PERMISSION ANALYZER

USER MANUAL 2.3

Protect your data and get in control!

Scan your network, filter NTFS permissions,

validate your access control design

and trace user or group access.

PERDEMIASOFTWARE
Get in control

1. What is Permission Analyzer?

Permission Analyzer scans your network and combines NTFS permissions with user and group data from the Active Directory. All data that is stored locally can be retrieved to create overviews of permissions per group or user. You will be able to monitor permissions for entire user groups and receive notifications if undesired permissions are flagged within your network.

Many filter options
Embedded or central database
Scan once and run fast overviews
Generate HTML reports
Modify permissions
Define policies and receive alerts

MAIN FEATURES

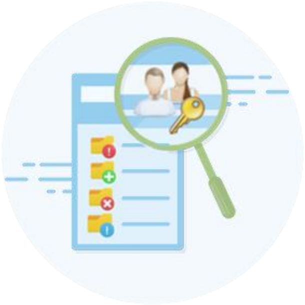
Scanning the network

Configure the directories and LDAP Organizational Units to scan. All directory information and group memberships from LDAP are saved in a local database file. Run the scan whenever you like or schedule an automated scan. Permission Analyzer supports an external database, allowing multiple workstations to share the same information source.

Running your overviews

All information is saved on a database, allowing you to conduct targeted search queries in seconds, instead of scanning the whole network every time you want to apply a new filter. Add filters for specific members, all members of a group or LDAP OU, permissions or folders.

Tracing permissions



The main overview provides an aggregated summary of all permissions found and may contain the permissions of multiple users or groups. The Trace function is part of the overview and shows you the origin of permissions for a specific user or group and folder (via the group membership or parent folder they have been inherited). Use this view to zoom in on your search results.

Creating reports and policies

Save your filters as report and export them to HTML or CSV and e-mail. Use Permission Analyzer to run reports automatically using command-line parameters. Save your filters as policies and receive e-mail notifications if your policy report contains unwanted permissions.

2. Features

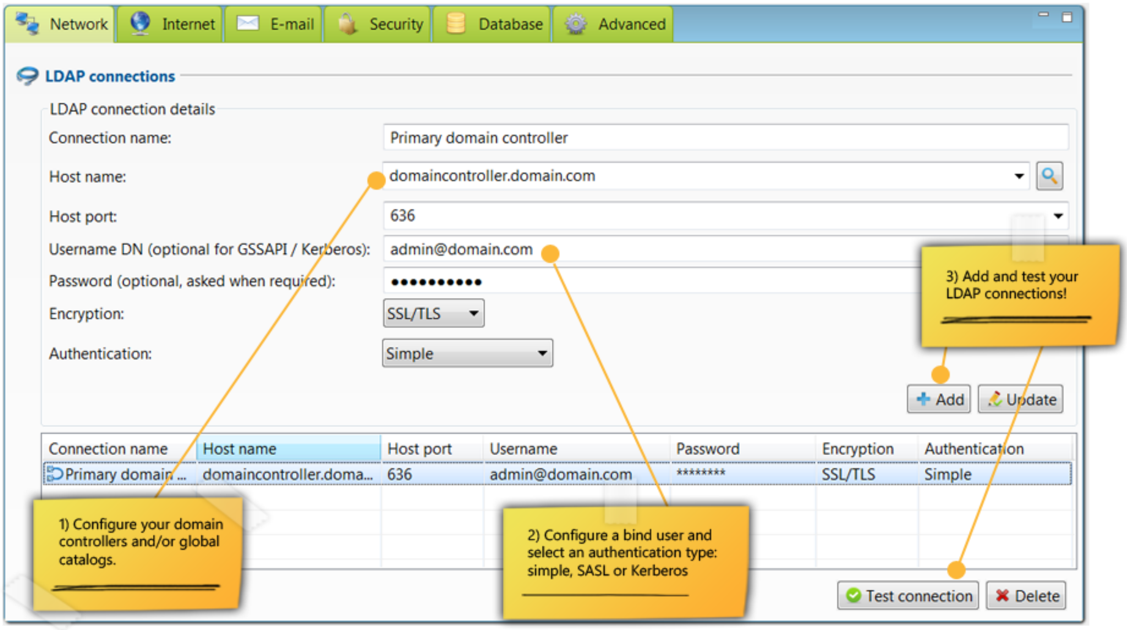
SCANNING THE NETWORK

Specify directories or network shares to scan and configure depth. Add (nested) group membership information to the database by selecting particular LDAP Organizational Units to scan.

Permission Analyzer has two key functionalities: network scanning and overview creation. During the scanning process, all necessary information is stored in the corresponding local database. A major advantage of this feature, firstly, is that the network need not be overloaded with each overview that is run. Secondly, any overview results are available within a matter of seconds. The database contains the Access Control List of each folder (or file), group and user data from the LDAP, such as usernames, and data on (nested) group relations. In addition, Permission Analyzer supports a series of external databases, allowing data to be centralized and shared between multiple workstations. Please see chapter on External Database.

Configuring LDAP connections

Open **settings** and add the LDAP connections you wish to add, such as various domain controllers or a global catalog. Permission Analyzer supports multiple authentication protocols, such as (bind) username and password, Digest-MD5, Cram-MD5 or Kerberos. In addition, users can choose between plain, SSL/TLS or STARTTLS security protocols.



LDAP connections

LDAP connection details

Connection name: Primary domain controller

Host name: domaincontroller.domain.com

Host port: 636

Username DN (optional for GSSAPI / Kerberos): admin@domain.com

Password (optional, asked when required): ••••••••••

Encryption: SSL/TLS

Authentication: Simple

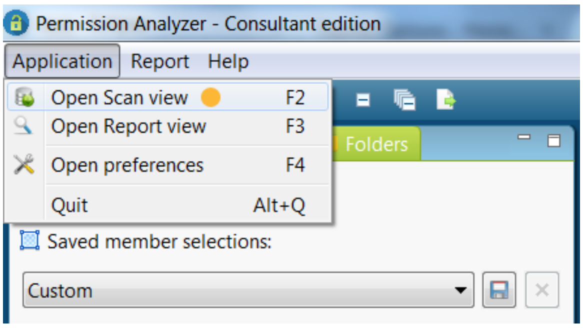
Connection name	Host name	Host port	Username	Password	Encryption	Authentication
Primary domain ...	domaincontroller.doma...	636	admin@domain.com	********	SSL/TLS	Simple

1) Configure your domain controllers and/or global catalogs.

2) Configure a bind user and select an authentication type: simple, SASL or Kerberos

3) Add and test your LDAP connections!

Adding directories and LDAP OU’s

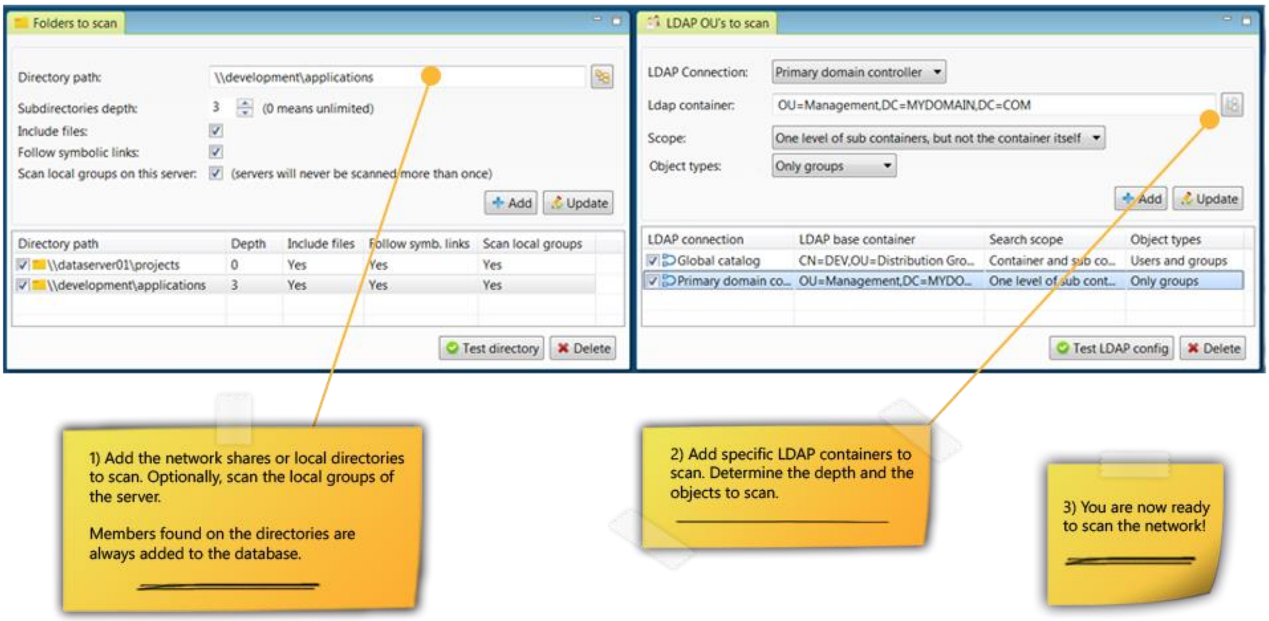


Saved member selections: Custom

Open **Scan View** via the menu and determine which directories and LDAP Organizational Units (OU) need to be scanned by Permission Analyzer. LDAP OU’s are used to supplement user data from the ACL with a username and nested group information for the relevant member.

Directories can be limited by setting up a depth limit for the number of subdirectories, file scanning and scanning of local groups on the server of the directory. LDAP OU’s can also be configured with a depth limit as well as selected scanning of users and/or groups. Permission Analyzer will at all times ensure that a comprehensive overview of nested group data is available by assessing the **member** and **memberOf** attributes of each user or group. As such, the scan may expand beyond the selected OU.

Note: because a universal group can have members from domains other than the domain where the group object is stored and can be used to provide access to resources in any domain, only a global catalog server is guaranteed to have all universal group memberships that are required for authentication. On the other hand, the global catalog stores the membership (the member attribute) of only universal groups. The membership of other groups can be ascertained at the domain level. Therefore, if applicable, make sure you add both the domain controllers as your global catalogue to ensure a complete overview of group memberships. Permission Analyzer will make sure that no duplicate memberships are stored.



Folders to scan

Directory path: \\development\applications

Subdirectories depth: 3 (0 means unlimited)

Include files: ☑

Follow symbolic links: ☑

Scan local groups on this server: ☑ (servers will never be scanned more than once)

Directory path	Depth	Include files	Follow symb. links	Scan local groups
☑ \\dataserver01\projects	0	Yes	Yes	Yes
☑ \\development\applications	3	Yes	Yes	Yes

LDAP OU's to scan

LDAP Connection: Primary domain controller

Ldap container: OU=Management,DC=MYDOMAIN,DC=COM

Scope: One level of sub containers, but not the container itself

Object types: Only groups

LDAP connection	LDAP base container	Search scope	Object types
☑ Global catalog	CN=DEV,OU=Distribution Gro...	Container and sub co...	Users and groups
☑ Primary domain co...	OU=Management,DC=MYDO...	One level of sub cont...	Only groups

1) Add the network shares or local directories to scan. Optionally, scan the local groups of the server.

Members found on the directories are always added to the database.

2) Add specific LDAP containers to scan. Determine the depth and the objects to scan.

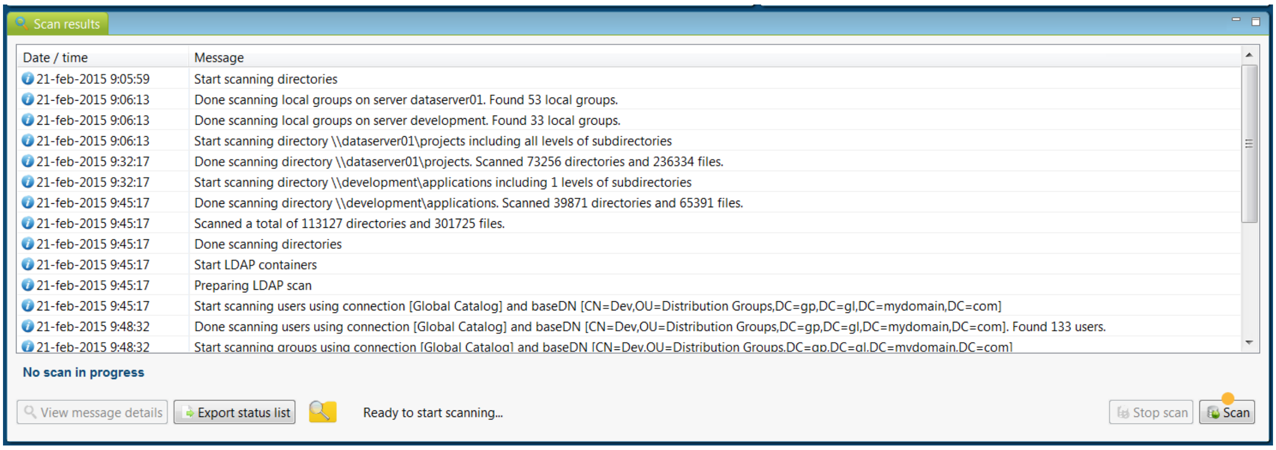
3) You are now ready to scan the network!

Starting the scan

Permission Analyzer will refresh the database with the current network statistics when a scan is initiated. You will also be able to choose to refresh the databases or LDAP OUs only. This will result in the application leaving user and group data unchanged in the former and the directory data in the database unchanged in the latter. Only items that are **checked** will be scanned by Permission Analyzer.

A scan may be initiated automatically by the application using the scan parameter. The application will then commence a scan with the current configurations and subsequently close. An LDAP or directory scan may be initiated using the **-scanLDAP** or **-scanDirectories** parameters.

You will be able to review the results of the final scan in the status list or in the *Last_status_messages.csv* file in the application directory.



Scan results

Date / time	Message
21-feb-2015 9:05:59	Start scanning directories
21-feb-2015 9:06:13	Done scanning local groups on server dataserver01. Found 53 local groups.
21-feb-2015 9:06:13	Done scanning local groups on server development. Found 33 local groups.
21-feb-2015 9:06:13	Start scanning directory \\dataserver01\projects including all levels of subdirectories
21-feb-2015 9:32:17	Done scanning directory \\dataserver01\projects. Scanned 73256 directories and 236334 files.
21-feb-2015 9:32:17	Start scanning directory \\development\applications including 1 levels of subdirectories
21-feb-2015 9:45:17	Done scanning directory \\development\applications. Scanned 39871 directories and 65391 files.
21-feb-2015 9:45:17	Scanned a total of 113127 directories and 301725 files.
21-feb-2015 9:45:17	Done scanning directories
21-feb-2015 9:45:17	Start LDAP containers
21-feb-2015 9:45:17	Preparing LDAP scan
21-feb-2015 9:45:17	Start scanning users using connection [Global Catalog] and baseDN [CN=Dev,OU=Distribution Groups,DC=gp,DC=gl,DC=mydomain,DC=com]
21-feb-2015 9:48:32	Done scanning users using connection [Global Catalog] and baseDN [CN=Dev,OU=Distribution Groups,DC=gp,DC=gl,DC=mydomain,DC=com]. Found 133 users.
21-feb-2015 9:48:32	Start scanning groups using connection [Global Catalog] and baseDN [CN=Dev,OU=Distribution Groups,DC=gp,DC=gl,DC=mydomain,DC=com]

No scan in progress

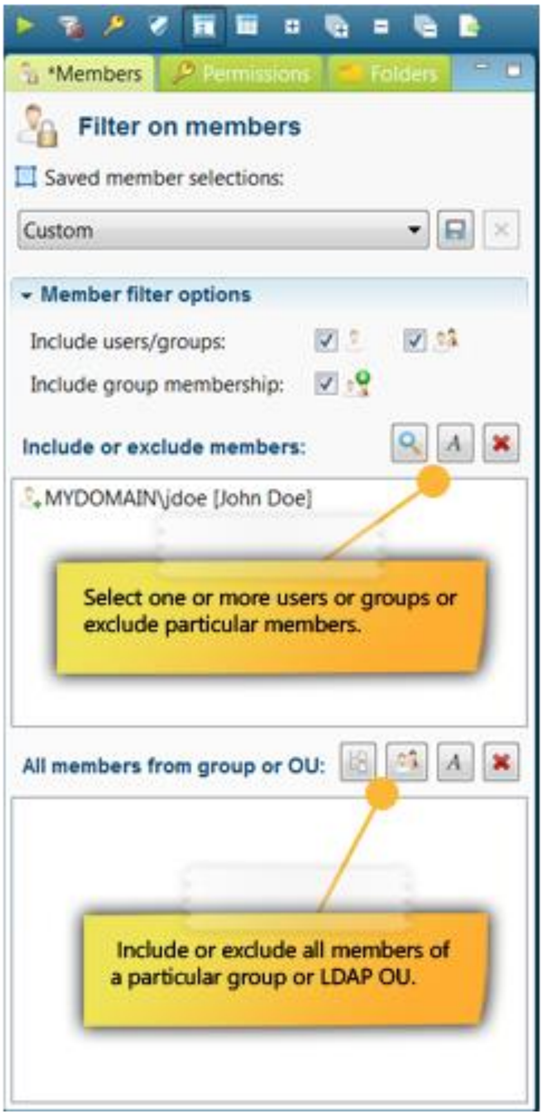
Ready to start scanning...

FILTERS AND OVERVIEWS

Create filters and include or exclude particular members, simple or special permissions and folders or files. Save your filters as Selection or save and re-use them as report.

Following the network scan, the database may be used to carry out search queries. Permission Analyzer offers an extensive set of filters for you to obtain specific information. The search results are represented in the **tree** structure or **table** of directories and files. An **aggregated** list of privileges is shown for each of the directories or files, as the search result(s) may contain privileges of multiple users or groups. You will be able to zoom in on the aggregated privileges using the Trace View feature at the bottom of the result window.

Filtering for users and groups



*Members
Permissions
Folders
Filter on members
Saved member selections:
Custom
Member filter options
Include users/groups:
Include group membership:
Include or exclude members:
MYDOMAIN\jdoe [John Doe]
Select one or more users or groups or exclude particular members.
All members from group or OU:
Include or exclude all members of a particular group or LDAP OU.

The simplest filter displays the permission privileges for a specific group or user (hereafter to be referred to as **member**). The filter takes into account the nested group membership of the selected member. Permission Analyzer also allows for multiple members to be included in a single overview. Simply select **all members** of a specific group or LDAP OU or search using a **wildcard** key word for the account name and display name. This will not filter for the group itself but for **all** the members of that group. Nested group membership will automatically be taken into account for each group member when determining permissions. This will allow you to monitor whether someone from a specific group has too many permission privileges in certain folders.

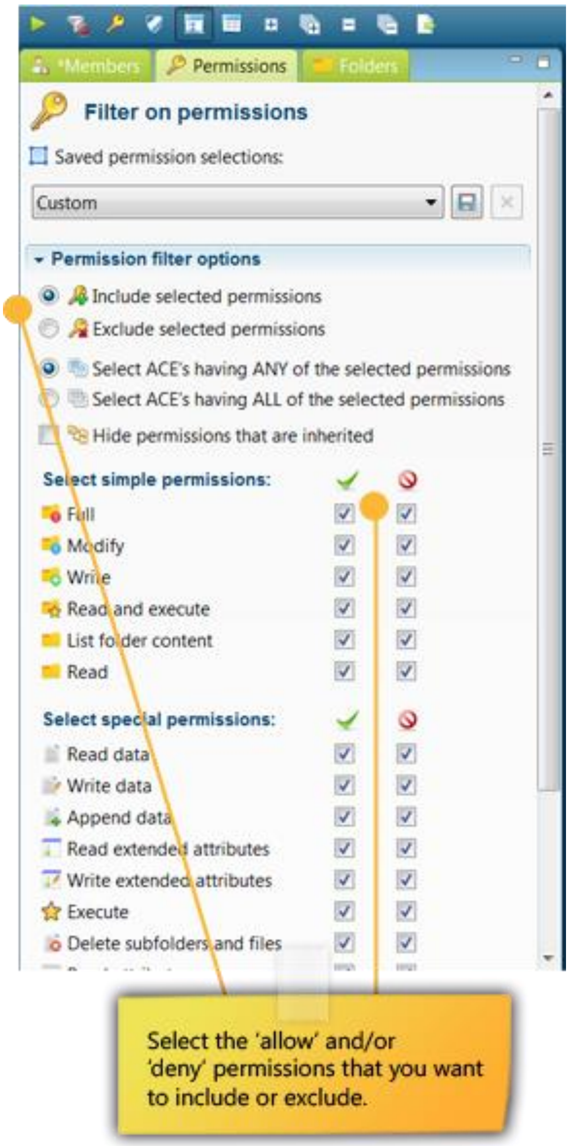
In addition to including members in searches, you are also able to **exclude** one or more members from searches, e.g. by excluding everyone from the Domain Admins group.

Filtering for permission privileges

All permission privileges are automatically shown for each search. However, a filter can be created to **include** or **exclude** certain privileges from a search. The filter overview distinguishes between Windows simple permissions, special permissions or permissions that allow or deny something.

When filtering permission privileges you can indicate whether a member should have **all** privileges or **at least one** of those you have selected. The former can be used to filter for members with specific permissions (such as FULL), while the latter can be used to display a series of permissions.

If necessary, configure the filter to only display **explicit** permissions.



Filter on permissions

Saved permission selections: Custom

Permission filter options

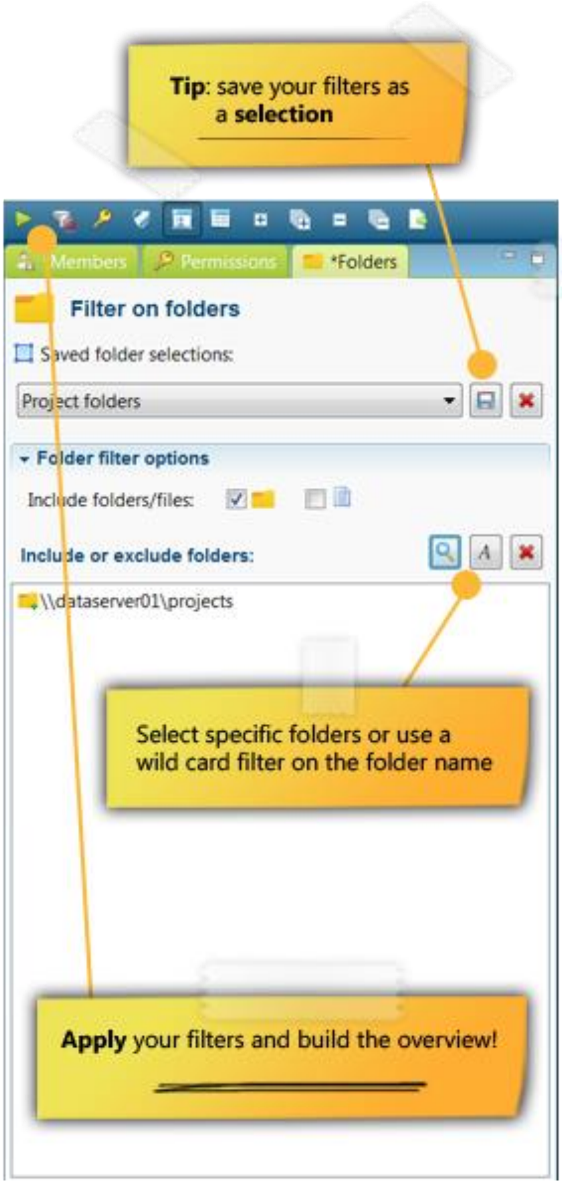
- ● Include selected permissions
- ○ Exclude selected permissions
- ● Select ACE's having ANY of the selected permissions
- ○ Select ACE's having ALL of the selected permissions
- □ Hide permissions that are inherited

Select simple permissions:	✓	🚫
Full	☑	☑
Modify	☑	☑
Write	☑	☑
Read and execute	☑	☑
List folder content	☑	☑
Read	☑	☑

Select special permissions:	✓	🚫
Read data	☑	☑
Write data	☑	☑
Append data	☑	☑
Read extended attributes	☑	☑
Write extended attributes	☑	☑
Execute	☑	☑
Delete subfolders and files	☑	☑

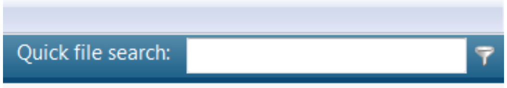
Select the 'allow' and/or 'deny' permissions that you want to include or exclude.

Filtering for directories and files


Tip: save your filters as a selection
Members
Permissions
*Folders
Filter on folders
Saved folder selections:
Project folders
Folder filter options
Include folders/files:
Include or exclude folders:
\\dataserver01\projects
Select specific folders or use a wild card filter on the folder name
Apply your filters and build the overview!

Search results can be scoped to exclude certain directories or files. Adding a directory will automatically include all subdirectories and files. You will also be able to search for the name of a file or directory using a wildcard.

Tip: To retrieve a directory or file in the main window, use the Quick File Search box.

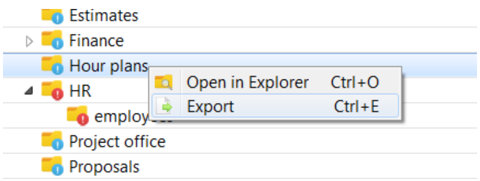


A set of filters can be saved as a **Selection**, making a large number of frequently used filters easily retrievable and usable. A selection will bundle filters of the same type (members, permissions or folders). The total number of filters for an overview can be saved as a Report. Filters can be modified by clicking **Run** and can be reset by clicking **Reset** in the toolbar.

Overview of permissions

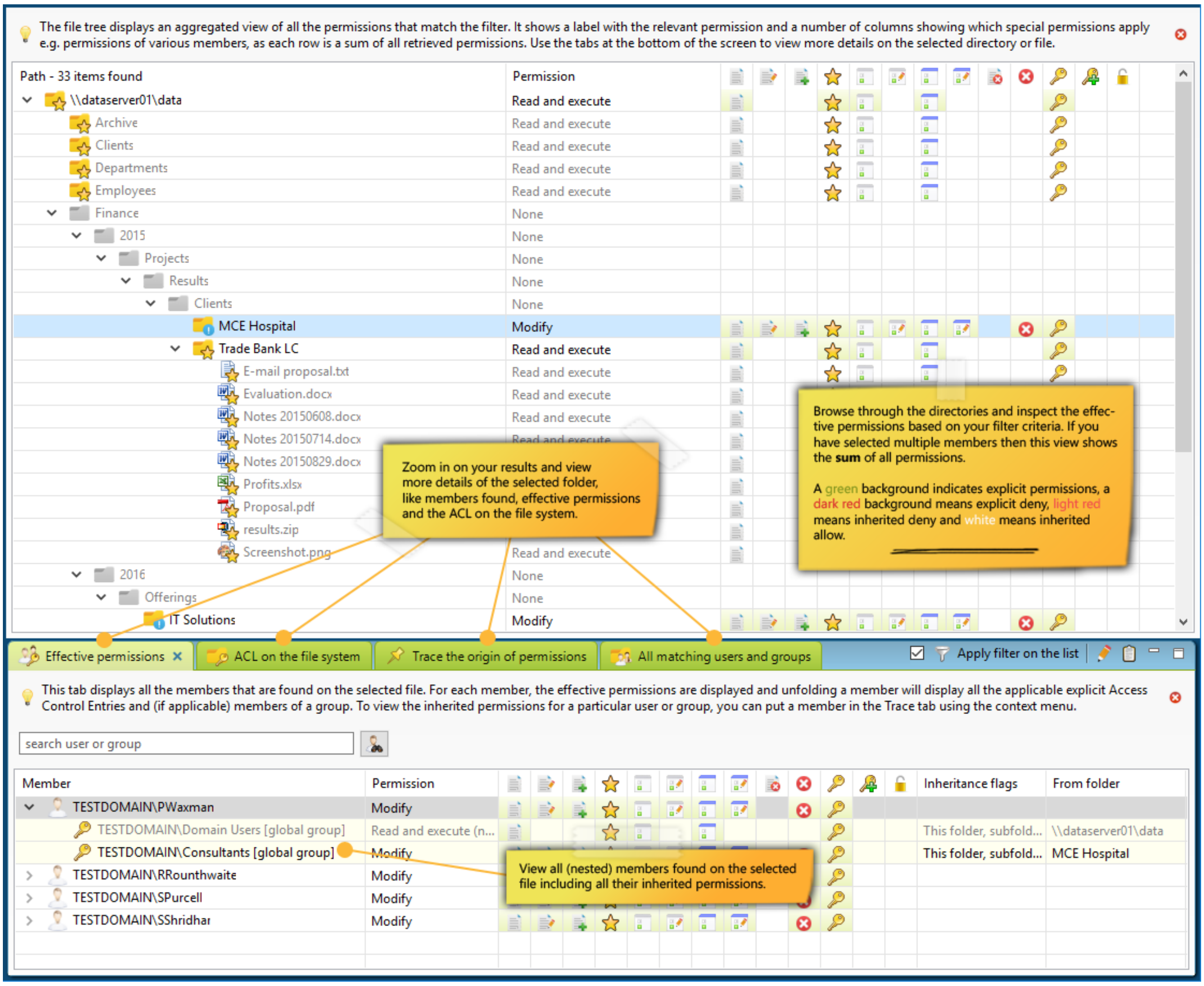
After applying the filters, all retrieved permissions will be shown in a tree structure, grouped in directories and files. The toolbar also contains an option to have results displayed in a table rather than a tree structure. Each item will contain a label with the relevant permission and a number of columns showing which special permissions apply e.g. permissions of various members, as each row is a sum of all retrieved permissions. The background color of the permissions indicates whether a permission was granted directly or if it was inherited from a folder above: white for implicit ‘allow’ permissions, green for explicit ‘allow’ permissions, light red for implicit ‘deny’ permissions and dark red for explicit ‘deny’ permissions.

Tip: Each directory within the search results can be exported to an HTML report or CSV file by opening the context menu with the right mouse button. Directories can also be opened directly with **Windows Explorer**.



There are four tabs at the bottom of the search result screen: one which allows you to zoom in on a directory to review which permissions and members have been found including their effective and inherited permissions, one that provides details on the Access Control List of the directory selected, one that shows the provenance of permissions for a particular member and another tab which allows you to retrieve all users and groups from the overview including all their explicit permissions. For more details see the [Modifying permissions]() and [Tracing permissions]() features.

Tip: drag tabs to a second screen or to another location within the application to view both tabs simultaneously.



The file tree displays an aggregated view of all the permissions that match the filter. It shows a label with the relevant permission and a number of columns showing which special permissions apply e.g. permissions of various members, as each row is a sum of all retrieved permissions. Use the tabs at the bottom of the screen to view more details on the selected directory or file.

Path - 33 items found	Permission
\\dataserver01\data	Read and execute
Archive	Read and execute
Clients	Read and execute
Departments	Read and execute
Employees	Read and execute
Finance	None
2015	None
Projects	None
Results	None
Clients	None
MCE Hospital	Modify
Trade Bank LC	Read and execute
E-mail proposal.txt	Read and execute
Evaluation.docx	Read and execute
Notes 20150608.docx	Read and execute
Notes 20150714.docx	Read and execute
Notes 20150829.docx	
Profits.xlsx	
Proposal.pdf	
results.zip	
Screenshot.png	Read and execute
2016	None
Offerings	None
IT Solutions	Modify

Zoom in on your results and view more details of the selected folder, like members found, effective permissions and the ACL on the file system.

Browse through the directories and inspect the effective permissions based on your filter criteria. If you have selected multiple members then this view shows the **sum** of all permissions.

A green background indicates explicit permissions, a dark red background means explicit deny, light red means inherited deny and white means inherited allow.

Effective permissions ×
ACL on the file system
Trace the origin of permissions
All matching users and groups
☑ Apply filter on the list

This tab displays all the members that are found on the selected file. For each member, the effective permissions are displayed and unfolding a member will display all the applicable explicit Access Control Entries and (if applicable) members of a group. To view the inherited permissions for a particular user or group, you can put a member in the Trace tab using the context menu.

Member	Permission	Inheritance flags	From folder
TESTDOMAIN\PWaxman	Modify		
TESTDOMAIN\Domain Users [global group]	Read and execute (n...	This folder, subfold...	\\dataserver01\data
TESTDOMAIN\Consultants [global group]	Modify	This folder, subfold...	MCE Hospital
TESTDOMAIN\RRounthwaite	Modify		
TESTDOMAIN\SPurcell	Modify		
TESTDOMAIN\SShridhar	Modify		

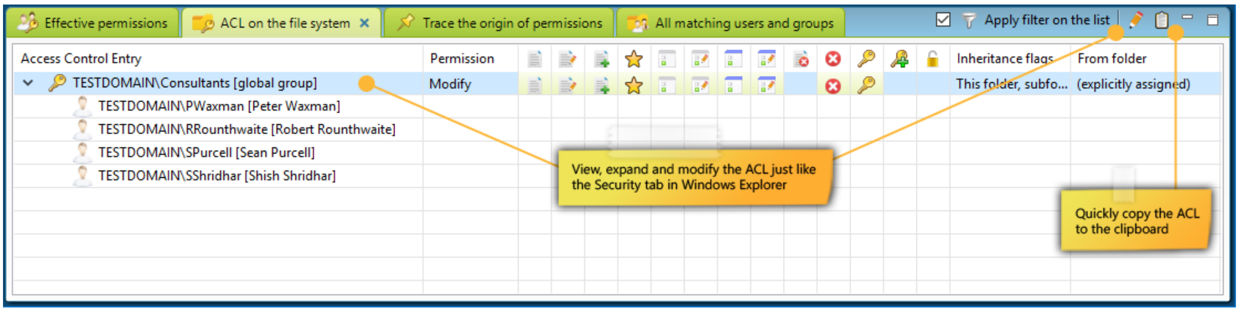
View all (nested) members found on the selected file including all their inherited permissions.

TRACING PERMISSIONS

Zoom in on your search results and trace the origin of permissions that have been found. See if permissions are inherited from a (indirect) group membership or parent folder.

To review a directory for all found permissions, see the tabs at the bottom of the search result screen. Each directory in the main search result screen represents the **sum** of all permissions found. Should the filter criteria yield multiple members, then you may use one of the tabs to view more details about particular members. The first tab with **Effective permissions** displays members for whom permissions have been found on the selected directory or file. Each member can be expanded to view the provenance of their effective permissions, e.g. through which (nested) group membership the permissions were granted.

The second tab displays the **Access Control List on the file system**, this tab corresponds with the Security tab on the file properties dialog in Windows Explorer. Only the members that match the filter criteria are displayed, unless the option "*Apply filter on the list*" is unchecked to view the entire Access Control List. Permissions can be modified or the results can be copied to the clipboard using the toolbar buttons in the tab:

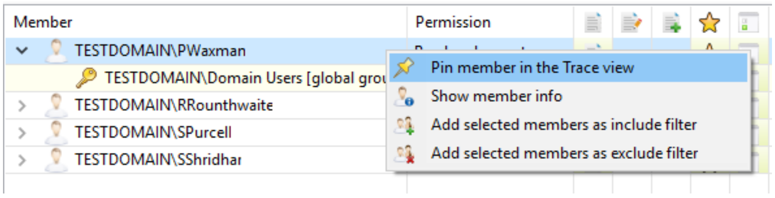

Effective permissions
ACL on the file system ✕
Trace the origin of permissions
All matching users and groups
☑ Apply filter on the list

Access Control Entry	Permission	Inheritance flags	From folder
TESTDOMAIN\Consultants [global group]	Modify	This folder, subfo...	(explicitly assigned)
TESTDOMAIN\PWaxman [Peter Waxman]			
TESTDOMAIN\RRounthwaite [Robert Rounthwaite]			
TESTDOMAIN\SPurcell [Sean Purcell]			
TESTDOMAIN\SShridhar [Shish Shridhar]			

View, expand and modify the ACL just like the Security tab in Windows Explorer

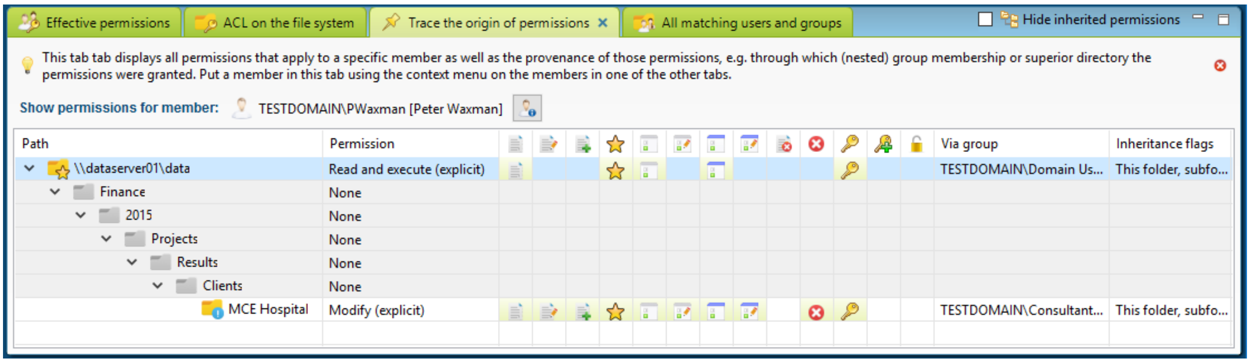
Quickly copy the ACL to the clipboard

The **Trace** tab is used to pin a particular member and to view all applicable permissions for the selected folder. The view subsequently displays all permissions that apply to that specific member as well as the provenance of those permissions, e.g. through which (nested) group membership or superior directory the permissions were granted. This feature allows you to easily track the cause of undesirable permissions and resolve such cases by [modifying the permissions](). The context menu of a member in one of the other tabs has the option to add the member to the Trace tab.


Pin member in the Trace view
Show member info
Add selected members as include filter
Add selected members as exclude filter

Member	Permission
TESTDOMAIN\PWaxman	
TESTDOMAIN\Domain Users [global grou	
TESTDOMAIN\RRounthwaite	
TESTDOMAIN\SPurcell	
TESTDOMAIN\SShridhar	

Tip: Use the info button to get the group membership information of the member selected:

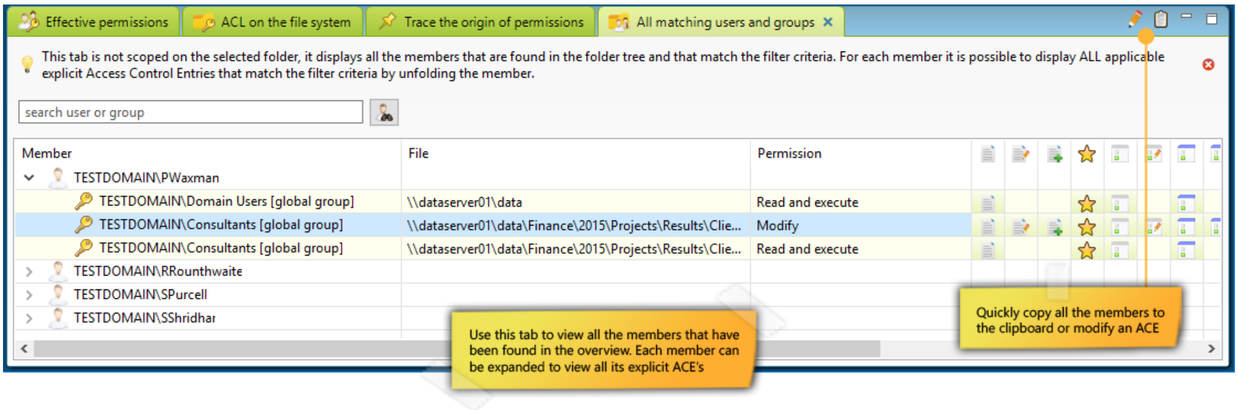

Effective permissions
ACL on the file system
Trace the origin of permissions
All matching users and groups
☐ Hide inherited permissions

This tab tab displays all permissions that apply to a specific member as well as the provenance of those permissions, e.g. through which (nested) group membership or superior directory the permissions were granted. Put a member in this tab using the context menu on the members in one of the other tabs.

Show permissions for member: TESTDOMAIN\PWaxman [Peter Waxman]

Path	Permission	Via group	Inheritance flags
\\dataserver01\data	Read and execute (explicit)	TESTDOMAIN\Domain Us...	This folder, subfo...
Finance	None		
2015	None		
Projects	None		
Results	None		
Clients	None		
MCE Hospital	Modify (explicit)	TESTDOMAIN\Consultant...	This folder, subfo...

The final tab **All matching users and groups** can be used to extract all users and groups from the overview. This is useful when the filter criteria yield multiple members and you want to have a overview of unique users and groups that have been found. Each member can be expanded to view **all** the explicit permissions on every directory for that member, including the ones granted through nested group memberships:



This tab is not scoped on the selected folder, it displays all the members that are found in the folder tree and that match the filter criteria. For each member it is possible to display ALL applicable explicit Access Control Entries that match the filter criteria by unfolding the member.

Member	File	Permission
TESTDOMAIN\PWaxman		
TESTDOMAIN\Domain Users [global group]	\\dataserver01\data	Read and execute
TESTDOMAIN\Consultants [global group]	\\dataserver01\data\Finance\2015\Projects\Results\Clie...	Modify
TESTDOMAIN\Consultants [global group]	\\dataserver01\data\Finance\2015\Projects\Results\Clie...	Read and execute
TESTDOMAIN\RRounthwaite		
TESTDOMAIN\SPurcell		
TESTDOMAIN\SShridhar		

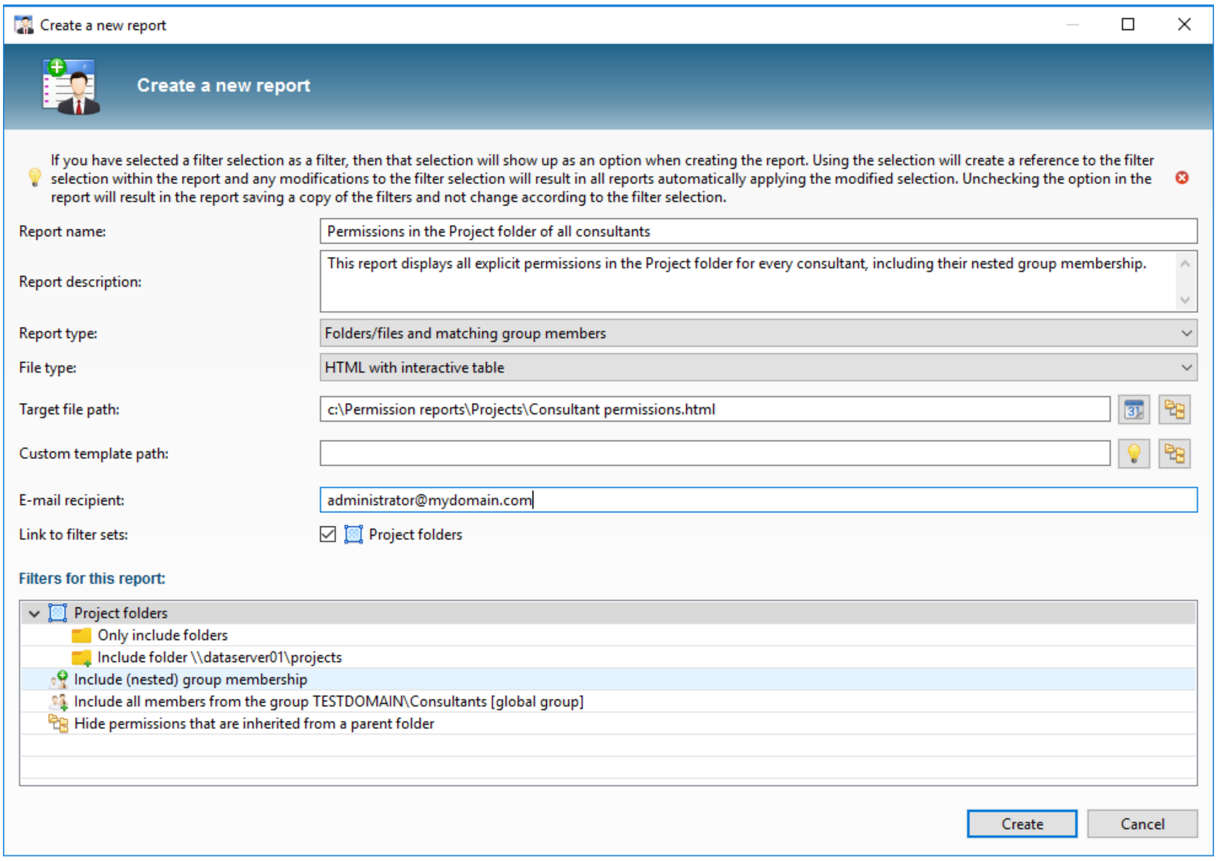
Use this tab to view all the members that have been found in the overview. Each member can be expanded to view all its explicit ACE's

Quickly copy all the members to the clipboard or modify an ACE

REPORTS AND EXPORT

Save your filters as report and export them to HTML or CSV and e-mail. Use different report types, such as permissions tracing and group memberships, effective permissions or plain Access Control List information of your directories.

Current sets of filters can be saved as a new report using the menu [Report] > [Create new report]. Reports can be exported to **HTML** or **CSV** files or can be reloaded within the program to change the filters or review results. There are two options for HTML: a simple HTML table and an option which includes search, paging and sorting options.



If you have selected a filter selection as a filter, then that selection will show up as an option when creating the report. Using the selection will create a reference to the filter selection within the report and any modifications to the filter selection will result in all reports automatically applying the modified selection. Unchecking the option in the report will result in the report saving a copy of the filters and not change according to the filter selection.

Report name: Permissions in the Project folder of all consultants

Report description: This report displays all explicit permissions in the Project folder for every consultant, including their nested group membership.

Report type: Folders/files and matching group members

File type: HTML with interactive table

Target file path: c:\Permission reports\Projects\Consultant permissions.html

Custom template path:

E-mail recipient: administrator@mydomain.com

Link to filter sets: ☑ Project folders

Filters for this report:

- Project folders
  - Only include folders
  - Include folder \\dataserver01\projects
- Include (nested) group membership
- Include all members from the group TESTDOMAIN\Consultants [global group]
- Hide permissions that are inherited from a parent folder

Report types

Permission Analyzer supports four report types, each of which displays search results differently:

- Folder and files and the sum of their permissions
- Folder and files and their Access Control List, as they appear on the file system.
- Folder and files and matching group members to show the origin of permissions per user or group including permissions from nested group memberships. This report will show every matching member per directory or file.

- Users and groups and all their explicit permissions. This report is grouped by user or group instead of directory and it displays all the explicit permissions for each member, including permissions from nested group memberships.

The last two report types show a relatively extensive amount of information per user and group. That's why we recommend making your filters as specific and targeted as possible, to exclude any unnecessary information. This prevents reports from being crowded with irrelevant information.

Tip: put a placeholder in the *Target file path* to include the current date in the path c:\permission reports\[date:yyyy-MM-dd]_report.html. This will preserve old report files. See Java date formats.

E-mail

A report can be configured with an e-mail address, allowing it to be sent to that address at every export opportunity. An **SMTP** server, however, must be configured to accommodate the address and can be set up in the application settings. The option will also allow you to indicate whether you want the report to be included as an **attachment** and to include a message in the e-mail. The e-mail template may contain the following fields: `[report_name]`, `[report_path]`, `[report_description]` and `[report_threshold]`.

Report templates

You will also be able to use modified templates to generate the report. Permission Analyzer comes with a number of default templates for HTML and CSV, which can be modified according to your specifications. The templates are located in *<application dir>\plugins\Permission_Analyzer_2.xxxx.jar* – the file can be opened with any ZIP application. Here are examples of the default HTML template for files and the sum of permissions or the CSV template for files and their ACL's.

Filter selections

If you have selected a filter selection as a filter, then that selection will show up as an option when generating the report. Using the selection will create a **reference** to the filter selection within the report and any modifications to the filter selection will result in all reports automatically applying the modified selection. Unchecking the option in the report will result in the report saving a **copy** of the filters and not change according to the filter selection.

Running reports automatically

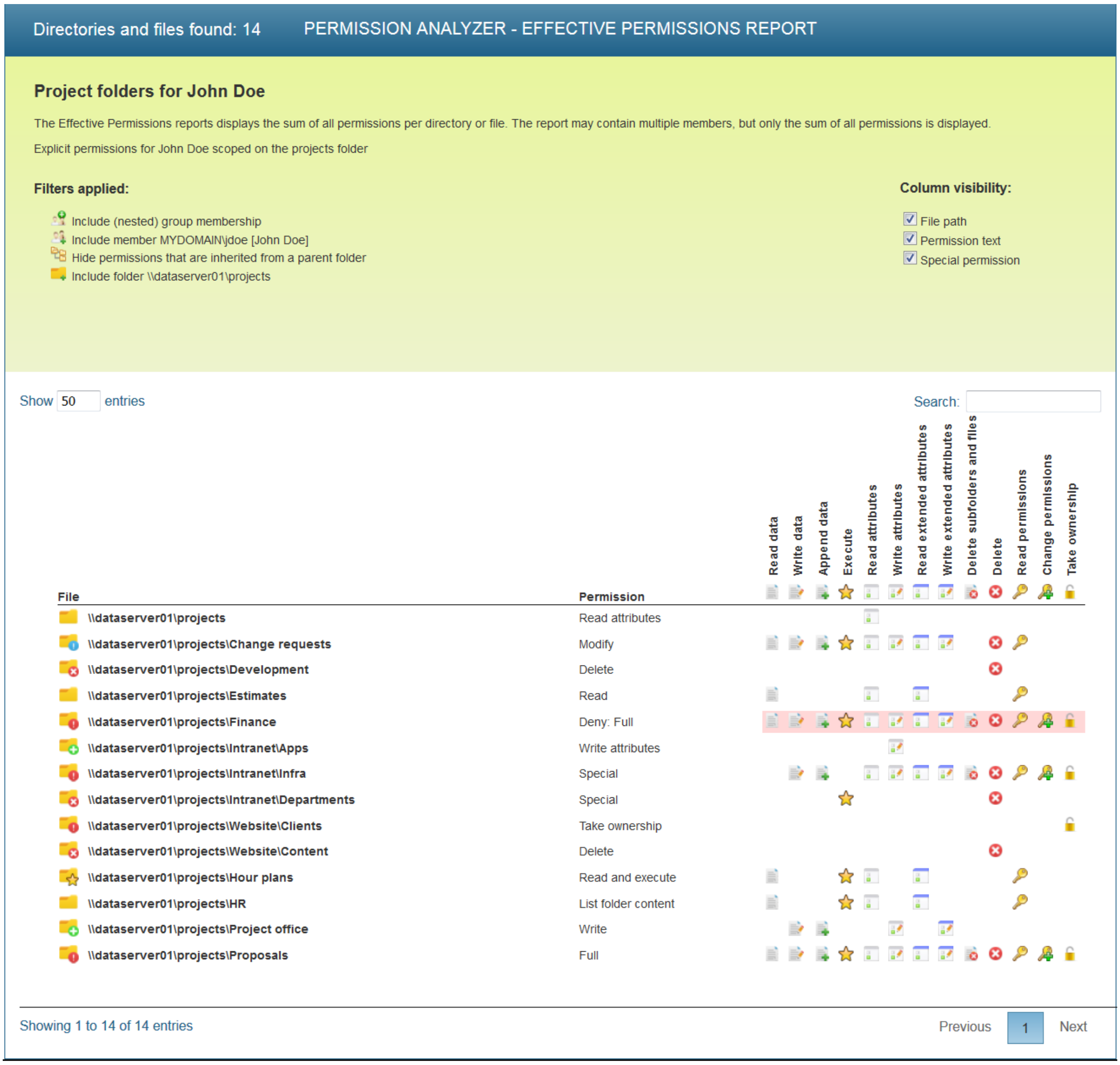
Use Permission Analyzer to run reports automatically using the following parameters:

- **-report “myReport”**: run a specific report by name. This parameter can be input a number of times.
- **-allReports**: run all reports.

Permission Analyzer will close automatically after all reports have been exported. See Scheduling jobs feature for more command-line options.

FOLDERS/FILES AND THE SUM OF THEIR PERMISSIONS

This report type shows a sum of all permissions found per directory or file and takes into account the priorities used by Windows (privileges that deny something will, for example, have a higher priority than privileges that grant access).



Directories and files found: 14 PERMISSION ANALYZER - EFFECTIVE PERMISSIONS REPORT

Project folders for John Doe

The Effective Permissions reports displays the sum of all permissions per directory or file. The report may contain multiple members, but only the sum of all permissions is displayed.

Explicit permissions for John Doe scoped on the projects folder

Filters applied:

- Include (nested) group membership
- Include member MYDOMAIN\jdoe [John Doe]
- Hide permissions that are inherited from a parent folder
- Include folder \\dataserver01\projects

Column visibility:

- ☑ File path
- ☑ Permission text
- ☑ Special permission

Show 50 entries

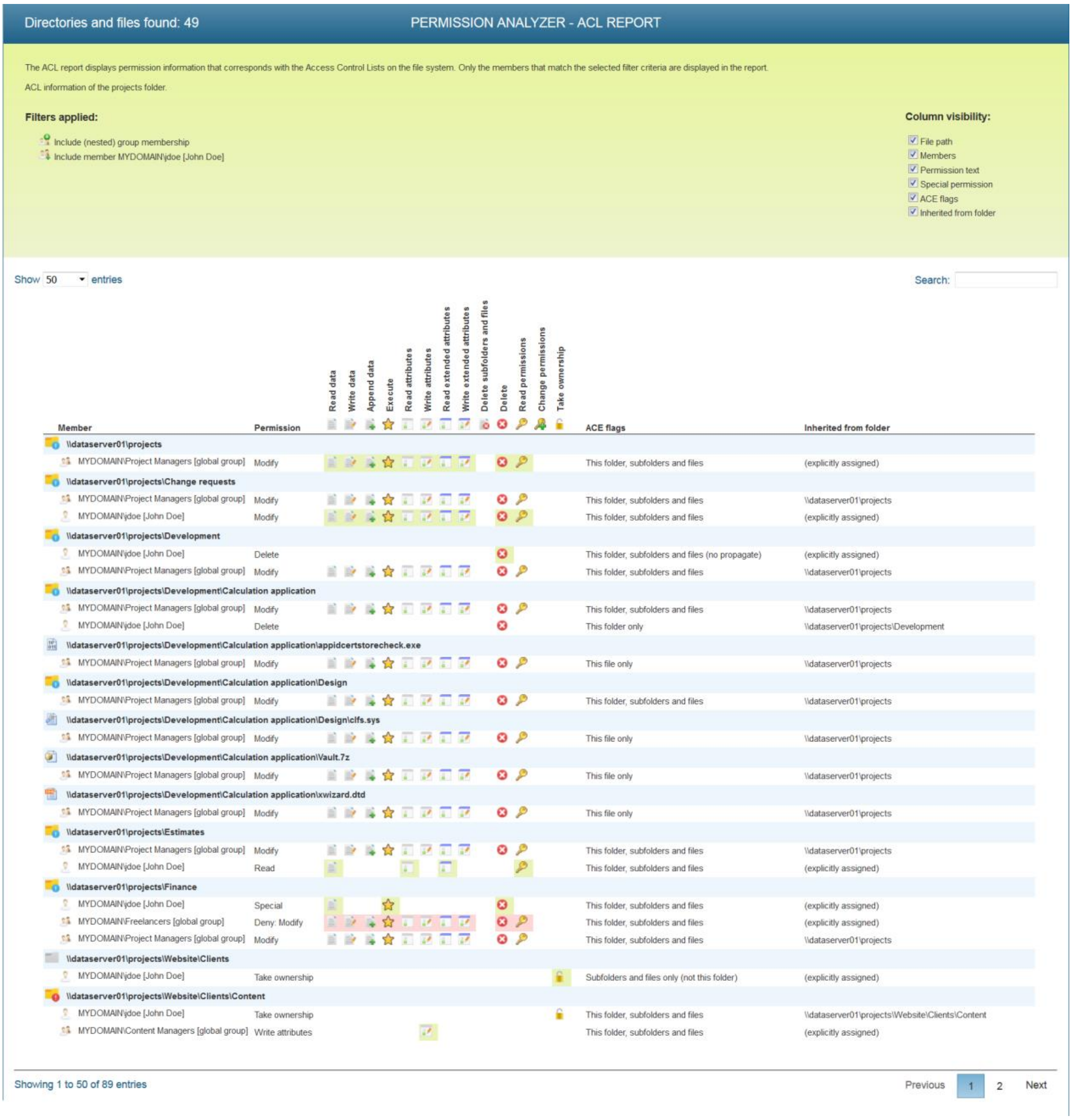
Search:

File	Permission	Read data	Write data	Append data	Execute	Read attributes	Write attributes	Read extended attributes	Write extended attributes	Delete subfolders and files	Delete	Read permissions	Change permissions	Take ownership
\\dataserver01\projects	Read attributes					✓								
\\dataserver01\projects\Change requests	Modify	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓		
\\dataserver01\projects\Development	Delete										✓			
\\dataserver01\projects\Estimates	Read	✓				✓		✓				✓		
\\dataserver01\projects\Finance	Deny: Full	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
\\dataserver01\projects\Intranet\Apps	Write attributes						✓							
\\dataserver01\projects\Intranet\Infra	Special		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓
\\dataserver01\projects\Intranet\Departments	Special				✓						✓			
\\dataserver01\projects\Website\Clients	Take ownership													✓
\\dataserver01\projects\Website\Content	Delete										✓			
\\dataserver01\projects\Hour plans	Read and execute	✓			✓	✓		✓				✓		
\\dataserver01\projects\HR	List folder content	✓			✓	✓		✓				✓		
\\dataserver01\projects\Project office	Write		✓	✓			✓		✓					
\\dataserver01\projects\Proposals	Full	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

Showing 1 to 14 of 14 entries

FOLDERS/FILES AND THEIR ACCESS CONTROL LIST

This report provides an overview of the Access Control List (ACL) per directory or file and contains all Access Control Entries (ACE) that match the search criteria. Each ACE has a set of permissions and a member and match the data in the **Windows Security tab** on the file properties. Only the directories and files that match the search criteria will be included in the report.



Directories and files found: 49

PERMISSION ANALYZER - ACL REPORT

The ACL report displays permission information that corresponds with the Access Control Lists on the file system. Only the members that match the selected filter criteria are displayed in the report.

ACL information of the projects folder.

Filters applied:

- Include (nested) group membership
- Include member MYDOMAIN\jdoe [John Doe]

Column visibility:

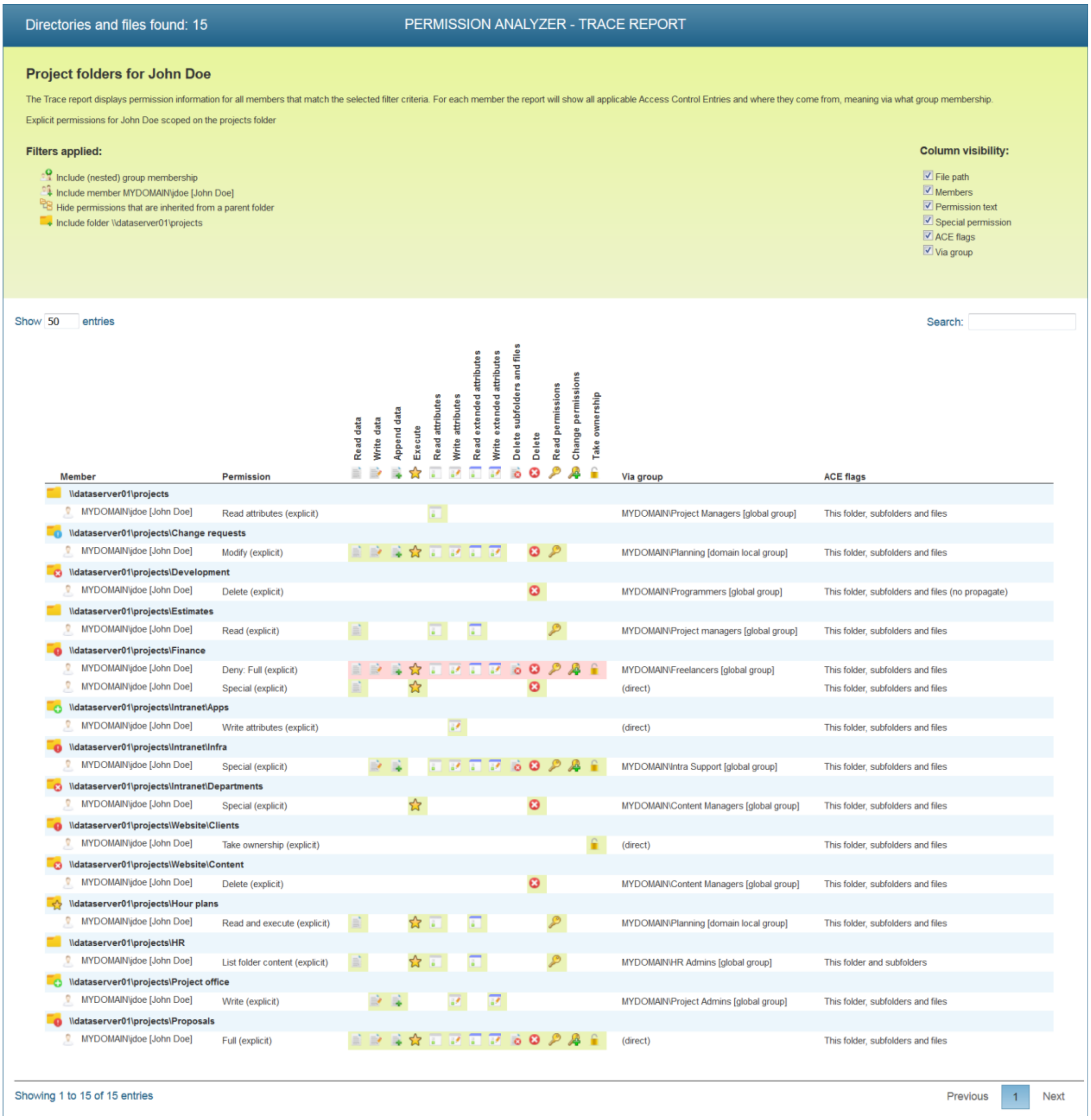
☑ File path
☑ Members
☑ Permission text
☑ Special permission
☑ ACE flags
☑ Inherited from folder

Member	Permission	Read data	Write data	Append data	Execute	Read attributes	Write attributes	Read extended attributes	Write extended attributes	Delete subfolders and files	Delete	Read permissions	Change permissions	Take ownership	ACE flags	Inherited from folder
\\dataserver01\projects																
MYDOMAIN\Project Managers [global group]	Modify	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			This folder, subfolders and files	(explicitly assigned)
\\dataserver01\projects\Change requests																
MYDOMAIN\Project Managers [global group]	Modify	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			This folder, subfolders and files	\\dataserver01\projects
MYDOMAIN\jdoe [John Doe]	Modify	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			This folder, subfolders and files	(explicitly assigned)
\\dataserver01\projects\Development																
MYDOMAIN\jdoe [John Doe]	Delete										✓				This folder, subfolders and files (no propagate)	(explicitly assigned)
MYDOMAIN\Project Managers [global group]	Modify	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			This folder, subfolders and files	\\dataserver01\projects
\\dataserver01\projects\Development\Calculation application																
MYDOMAIN\Project Managers [global group]	Modify	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			This folder, subfolders and files	\\dataserver01\projects
MYDOMAIN\jdoe [John Doe]	Delete										✓				This folder only	\\dataserver01\projects\Development
\\dataserver01\projects\Development\Calculation application\appidcertstorecheck.exe																
MYDOMAIN\Project Managers [global group]	Modify	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			This file only	\\dataserver01\projects
\\dataserver01\projects\Development\Calculation application\Design																
MYDOMAIN\Project Managers [global group]	Modify	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			This folder, subfolders and files	\\dataserver01\projects
\\dataserver01\projects\Development\Calculation application\Design\clfs.sys																
MYDOMAIN\Project Managers [global group]	Modify	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			This file only	\\dataserver01\projects
\\dataserver01\projects\Development\Calculation application\Vault.7z																
MYDOMAIN\Project Managers [global group]	Modify	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			This file only	\\dataserver01\projects
\\dataserver01\projects\Development\Calculation application\xwizard.dtd																
MYDOMAIN\Project Managers [global group]	Modify	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			This file only	\\dataserver01\projects
\\dataserver01\projects\Estimates																
MYDOMAIN\Project Managers [global group]	Modify	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			This folder, subfolders and files	\\dataserver01\projects
MYDOMAIN\jdoe [John Doe]	Read	✓				✓		✓				✓			This folder, subfolders and files	(explicitly assigned)
\\dataserver01\projects\Finance																
MYDOMAIN\jdoe [John Doe]	Special	✓			✓						✓				This folder, subfolders and files	(explicitly assigned)
MYDOMAIN\Freelancers [global group]	Deny: Modify	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			This folder, subfolders and files	(explicitly assigned)
MYDOMAIN\Project Managers [global group]	Modify	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			This folder, subfolders and files	\\dataserver01\projects
\\dataserver01\projects\Website\Clients																
MYDOMAIN\jdoe [John Doe]	Take ownership													✓	Subfolders and files only (not this folder)	(explicitly assigned)
\\dataserver01\projects\Website\Clients\Content																
MYDOMAIN\jdoe [John Doe]	Take ownership													✓	This folder, subfolders and files	\\dataserver01\projects\Website\Clients\Content
MYDOMAIN\Content Managers [global group]	Write attributes						✓								This folder, subfolders and files	(explicitly assigned)

Showing 1 to 50 of 89 entries

FOLDERS/FILES AND MATCHING GROUP MEMBERS

This report shows the origin of permissions per group or user, indicating through which (nested) group a user or group has inherited those permissions. Only users and groups that appear in the search results will be included in the report. This report shows a relatively extensive amount of information per user and group. That’s why we recommend making your filters as specific and targeted as possible, to exclude any unnecessary information. This prevents reports from being crowded with irrelevant information.



Directories and files found: 15

PERMISSION ANALYZER - TRACE REPORT

Project folders for John Doe

The Trace report displays permission information for all members that match the selected filter criteria. For each member the report will show all applicable Access Control Entries and where they come from, meaning via what group membership.

Explicit permissions for John Doe scoped on the projects folder

Filters applied:

- Include (nested) group membership
- Include member MYDOMAIN\jdoe [John Doe]
- Hide permissions that are inherited from a parent folder
- Include folder \\dataserver01\projects

Column visibility:

☑ File path
☑ Members
☑ Permission text
☑ Special permission
☑ ACE flags
☑ Via group

Show 50 entries

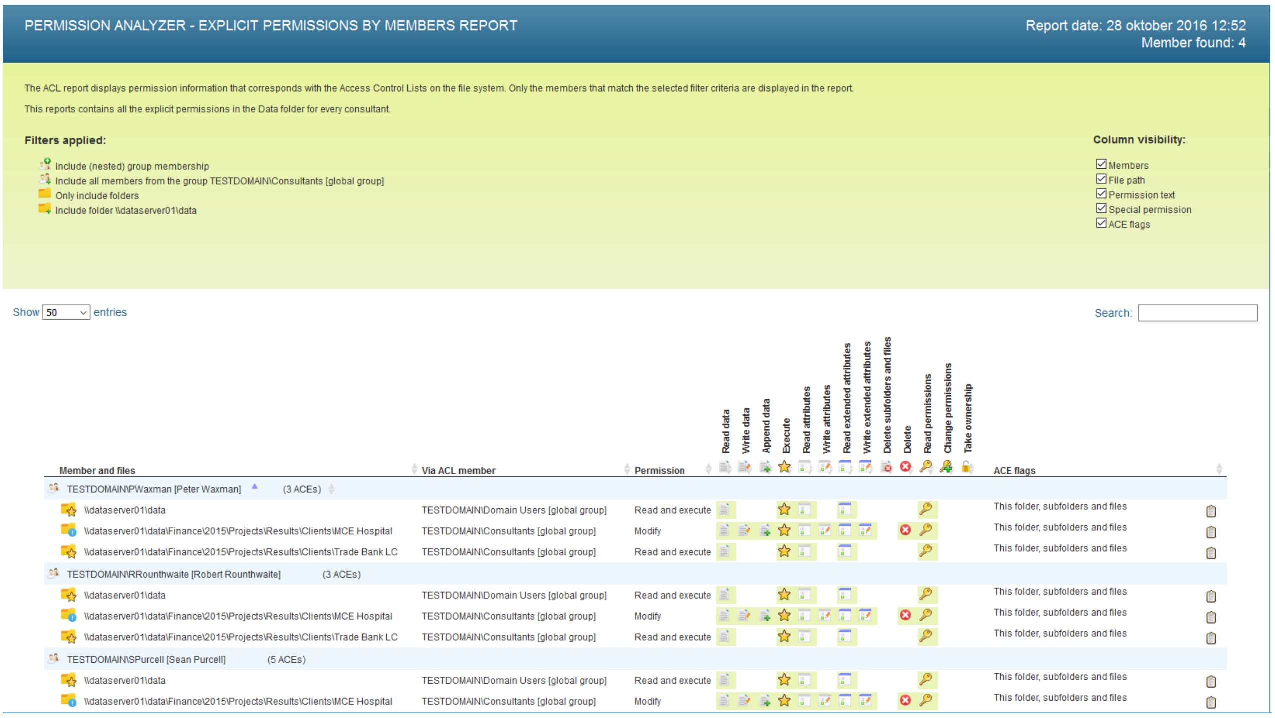
Search:

Member	Permission	Read data	Write data	Append data	Execute	Read attributes	Write attributes	Read extended attributes	Write extended attributes	Delete subfolders and files	Delete	Read permissions	Change permissions	Take ownership	Via group	ACE flags
\\dataserver01\projects																
MYDOMAIN\jdoe [John Doe]	Read attributes (explicit)					✓									MYDOMAIN\Project Managers [global group]	This folder, subfolders and files
\\dataserver01\projects\Change requests																
MYDOMAIN\jdoe [John Doe]	Modify (explicit)	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			MYDOMAIN\Planning [domain local group]	This folder, subfolders and files
\\dataserver01\projects\Development																
MYDOMAIN\jdoe [John Doe]	Delete (explicit)										✓				MYDOMAIN\Programmers [global group]	This folder, subfolders and files (no propagate)
\\dataserver01\projects\Estimates																
MYDOMAIN\jdoe [John Doe]	Read (explicit)	✓				✓		✓				✓			MYDOMAIN\Project managers [global group]	This folder, subfolders and files
\\dataserver01\projects\Finance																
MYDOMAIN\jdoe [John Doe]	Deny: Full (explicit)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	MYDOMAIN\Freelancers [global group]	This folder, subfolders and files
MYDOMAIN\jdoe [John Doe]	Special (explicit)	✓			✓						✓				(direct)	This folder, subfolders and files
\\dataserver01\projects\Intranet\Apps																
MYDOMAIN\jdoe [John Doe]	Write attributes (explicit)						✓								(direct)	This folder, subfolders and files
\\dataserver01\projects\Intranet\Infra																
MYDOMAIN\jdoe [John Doe]	Special (explicit)		✓	✓		✓	✓	✓	✓	✓	✓	✓	✓	✓	MYDOMAIN\Intra Support [global group]	This folder, subfolders and files
\\dataserver01\projects\Intranet\Departments																
MYDOMAIN\jdoe [John Doe]	Special (explicit)				✓						✓				MYDOMAIN\Content Managers [global group]	This folder, subfolders and files
\\dataserver01\projects\Website\Clients																
MYDOMAIN\jdoe [John Doe]	Take ownership (explicit)													✓	(direct)	This folder, subfolders and files
\\dataserver01\projects\Website\Content																
MYDOMAIN\jdoe [John Doe]	Delete (explicit)										✓				MYDOMAIN\Content Managers [global group]	This folder, subfolders and files
\\dataserver01\projects\Hour plans																
MYDOMAIN\jdoe [John Doe]	Read and execute (explicit)	✓			✓	✓		✓				✓			MYDOMAIN\Planning [domain local group]	This folder, subfolders and files
\\dataserver01\projects\HR																
MYDOMAIN\jdoe [John Doe]	List folder content (explicit)	✓			✓	✓		✓				✓			MYDOMAIN\HR Admins [global group]	This folder and subfolders
\\dataserver01\projects\Project office																
MYDOMAIN\jdoe [John Doe]	Write (explicit)		✓	✓			✓		✓						MYDOMAIN\Project Admins [global group]	This folder, subfolders and files
\\dataserver01\projects\Proposals																
MYDOMAIN\jdoe [John Doe]	Full (explicit)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	(direct)	This folder, subfolders and files

Showing 1 to 15 of 15 entries

FOLDERS/FILES AND MATCHING GROUP MEMBERS

This report groups the permissions by user or group. It displays all explicit permissions, including permissions from nested group memberships. The column **Via ACL member** shows the origin of permissions per group or user, indicating through which (nested) group a user or group has inherited those permissions. Only users and groups that appear in the search results will be included in the report. This report shows a relatively extensive amount of information per user and group. That's why we recommend making your filters as specific and targeted as possible, to exclude any unnecessary information. This prevents reports from being crowded with irrelevant information.



PERMISSION ANALYZER - EXPLICIT PERMISSIONS BY MEMBERS REPORT

Report date: 28 oktober 2016 12:52
Member found: 4

The ACL report displays permission information that corresponds with the Access Control Lists on the file system. Only the members that match the selected filter criteria are displayed in the report.

This reports contains all the explicit permissions in the Data folder for every consultant.

Filters applied:

- Include (nested) group membership
- Include all members from the group TESTDOMAIN\Consultants [global group]
- Only include folders
- Include folder \\dataserver01\data

Column visibility:

☑ Members
☑ File path
☑ Permission text
☑ Special permission
☑ ACE flags

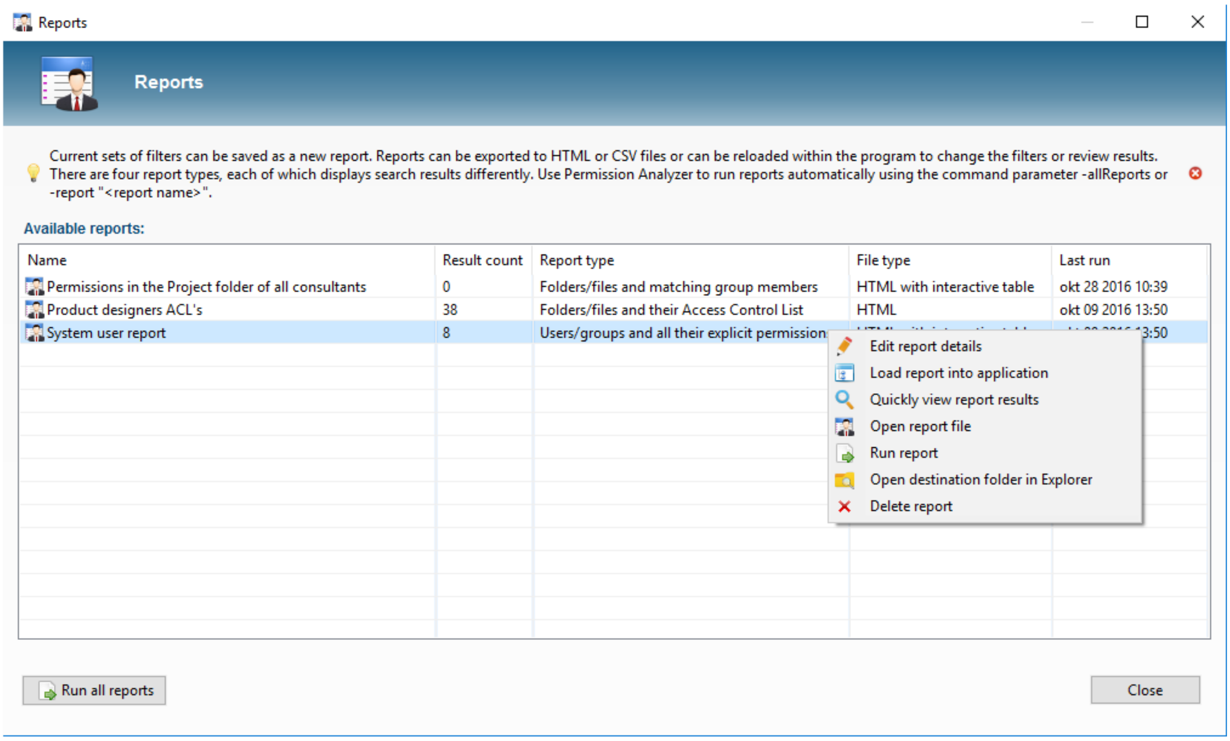
Show 50 entries

Search:

Member and files	Via ACL member	Permission	Read data	Write data	Append data	Execute	Read attributes	Write attributes	Read extended attributes	Write extended attributes	Delete subfolders and files	Delete	Read permissions	Change permissions	Take ownership	ACE flags
TESTDOMAIN\PWaxman [Peter Waxman] (3 ACEs)																
\\dataserver01\data	TESTDOMAIN\Domain Users [global group]	Read and execute	✓			✓	✓		✓				✓			This folder, subfolders and files
\\dataserver01\data\Finance\2015\Projects\Results\Clients\MCE Hospital	TESTDOMAIN\Consultants [global group]	Modify	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			This folder, subfolders and files
\\dataserver01\data\Finance\2015\Projects\Results\Clients\Trade Bank LC	TESTDOMAIN\Consultants [global group]	Read and execute	✓			✓	✓		✓				✓			This folder, subfolders and files
TESTDOMAIN\RRounthwaite [Robert Rounthwaite] (3 ACEs)																
\\dataserver01\data	TESTDOMAIN\Domain Users [global group]	Read and execute	✓			✓	✓		✓				✓			This folder, subfolders and files
\\dataserver01\data\Finance\2015\Projects\Results\Clients\MCE Hospital	TESTDOMAIN\Consultants [global group]	Modify	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			This folder, subfolders and files
\\dataserver01\data\Finance\2015\Projects\Results\Clients\Trade Bank LC	TESTDOMAIN\Consultants [global group]	Read and execute	✓			✓	✓		✓				✓			This folder, subfolders and files
TESTDOMAIN\SPurcell [Sean Purcell] (5 ACEs)																
\\dataserver01\data	TESTDOMAIN\Domain Users [global group]	Read and execute	✓			✓	✓		✓				✓			This folder, subfolders and files
\\dataserver01\data\Finance\2015\Projects\Results\Clients\MCE Hospital	TESTDOMAIN\Consultants [global group]	Modify	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			This folder, subfolders and files

Managing reports

A list of all reports can be requesting via the menu: [Report] > [Manage Reports]. You will subsequently be able to review and modify all reports, run them manually or import them into the application.



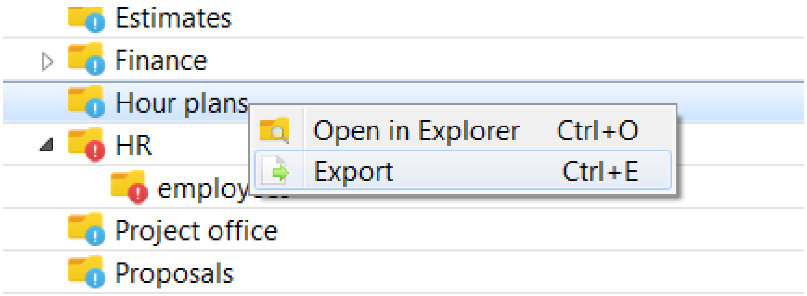
Current sets of filters can be saved as a new report. Reports can be exported to HTML or CSV files or can be reloaded within the program to change the filters or review results. There are four report types, each of which displays search results differently. Use Permission Analyzer to run reports automatically using the command parameter -allReports or -report "<report name>".

Available reports:

Name	Result count	Report type	File type	Last run
Permissions in the Project folder of all consultants	0	Folders/files and matching group members	HTML with interactive table	okt 28 2016 10:39
Product designers ACL's	38	Folders/files and their Access Control List	HTML	okt 09 2016 13:50
System user report	8	Users/groups and all their explicit permission		3:50

Edit report details
Load report into application
Quickly view report results
Open report file
Run report
Open destination folder in Explorer
Delete report
Run all reports
Close

Quick export



Folders can be easily exported using the filters selected and will not require generation of a report. Simply open the context menu of a folder using the right mouse button and select Export. This option will also allow you to select the report type, file type and whether you wish to send an e-mail.

DEFINING POLICIES

Save your filters as policies and receive e-mail notifications if your policy report contains unwanted permissions.

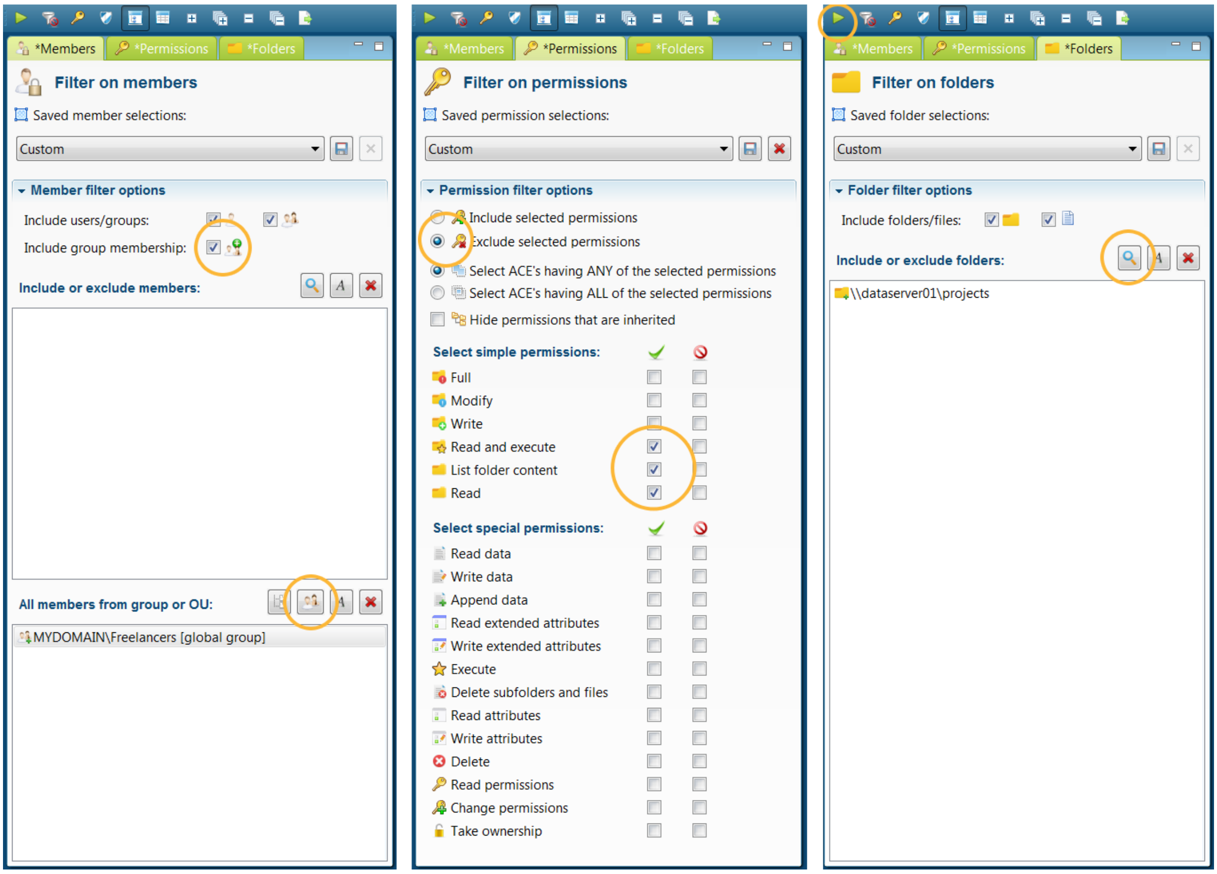
A policy is a collection of filters that display unwanted permissions. This collection can be saved as a policy where an e-mail notification is sent if the report contains more than a certain number of directories and files. That number can be configured via the ***Policy alert threshold*** value in the policy details. Here's the difference between a policy report and a standard report: a policy report defines a combination of filters that should not yield any results. If any results are found, however, an e-mail notification is sent out. Running a policy report automatically from time to time will allow you to check for any unwanted permissions within the network. Also see the Scheduling Jobs and Reports and Export features.

A **SMTP** server should be configured to facilitate any e-mail notifications. Go to settings to configure the server. You will also be able to indicate whether you want the report to be included as an **attachment** and to include a message in the e-mail. The e-mail template may contain the following fields: `[report_name]`, `[report_path]`, `[report_description]` and `[report_threshold]`.

Example

If, in your access control design you determined that all freelancers within your network should be unable to modify project information and you would like to verify that policy with current permissions within the network. All freelancers are located in a communal group; project information is kept in the projects folder on a data server. First you will have to define the filters that make up the policy:

- Select Freelancers from the Members tab and add this group to the bottom selection list (see screenshot). This will not filter for the group itself but for **all** the members of that group. Nested group membership will automatically be taken into account for each group member when determining permissions.
- In the Permissions tab select the Exclude option and select all reading privileges. These, after all, are privileges that Freelancers have been granted and as such should be excluded from the policy report.
- In the Folders tab select the \\datasever01\projects folder. Your search results will then be scoped to that specific folder.



Filter on members

Saved member selections: Custom

Member filter options

Include users/groups: ☑ ☑

Include group membership: ☑

Include or exclude members:

All members from group or OU:

MYDOMAIN\Freelancers [global group]

Filter on permissions

Saved permission selections: Custom

Permission filter options

○ Include selected permissions
● Exclude selected permissions
● Select ACE's having ANY of the selected permissions
○ Select ACE's having ALL of the selected permissions
□ Hide permissions that are inherited

Select simple permissions:	✓	🚫
Full	□	□
Modify	□	□
Write	□	□
Read and execute	☑	□
List folder content	☑	□
Read	☑	□

Select special permissions:	✓	🚫
Read data	□	□
Write data	□	□
Append data	□	□
Read extended attributes	□	□
Write extended attributes	□	□
Execute	□	□
Delete subfolders and files	□	□
Read attributes	□	□
Write attributes	□	□
Delete	□	□
Read permissions	□	□
Change permissions	□	□
Take ownership	□	□

Filter on folders

Saved folder selections: Custom

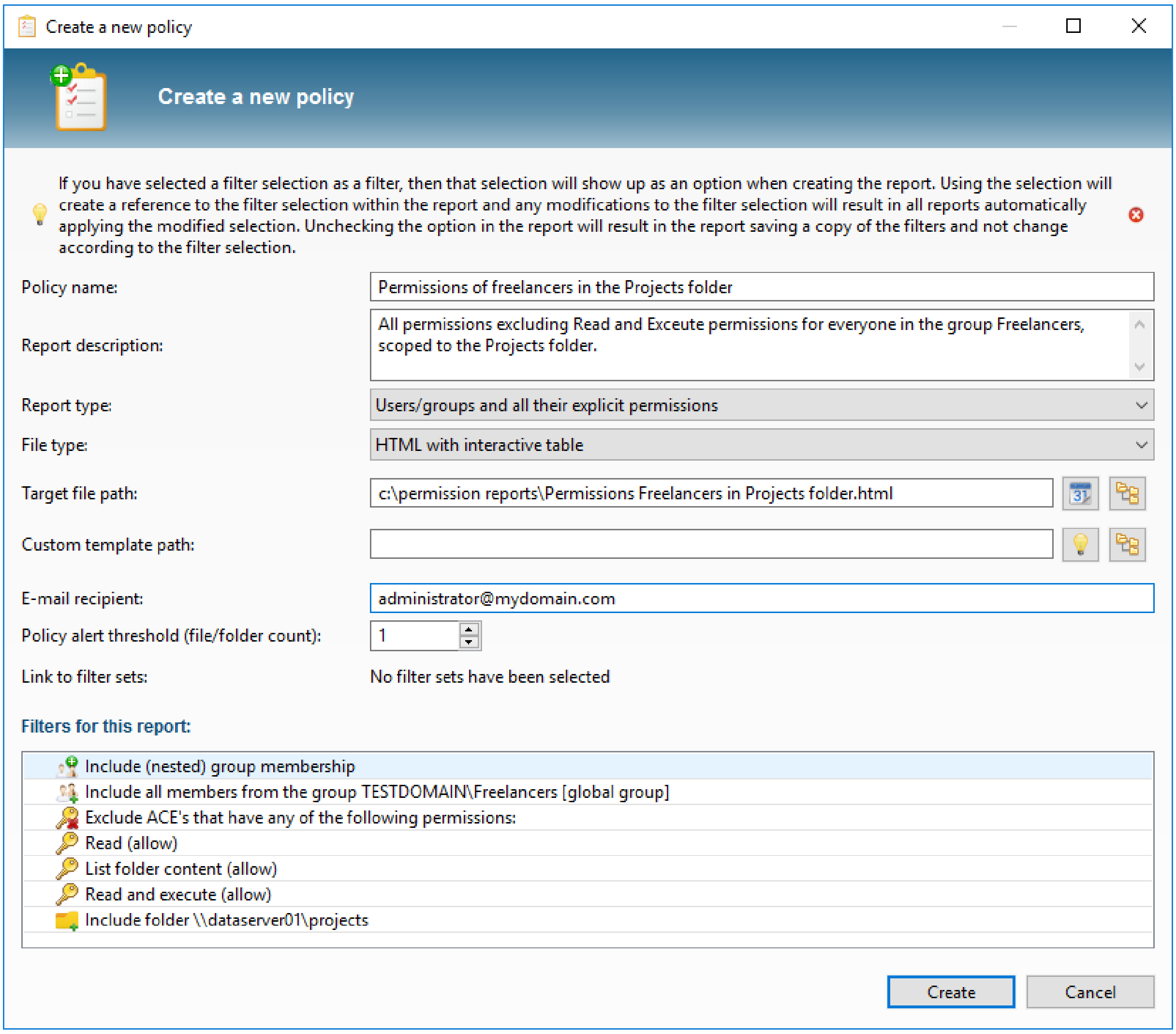
Folder filter options

Include folders/files: ☑ ☑

Include or exclude folders:

\\dataserver01\projects

Review your search results by applying the filters using the **Apply filters** button. If necessary, add new filters, e.g. an Exclude filter for one or more users. Ideally, the result field will remain empty, meaning that no unwanted permissions have been found and that your policy has been implemented completely. Should you have any search result items that appear as exceptions, then simply raise the threshold value for e-mail notification in the report. The threshold value determines the number of files or folders notifications that are sent and can be configured in the *Policy alert threshold* field. For a policy you will only want a notification if a minimum number of files is found, so you would set the value at 1 or more. Once your search results are satisfactory, save your filters as a new policy:



Create a new policy

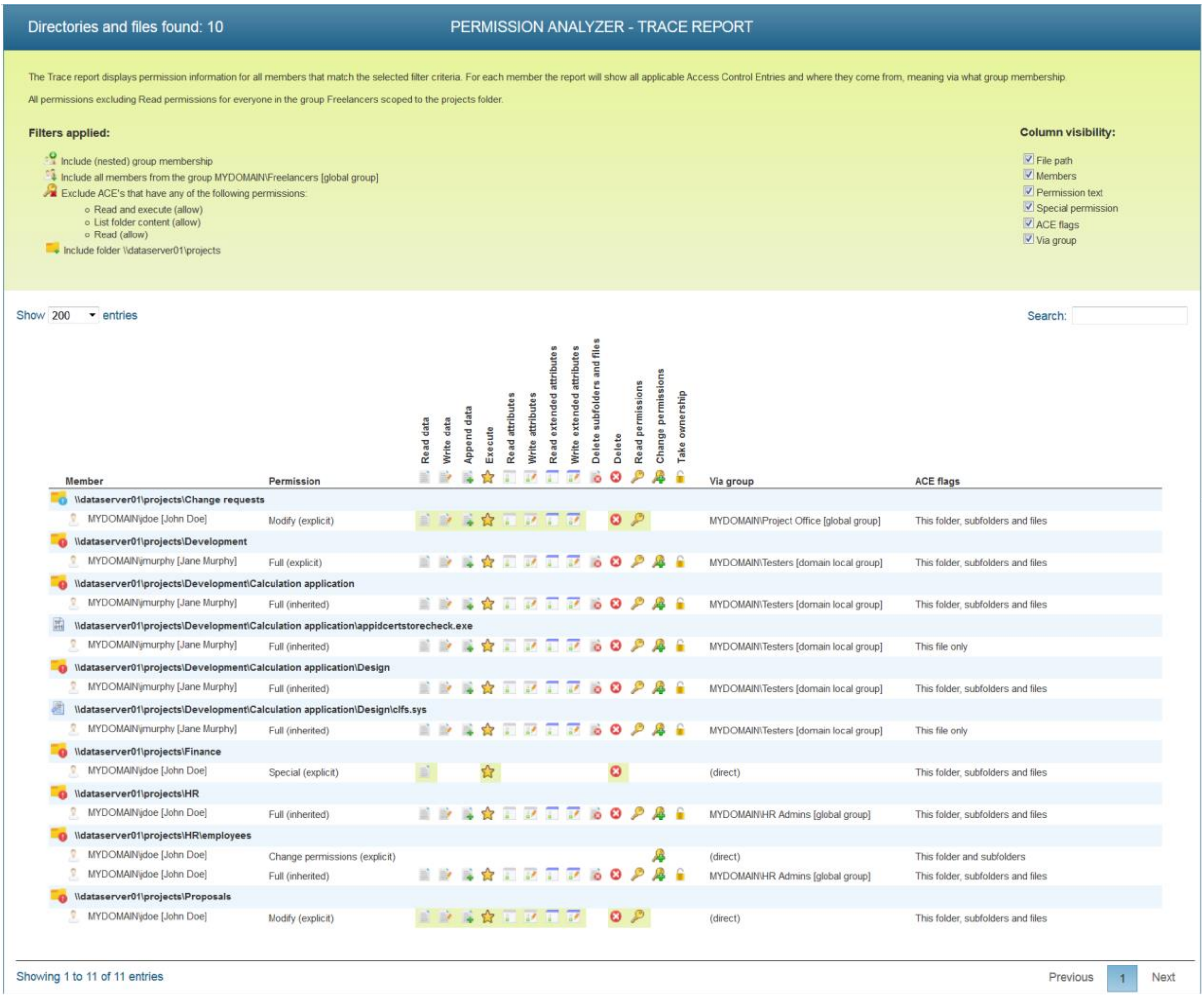
If you have selected a filter selection as a filter, then that selection will show up as an option when creating the report. Using the selection will create a reference to the filter selection within the report and any modifications to the filter selection will result in all reports automatically applying the modified selection. Unchecking the option in the report will result in the report saving a copy of the filters and not change according to the filter selection.

Policy name:	Permissions of freelancers in the Projects folder
Report description:	All permissions excluding Read and Exceute permissions for everyone in the group Freelancers, scoped to the Projects folder.
Report type:	Users/groups and all their explicit permissions
File type:	HTML with interactive table
Target file path:	c:\permission reports\Permissions Freelancers in Projects folder.html
Custom template path:	
E-mail recipient:	administrator@mydomain.com
Policy alert threshold (file/folder count):	1
Link to filter sets:	No filter sets have been selected

Filters for this report:

- Include (nested) group membership
- Include all members from the group TESTDOMAIN\Freelancers [global group]
- Exclude ACE's that have any of the following permissions:
- Read (allow)
- List folder content (allow)
- Read and execute (allow)
- Include folder \\dataserver01\projects

The way a policy report is shown depends on the report type you selected – see Report and Export feature. If you selected the report type **Folders/files and matching group members**, it may look like the figure below. The report below shows that John Doe has Modify privileges in the “project\Change requests” through the “Project Office” group. It also shows Jane Murphy has full privileges within the “projects\Development” folder, as she is part of the “Testers” group. These results show you who has acquired more permissions than is desirable and where additional permissions have been granted.



Directories and files found: 10

PERMISSION ANALYZER - TRACE REPORT

The Trace report displays permission information for all members that match the selected filter criteria. For each member the report will show all applicable Access Control Entries and where they come from, meaning via what group membership.

All permissions excluding Read permissions for everyone in the group Freelancers scoped to the projects folder.

Filters applied:

- Include (nested) group membership
- Include all members from the group MYDOMAIN\Freelancers [global group]
- Exclude ACE's that have any of the following permissions:
  - Read and execute (allow)
  - List folder content (allow)
  - Read (allow)
- Include folder \\dataserver01\projects

Column visibility:

☑ File path
☑ Members
☑ Permission text
☑ Special permission
☑ ACE flags
☑ Via group

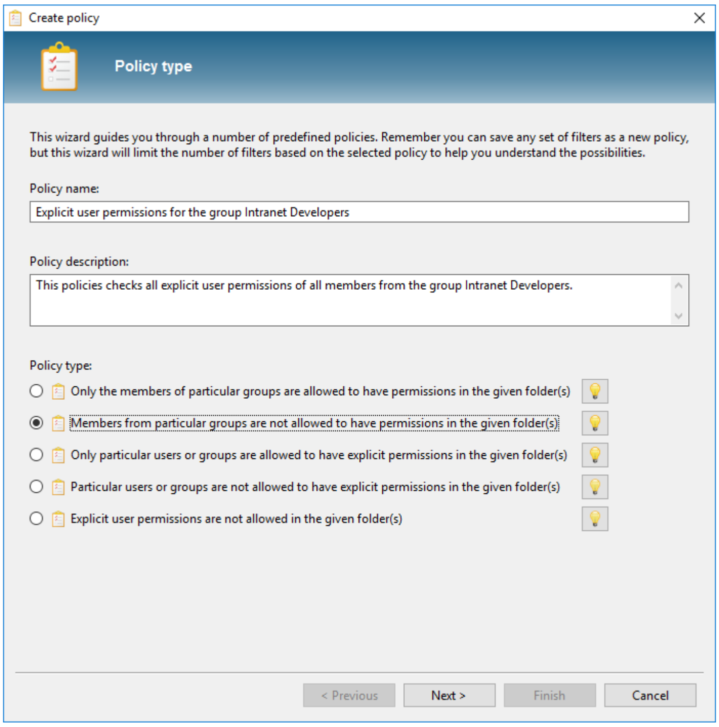
Show 200 entries Search:

Member	Permission	Read data	Write data	Append data	Execute	Read attributes	Write attributes	Read extended attributes	Write extended attributes	Delete subfolders and files	Delete	Read permissions	Change permissions	Take ownership	Via group	ACE flags
\\dataserver01\projects\Change requests																
MYDOMAIN\jdoe [John Doe]	Modify (explicit)	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			MYDOMAIN\Project Office [global group]	This folder, subfolders and files
\\dataserver01\projects\Development																
MYDOMAIN\jmurphy [Jane Murphy]	Full (explicit)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	MYDOMAIN\Testers [domain local group]	This folder, subfolders and files
\\dataserver01\projects\Development\Calculation application																
MYDOMAIN\jmurphy [Jane Murphy]	Full (inherited)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	MYDOMAIN\Testers [domain local group]	This folder, subfolders and files
\\dataserver01\projects\Development\Calculation application\appidcertstorecheck.exe																
MYDOMAIN\jmurphy [Jane Murphy]	Full (inherited)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	MYDOMAIN\Testers [domain local group]	This file only
\\dataserver01\projects\Development\Calculation application\Design																
MYDOMAIN\jmurphy [Jane Murphy]	Full (inherited)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	MYDOMAIN\Testers [domain local group]	This folder, subfolders and files
\\dataserver01\projects\Development\Calculation application\Design\clfs.sys																
MYDOMAIN\jmurphy [Jane Murphy]	Full (inherited)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	MYDOMAIN\Testers [domain local group]	This file only
\\dataserver01\projects\Finance																
MYDOMAIN\jdoe [John Doe]	Special (explicit)	✓			✓						✓				(direct)	This folder, subfolders and files
\\dataserver01\projects\HR																
MYDOMAIN\jdoe [John Doe]	Full (inherited)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	MYDOMAIN\HR Admins [global group]	This folder, subfolders and files
\\dataserver01\projects\HR\employees																
MYDOMAIN\jdoe [John Doe]	Change permissions (explicit)												✓		(direct)	This folder and subfolders
MYDOMAIN\jdoe [John Doe]	Full (inherited)	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	MYDOMAIN\HR Admins [global group]	This folder, subfolders and files
\\dataserver01\projects\Proposals																
MYDOMAIN\jdoe [John Doe]	Modify (explicit)	✓	✓	✓	✓	✓	✓	✓	✓		✓	✓			(direct)	This folder, subfolders and files

Showing 1 to 11 of 11 entries

Creating policies using the wizard

Permission Analyzer offers a wizard to help you creating the first policies. It offers a predefined set of policies and guides you through the necessary filters. You can find this wizard in the menu [Policies] > [Open the policy wizard]:



This wizard guides you through a number of predefined policies. Remember you can save any set of filters as a new policy, but this wizard will limit the number of filters based on the selected policy to help you understand the possibilities.

Policy name:
Explicit user permissions for the group Intranet Developers

Policy description:
This policies checks all explicit user permissions of all members from the group Intranet Developers.

Policy type:

○ Only the members of particular groups are allowed to have permissions in the given folder(s)
● Members from particular groups are not allowed to have permissions in the given folder(s)
○ Only particular users or groups are allowed to have explicit permissions in the given folder(s)
○ Particular users or groups are not allowed to have explicit permissions in the given folder(s)
○ Explicit user permissions are not allowed in the given folder(s)

Running policies automatically

Use Permission Analyzer to run policies automatically using the following parameters:

- **-report "myPolicy"**: run a specific policy by name. This parameter can be input a number of times.
- **-allPolicies**: run all policies.

Permission Analyzer will close automatically after all policies have been run. See Scheduling jobs feature for more command-line options.

SCHEDULING JOBS

Use command-line parameters to run a network scan or report export automatically. Let Permission Analyzer check all your policies and send out e-mail notifications by running the application with parameters and Windows Scheduler.

Permission Analyzer is able to run network scans and export reports automatically. Simply use Windows Scheduled Tasks and a combination of application parameters:

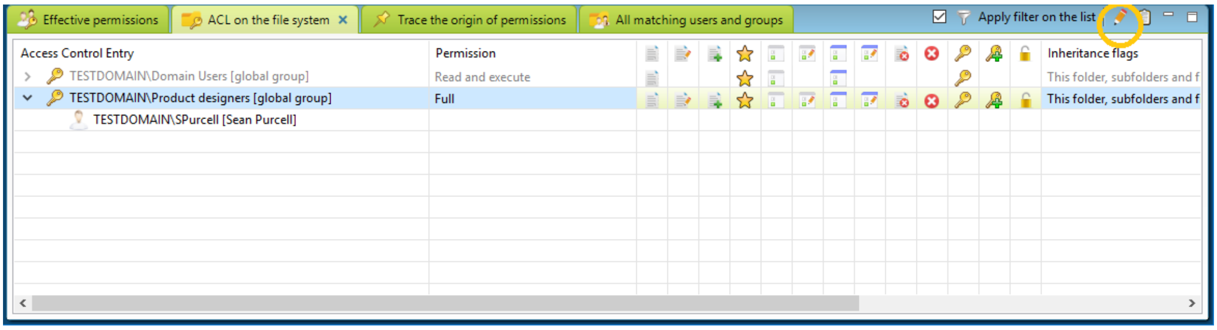
PARAMETER	FUNCTION
-scan	Automatically initiate a network scan with the current configuration, after which the application closes down. Only checked directories and LDAP OUs will be scanned. Review results of an automatic scan in the status list in Scan View or via the Last_status_messages.csv file in the application directory.
-scanDirectories	Only scans (checked) directories and files and does not change LDAP data in the database. Review results of an automatic scan in the status list in Scan View or via the Last_status_messages.csv file in the application folder.
-scanLdap	Automatically initiates a scan of all selected LDAP OUs. Directory data in the database remains unchanged.
-password	If the application is secured with a password, than this parameter, combined with a scan or report parameter, can be used to initiate the application.
-report	Exports a specific report (by name) and can include sending out an e-mail notification. Multiple reports can be exported by

	inputting the parameter several times: -report “All permissions for John Doe” -report “All explicit permissions in the projects folder”.
-allReports	Exports all reports and sends out all required e-mails if that option has been enabled for a report. Export files are automatically overwritten.
-allPolicies	Exports all reports with an *E-mail file/folder count threshold* value higher than 0.

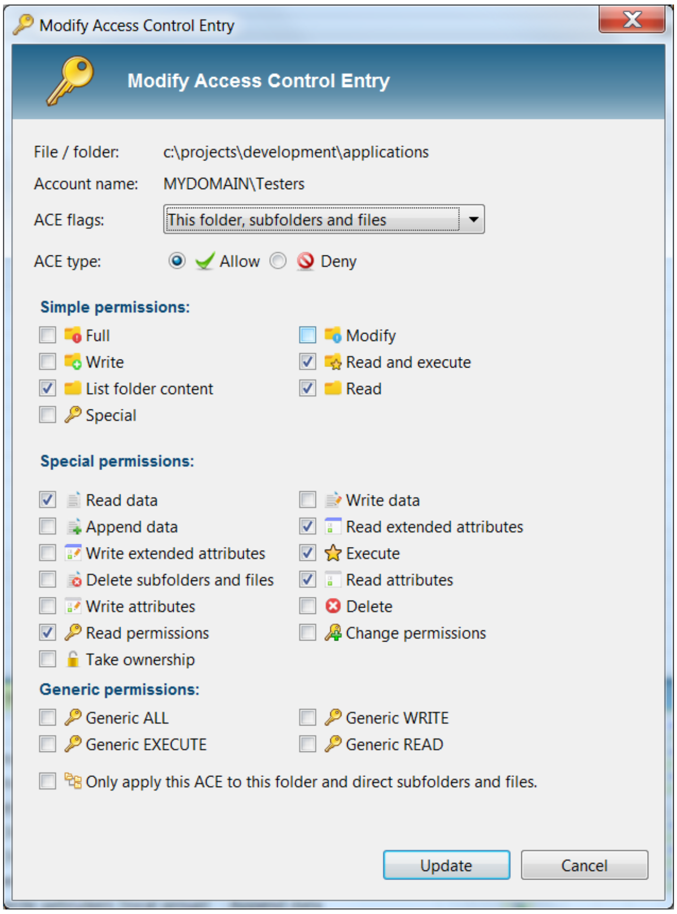
MODIFYING PERMISSIONS

Change the permissions of a directory directly from within the application. Changes are directly applied to the file system and the database is updated with the changes made.

At the bottom of the search result screen is a tab that allows you to review and modify the Access Control List (ACL) of the selected directory or file. The ACL tab corresponds to the **Security tab** in Windows’ file properties. Permission Analyzer in some cases will show more items in the ACL, as Windows does not show generic permissions. You will be able to only show Access Control Entries (ACE) that meet the filter criteria by ticking the checkbox “Apply filter on ACL list”. In addition the ACL view toolbar contains a button to directly modify the selected ACE on the file system. Permission Analyzer uses the same Windows mechanisms as the Security tab. When modifying permission through Permission Analyzer, however, information in the database is updated immediately.


Effective permissions
ACL on the file system ×
Trace the origin of permissions
All matching users and groups
☑ Apply filter on the list

Access Control Entry	Permission	Inheritance flags
TESTDOMAIN\Domain Users [global group]	Read and execute	This folder, subfolders and f
TESTDOMAIN\Product designers [global group]	Full	This folder, subfolders and f
TESTDOMAIN\SPurcell [Sean Purcell]		



Modify Access Control Entry

File / folder: c:\projects\development\applications
Account name: MYDOMAIN\Testers
ACE flags: This folder, subfolders and files
ACE type: ● Allow ○ Deny

Simple permissions:

☐ Full
☐ Write
☑ List folder content
☐ Special
☐ Modify
☑ Read and execute
☑ Read

Special permissions:

☑ Read data
☐ Append data
☐ Write extended attributes
☐ Delete subfolders and files
☐ Write attributes
☑ Read permissions
☐ Take ownership
☐ Write data
☑ Read extended attributes
☑ Execute
☑ Read attributes
☐ Delete
☐ Change permissions

Generic permissions:

☐ Generic ALL
☐ Generic EXECUTE
☐ Generic WRITE
☐ Generic READ

☐ Only apply this ACE to this folder and direct subfolders and files.

DATA PROTECTION

Permission Analyzer can be secured with an application password. The password is required to open up the application and may be used to encrypt the local database using strong AES encryption.

All Permission Analyzer settings (such as LDAP connections) are automatically saved using an encryption with a built-in hidden* key. Users, however, can opt to protect their settings and access to the application with their own passwords. The application will subsequently only be accessible after start up once the correct password is entered. Passwords themselves are not saved; only a ‘one-way’ hash code of the password is stored. Permission Analyzer uses an advanced hash algorithm (**PBKDF2WithHmacSHA1**), making it impossible to crack or retrieve passwords.

Alternatively, you can also choose to encrypt the local database completely with both your own password as well as an **AES** encryption. This will however result in database interaction becoming 2.5 times slower.

Please keep in mind that if you encrypt the application with a password, you will have to enter the password when running automatic scans or have reports exported via Windows Scheduled Tasks. Use the application parameter ***-password mypassword***.

* Permission Analyzer's application code is encrypted and it is very difficult, but not impossible, to retrieve textual values, such as a built-in password.

EXTERNAL DATABASE

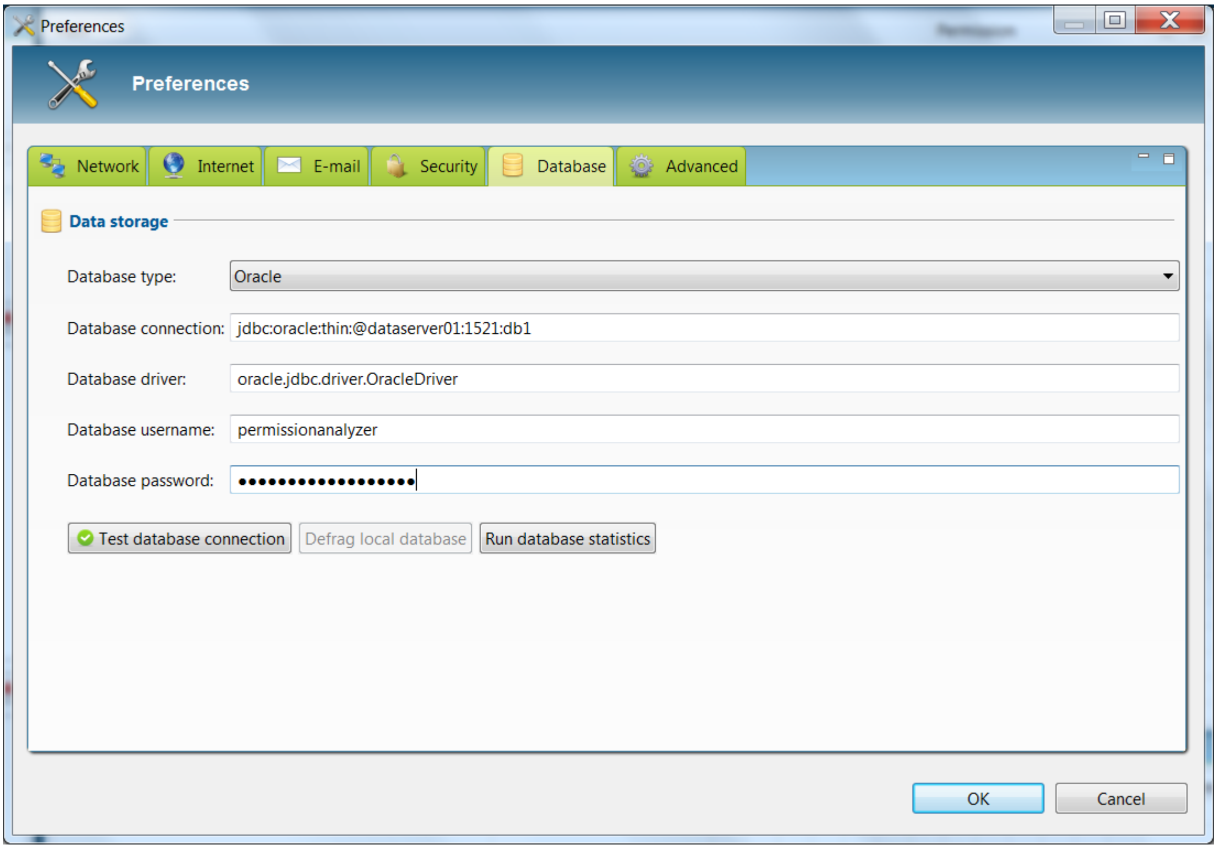
Permission Analyzer is supplied with an embedded database to store directory and group membership information. It supports a central company database, so that workstations can use the same information source or so you can create your own queries and integration.

Although Permission Analyzer is supplied with a local database (H2), which is simply a file in the application directory, you can choose to use a central database to share, say, scanned information, between installations of Permission Analyzer or to run your own queries on the database. Permission Analyzer supports Oracle, DB2, MS SQL, MySQL, PostgreSQL, Derby and H2. Please note that this feature is only supported by the **Enterprise** and **Consultant** editions.

First download the Driver Pack and overwrite the External_DB_Drivers_1.0.0.jar file in the plugins directory of Permission Analyzer. Then restart the application using the **-clean** parameter. Run one of the following SQL scripts on your central database to create the tables for Permission Analyzer:

- Oracle create script
- DB2 create script
- MSSQL create script
- MySQL create script
- PostgreSQL create script
- Derby create script
- H2 create script

Once the database has been created, open **Settings**. In the **Database** tab you will then be able to select an external database and enter the connection details.



Database type: Oracle

Database connection: jdbc:oracle:thin:@dataserver01:1521:db1

Database driver: oracle.jdbc.driver.OracleDriver

Database username: permissionanalyzer

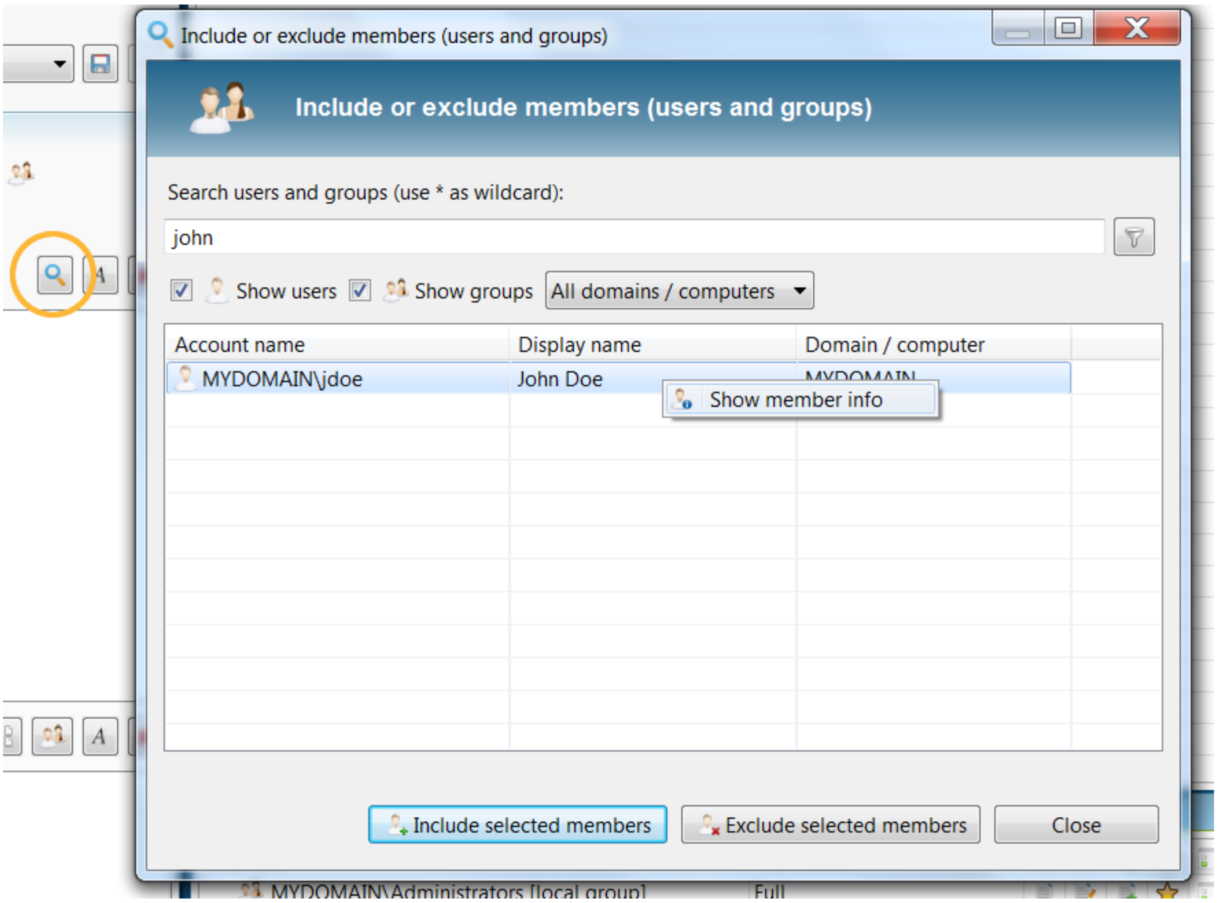
Database password: ••••••••••••••••••

OTHER FEATURES

View member info and search for nested group memberships, modify LDAP attributes that are being used and make use of the update service delivered by Permission Analyzer.

Showing member info

You will be able to request the details of a member or group at various points throughout the application: in the ACL view, Trace view, Member filters or search window for member selection. The member dialogue window shows both **memberOf** data as well as the **members** in the case of a group. In both cases **nested** memberships will also be shown.

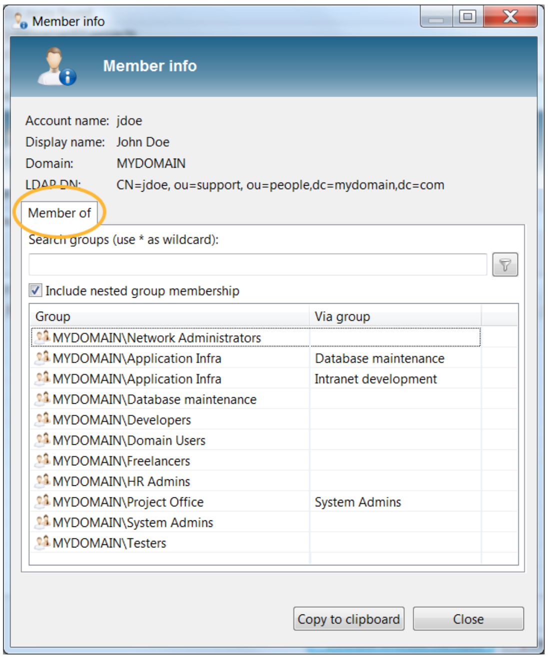


Include or exclude members (users and groups)

Search users and groups (use * as wildcard): john

☑ Show users ☑ Show groups All domains / computers

Account name	Display name	Domain / computer
MYDOMAIN\jdoe	John Doe	MYDOMAIN



Member info

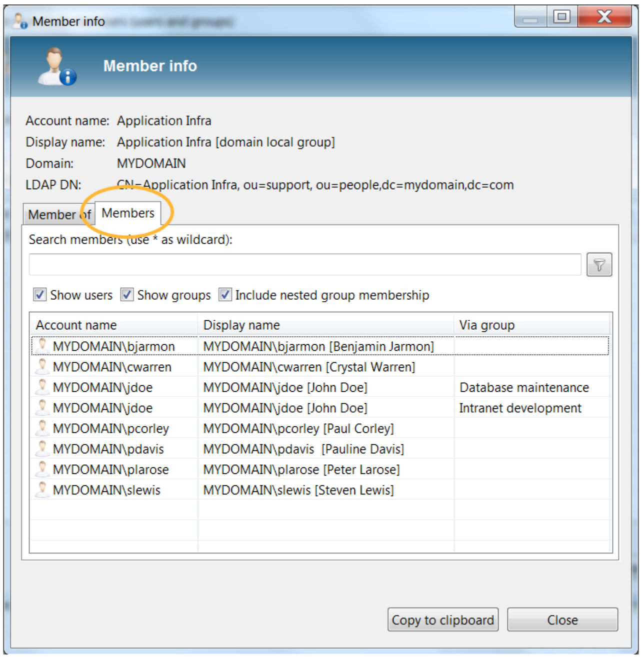
Account name: jdoe
Display name: John Doe
Domain: MYDOMAIN
LDAP DN: CN=jdoe, ou=support, ou=people,dc=mydomain,dc=com

Member of

Search groups (use * as wildcard):

☑ Include nested group membership

Group	Via group
MYDOMAIN\Network Administrators	
MYDOMAIN\Application Infra	Database maintenance
MYDOMAIN\Application Infra	Intranet development
MYDOMAIN\Database maintenance	
MYDOMAIN\Developers	
MYDOMAIN\Domain Users	
MYDOMAIN\Freelancers	
MYDOMAIN\HR Admins	
MYDOMAIN\Project Office	System Admins
MYDOMAIN\System Admins	
MYDOMAIN\Testers	



Member info

Account name: Application Infra
Display name: Application Infra [domain local group]
Domain: MYDOMAIN
LDAP DN: CN=Application Infra, ou=support, ou=people,dc=mydomain,dc=com

Member of | Members

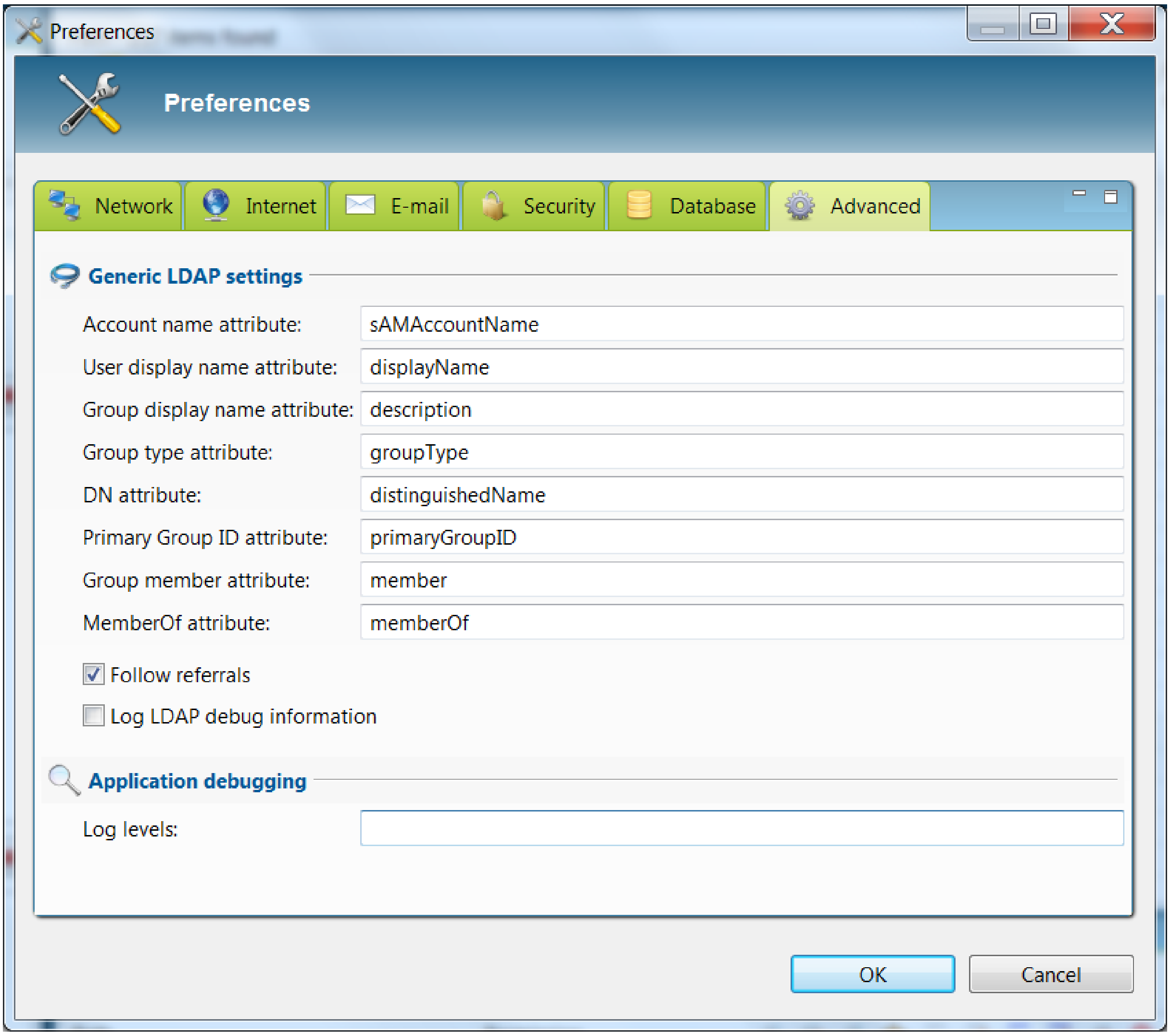
Search members (use * as wildcard):

☑ Show users ☑ Show groups ☑ Include nested group membership

Account name	Display name	Via group
MYDOMAIN\bjarmon	MYDOMAIN\bjarmon [Benjamin Jarmon]	
MYDOMAIN\cwarren	MYDOMAIN\cwarren [Crystal Warren]	
MYDOMAIN\jdoe	MYDOMAIN\jdoe [John Doe]	Database maintenance
MYDOMAIN\jdoe	MYDOMAIN\jdoe [John Doe]	Intranet development
MYDOMAIN\pcorley	MYDOMAIN\pcorley [Paul Corley]	
MYDOMAIN\pdavis	MYDOMAIN\pdavis [Pauline Davis]	
MYDOMAIN\plarose	MYDOMAIN\plarose [Peter Larose]	
MYDOMAIN\slewis	MYDOMAIN\slewis [Steven Lewis]	

Configuring LDAP attributes

Permission Analyzer makes use of a number of standard LDAP attributes to retrieve member information and group relations. These attributes can be modified if you wish to use other fields.



Generic LDAP settings

Account name attribute:	sAMAccountName
User display name attribute:	displayName
Group display name attribute:	description
Group type attribute:	groupType
DN attribute:	distinguishedName
Primary Group ID attribute:	primaryGroupID
Group member attribute:	member
MemberOf attribute:	memberOf

☑ Follow referrals

□ Log LDAP debug information

Application debugging

Log levels:

Update service

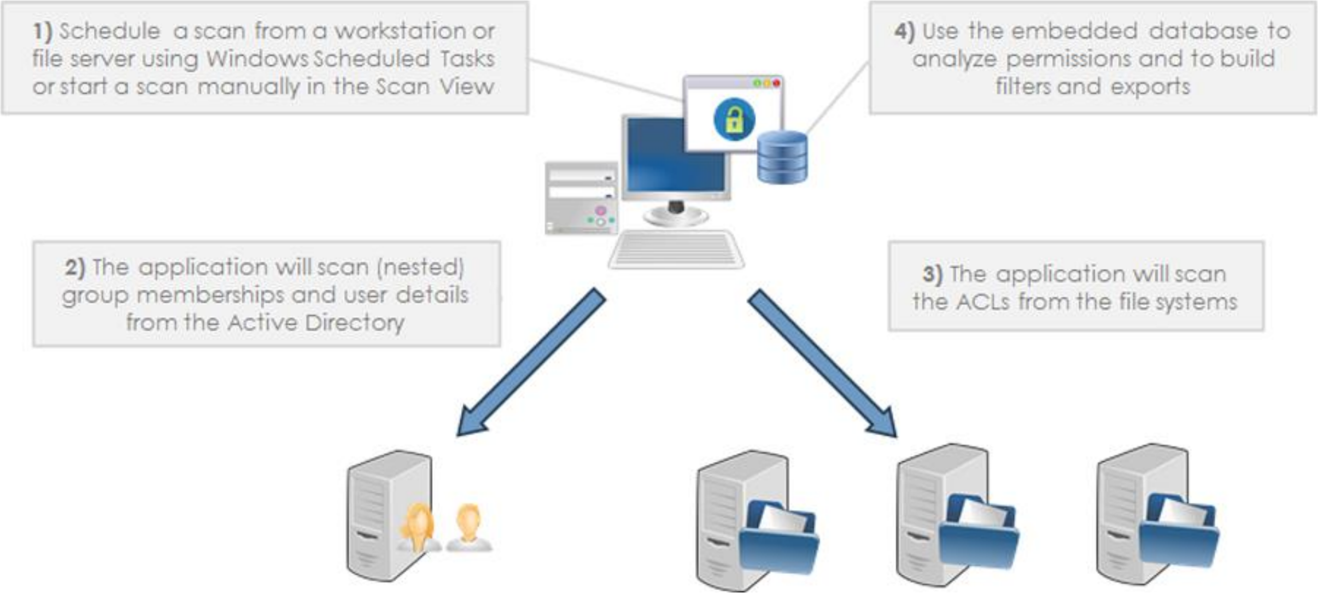
Check for updates quickly at any time via [Help] > [Check for updates].

3. Architectural setup

Permission Analyzer supports different setups by either using the embedded database, or a central database server to share the scanned network data, filter definitions and reports between workstations.

USING THE EMBEDDED DATABASE

The default setup depends on a single workstation or server. The scanning is done from a single machine and the information is stored in a local database file. The disadvantage of this setup is that the scanned information cannot be shared and that the workstation or server will have to scan all the remote file systems, which has the overhead of reading remote NTFS permissions over the network:



1) Schedule a scan from a workstation or file server using Windows Scheduled Tasks or start a scan manually in the Scan View

4) Use the embedded database to analyze permissions and to build filters and exports

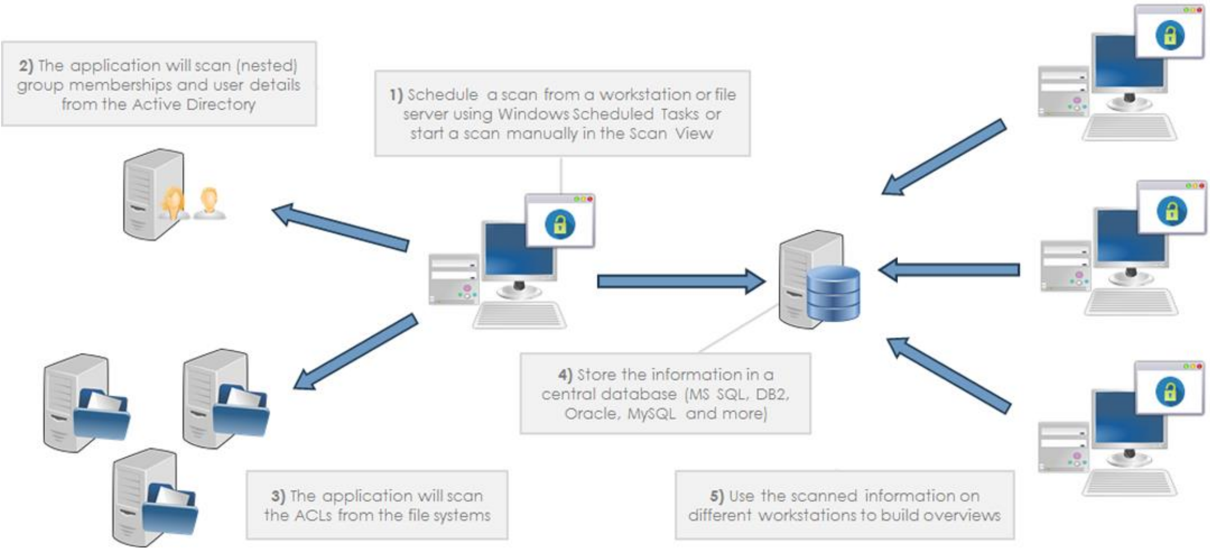
2) The application will scan (nested) group memberships and user details from the Active Directory

3) The application will scan the ACLs from the file systems

The performance depends a lot on the network setup and hardware. Scanning local files using a local database scans about 1 million files and directory per hour and results in 1 GB database storage for those million items. This means 1 MB per 1000 files or directories and a scan performance of 16.500 files or directories per minute. When scanning a NAS or using a remote database, much of the performance depends on the network environment. See Using scan agents to scan remote file systems more efficiently.

USING A CENTRAL DATABASE

The second setup has a shared (external) database, which means that other team members / workstations can use the scanned information from the database to create overviews. The application supports Oracle, MSSQL, DB2, MySQL, PostgreSQL, H2 and Derby out of the box. User reports, policies and filter sets are stored in the database, so when you use a central database you can share that information between all the clients/workstations. Note that each workstation requires a license, Permission Analyzer is licensed on "per-installation" basis. The Basic and Standard Edition don't support the use of an external database.



2) The application will scan (nested) group memberships and user details from the Active Directory

1) Schedule a scan from a workstation or file server using Windows Scheduled Tasks or start a scan manually in the Scan View

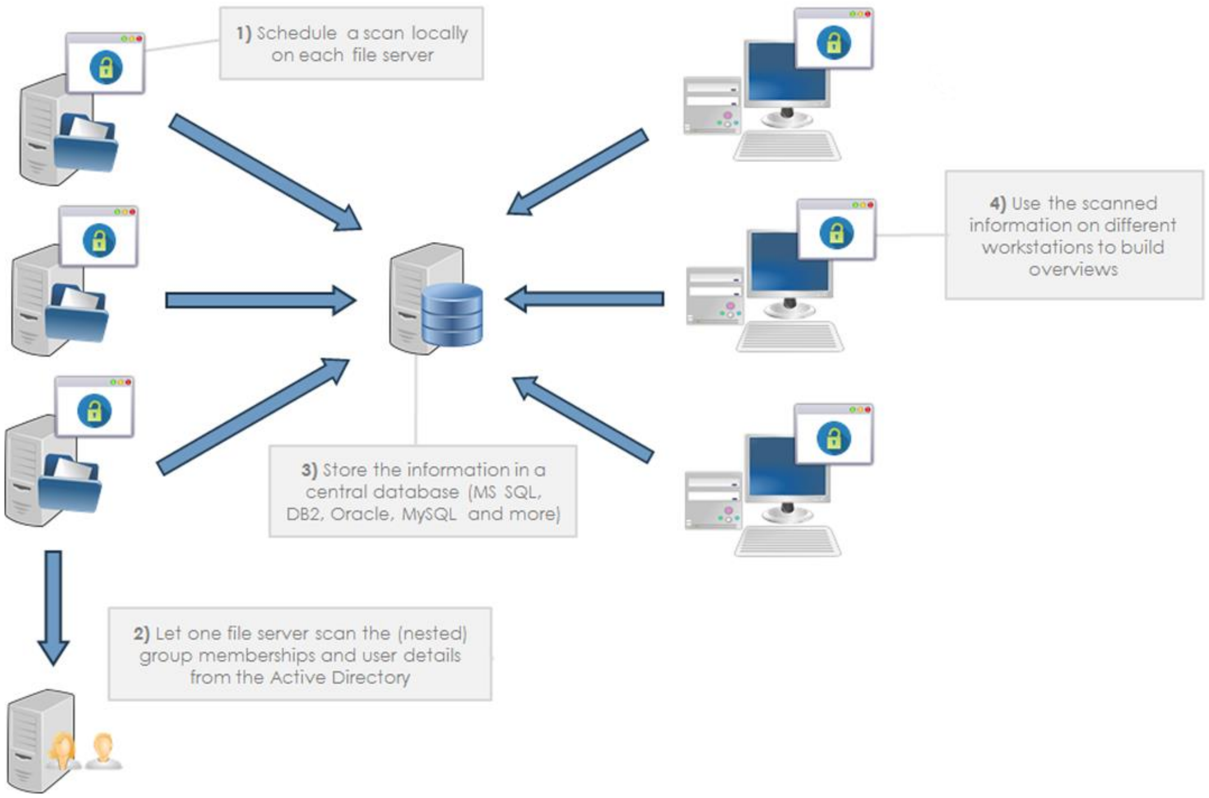
4) Store the information in a central database (MS SQL, DB2, Oracle, MySQL and more)

3) The application will scan the ACLs from the file systems

5) Use the scanned information on different workstations to build overviews

USING SCAN AGENTS

The third setup may prevent the reading of remote permissions over the network and makes it possible to scan the file systems simultaneously. Every file server will scan its own local permissions and submits the information to a central database. Reading local permissions is a lot faster and the file servers can scan their permissions simultaneously. The file servers only require a (cheaper) Scan Agent license, which doesn't support reporting but only scanning the network.


1) Schedule a scan locally on each file server
4) Use the scanned information on different workstations to build overviews
3) Store the information in a central database (MS SQL, DB2, Oracle, MySQL and more)
2) Let one file server scan the (nested) group memberships and user details from the Active Directory

USING POWERSHELL SCRIPTS

PowerShell is a native Microsoft scripting solution, which allows you to scan the ACL's of directories and files. PowerShell scripts are executed on the remote server (if necessary) and the result is saved locally. So instead of scanning the network using Permission Analyzer, you can use a PowerShell script to export all the ACL information to a text file which can be imported into Permission Analyzer.

Execute a command-line and type "powershell", you should see a command prompt that starts with "PS". Copy and paste one of the following scripts to the command-line to export permissions:

PowerShell script to export the ACL of all (sub)directories and files to a text file:

(you can also use a network share as path, this will run the script locally on the remote server)

```
Get-ChildItem "C:\MyFolder" -Recurse | Sort-Object FullName | %{
$Path = $_.FullName
$IsDirectory = $_.PsIsContainer
(Get-Acl $Path) | Select-Object `
    @{n='Path';e={ "$Path, d=$IsDirectory" }},
      @{n='Access';e={ [String]::Join("`n", $( $_.Access | %{
            "$($_.IdentityReference), $($_.AccessControlType),
$($_.IsInherited), $($_.InheritanceFlags), $($_.PropagationFlags),
$($_.FileSystemRights)" })) }}
} | Format-list | Out-File -FilePath C:\temp\permission_export.txt -
Encoding UTF8
```

PowerShell script to exclude files (and only export directories):

```
Get-ChildItem "C:\MyFolder" -Recurse | Sort-Object FullName | ?{
$_.PsIsContainer } | %{
$Path = $_.FullName
$IsDirectory = $_.PsIsContainer
(Get-Acl $Path) | Select-Object `
    @{n='Path';e={ "$Path, d=$IsDirectory" }},
      @{n='Access';e={ [String]::Join("`n", $( $_.Access | %{
            "$($_.IdentityReference), $($_.AccessControlType),
$($_.IsInherited), $($_.InheritanceFlags), $($_.PropagationFlags),
$($_.FileSystemRights)" })) }}
} | Format-list | Out-File -FilePath C:\temp\permission_export.txt -
Encoding UTF8
```

PowerShell script to exclude inherited permissions:

```
Get-ChildItem "C:\MyFolder" -Recurse | Sort-Object FullName | %{
$Path = $_.FullName
$IsDirectory = $_.PsIsContainer
(Get-Acl $Path) | Select-Object `
    @{n='Path';e={ "$Path, d=$IsDirectory" }},
      @{n='Access';e={ [String]::Join("`n", $( $_.Access |
?{!$_.IsInherited} | %{
            "$($_.IdentityReference), $($_.AccessControlType),
$($_.IsInherited), $($_.InheritanceFlags), $($_.PropagationFlags),
$($_.FileSystemRights)" })) }}
} | Format-list | Out-File -FilePath C:\temp\permission_export.txt -
Encoding UTF8
```

The resulting text file has the following format:

```
Path   : <path>
Access : <member>, <Allow/Deny>, <inherited ACE>, <inheritance flags>,
<propagation flags>, <permissions>
         <member>, <Allow/Deny>, <inherited ACE>, <inheritance flags>,
<propagation flags>, <permissions>
```

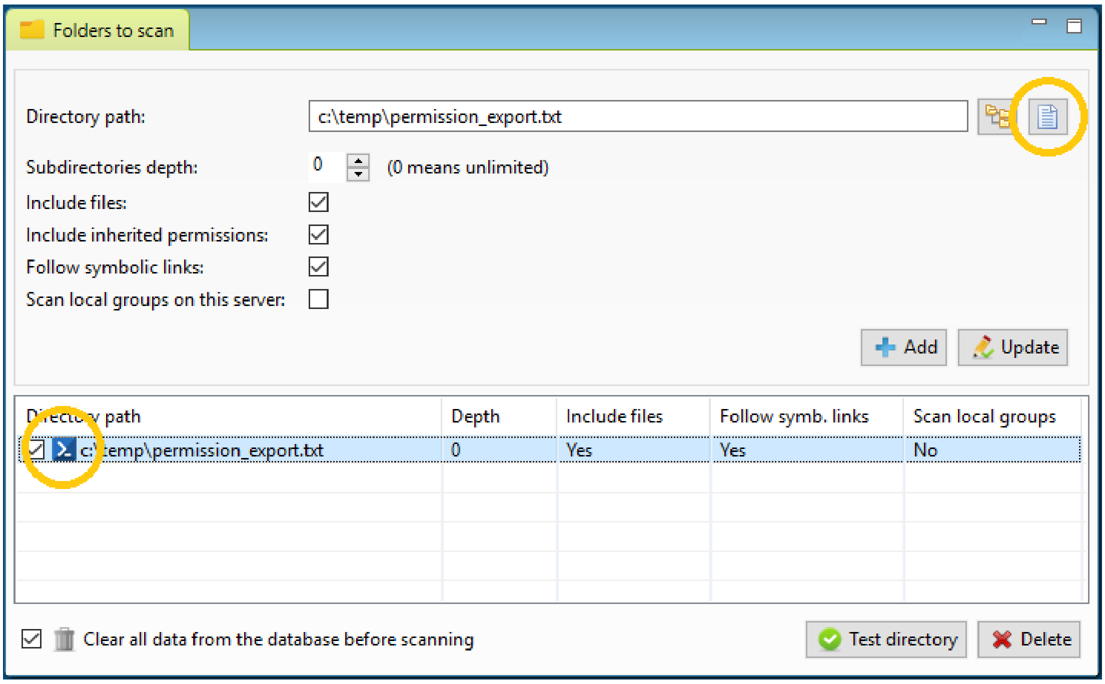
For example:

```
Path   : \\server01\Data\Projects\Finance, d=True
Access : YOURDOMAIN\Domain Admins, Allow, True, None, None, FullControl,
Synchronize
         YOURDOMAIN\pbrandon, Allow, True, ContainerInherit, InheritOnly,
ReadAndExecute, Synchronize
         YOURDOMAIN\gwatson, Allow, True, None, None, FullControl,
Synchronize
         YOURDOMAIN\Project Office, Allow, True, ContainerInherit,
ObjectInherit, InheritOnly, Modify, Synchronize
         YOURDOMAIN\Finance Auditors, Allow, True, None, None, FullControl,
Synchronize

Path   : \\server01\Data\Projects\Finance\Results, d=True
Access : YOURDOMAIN\Domain Admins, Allow, True, None, None, FullControl,
Synchronize
         YOURDOMAIN\pbrandon, Allow, True, ContainerInherit, InheritOnly,
ReadAndExecute, Synchronize
         YOURDOMAIN\gwatson, Allow, True, None, None, FullControl,
Synchronize
         YOURDOMAIN\Project Office, Allow, True, ContainerInherit, None,
None, Modify, Synchronize
         YOURDOMAIN\Finance Auditors, Allow, True, None, None, FullControl,
Synchronize
```

Importing the PowerShell results

The text file that has been created can be imported into Permission Analyzer:



Directory path: c:\temp\permission_export.txt

Subdirectories depth: 0 (0 means unlimited)

Include files: ☑

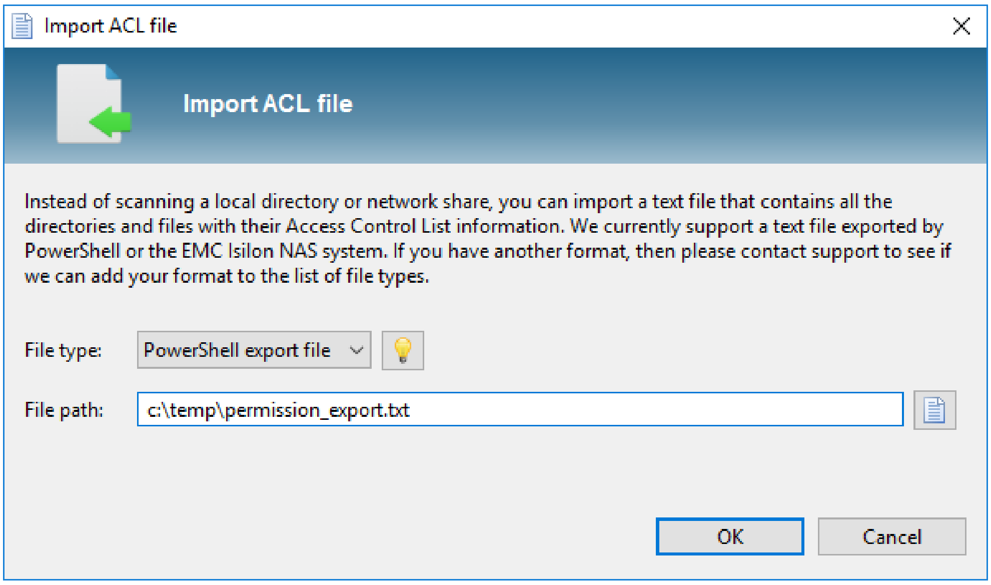
Include inherited permissions: ☑

Follow symbolic links: ☑

Scan local groups on this server: □

Directory path	Depth	Include files	Follow symb. links	Scan local groups
☑ c:\temp\permission_export.txt	0	Yes	Yes	No

☑ Clear all data from the database before scanning



Instead of scanning a local directory or network share, you can import a text file that contains all the directories and files with their Access Control List information. We currently support a text file exported by PowerShell or the EMC Isilon NAS system. If you have another format, then please contact support to see if we can add your format to the list of file types.

File type: PowerShell export file

File path: c:\temp\permission_export.txt

You can now scan the content of the text file the same you would scan a directory or share. Use the same command line options (“-scan”) to scan the text file periodically using Windows Scheduled Tasks. Note that Permission Analyzer scans ACL’s more than twice as fast as the provided PowerShell scripts.

Tip: Zip the text file to save storage and import the zip file directly into Permission Analyzer, the application will recognize the zip extension.

Permission Analyzer also supports files exported from a **EMC Isilon NAS**. See the Help button in the import dialog for more information.

4. Licensing model

Permission Analyzer's licensing model operates on an installation basis and consists of a number of editions based on company size, varying in the features they offer. Each **installation** of Permission Analyzer will require a separate license. The number of users and groups per edition will constitute the maximum number to be scanned by Permission Analyzer. These numbers are the sum of the unique members found in the Access Control Lists on the file system and the LDAP Organizational Units you select to determine (nested) group membership. This does not necessarily have to encompass the entire domain, but can be limited to certain OUs. Only those members and groups will then be available to the application, supplemented by the members attributed to a directory directly.

Licenses will be valid for **1 year** and automatically entitle the purchaser to tech support and updates. A license can be moved three times by deactivating an active license and reactivating it on a new device. The Consultant edition is intended to allow use of Permission Analyzer at a variety of clients within a short period of time. In that case, one license can be used on several devices, though never at the same time. This may be useful for security audits where a consultant will install Permission Analyzer within a client's domain and deactivate the license after completing the assignment.

Permission Analyzer's **trial** version is limited to two root directories with two levels of subdirectories. If you'd like to try out one of your editions, then just fill out the trial request form.

Notes:

[1] The number of servers that are scanned on directories, files and local groups. This does not relate to the number of domain controllers.

[2] Encryption is only supported for the local H2 databases supplied with the edition. Please consult the product documentation for information on encryption of other (external) databases.

[3] You will be able to use any database with a JDBC interface. Permission Analyzer automatically supports Oracle, DB2, MS SQL, MySQL, PostgreSQL, Derby and H2. Also see External Database.

[4] A license can be deactivated within the application and can subsequently be reactivated on another device. You will be able to carry this out 3 times. The Consultant Edition can be moved 200 times and can also be used to have a temporarily license operate for multiple clients. A license must always be deactivated first before a new activation can be initiated.

TRIAL	BASIC	STANDARD
-	$\$ 299^{99}$	$\$ 499^{99}$
2 root directories	Unlimited directories	Unlimited directories
1 server [1]	1 server [1]	5 servers [1]
Unlimited users	500 users	3000 users
Unlimited groups	100 groups	1000 groups
-	-	Database encryption [2]
-	-	-
-	3 license moves [4]	3 license moves [4]
DOWNLOAD	**PURCHASE**	**PURCHASE**

ENTERPRISE	CONSULTANT	SCAN AGENT
$\$ 699^{99}$	$\$ 1299^{99}$	$\$ 49^{99}$
2 directories	Unlimited directories	Unlimited directories
Unlimited servers	Unlimited servers	Unlimited servers
Unlimited users	Unlimited users	Unlimited users
Unlimited groups	Unlimited groups	Unlimited groups
Database encryption [2]	Database encryption [2]	Database encryption [2]
External DB support [3]	External DB support [3]	External DB support [3]
3 license moves [4]	200 license moves [4]	200 license moves [4]
PURCHASE	**PURCHASE**	**PURCHASE**

5. FAQ

APPLICATION QUERIES

Why does the application not start?

Access denied on the workspace directory

Permission Analyzer writes data into the directory where it has been installed. If the directory is located in Program Files, Windows may decide to block the writing operations of the application. If this is the case, run Permission Analyzer as an Administrator. Right click Permission Analyzer.exe and select Run as Administrator.

What exactly is retrieved from the Active Directory?

Permission Analyzer makes use of the Active Directory to retrieve additional member attributes that are not available from the file system, e.g. the displayName and (nested) group membership. The application's scan screen will show specific Active Directory Organizational Units (OU) to be scanned and Permission Analyzer will limit the scan to those OUs. The scan will only search for items outside the OUs if they occur in the **member** or **memberOf** attributes of members in the OU. This is done to obtain a complete overview of group membership for each member of the OU(s).

Do I have to install the product directly on a domain controller?

No, you can run Permission Analyzer from any server or workstation within your domain, as long as you have enough permissions to read the security properties of the directories to scan and the OUs in the Active Directory.

Does the application require an Internet connection?

No, you can use an Internet connection to activate your license automatically, but you can also use our form on the website to create an offline activation file based on your license.

Can I change the location of the embedded database?

Yes, just move the files **H2DB.h2.db** and **H2DB.trace.db** to another location on your hard disk and change the database path in the settings of the application.

I’ve discovered a bug. How can I report it?

A dialog window can be opened within the application, allowing you to send a direct message to our tech support team. The dialog window also allows you to send the application log in zip format. Go to [Help] > [Contact support]. Make sure you’ve configured a valid SMTP server in the application settings before sending out the e-mail.

LICENSING QUERIES

How can I move my license?

A license is linked to an installation of Permission Analyzer. That’s why it’s important to deactivate an old, previous installation. This can be done automatically online or manually through the website. Open [Help] > [License information] and select [Deactivate license]. You will now be able to activate the license on another device.

How many licenses do I need?

A license is needed for every installation of Permission Analyzer. You should select the appropriate addition of Permission Analyzer based on the number of groups and users you are scanning on the file system and Active Directory. If you’d like to move Permission Analyzer regularly, e.g. to use for several clients temporarily, then you’re best off choosing the **Consultant Edition**.

How can I get a written quote?

Our sales agent Share-It is happy to send you a quote upon request. Prices noted in the offer are non-binding and may be subject to currency fluctuations. Quotes are valid for 14 days. If a quote is not processed as an order within this period, it will be automatically cancelled in our system.

Select the edition for which you wish to receive a quote:

- Basis Edition
- Standard Edition
- Enterprise Edition
- Consultant Edition

What is Permission Analyzer's ordering process like?

Permission Analyzer's orders are processed by our sales agent Share-It, one of the biggest software sales agents worldwide. Share-It supports the following payment methods: credit card (Visa, MasterCard, American Express, JCB and Diner's Club, as well as Maestro debit cards issued in the UK), wire transfer, check, PayPal and WebMoney. When you pay by credit card you will immediately receive the license file(s) by e-mail.

The trial version is very limited. Can I test a full version?

Sure! Just fill out our online form to request a trial license for a specific edition.

Can I sign up as a reseller?

Yes, you can register as a reseller or affiliate through our sales agent, Share-It. As an affiliate, you can market Permission Analyzer by placing links on your website to the relevant product pages on the publisher's website. You will receive a commission for each sale of these products via your website. As a reseller you will be able to quickly and easily place online orders for your customers for products by "Perdemia". As a reseller, you can log in to the publisher's website without having to re-enter your personal information for every order.

Register as affiliate
Register as reseller

6. Application version history

2.3.0 **2016-10-07**

- Created a better separation between reports and policies, including a dialog that shows the current status of all your policies.
- Added a wizard to create a new policy
- Renamed the report types and added a new report type that orders the data by user/group

2.2.1 **2016-08-14**

Added two new tabs in the Report View. One tab with the members of the selected directory and their effective permissions and one tab that displays all users and groups that have been found in the directory tree, including their ACE’s.

2.2.0 **2016-06-19**

- Support for Scan Agents that run locally on the file server and submit their information to a central database. The previous version would always truncate the existing data from the database, this is now configurable in the Scan View.
- A new checkbox has been introduced in the Scan View to exclude inherited permissions from the scan. So besides excluding them in the overview, they can now be excluded from the database completely. This means the database will be a lot smaller (and faster) in that case.
- The export reports contain a new column with the number of members per directory.
- Uchecking the member column in the HTML report will now hide the whole ACE row.
- The HTML reports have a new icon to copy the file path quickly to the clipboard.

2.1.2 **2016-05-06**

Added support for long file paths (Windows MAX_PATH limitation).

2.1.1 **2016-04-03**

A new panel has been added to display all members that have been found in the results after the filters are applied.

2.1.0 **2016-02-13**

A new audit dashboard with 18 charts showing statistics about your network users and groups, permissions and files.

2.0.0 **2015-10-10**

A complete renewal of version 1.x
