



SCAN Desktop

Smart Content Aggregation and Navigation

Version 1.3





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1 Introduction

“... the abundance of information will be such that either you have reached such a level of maturity that you are able to be your own filter, or you will desperately need a filter... some professional filter.”

Umberto Eco, “*A Conversation on Information*”
(an interview by Patrick Coppock¹, February, 1995)

SCAN (Smart Content Aggregation and Navigation) is a semantic desktop content aggregator. It integrates navigation, search, tagging, text analysis and metadata functions to provide new user experience of personal document management.

SCAN goal is to be a solution for major problems of personal content organization and findability in information overload age. It aggregates information flows from different sources into a single searchable and explorable semantic space for fast finding and navigating the documents and other content items.

SCAN is a desktop cross-platform application written in Java. It is designed to be a flexible component framework, easily configurable for specific user needs and extensible by integration the plugins for new document locations and formats, as well as the user interface add-ons.

1.1 SCAN integrated approach

SCAN approach is based on an idea that information overload is a complex of problems and no single magic bullet exists to solve them effectively. Thus, there is a synthesis of few different techniques aimed at specific aspects of the problem.

Content aggregation

SCAN erases the boundaries put on information by different storage systems. It links the information items from multiple sources and of different formats into a seamless digital library, where they can be categorized, annotated, navigated and searched by a uniform way. This provides a homogeneous searchable and explorable semantic information space where files, web-pages, emails, other content items are equal documents organized by their natural semantic properties.

The component architecture makes the technology agnostic of specific types of sources (local or network file systems, web-sites etc.) and of the document formats (MS Office, PDF, HTML ...). A number of those types of sources and formats can be supported via integration of the components for a specific business application.

Tagging

Tagging is the easiest and intuitive way of information modeling and organization of the documents collection similarly to the popular services like del.icio.us or [Flickr](http://www.flickr.com). Tags are keywords or labels freely attached to the items to identify them for quick navigation and finding. All tags together form a taxonomy representing the semantics of the documents collection. The taxonomy can be viewed as a “tags cloud” for navigating through the documents.

Text analysis and concept extraction

SCAN brings the power of automated text mining and natural language processing to discover document semantics by extracting the valuable terms and their patterns from the document content. It makes possible to identify what the document is about and how it relates to others.

1 http://carbon.cudenver.edu/~mryder/itc_data/eco/eco.html

Text analysis greatly simplifies the process of tagging. It helps a user to pick the most relevant terms identifying a document and assign them as the document tags. It makes the manual document tagging as simple as selecting the tags from the suggested candidates. Also, a user can entrust the process of tagging entirely to the system, so that the documents would be tagged automatically with the relevant terms.

Text analysis is also underlying the advanced semantic search functionality like finding the documents by similarity (pattern search) and associative guided search based on system suggestions.

Metadata and facet navigation

SCAN provides a rich set of metadata properties associated with the documents, including document title, description/annotation, author, creation date and others. The properties are set automatically on a document adding and can be quickly edited later.

Metadata properties can be used in the structured search to find the documents matching specified criteria. In addition, some properties (e.g., author or creation date) may be used as navigation facets to browse the documents collection.

Search

Content of documents is indexed for search – either unstructured full-text search or more complex, structured queries both on text and metadata properties. It is possible to save the search queries for repeatable use, thus creating the dynamically populated sets of the documents grouped by specified criteria.

Advanced semantic search techniques are driven by text analysis functionality. After any search request is performed, the results are analyzed to build a “see also” terms list for associative search. It provides step-by-step exploration of an area of interest following the system recommendations. Pattern search explores semantic compatibilities between different documents and allows to find the documents conceptually similar to a subject of a given one.

1.2 Terminology

Document

An every single content item: a file, a web-page, an email message etc.

Property

A field of a document containing data of a specific type. A text, a title, an author name and a creation date are the examples of different document properties. Some properties (e.g, a title) can be edited by the SCAN user interface, while others (e.g a text or a last modification date) are set from original document source and are not editable.

Repository

An aggregated collection of documents managed by SCAN.

Location

A physical source of documents: a directory, a web-site, a mail folder etc. The documents are added to the repository via locations containing them.

Tag

A keyword, or a text label assigned to a document to identify its topic. The concept of tags is a cornerstone of SCAN navigation system.

Autotagging

An automated process of extraction of the important words (concepts) from a document content and assigning them as document tags.

Tag auto-population

An automated process of finding the documents relevant to a given tag and assigning it to those documents.

Facet

A document property, enumerated values of which are used for navigation through the repository. Examples of facet properties are the Author and Creation date. Together with tags, facets are the key items of SCAN navigation system.

Plugin

An extension module, providing some additional functionality to SCAN. New document formats, new location types and user interface extensions are added to SCAN via the mechanism of plugins.

Tab

One of the panels in the main area of SCAN application screen, switched with the buttons at the left vertical bar. The default tabs represent main user activities on working with the repository (“Browse”, “Search” and “Tags”). The plugin modules can install additional tabs.

1.3 Feedback and support

1.3.1 Community tools

Check the SCAN community area on SourceForge.NET web-site:

- <http://sourceforge.net/projects/scan/>

Please ask your questions and share your opinion about SCAN at the community discussion forum:

- http://sourceforge.net/forum/forum.php?forum_id=665371

To report a bug, please use the community Bug tracker:

- http://sourceforge.net/tracker/?group_id=189359&atid=929010

Your ideas on future development are welcomed at the Feature request tracker:

- http://sourceforge.net/tracker/?group_id=189359&atid=929013

1.3.2 Commercial support

ViceVersa Technologies (<http://www.viceversatech.com>), a company behind the SCAN development, provides high-quality support services for customers, including:

- Professional technical support directly from software engineers
- Hot bugfixes and on-demand custom releases
- Development of custom proprietary components for integration with the elements of customer IT infrastructure (such as document management systems and databases) to build the customized business-specific solutions.

Contact ViceVersa: info@viceversatech.com.

2 Installation and running

2.1 Prerequisites

You need Sun Java 2 Runtime Environment (JRE) version 5.0 (or higher) installed in your system before you can use SCAN. You can download a free copy of JRE for your platform from <http://java.sun.com/javase/downloads/>.

SCAN is a cross-platform software, independent from specific computer platform and operating system. At the moment, the following platforms are tested and fully supported:

- MS Windows 2000/XP/Vista
- GNU Linux

2.2 SCAN installation

2.2.1 MS Windows

To install SCAN in MS Windows operating system, execute `scan-1.*.exe` automated installer and follow instructions on the screen.

After installation is completed, you can run SCAN via the Start menu (new **SCAN** section will be created) or using a shortcut on your desktop.

2.2.2 Cross-platform install

To install SCAN on other platforms (or if you cannot use the Windows installer by some reasons), use the cross-platform distribution (a compressed ZIP archive file). Use any unzip utility to unpack the distribution archive into a directory of your choice.

After unpacking the archive, you should see the following directory structure:

```
scan-**
├── conf
├── lib
├── plugins
├── LICENSE
├── README
├── scan.bat
├── scan-launcher.jar
└── scan.sh
```

The start-up scripts for Windows (`scan.bat`) and UNIX systems (`scan.sh`) are provided for running SCAN.

Note: On a UNIX-based system, you may have to set executable permissions for the shell script:

```
$ cd scan-**
$ chmod 755 ./scan.sh
```

It is possible also to run SCAN using executable `scan-launcher.jar` file. Generally, it is enough to double-click this file in your file manager to get SCAN started. If it doesn't work, check your system file associations or execute SCAN launcher from a console:

```
$ cd scan-**
$ java -jar scan-launcher.jar
```


2.3 Plugins installation

In the “Plugins” section of SCAN web-site¹ you can find a number of software components (plugins) for many additional features. Plugins are installed by users choice to extend SCAN functionality.

All changes of plugins are activated after restarting SCAN.

2.3.1 Manual plugin installation

To install a plugin manually, download it from SCAN download area² and unpack the downloaded ZIP file into the `plugins/` subdirectory of your SCAN platform installation. The plugin directory must be a direct subdirectory of the `plugins/`.

To remove a plugin, delete its directory from `plugins/`.

2.3.2 Installation using Plugins manager

Since 1.2 version, SCAN is provided with new plugins management framework for easy download, installation, upgrading and removing the plugins within the application.

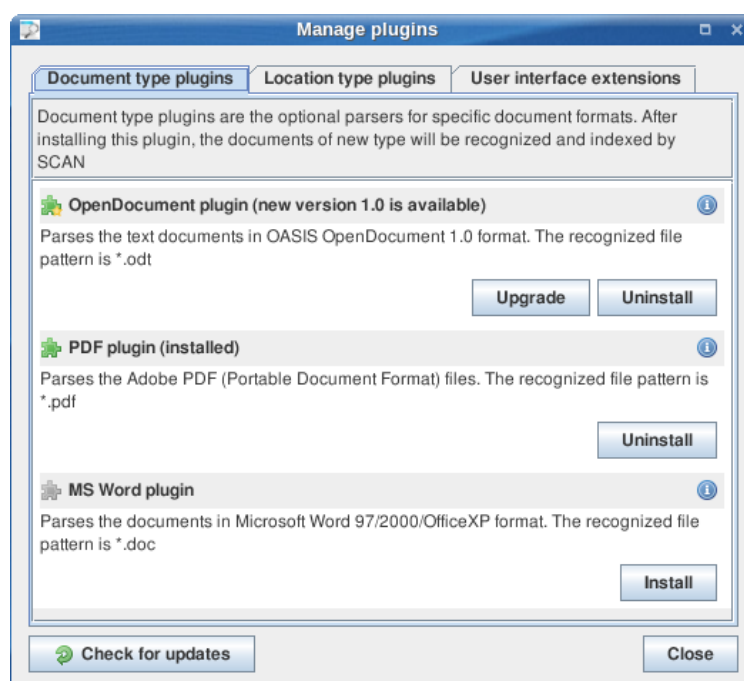


Illustration 1: Plugins Manager dialog

To open the Plugins Manager window, proceed to the **Tools → Manage plugins...** menu.

The Plugins manager shows all plugins available to download and install. The plugins are grouped into categories, represented by dialog tabs.

- To download and install a selected plugin, click on **Install** button.
- If newer version of an installed plugin is available, click on **Upgrade** button.
- To remove a plugin, click on **Uninstall** button
- To update plugins information, click on **Check for updates** button.

¹ http://scan.sourceforge.net/?page_id=6

² <https://sourceforge.net/projects/scan/files>

2.4 Uninstall SCAN

2.4.1 MS Windows

To remove SCAN from your MS Windows system, select **Uninstall SCAN** in **SCAN** section of the Start menu and follows instructions on the screen.

2.4.2 Cross-platform install

To remove SCAN, installed from a cross-platform ZIP file distribution, delete the folder where you have unpacked the file.

2.4.3 Delete the repository and data files

The uninstall procedure preserves repository files, configurations, cache and other data files, used by SCAN. This allows to restore the program environment in next SCAN installation (e.g., after version upgrade).

To remove the SCAN data, delete the directory where it is located. You can find the actual path of this directory in the **Repository path** field of SCAN configuration dialog (**Tools → Configure...**).

3 Repository Management

The cornerstone of the SCAN architecture is the documents repository. The repository is a centralized collection to keep records on the documents independently from their physical locations. A user can browse or search the documents in the repository and open them from their original locations with the suitable external applications.

The repository aggregates content from different sources. The folders in the local or network filesystems are used as the document sources by default. A number of other types of sources are available with the installed plugins: web syndication feeds, mailboxes, del.icio.us bookmarks and others.

Adding documents to the repository is automated. A user only need to point SCAN to a location she wants to add and the application will find and add every document from there. Added locations are monitored for changes (new, modified or deleted documents) to keep the repository up-to-date.

The repository keeps records on user's documents with rich set of metadata properties: title, description, original location, author, creation date etc. The metadata properties associated with the documents are set automatically on a document adding and can be quickly edited by a user. Their values can be used in search queries to find the documents matching the specified criteria.

A full-text search engine is integrated with the repository. When new documents are added to the repository, their content is extracted and indexed for search.

The repository is independent of the specific document formats. The number of popular document formats is supported either natively or via the plugins, including HTML, PDF, OpenOffice ODF, MS Office documents, plain text files and email messages.

Repository management operations are available in the **Browse** application panel. The panel contains the list of all locations in the repository which can be browsed with the documents list of this panel.

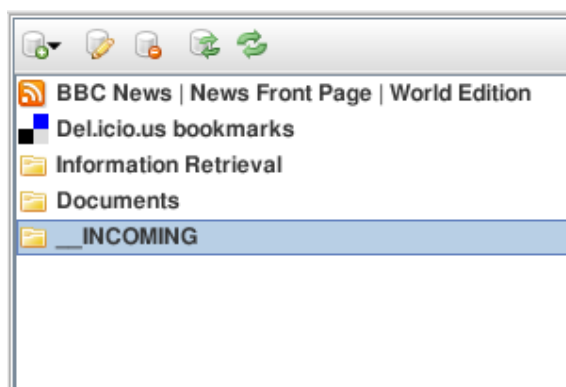


Illustration 2: Locations list

Repository management operations are accessed via **Collection** menu items. They are duplicated with the buttons on the locations list toolbar and with the context menu.

3.1 Adding a location to the repository

When new location is added, SCAN gets the documents found in this location by a specific location provider. Location provider is a part of a Location type plugin, which knows how to extract the documents from a specific location type. The *Directory* location provider is built-in and does not need a plugin to be installed.

The provider for new location is selected in **Collection** → **Add documents** submenu.

Content and metadata of the documents are extracted using an appropriate parser which depends on a document format. A format of an each document is generally determined by a filename (URL) pattern. The default (built-in) document formats are:

Filename pattern	Document format	MIME-type
*.txt (or no extension)	Plain text document	text/plain
*.html, *.htm, *.xhtml	(X)HTML document	text/html
*.xml	XML document	text/xml

Table 1: Built-in document types

Installed Document Type plugins register new filename patterns for their own document formats. For instance, after installing the PDF plugin, all “*.pdf” files will be recognized for adding to the repository using the parser of this plugin. If no parser is found for a specific filename pattern, the file will be skipped (ignored).

Adding the documents to the repository is a time- and resource-consuming operation, and it is thus performed in background mode.

3.1.1 Adding a directory location

To add new directory location, select **Collection** → **Add documents** → **Add directory...** menu item.

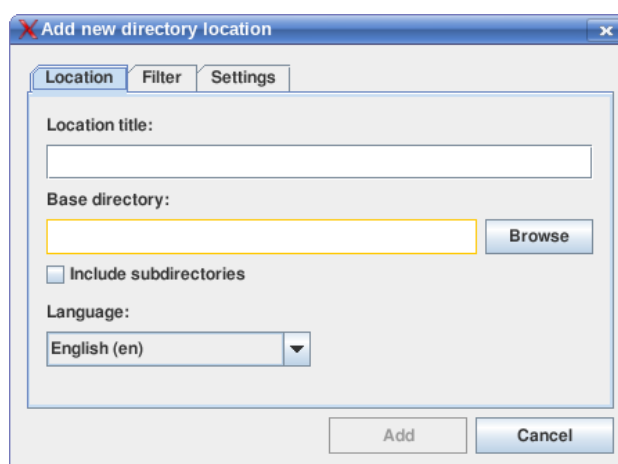


Illustration 3: "Add new directory location" dialog

- Select a directory with the **Browse** button or enter the valid directory path into the **Base directory** field.
- The value of **Location title** will be set automatically to the base directory name. You can change it as you wish.
- Select **Include subdirectories** checkbox to add the documents recursively from all subdirectories.
- Optionally select a language of documents in this location and set other location options (see 3.2 Common location options).
- Click **Add** button to start adding the documents.

3.2 Common location options

The location options described in this chapter are independent from specific location provider and can be set for any type of location.

3.2.1 Language

The **Language** selector of the location dialog box allows to set a language for the documents in the location. Language settings affect the way the documents are indexed – specifically a language-specific algorithm of stemming the words and stop-word filtering.

By default, the language is set to one defined in the global configuration dialog (see 3.5). With the **Language** selector of the location dialog box you can redefine it on per-location basis.

Select **Mixed (autodetect)** option if the location contains documents written in multiply languages. In this case, SCAN will try to identify the language of each individual document automatically (may slow down the indexing process).

3.2.2 URI filter

URI filter allows to define custom rules about which documents should be processed and which ones should be skipped in this location, by defining two URI patterns:

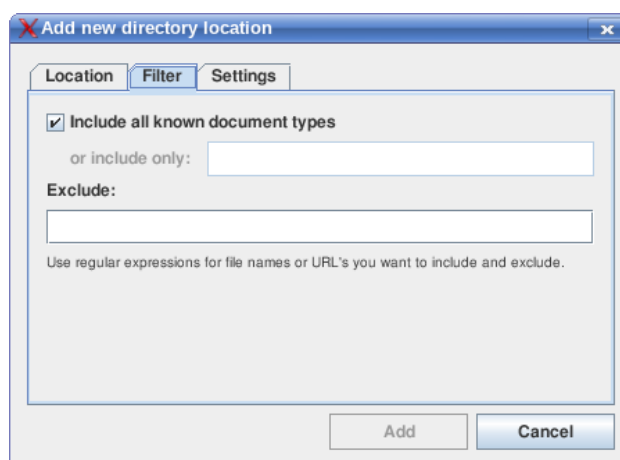


Illustration 4: URI Filter tab of Location dialog

- Leave the **Include all known document types** checkbox selected to include all documents allowed by installed document type plugins. For instance, if PDF plugin is installed, all documents with “.pdf” filename extension will be processed, etc.
- Unselect the **Include all known document types** checkbox to set a custom inclusion rule in **or include only** field. If the inclusion rule is set, only documents matching this rule will be processed.
- In the **Exclude** field you can define a rule to exclude the specific documents from the location. All documents matching this rule will be skipped.

Inclusion and exclusion rules are defined as regular expressions¹ of the file names or URLs. Examples include:

- `.*\.doc` - All files with names ending with “.doc” (“.” denotes any number of characters, the dot symbol must be escaped by a backslash).
- `.*\\Desktop\\.*` - All files with names containing “Desktop\” in the middle (the backslashes must be escaped).
- `http://www.*` - All URLs starting with “http://www”.
- `.*\.doc | .*\\Desktop\\.* | http://www.*` - Combination of these three rules (the “|” character acts as “OR” operator).

¹ <http://www.javaworld.com/javaworld/jw-07-2001/jw-0713-regex.html>

3.2.3 Custom update interval

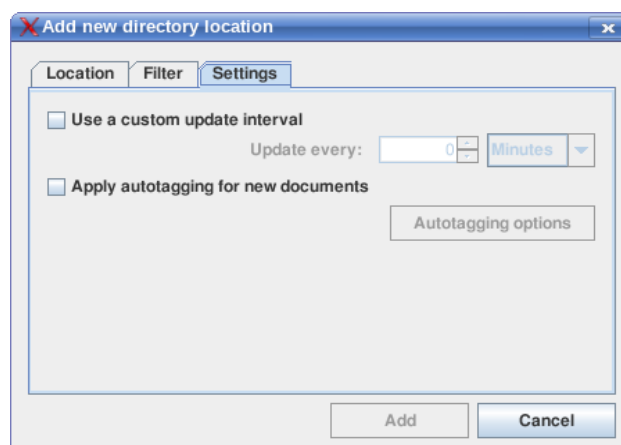


Illustration 5: Settings tab of Location dialog

By default, all locations are checked for updates in a time interval defined in global application preferences (3.4.4 Setting up update automation). On the **Settings** tab of a location dialog you can define a custom update period for specific location. To enable it, select **Use a custom update interval** checkbox and set the interval (in minutes or hours). Zero value will disable the automatic update for this location.

3.2.4 Autotagging

If **Apply autotagging for new documents** options is set, all new documents of this location will be automatically tagged after adding to the repository. By clicking **Autotagging options** button, you can call the dialog to change default tagging options for this location (see 4.6).

3.3 Manage locations

3.3.1 Edit location properties

To edit the properties of a specific location, select in the locations list and select **Collection → Edit location** menu item.

Note that some basic properties (such as a base directory etc.) are not editable. To change these properties you have to re-create the location.

3.3.2 Remove a location

To remove a location from the repository, select it in the locations list and select **Collection → Remove location** menu item.

The documents will be removed from the repository only. The operation does not affect any original files.

3.3.3 Autotag a location

To apply autotagging to all documents of a specific location, select in the locations list and select **Collection → Autotag location...** menu item.

Set the autotagging options in the appeared dialog box (see 4.6) and press **Ok** to start autotagging process.

3.4 Update the repository

Updating is an operation of synchronizing the repository with actual state of the documents. It checks the locations for new, modified or deleted documents:

- New documents will be added to the repository
- Modified documents will be re-indexed and updated in the repository
- Deleted documents (which are no longer exist in their original locations) will be removed from the repository

Updating is started in background mode either manually, or automatically (after a specified time interval is passed).

3.4.1 Updating a single location manually

To check a single location for new, modified or deleted documents and update it in the repository, select the location in the locations list and select **Collection** → **Update location** menu item.

3.4.2 Rescanning a location

While usual update checks a location incrementally (the unmodified documents are ignored), rescanning performs full re-indexing of all documents in the location. It has an effect similar to re-creating the location and may be needed, e.g., after changing the global indexing options (3.5).

To rescan a location, select it in the locations list and select **Collection** → **Rescan location** menu item.

3.4.3 Updating the whole repository

To update all locations in the repository, select **Collection** → **Update all** menu item.

3.4.4 Setting up update automation

Updating the collection can be performed manually (3.4.1, 3.4.3) or automatically, in a specified time interval. To configure automated updating, open the system Configuration dialog (**Tools** → **Configure...**).

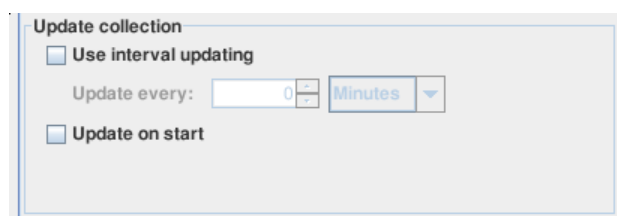


Illustration 6: Configuration dialog: Update collection

- To set the global update interval, select **Use interval updating** checkbox and enter an interval in minutes or hours. To disable automatic updates, unselect this checkbox. Update interval can also be set for a specific location individually (see 3.2.3).
- If **Update on start** checkbox is selected, the collection will be updated every time when SCAN is started.

3.5 Indexing options

To configure document indexing, open the system Configuration dialog (**Tools** → **Configure...**).

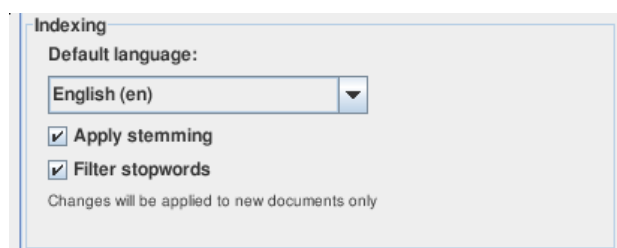


Illustration 7: Configuration dialog: Indexing options

Default language selector defines a default language of the repository. The default language has two purposes:

- A language used by default for new locations. Location-specific language settings (3.2.1) override this.
- A language used for parsing the search queries

It is recommended to set this parameter to a primary language of your document collection. If it is set to **Mixed (autodetect)**, SCAN will try to identify the language in every case.

Apply stemming option enables the lexical analysis of the documents content. If this option is set, the stems of the words will be extracted and indexed instead of the words themselves. For instance, the words “work”, “worker” and “working” will be indexed as a single term “work”, so that the search for this term would return documents containing all variations of the lexeme “work”.

If **Filter stopwords** option is turned on, the words listed as the “stopwords” for a selected language will be excluded from the index. Stopword lists are used to filter so-called “common words” (such as “the”, “and”, “this” etc. in English) out of indexing, thus improving search quality and efficiency. Lists of stopwords for each language are available as the plain-text files in `/conf/stopwords` subdirectory of the SCAN installation.

Note that changes of the indexing options will affect newly indexed documents only. To apply changes to existing documents, rescan (3.4.2) or re-create a location.

4 Working with documents

4.1 The documents list

The documents list contains the documents of a selected location, or the results of a navigational or search action. The list is located at the right (wide) column of SCAN tabs (and may also be opened in a separate window).

The list can be viewed in two modes:

- **Detailed view** (default)
Displays the list as a table with document metadata properties as the columns
- **List view**
Displays a single-column list with brief document info.

To switch between the view modes, use **View → View mode** menu or   buttons on the list toolbar.

The documents are selected by clicking an item in the list. To select multiple documents, click them in the list while holding the **Ctrl** key. To select multiple documents in a continuous range, select the first item and then the last item while holding the **Shift** key. To select all documents of the list, choose **Select → Select all** menu item or press **Ctrl+A**. To clear the selection, choose **Select → Select none** menu item (**Ctrl+D**).

All operations with individual documents or selections are performed in the **Document** menu. These menu items are duplicated with buttons on the documents list toolbar and also in the documents list context menu.

4.1.1 Customize the detailed view

The detailed view can be customized by choosing the document properties to display as the table columns in **View → Columns** menu. This menu can be called also by right-clicking a column header.

To re-order the columns of the detailed view, drag the column headers. Change the columns' width by dragging the header edges.

4.1.2 Sort the list

To sort the documents list, select a document property in **View → Sort by** menu. The documents will be ordered by values of the selected property. Alternatively, in the Detailed view mode, you can click on a property column header (repeatable clicks on the same header change the sorting order).

To sort the list in ascending order, select **View → Sort by → Ascending order** option.


View → Sort by → No sorting option means that the documents are ordered by relevancy to the query (in the case of a search result) or listed in no specific order (in all other cases).


4.1.3 Filter the list

Filter search panel on the right side of the documents list toolbar allow to restrict the list content by the documents that match a specified search query:



Illustration 8: Filter search panel

To filter the documents list, enter a query string into the text field and press  button.

To select the document properties to apply the filter to, press  button and select the properties in a pop-up menu box.

To clear the text field and cancel the filter, press  button.

The query string for filtering may use special query expression syntax (see Appendix A.).

4.2 Open a document

Documents from the documents list can be opened with an external application for viewing or editing. It is possible to set multiple applications for every document type and select which one will be used by default.

To open a document with a default application, double-click it in the documents list or select it and choose **Document** → **Open document** menu item.

On MS Windows and Mac OS X platforms, SCAN uses the default system file associations to identify an application to open a document. On other types of desktops (or if this method fails otherwise), you will be asked to set an application before opening a first document of a given type (4.2.1).

4.2.1 Open a document with specific external application

To open a selected document with an external application, already defined for this document type, choose it in **Document** → **Open document with** menu.

To define new application for a given document type and open the document with it, select **Document** → **Open document with** → **Select program...** menu item.

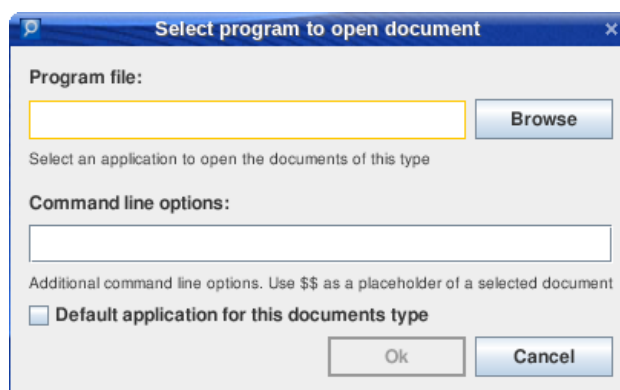


Illustration 9: "Select program" dialog

- In the **Program file** field enter full path to the executable program file or use **Browse** button to find and select the file.
- In the **Command line options** enter additional command line arguments of the program, if needed. If this field is empty, only document path (URL) will be passed to the program. Alternatively, you can define the program arguments line, using double dollar characters (\$\$) as a placeholder for real document path. You may need to refer to the program documentation on its command line syntax.
- Select **Default application for this documents type** checkbox if this application should be used by default for **Open document** action (if more than one applications are defined for this document type).

As soon as the application is set, it will be added to **Document** → **Open document with** menu and available for all documents of the same type. Repeating this operation, you can define as many applications as you wish.

4.3 Edit document properties

4.3.1 Quick edit in the detailed view mode

To edit a property value of a document in the detailed view mode, select a document and click on a table cell of the property to edit the value. Select another document or press **Enter** when editing is done.

Press **Esc** in the edit mode to cancel editing and discard the changes.

Note that some properties are not editable.

4.3.2 Document properties dialog box

To edit the document properties in the dialog box, choose **Document** → **Edit document properties** menu item.

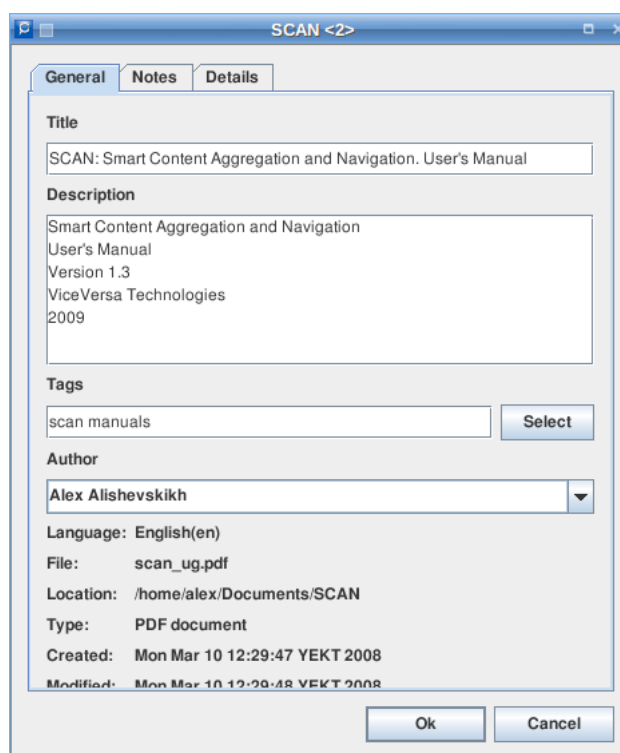


Illustration 10: Document properties dialog box

The **General** tab of the dialog box contains some most common metadata properties to view and edit:

- **Title**
The document title
- **Description**
A description of what the document is about
- **Tags**
A space-separated list of the document tags. You can edit the tags in the text field, or press Select to call the Edit tags dialog (see 4.5)
- **Author**
A document author. Enter the author name or select an existing author in the combobox.

On the **Notes** tab of the dialog box you can edit the document notes (see 4.4)

The **Details** tab contains a detailed table view of all metadata properties of this document. You can edit those marked with “*”.

To assign a property value for a number of documents at once, select multiple documents and choose **Document** → **Edit document properties**. In the dialog box, fill the fields for the properties you want to assign the values to. For empty fields, the original values will be preserved in the documents.

Press **Ok** after editing is done to close the dialog box and apply changes.

4.4 Edit document notes

A text note can be attached to a document to describe and annotate it. The “Notes” property differs from others as SCAN makes no attempt to fill it automatically at indexing stage (it is completely user-edited) and provides a special user interface to view and edit it.

To view and edit the document notes, select the document in the list and choose **Document** → **Edit document notes** menu item. Then, edit the text note in a pop-up dialog box and press **Ok**.

Alternatively, the notes can be edited:

- On the Notes tab of the document properties dialog box (see 4.3.2).
- By quick editing of the “Notes” property in the Detailed view mode (see 4.3.1).

4.5 Edit document tags

Tags are keywords or text labels freely associated with the documents in the repository to provide tag navigation facet. There is no limits on a number of tags assigned to a single document.

The tags can contain letters, numbers and punctuation characters, except for quote marks and spaces. Tags are case-insensitive, so that the tags “cats”, “Cats” and “CATS” are interpreted as the same tag.

To edit the document tags, select a document and choose **Document** → **Edit document tags...** menu item. The “Edit tags” dialog box will appear:



Illustration 11: Edit tags dialog box

Enter the tags into the **Tags** text field, separating individual tags with spaces, or select the tags from the lists below the field:

- **Existing tags** list contains the tags already assigned to other documents. An item size indicates a number of documents a given tag is assigned to.
- **Suggested tags** list contains the words, recommended by a tag suggestion algorithm. If a word is an existing tag, it's marked with a bold font. An item size indicates relevancy of a given term to the document. You can adjust the length of the list with the **Less terms** ↔ **More terms** slider.

Alternatively, the document tags can be edited:

- Via the Document properties dialog box (see 4.3.2)
- By quick editing of the “Tags” property in the Detailed view mode (see 4.3.1).

To edit tags of multiple documents at once, select the documents and choose **Document** → **Edit document tags...** menu. Select **Preserve existing tags** checkbox to add tags from the dialog box to existing tags of the selected documents. Otherwise, tags from the dialog box will replace tags of those documents.

4.6 Documents autotagging

Autotagging is a process of automated assigning the relevant tags to documents. Autotagging can be applied to all documents of a specific location (see 3.2.4, 3.3.3) or to individual documents selected in the document list.

To autotag the selected documents, choose **Document** → **Autotagging...** menu item and set autotagging options in a dialog box:

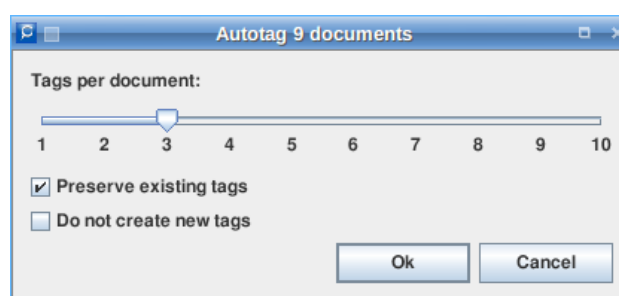


Illustration 12: Autotagging options

- Set a desired number of tags to be assigned for each document with the **Tags per document** slider.
- Select **Preserve existing tags** checkbox to add new tags to existing ones. If this option is not set, new tags will replace all tags assigned to the documents before.
- Selected **Do not create new tags** checkbox will cause selection of tags from the existing tag set (new tag creation is disabled). Use this option if you want to control your taxonomy manually.

Note that if **Do not create new tags** option is set, an actual number of tags assigned to some documents may be lesser than specified, or no tags may be assigned at all. It indicates that there are no existing tags relevant to those documents.

4.6.1 Global autotagging preferences

Depending on size and semantic nature of your document collection, you may want to adjust global parameters to fine-tune the autotagging process and to achieve the best results. These parameters also affect the tag suggestion algorithm (4.5).

To set up the autotagging parameters, select the **Autotagging** tab of the global Configuration dialog (**Tools** → **Configure...**):

- **Tags specificity** is an autotagging parameter which defines whether the terms extracted from a document directly must have higher priority than ones picked from a document context (a cluster of similar documents). High specificity leads to large and granulated taxonomies with small numbers of documents sharing the same tags, while low specificity increases the value of “general” terms, thus producing lesser tags number but with more documents per single tag.
- **Tags novelty** parameter controls a tendency of autotagging to invent new tags instead of re-using existing ones. When set to maximum, existing tags takes no priority of new candidates. Otherwise, if everything else is equal, existing tags have more chances to be selected for new documents. Minimal novelty means absolute priority of existing tags.
- **Tags autopopulation relevancy threshold** defines a minimal value of document relevancy required by Tag autopopulation algorithm (see 5.2.1) to assign the tag.

5 Navigation and search

5.1 Faceted browsing

“Browse” tab provides the widgets to navigate the documents collection by selecting the values of specific metadata properties (facets). Facet value selection causes navigating to a subset of the documents matching the specified value.

5.1.1 Path widget

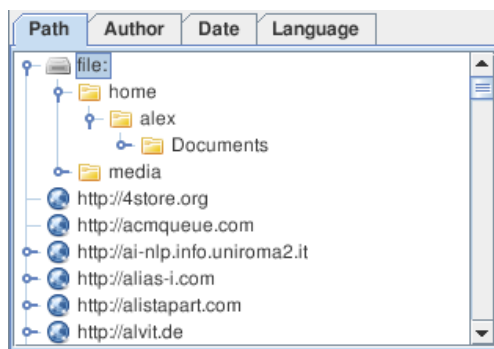


Illustration 13: Path navigation

The path widget provides browsing the documents by paths of the original files or URLs represented as tree-like structures. Selection of a tree item causes navigation to a subset of documents in the selected path (including all descendant items).

5.1.2 Author widget

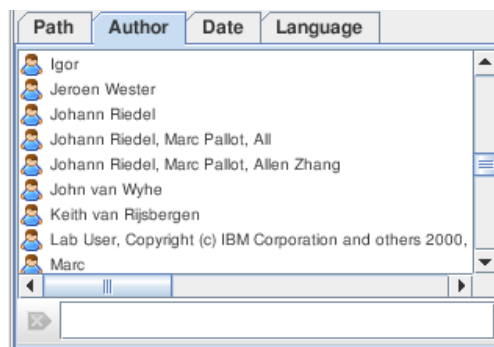



Illustration 14: Authors navigation

The authors widget contains an alphabetically sorted list of all author names found in the “Author” metadata properties of the documents. Selection of an author in the list causes navigation to a subset of documents matching the selected value.

To find a specific author, start typing the name in the text field below the list. The list will be filtered by an entered value. To clear the text field, press  button.

5.1.3 Date widget

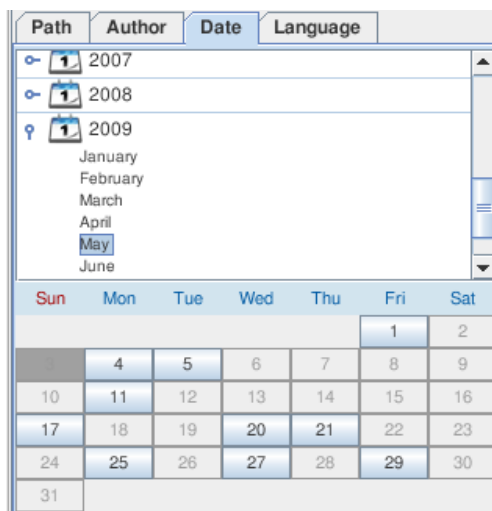


Illustration 15: Dates navigation

The dates navigation widget contains a calendar to navigate the document repository by dates of document creation. Selection of a year, a month or a day in the calendar causes navigation to a subset of documents created at the selected period.

5.1.4 Language widget

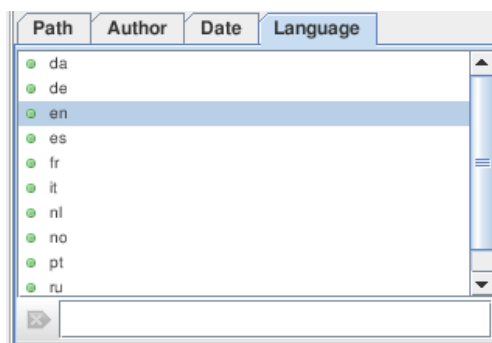



Illustration 16: Languages navigation

The language widget contains a list of all languages of the documents in the repository. To navigate to a subset of documents with a specific language, select it in the list.


5.2 Tag navigation

“Tags” tab provides navigation through the document repository using tags, assigned to documents (4.5, 4.6). The tags cloud widget in the right panel contains a list of all existing tags, sorted alphabetically. The size of a list item indicates a number of documents associated with the given tag.

When a tag is selected, the widget automatically highlights the tags related to the selected one. An intensity of a highlighting color indicates a degree of relevancy between the tags.

If no document property is declared with the special syntax, the search is performed over document properties, defined in the “Search in” menu. To change the searchable property set, open this menu by pressing  button and select the properties in a pop-up menu box.

5.3.2 Advanced search

To perform complex, structured search queries, click on **Advanced search** or  button. It calls the special visual query constructor:

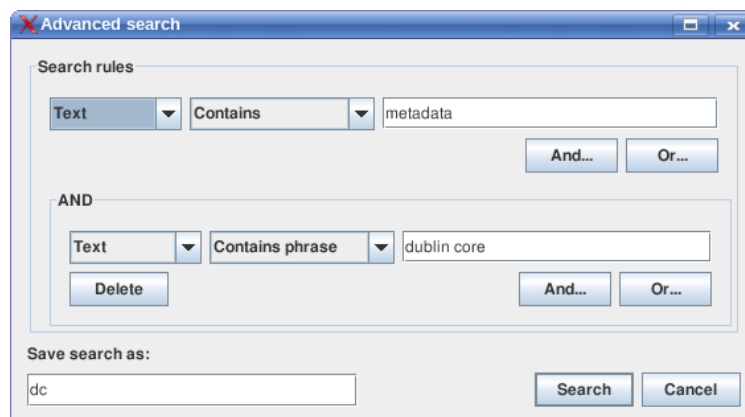


Illustration 18: Advanced search dialog

A query contains of one or more search rules, grouped and connected with boolean operators (“And”/“Or”). “And” connector means that the search results must be relevant to all rules in a group. “Or” connector — that they must be relevant to at least one rule in a group.


Each rule consists of a document property, condition and a test value. Available conditions (predicates) and their negations are:


- **Contains (Does not contain)**
Searches for any listed term (space-separated). Wildcard characters (? and *, see Appendix A. Wildcards) are allowed in the terms.
- **Contains phrase (Does not contain phrase)**
Searches for an exact phrase (including space characters)
- **Equals to (Does not equal to)**
Searches for an exact value of a given data property. Wildcard characters are allowed.
- **After / Before**
For date properties, searches for values of dates after or before the given date. On formatting the date values, see Appendix A. Date search).

To add new rule to the query, click on **And...** / **Or...** buttons for an existing rule. To delete a rule, click on **Delete** button.

To save a query for repeating use, enter a name for this query in **Save search as** field.

5.3.3 Saved searches

Advanced search queries, saved for repeatable use, are available in the list on the “Search” tab panel. To execute a query, double-click it in the list or select it and press  button on the list toolbar.

To edit a saved query before execution, select it in the list and press  button.

To delete a query, select it and press  button.

5.3.4 Associative search

On each search query, the results are analyzed to identify valuable terms related to the subject of the query. These words may give you some hints about what to search also on a subject and are suggested for the next query.

To add a suggested term into the quick search field, press **More ▶** button on the search panel and select a term in the pop-up list.

5.3.5 Finding similar documents

A special type of search is finding a set of documents, conceptually similar to a given one. This allows to identify a set of documents on a specific subject, taking a known document as a pattern.

This function is available from the documents list (see 4.1). To find the similar documents, select a pattern document in the list and choose **Document → Find similar documents...** menu item.

The search results are displayed in a new window as a document list, sorted by relevancy to the pattern document. Moving **Less documents ↔ More documents** slider, you can adjust the relevancy threshold to populate the list.

To close the documents list window, press **Close** button.

Appendix A.

Search query special syntax

The special query expression syntax allows to perform complex queries like with Advanced search query constructor (5.3.2). For complete search query syntax refer to the Apache Lucene guide¹.

The search is case-insensitive. In addition, if the documents were indexed with the “Apply stemming” option (3.5) and this option is turned on, a query will match any document containing a variation of a word with a same stem as the query term have. For instance, the query term “constructor” will match the words “construct”, “constructor”, “construction”, “constructed” etc.

Document properties

To search on specific document properties in the Quick search (5.3.1), use the term prefix in form of a name of a property and the colon (“:”). For instance, to search the word “wiki” in document titles only, use the query term:

```
title:wiki
```

To search more than one word in the same document property, use parentheses:

```
author:(John Mary Jane)
```

This query returns the documents containing either John, Mary or Jane in the “author” property.

The following document properties are available for search:

- `title` - Document title
- `description` - Document description
- `text` - Document text (default)
- `author` - Document author
- `notes` - Document notes
- `date` - Creation date
- `date_modified` - Modification date
- `url` - Full document URL
- `file` - File name
- `path` - File path
- `size` - File size in bytes (for local documents)
- `language` - Document language code (e.g., “en”, “fr”, “de”, etc)

Note that the set of metadata properties depends on the document type plugins installed. Some plugins may define additional document properties. To know which properties are available in your actual configuration, open the **Details** tab of the Document properties dialog (4.3.2). A common rule of using a property name in search queries is to lowercase all letters and replace spaces with underscore characters (e.g., “Date modified” ⇒ “date_modified”). The “Tag” property, though exists, is not searchable.

If no property prefix is set, Quick search uses the properties defined in the “Search in” menu (5.3.1).

Phrase search

By default, a query expression containing multiple space-separated terms matches the documents containing *any* of those terms. For searching for an exact phrase (including the spaces), it must be surrounded with double quotes:

```
"Hello, world"
```

¹ <http://lucene.apache.org/java/docs/queryparsersyntax.html>

```
title:"New York"  
author:"John Doe"
```

Wildcards

Wildcards are used to replace one or more characters in a query.

“?” symbol is a single character wildcard. For example, “h?t” matches any of words “hat”, “hit”, “hot”, but not “heart”.

“*” symbol is a multiple characters' wildcard. For example, “list*” matches any of words “list”, “listing”, “listen”, “listener”, etc.

Note: You cannot use a * or ? symbol as the first character of a search.

Date search

The values of the date properties (date and date_modified) has the following format:

```
yyyyMMddHHmmsSSS
```

Where

- yyyy - Year (4 digits)
- MM – Month: 01...12 (2 digits)
- dd - Day 01...31 (2 digits)
- HH – Hours: 00...23 (2 digits)
- mm – Minutes: 00...59 (2 digits)
- ss – Seconds: 00...59 (2 digits)
- SSS – Milliseconds: 000...999 (3 digits)

To search on the date properties the wildcards can be used. For example:

```
date:20090820* (documents, created at August, 20 2009)
```

```
date_modified:200707* (documents modified during July, 2007)
```

It is also possible to search the documents in a range between two dates:

```
date:[20070715* TO 20070815*] (documents, created between July, 15 and August, 15 2007)
```

```
date:[0 TO 2007*] (documents, created not later than 31/12/2007)
```

Fuzzy and proximity search

Fuzzy queries are used to find the terms similar in spelling to a given word. For a fuzzy search, add the tilde, "~", symbol at the end of a single term expression:

```
roam~ (will find documents containing words “roam”, “roams”, “foam”, “road” and alike)
```

For finding words which are within a specific distance away (proximity search) use the tilde, “~” symbol at the end of a phrase. For example to search for an “oil” and “import” within 10 words of each other in a document use the search:

```
“oil import”~10
```

Boosting a term

In multi-term queries, it's possible to specify a boost factor of a specific term. A boost factor indicates an importance of a term in the query, so that the documents matching the boosted terms will have higher relevancy in the search results. To boost a term use the caret, “^” symbol with a boost factor (a number) at the end of the term you are searching:

oil^4 import (documents containing an “oil” (or “oil” and “import”) will be 4 times more relevant than those, containing “import” only).

Boolean operators

Few term expressions can be combined in a single query through boolean (logic) operators (OR, AND, +, -, NOT). By default, if no operator is defined, boolean OR is assumed. For instance:

```
author:(John Mary Jane) is equivalent to
author:(John OR Mary OR Jane) or
author:John OR author:Mary OR author:Jane
```

OR conjunction means that the result may contain at least one of the specified terms (either John, Mary or Jane).

OR, AND and NOT operators must contain UPPERCASE letters only. They can also be substituted with the following symbols:

```
OR : ||
AND : &&
NOT : !
```

AND operator

If the terms are combined with AND (&&) operator, all terms must be presented in the search result:

```
title:oil AND price
```

Searches the documents that contain “oil” in the title and “price” in the text.

+ operator

“+” prefix indicates a required term. The result must contain the term after “+” symbol:

```
+oil import price
```

Searches the documents that contain “oil” and optionally, “import” or “price”.

- operator

“-” prefix indicates a prohibited term. The documents containing this term are excluded from the search results:

```
-olive oil
```

Searches the documents that contain “oil” but not “olive”.

NOT operator

If two terms are combined with NOT operator, the documents that contain the term after “NOT” are excluded from the search result:

```
oil NOT olive
```

Is equivalent to the example above.

Grouping

To group the boolean clauses in complex search queries, parentheses are used. Examples:

```
(title:oil OR oil) AND price
(author:(John Mary Jane) AND import) NOT date:2007*
(oil AND price) OR (brent AND urals)
```

Escaping Special Characters

Some characters are reserved by query syntax and must not be used unescaped:

+ - && || ! () { } [] ^ " ~ * ? : \

To escape these character use the backslash, “\” before the character. Examples:

“Washington \ (city\)

“\”Exactly\!\”, he said.”

Appendix B. Troubleshooting

If you experience problems with SCAN:

1. Check the messages in the application log window or in a log file (see Logging section below)
2. Check the program debug output in the system console (see Logging section below)
3. Read the “Common issues” section of this appendix
4. If no solution is found and you think the problem is caused by a bug in the application, feel free to submit a bug report (see 1.3 Feedback and support). Please provide a detailed description of your problem and attach the console output if possible.

Logging

Log window

To see the warning and error messages in the application log, click on the button in the bottom right corner of the SCAN screen. The log messages window will appear.

To force immediate memory garbage collection, press **GC** button. It may free some amount of RAM.

To clear the messages window and close it press **Clear and close**. To close the window without clearing the messages, press **Close**.

Console output

To see the full program output while SCAN is running, open the system console window, go to the directory where SCAN is installed and execute the startup script (`scan.bat` or `scan.sh`, depending on your platform).

Logging to a file

To configure file logging, open `scan.conf` file in the SCAN home directory in a text editor of your choice and add an entry:

```
<entry key="scan.logging.file.level">ALL</entry>
```

Instead of `ALL` you can specify the minimal level of messages to be written into the file (`CONFIG`, `INFO`, `WARNING` or `SEVERE`).

By default, the log file is named `scan.log` and located in the SCAN home directory. You can change its name and location by adding a `scan.logging.file.path` entry, e.g.:

```
<entry key="scan.logging.file.path">/var/log/scan.log</entry>
```


Common issues

SCAN doesn't work at all

Make sure Java 5.0 or later from Sun Microsystems¹ is installed on your system. Older versions (1.4 and earlier) and Java implementations from other vendors (e.g., GNU) may not work. To check the installed Java version, type in the console:

```
$ java -version
```

“Tagger: Cannot connect to database ...” error at startup

Indicates that another SCAN process is already running or that a previous session has been halted unexpectedly (e.g because of a power break). Make sure that SCAN is not already started with the same repository path. If it is not the case, delete `repository/db/.lock` file and run SCAN again.

“Out of memory” error

SCAN may run out of memory limits when parsing very large documents. If it happens, try to increase an amount of RAM available for Java Virtual machine by editing a line in the startup script, e.g.:

```
java -Xms256M -Xmx256M -jar scan-launcher.jar
```

In the example above, RAM limit is increased up to 256Mb. You can replace it with another reasonable value.

Encrypted PDF files are skipped

The feature is unsupported at the moment.

No PDF file content is indexed

Some PDF files (e.g., scanned from paper) contains images instead of a parseable text. You can check this – if it's impossible to copy-paste the text from Adobe Acrobat Reader, it is unlikely that the file can be processed by SCAN PDF plugin. Probably, non-standard character encodings may cause this problem as well.

Duplicate document entries

Tags without documents

May be caused by an unexpected break of the application. Run Index maintenance function (**Tools** → **Configure...** → **Index Maintenance** → **Start**) to check and fix the repository index.

Backup and restore the repository and settings

It is recommended to backup the repository and configuration files before upgrading the SCAN version. To make a repository backup, copy the contents of the SCAN home directory. To identify the path to this directory, look at the **Repository path** field of SCAN Configuration dialog (**Tools** → **Configure...**).

To restore the repository, copy the archived contents back to this directory (check if SCAN is not started during copying).

¹ [Http://www.java.com/en/download/](http://www.java.com/en/download/)

Appendix C.

Keyboard shortcuts

Shortcut	Action
Enter	Open a document
Ctrl+Enter	Select a program to open a document
Alt+Enter	Edit document properties
F2	Edit a property in a selected cell
F4	Edit document tags
Shift+F4	Edit document notes
F5	Update a selected location
Ctrl+F5	Update all locations
Up / Down	Navigate the document list
Ctrl+Home / Ctrl+End	Go to the top / bottom of the list
Shift+Up / Shift+Down	Select the list items
Ctrl+A	Select all
Ctrl+D	Unselect all

Appendix D.

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