

Overview

System Capabilities

The Document Management System is an automated document management tool. DMS stores a wide variety of documents in an indexed database for easy retrieval. Documents are added to the database using a scanner or by importing word processor or spreadsheet files and may be quickly retrieved via keyword search or full text search. In addition, DMS may be used to view, print, fax, e-mail, or export any document in the database. Several users may share the one or several DMS databases over a network and use them simultaneously

System requirements

The specifications listed below are the minimum system requirements for running DMS.

Intel Pentium (or equivalent) processor

16 MB memory

50 MB disk space

Windows 95 OSR2 or Windows NT 4.0

Microsoft Word 6.0

Windows 95 OSR2

TWAIN compliant scanner with ADF (Automatic Document Feeder)

TWAIN scanner drivers

Functions

This section describes the overall functions and processes in DMS. Detailed instructions on how to perform individual tasks if given in the tasks section.

Images

When documents are added to the DMS database using a scanner the original image file is maintained in the database to preserve the document's appearance. OCR (Optical Character Recognition) is performed to extract and index the document's text and store it to the database. If keywords have been defined they may also be indexed and stored to the database. Multi-page documents may be scanned using a scanner with an ADF (Automatic Document Feeder). Image files may also be imported into the DMS database from disk. Scanning resolution may be customized to obtain optimum image quality.

Word Processor Files

When word processor files and spreadsheets are added to the DMS database, they are automatically converted to the Microsoft Word format. Any word processor or spreadsheet format that Microsoft Word supports may be used, including WordPerfect, Excel, and Text files. The text of the imported file is indexed and stored to the database. If keywords have been defined they may also be indexed and stored to the database. Multiple files may be simultaneously imported into the DMS database from disk, making it easy to store and catalog several files.

Document Types and Keywords

To facilitate indexing of documents in the DMS database, Document Types and Keywords Definitions are setup by the user for page layouts that are commonly used. Each Document Type may contain several Keywords Definitions. Keywords are key document items that are to be automatically indexed and used to retrieve documents from the database. Examples of keywords are Customer Name, Due Date, Social Security Number, Date of Birth, Age, etc.

Keywords Definitions are either zone-based or label-based or manual.

Zone-based keywords

Zone-based keywords definitions specify the coordinates on a scanned image where specific keyword text is located. The user specifies the location of the keyword by providing top, bottom, left, and right page coordinates. These zone coordinates are supplied by either entering them directly or drawing the zone on a test image with the mouse. Additionally, it is possible to specify text (such as column headers and labels) to automatically remove from the zone during OCR. Zone-based keywords are not available with word processor files.

Label-based keywords

Label-based keyword definitions specify a text string that precedes the keyword text, such as "Name:". The first word following the label is stored as the label text. For example, if the

following text appeared in a document and a label-based keyword was defined using the label “Name:”, the word “Smith” would be stored as the keyword text.

Name: Smith, John B.
Age: 28
Sex: Male

Manual keywords

A keyword is considered to be a manual keyword if the Auto-Detect Keyword feature for the keyword is disabled. OCR is not used to determine the keyword text for manual keywords. Instead, the user enters the keyword text manually or leaves it blank. Manual keywords are useful for storing information that does not appear in documents at a consistent location or with a consistent label. For example, a keyword such as “Other Information” could be defined for this purpose.

Searching

Documents are retrieved from the database via keyword search, full-text search, or browsing. A keyword search is performed by specifying the document type and keyword text of the desired documents. For example, selecting the document type “Neurodiagnostics Report” and entering the keyword text “Smith” for the Patient Name keyword would display all of the Neurodiagnostic Reports in the database for patient with the last name Smith. A full-text search is performed by specifying a word within the document body to search for. This type of search is most often used to perform ad-hoc searches for information not contained in keywords. For example, performing a full-text search on the word “epidermis” displays all documents where the word “epidermis” appears in the text body. Keyword searches and full-text searches may be combined to create more specific search criteria.

Security

DMS provides several security features. Each feature (described below) is a user option. Security features may be combined or omitted as desired to create a level of security that meets the users needs.

Document Security

Individual documents in the database may be password protected.. Only those users possessing the correct document password are able to use DMS to view or edit password protected documents.

Document Type Security

Entire document types may be password protected. Only those users possessing the correct document type password are able to use DMS to view or edit documents of password-protected document types. A password is also required to view or modify keyword definitions of password-protected document types.

Database Security

DMS database files may be password protected. Only those users possessing the correct database password are able to open password-protected databases. The database password

is stored within the database itself so it also prevents the DMS database from being opened by other compatible database programs. In addition each database file and all passwords (document, document type, and database) within each database are automatically encrypted, making it difficult for a “hacker” to gain access.

Customizable Security Levels

The three types of security mentioned above may be combined in any way to meet the security needs of the user. Users working with sensitive documents may assign passwords to every database, document type, and document. If only a small number of items require protecting, password may be assigned to individual documents or document types, leaving unrestricted access to the rest. Password may be omitted entirely, if desired, to give full access to everyone.

Password Cache

Each time a password is entered to access a password protected item, the password is saved in memory. This cache of passwords allows several items protected by the same password to be accessed without re-entering the password each time. The password cache is cleared when DMS is exited.

Workgroup Support

DMS is designed to meet the document needs of workgroups of any size. DMS supports multiple users and multiple databases.

Multiple Databases

DMS provides a way to administer several different databases. Using this feature, members of a workgroup could maintain personal DMS databases while still having access to a shared workgroup databases over the network. The ability to administer separate DMS databases also makes it easier to copy, move, backup, and distribute collections of documents.

Multiple Users

DMS databases support multi-user access. This means that several users are able to access the same DMS database over the network concurrently. For example, several workgroup members may scan images while others import word processor files, create new document types, search for document, and print documents.

OCR

Optical Character Recognition, or OCR, is a means of extracting text information from images such as scanner images. Images of a document produced by a scanner are, in essence, “digital photocopies” or “pictures” of a document containing individual image pixels instead of text characters. As such, images retain the original documents appearance very well and are easily viewed, printed, faxed, etc. However, a images cannot be easily edited with a word processor program since they contain no actual text characters.

OCR Tradeoffs

OCR is used to convert the pixel of an image document to actual text characters. DMS uses OCR to extract text from scanner images for keyword and full-text searches. Since OCR relies

upon pixel patterns to recognize individual characters, its accuracy depends on the quality and resolution of the scanned image. Therefore, scanning a high quality original document at high resolution yields higher OCR accuracy than scanning a low-quality faxed or photocopied document at low resolution. However, high resolution images require more storage space and more time for OCR. DMS provides a way to specify default scanning resolutions for each document type so that storage requirements, OCR performance, and OCR accuracy may be optimized to user requirements.

Caere OCR Engine

An OCR engine from Caere Corporation is provided with DMS. Caere is recognized as an industry leader in OCR technology and provides one of the fastest, most accurate OCR engines available. Once the OCR engine is registered the full capabilities of Caere's OCR engine will become available through DMS.

Word Processor Documents

Word Processor files do not require OCR since they already contain text characters. When DMS performs OCR functions on these documents, it simply exports the text directly from the file using Microsoft Word. Also, only label-based keyword detection

Using OCR

DMS makes it easy to perform OCR on scanned or imported images.

Automatic OCR

By default, OCR is automatically performed on any document scanned or imported into the DMS database. This feature may be disabled, if desired, to save time during scanning or importing or if OCR is not required.

Batch OCR

Batch OCR is used to perform OCR on images already in the database. Using Batch OCR, OCR can be performed on a single document or on several documents consecutively without user interaction. Batch OCR is useful for performing OCR on documents that did not have OCR performed when they were originally added to the database. It is also useful if OCR needs to be performed again due to new or revised keyword definitions.

Viewing Documents

Image documents and word processor documents may be viewed upon scanning or import before they are stored in the database. Documents in the database may also be viewed by searching for the desired document and selecting it from the list of documents that match the search criteria.

Viewing images

Images are displayed by DMS upon scanning and importing and by searching for an image in the database. The user can scroll the displayed image and change the zoom. For multi-page images, the page to view may be selected or all pages may be viewed at once as miniature thumbnails.

Viewing word processor files

Word processor files are displayed by DMS as a Microsoft Word icon upon scanning and importing and by searching for an image in the database. Double-clicking on the Microsoft Word icon opens the document with Microsoft Word. The document may be viewed or edited using Microsoft Word.

Tasks

Creating a New Image Database

To create a new image database, choose New Image Database from the File menu. Enter a name for the new database when the New Image Database dialog is displayed. A new image database will be created and opened using the name you provide. Once a new image database is created and opened new document types and images may be added to it.

If the New Image Database option is chosen when another database is already open, the currently open database is closed.

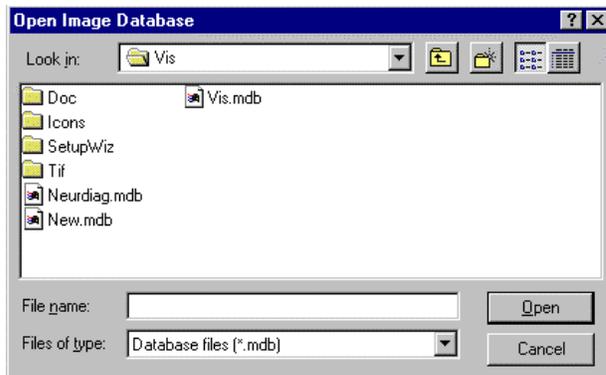


Opening an Image Database

To open an existing image database, choose Open Image Database from the File menu. Then, select the desired database when the Open Image Database dialog is displayed. The selected database is opened as the current image database.

The names of the four most recently used databases appear as numbered menu items in the File menu. If the image database you wish to open appears as a numbered item in the File menu it may be opened more quickly by choosing it directly from the menu instead of using the Open Image Database menu option.

If the New Image Database option is chosen when another database is already open, the currently open database is closed.



Closing an Image Database

To close the currently open image database, choose Close Image Database from the File menu.

The currently open image database is automatically closed by choosing any of the following items from the File menu.

Exiting

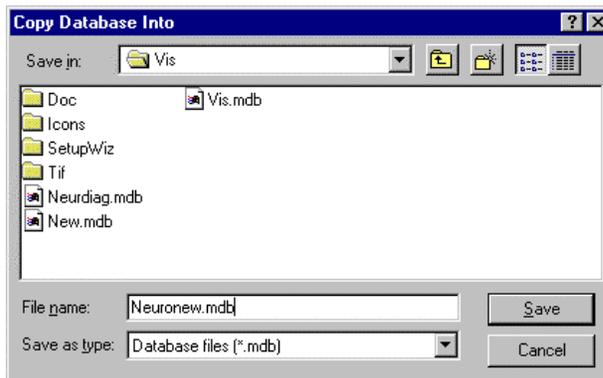
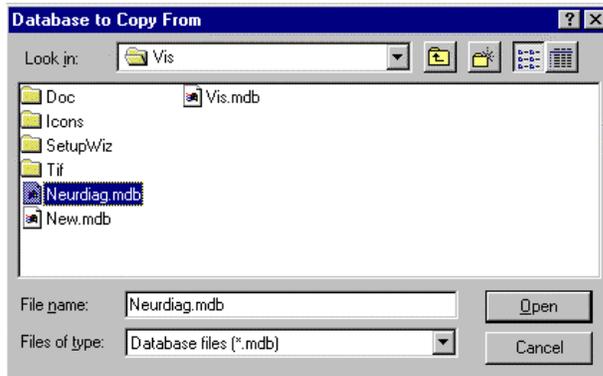
To exit the program, choose Exit from the file menu.

Copying a Database

To copy a database, choose Copy Database from the File menu. Select the name of the database to be copied when the Database Copy From dialog is displayed. Enter the name of the new database to create when the Copy Database Into dialog is displayed.

During the copying process the source database is automatically compacted. Depending on the size of the database, the copying and compacting process may take several minutes. A message box appears to indicate the copying and compacting process is complete.

A database cannot be copied when it is in use. Make sure all users including yourself have closed the database you wish to copy before attempting to copy it. An error message will be displayed if an attempt is made to copy a database that is currently in use.



Compacting a Database

To compact a database, choose Compact Database from the File menu. Select the name of the database to be compacted when the Compact Database dialog is displayed.

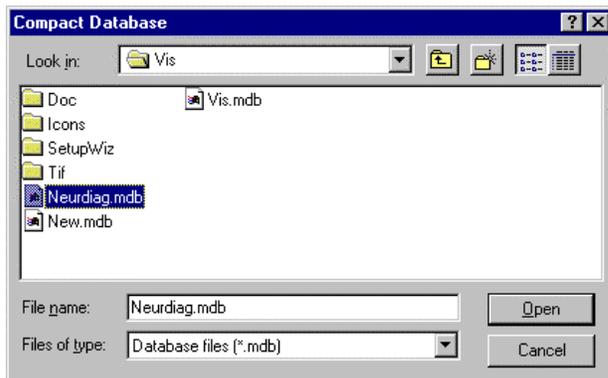
Depending on the size of the database, it may take several minutes to compact it. A message box will appear when the compacting process is complete.

A database cannot be copied when it is in use. Make sure all users including yourself have closed the database you wish to compact before attempting to compact it. An error message will be displayed if an attempt is made to compact a database that is currently in use.

A database is automatically compacted when it is copied using Copy Database from the File menu.

Compacting reduces the size of a database and increases database performance. Compacting reduces database size by removing wasted space that forms as records are deleted.

Compacting increases database performance by rebuilding indexes that become unbalanced as new records are added.



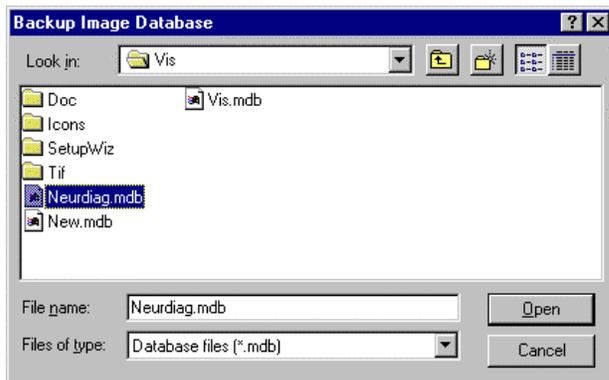
Backing Up a Database

To backup a database, choose Backup Database from the file menu. Select the name of the database to backup when the Backup Database dialog is displayed.

The backup process compacts and copies the selected database. The backup copy of the database is named based on the current date and time.

Depending on the size of the database, it may take several minutes to backup. A message box will appear when the backup process is complete.

A database cannot be backed up when it is in use. Make sure all users including yourself have closed the database you wish to backup before attempting a backup. An error message will be displayed if an attempt is made to backup a database that is currently in use.



Purging Backups

To purge old backups, choose Purge Backups from the file.

Purging backups deletes all backup files except for the ten most recent backups.

Setting Up Printers

To setup up printers, choose Print Setup from the file menu. Select the name of the printer to use for printing images and documents when the Print Setup dialog will be displayed. Other properties such as page size and orientation may also be selected.



Printing Documents.

To print a document.

Search for and display the desired document using the Query screen. See [Searching for Documents](#) for more information.

Select the desired documents from the Documents Found list box. Multiple documents may be selected at once. See [Multi-Select List Boxes and Dialogs](#) for more information.

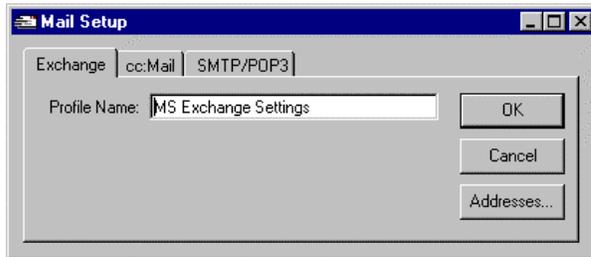
Print the selected document(s) by clicking the Print button or choosing Print from the file menu.

Setting Up Mail

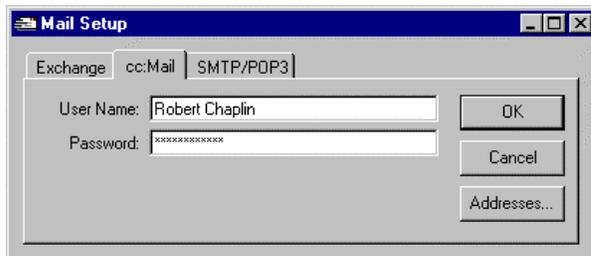
To setup mail, choose Mail Setup from the File menu. The Mail Setup dialog will be displayed. The mail setup screen may also be accessed by clicking the Setup button in the Send dialog when mailing a document.

Mail may be configured for three types of mail services: Microsoft Exchange, Lotus cc:Mail, and SMTP/POP3 (Internet mail). Configuring mail for the mail service you use will enable you to send copies of images and documents to others directly from the database.

To configure mail for Microsoft Exchange, select the Exchange tab on the Mail Setup screen. Enter the profile name to use when sending mail using Exchange. Unless your Windows mail system has been customized your profile name will be "MS Exchange Settings". In order to send Exchange mail you must first setup Exchange on your system by double-clicking on the Inbox on the Windows desktop.

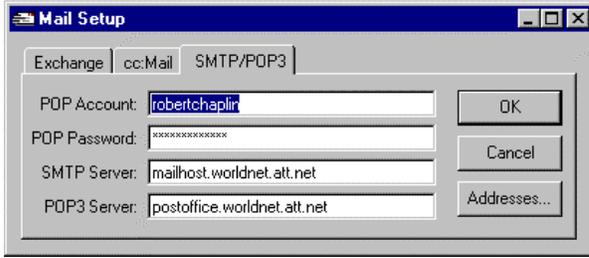


To configure mail for Lotus cc:Mail, select the cc:Mail tab on the Mail Setup screen. Enter the user name and password to use when sending mail. If the user name and password are left blank you will be prompted for them whenever you mail a document. Note that if you supply a password in the Mail Setup screen others may be able to send mail from within the program using your user name and password. In order to send cc:Mail you must have the 32-bit VIM client on your system.



To configure SMTP/POP3 mail, select the SMTP/POP3 tab on the Mail Setup screen. Enter the POP account. Enter the POP password for the account. Note that if you supply a password in Mail Setup others may be able to send mail from within the program using your user name and password. You will be prompted for a password when sending mail if you omit it. Enter an SMTP server name such as mailhost.worldnet.att.net. Enter a POP3 server name

such as postoffice.worldnet.att.net. In order to send SMTP/POP3 mail you must have access to an Internet mail server.



Mail recipients may be viewed and edited and created in the Address Book by clicking the Addresses button on the Mail Setup screen. See Address Book for more information.

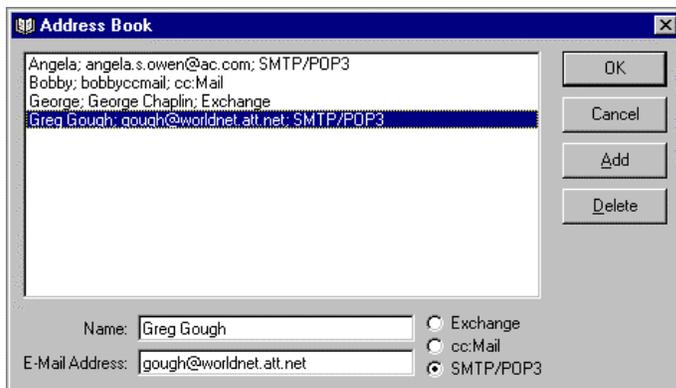
Address Book

The Address Book is accessed from the Mail Setup dialog. To open the Address Book, choose Mail Setup from the file menu and click the Addresses button on the Mail Setup dialog. The Address Book may also be accessed by clicking the Mail To button on the Send dialog when mailing a document. In the address book, the name, address, and mail type of mail recipients are displayed in a list box.

To edit a mail recipient's information, select the recipient in the list box. The name, mail address, and mail type for the selected recipient are displayed and may be edited in the fields below the list box.

To add a mail recipient, click the Add button. A new recipient will be added to the list box. Fill in the name and mail address of the recipient in the Name and E-Mail Address fields. Select the mail type by choosing either the Exchange, cc:Mail, or SMTP/POP3 radio button.

To delete a mail recipient, select the mail recipient in the list box and click the Delete button.



Sending Documents

To send a document:

Search for and display the desired document using the Query screen. See Searching for Documents for more information.

Select Send from the file menu. The Send dialog box will be displayed.

Type the mail address of the desired recipient in the Mail To field. Recipients may be selected from the Address Book by clicking the Mail To button.

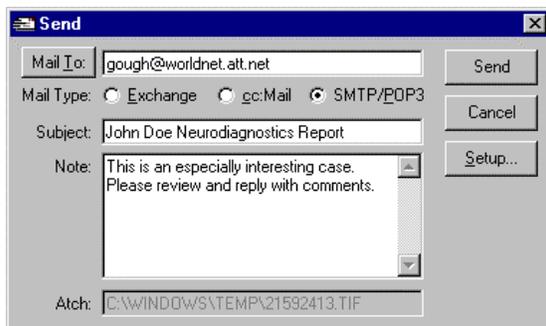
Select the mail type by choosing the Exchange, cc:Mail, or SMTP/POP3 radio button.

Type the mail subject in the Subject field. The subject is initially defaulted to the title of the document from the database.

Type an optional message to in the Note field.

Click the Send button.

The Mail Setup dialog may be accessed by clicking the Setup button if changes need to be made to the mail configuration before sending.



Exporting Documents

To export a document:

Search for and display the desired document using the Query screen. See Searching for Documents for more information.

Select Export from the File menu. The Export dialog will be displayed.

Type the file name of the document to be created from the database.

Click the save button.



Searching for Documents

To search for a document:

Choose Search Database from the Query menu.

Select the document type of the document you wish to find in the Document Type drop-down list box.

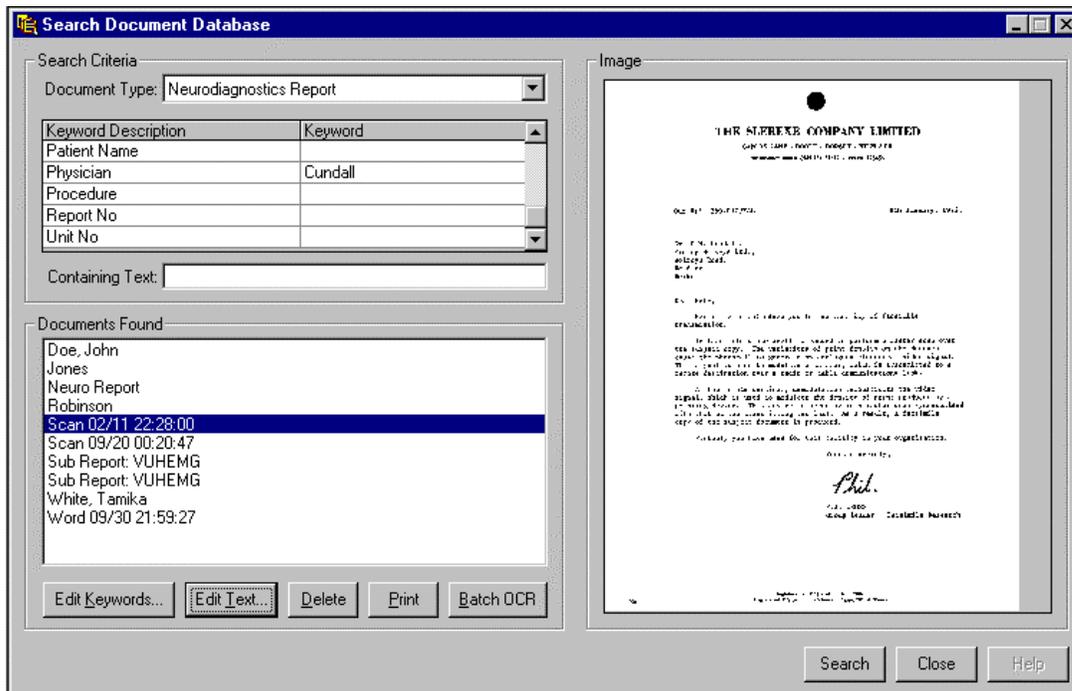
Enter any description and/or keywords that describe the document in the Keyword Description fields.

Enter any text to search for in the Containing Text field.

Click the Search button.

If the desired document is not displayed in the Documents Found list box, revise the search criteria and click the Search button again.

Click on the desired document in the Documents Found list box. It will be displayed in the image pane on the right-hand side of the screen.



Setting Up Scanner

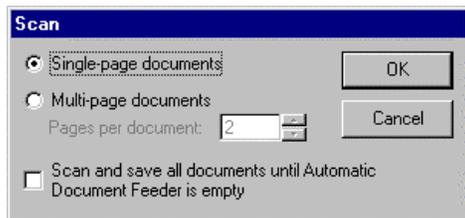
To setup a TWAIN scanner, choose Scanner Setup from the Scan menu. The Scanner Setup dialog for your scanner will be displayed. Use the scanner setup dialog to set the desired color depth and resolution and page size to use when scanning.

TWAIN scanner drivers must be installed to run Scanner Setup.

Scanning Documents

To scan a document:

1. Choose Scan Documents from the Scan menu. The Scan Documents screen will be displayed.
2. Select the document type of the document to be scanned from the Document Type drop-down list box.
3. Check the Automatic OCR check box to automatically perform OCR when scanning is complete. See Performing OCR for more information.
4. Click the Scan button. The scan dialog will be displayed



5. Select the Single-Page Documents radio button if the document(s) to be scanned contain only one page each. Select Multi-Page Documents radio button if each document to be scanned contains more than one page. If scanning multi-page documents, enter the number of pages per document.
6. Check the check box labeled “Scan and save all documents until Automatic Document Feeder is empty” if the ADF is being used to scan several documents.
7. Click the OK button to begin scanning. If the “Scan and save all documents...” check box was checked, all documents in the ADF will be scanned and saved to the database. Otherwise, a single document will be scanned and its image displayed.

Importing Documents

To import an existing TIFF image, Microsoft Word document, or WordPerfect document into the database:

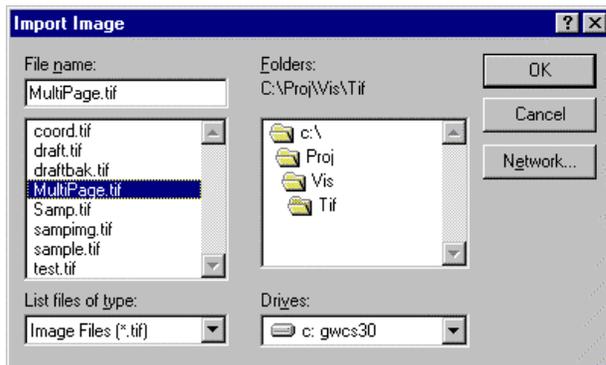
Choose Scan Documents from the Scan menu.

Select the document type of the document to be imported from the Document Type drop-down list box.

Click the Import button. The Import Image dialog will be displayed.

Select the file to be imported from the dialog box and click OK. If the file selected is a TIFF file it will be displayed on the Scan Documents screen. If the selected file is a Microsoft word or WordPerfect file an icon will be displayed on the screen representing the document.

Microsoft Word must be installed in order to import Microsoft Word documents. WordPerfect and other word processor formats may also be imported if the appropriate conversion filters have been installed in Microsoft Word. Run Microsoft Word setup to install additional conversion filters.



Performing OCR

To perform Optical Character Recognition (OCR) on a newly scanned or imported document:

1. Scan or import a document. See [Scanning Documents and Importing Documents](#) for more information. If the Automatic OCR check box was checked prior to scanning or importing, OCR will proceed automatically.
2. If the Automatic OCR check box was not checked, click the Do OCR button to perform OCR.
3. The OCR keywords and text will be displayed on the Scan Documents screen when OCR is complete.

To perform OCR on a documents that are in the database:

1. Search for and display the desired document using the Query screen. See [Searching for Documents](#) for more information.
2. Select the desired documents from the Documents Found list box. Multiple documents may be selected at once. See [Multi-Select List Boxes and Dialogs](#) for more information.
3. Perform OCR on the selected document(s) by clicking the Batch OCR button.
4. The OCR keywords and text will be created and created and saved in the database for each selected document.

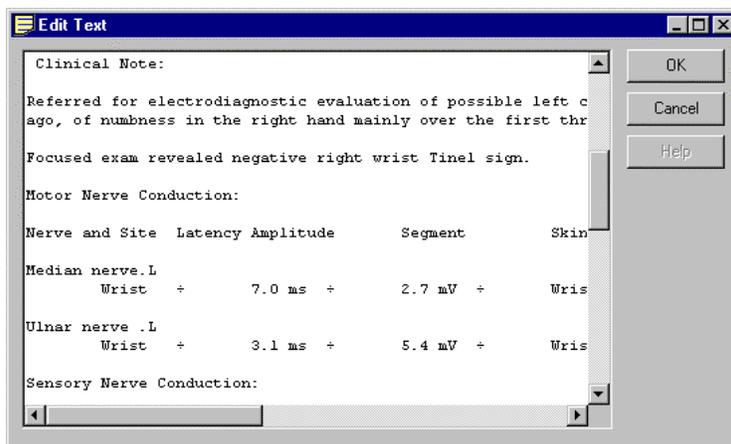
Editing OCR Text

To edit the OCR text of a newly scanned or imported document:

1. Scan or import a document using the Scan Documents screen. See Scanning Documents and Importing Documents for more information.
2. Perform OCR on the scanned or imported document. See Performing OCR for more information.
3. Click the Edit Text button. The Edit Text dialog will be displayed.
4. Modify the text displayed on the Edit Text screen as desired.
5. Click OK to save changes to OCR text or Cancel to discard changes.

To edit OCR text of a document that is in the database:

1. Search for and display the desired document using the Query screen. See Searching for Documents for more information.
2. Select the desired document from the Documents Found list box.
3. Click the Edit Text button. The Edit Text dialog will be displayed.
4. Modify the text displayed on the Edit Text screen as desired.
5. Click OK to save changes to OCR text or Cancel to discard changes.



Editing Keywords

To edit the keywords of a newly scanned or imported document.

Scan or import a document using the Scan Documents screen. See Scanning Documents and Importing Documents for more information.

If desired, perform OCR on the scanned or imported document. See Performing OCR for more information.

Modify keywords as desired in the Keyword grid. The name of the keyword is displayed in the first column of the grid. The keyword text is entered and edited in the second column. The first keyword is always “Description.” The remaining keywords may be customized for each document type. See Editing Document Types for more information.

To edit keywords of a document that is in the database:

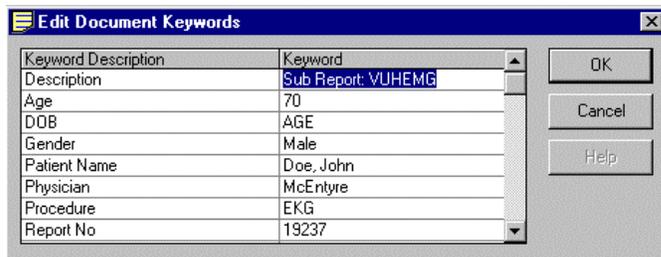
Search for and display the desired document using the Query screen. See Searching for Documents for more information.

Select the desired document from the Documents Found list box.

Click the Edit Keywords button. The Edit Document Keywords dialog will be displayed.

Modify keyword as desired in the Keyword grid.

Click OK to save changes to keywords or Cancel to discard changes.



Saving Documents

To save newly scanned or imported documents:

Scan or import a document using the Scan Documents screen. See [Scanning Documents and Importing Documents](#) for more information.

If desired, perform OCR on the scanned or imported document. See [Performing OCR](#) for more information.

Enter document description and keywords for the document. A description and at least one keyword is required. See [Editing Keywords](#) for more information.

Click the Save button. The document will be saved along with its keywords and OCR text.

Multi-Select List Boxes and Dialogs

Some list boxes and dialogs allow for the selection of several items at once.

To select multiple contiguous items in a multi-select list box or dialog:

Select the first desired item.

Hold down the Shift key while clicking the last desired item in the range. All items between the first and last item inclusive will be selected

To select multiple individual items in a multi-select list box or dialog:

Select the first desired item.

Hold down the Ctrl key while clicking every other desired item. Only the items that are clicked will be selected.

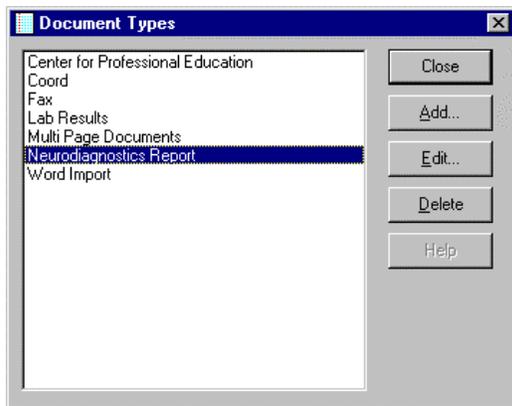
Adding Document Types

To add a document type:

Select Setup Documents from the Scan menu. The Document Types screen will be displayed showing a list of all available document types.

Click the Add button. The Add Document Type dialog will display.

Type the description of the Document Type being added and click OK. A document type having specified description will be added to the list of Document Types on the Document Types screen.



Deleting Document Types

Select Setup Documents from the Scan menu. The Document Types screen will be displayed showing a list of all available document types.

Select the document type to delete and click the Delete button.

A message will warn before deleting if there are any documents in the database under the selected document type. All documents, keywords and text stored under a document type are deleted when a document type is deleted.

Click OK when the warning message is displayed to continue deleting or click Cancel to abort deleting. The document type will be deleted from the database and removed from the Document Types screen.

Editing Document Types

Select Setup Documents from the Scan menu. The Document Types screen will be displayed showing a list of all available document types.

Select the document type to edit and click the Edit button. The Edit Document Type screen will display.

Edit the name and description of the document type displayed in the Name and Description field.

Select the scanning resolution in the Scanning Resolution list box. The resolution chosen will be used to automatically set the scanner resolution when scanning documents. Your scanner and TWAIN scanner drivers may not support this option and may require setting scanner resolution manually before scanning. See Setting Up Scanner for more information on manually setting scanner resolution.

To add a keyword name to the document type: Click the Add button, type the name of the keyword when the Add Keyword Name dialog is displayed, then click OK.

To edit a keyword name: Select the keyword, Click the Edit button, modify the name of the keyword when the Edit Keyword Name dialog is displayed, then click OK.

To delete a keyword name: Select the keyword and click the Delete button. A message will warn before deleting if any documents in the database have keywords stored under the selected keyword name. All keywords of all documents stored under a keyword name are deleted when a keyword name is deleted. Click OK when the warning message is displayed to continue deleting or click Cancel to abort deleting. The keyword name will be deleted from the database and removed from the Keywords list box.

To setup a keyword's attributes, click on the desired keyword in the Keywords list box and do the following:

Check the Automatically Detect Keywords check box to automatically extract keywords from OCR text when scanning or importing. Check off the check box to enter keywords manually when scanning or importing.

If Automatically Detect Keywords is selected, select label or Zone Auto Keyword Detect Type by clicking the Label or Zone radio button. Label detection recognizes keywords by the text that precedes them. Zone detection recognizes keywords by their position on the page.

If label detection is selected, enter the label text that will be used to detect the keyword. For example, "Physician:" Colons and similar punctuation should be included if they appear on the

page. If the entire label text is too long to fit in the Label field, enter the rightmost characters only. For example, enter “of Birth:” to represent the label text “Date of Birth:”

If Zone detection is selected, enter the top, bottom, left and right coordinates defining the keywords location on the page. Clicking the Scan button will scan a test image and display it. Click on and drag on the test image to define zones graphically and automatically insert coordinates in the Top, Bottom, Left, and Right fields.

If Zone detection is selected, enter any text to be discarded from the zone text in the Remove Text field. This option is commonly used when a descriptive label such as “Name:” appears directly above the desired keyword on the page. Keyword zone coordinates are defined to include the descriptive label and the label is removed during keyword detection.

Click OK to save changes, or Cancel to discard changes.

Edit Document Type

Document Type

Name: ND Rpt

Description: Neurodiagnostics Report

Resolution: High (200 DPI)

Keywords

- Gender
- Patient Name
- Physician
- Procedure
- Report No
- Unit No

Buttons: Add..., Edit..., Delete

Auto Keyword Detect

Automatically Detect Keywords

Label Label: No:

Zone Top: 470270 Bottom: 587837

Left: 422532 Right: 657273

Remove:

Test Image

THE STEREE COMPANY LIMITED

OK Cancel Scan Help

Deleting Documents

To delete a document from the database:

Search for and display the desired document using the Query screen. See [Searching for Documents](#) for more information.

Select the desired documents from the Documents Found list box. Multiple documents may be selected at once. See [Multi-Select List Boxes and Dialogs](#) for more information.

Click the Delete button to delete the selected documents.

Compacting a database after deleting several documents from it will reduce the database files size. See [Compacting a Database](#) for more information.

Editing Documents

To edit a Microsoft Word document that has been imported into the database:

Search for and display the desired document using the Query screen. See Searching for Documents for more information.

Select the desired document in the Documents Found list box. An icon will appear in the image pane.

Double-click on the icon. The document will be opened in Microsoft Word.

View and modify the document as desired.

Close the document, saving changes if necessary.

Exit or minimize Microsoft Word.

Microsoft Word must be installed in order to view documents in the database.

Zooming In or Out of a Document

To changed to magnification of a displayed TIFF image, select one of the following from the View menu:

Zoom In - Incrementally increase magnification.

Zoom Out - Incrementally decrease magnification

Fit to Height - Set magnification so that entire height of image fits within image pane.

Fit to Width = Set magnification so that entire width of image fits within image pane.

Best Fit - Set magnification so that entire height and width of image fits within image pane.

Actual Size - Set magnification so that displayed image is same size as original scanned page.

10%, 25%, 50%, 75%, 100%, 200%, 400% - Set magnification to specified value.

Custom - Set magnification to a user-defined value. A dialog will display for entering custom magnification.

Viewing Multi-Page Documents

To view the different pages of a multi-page TIFF image, select one of the following from the Page menu:

Next - Display the page after the page currently displayed page.

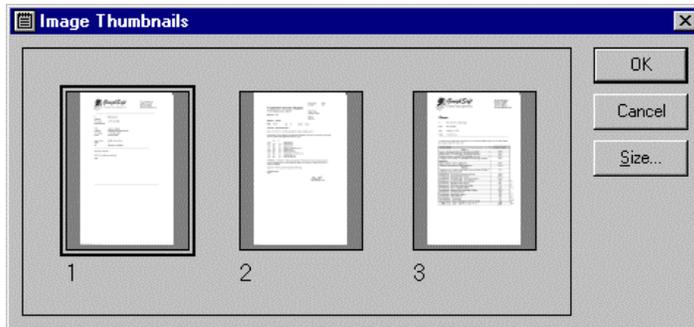
Previous - Display the page before the currently displayed page.

First - Display page one of the image.

Last - Display the last page of the image.

Go To - Display a specified page of the image. A dialog will display for entering the page number to view.

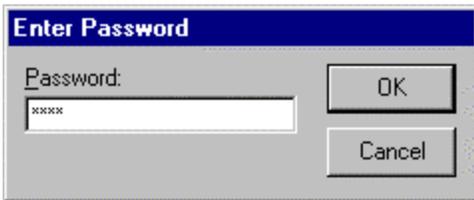
Thumbnails - Display all pages of the image simultaneously in the Image Thumbnails dialog. The page selected from the Image Thumbnails dialog is displayed when the dialog is closed.



Changing Database Passwords

To change a database password or assign a password to a database that is not yet password-protected:

1. Select Change Database Password from the File menu. A file dialog will display.
2. Select the database from the file dialog for which the password is to be changed. Note that a database password cannot be changed while it is in use.
3. If the database has been previously password-protected, the Enter Password dialog will display. The previous password must be supplied before the password can be changed. Enter the password and click OK.



The 'Enter Password' dialog box has a blue title bar with the text 'Enter Password'. It contains a label 'Password:' followed by a text input field containing five asterisks. To the right of the input field are two buttons: 'OK' and 'Cancel'.

4. The Change Password dialog will display. Enter the new database password (or leave blank to remove password) in the New Password field. Enter the new password again in the Verify field and click OK.

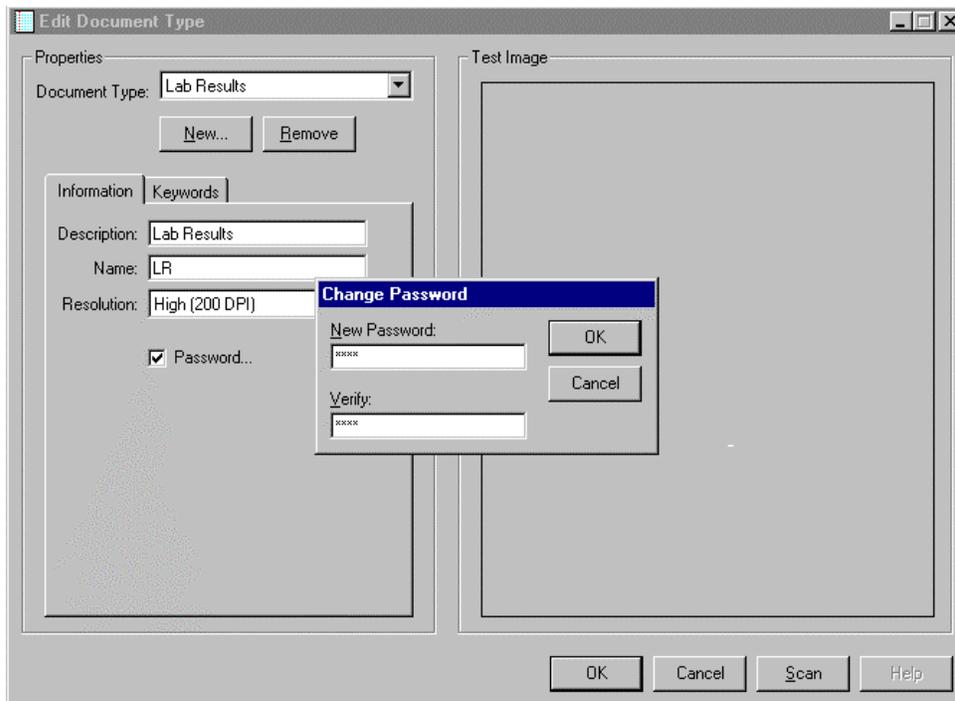


The 'Change Password' dialog box has a blue title bar with the text 'Change Password'. It contains two labels: 'New Password:' and 'Verify:'. Each label is followed by a text input field containing five asterisks. To the right of the input fields are two buttons: 'OK' and 'Cancel'.

Changing Document Type Passwords

To change a Document Type password or assign a password to a Document Type that is not yet password-protected:

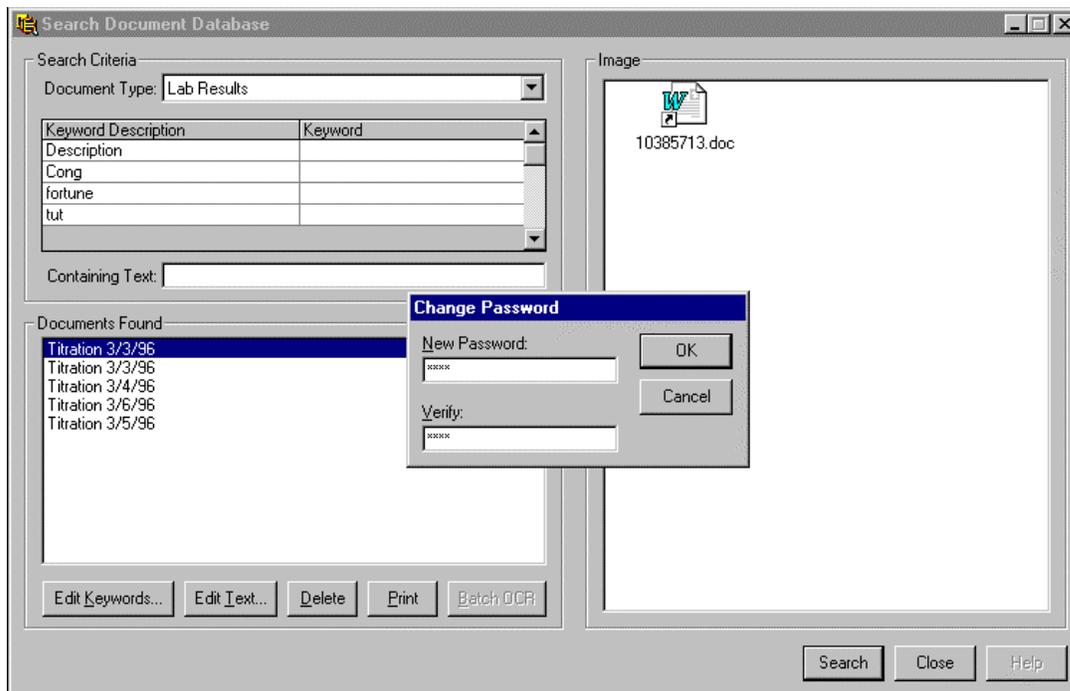
1. Select Setup Documents from the Scan menu. The Edit Document Type screen will display.
2. Select the document type from the Document Type combo box for which the password is to be changed. If there is a password already assigned to the selected document type, enter it when prompted.
3. Select the Information tab.
4. Click the Password checkbox. The Change Password dialog will display.
5. Enter the new document type password in the New Password field (or leave blank to remove password).
6. Enter the new password again in the Verify field and click OK.



Changing Document Passwords

To change a Document password or assign a password to a Document that is not yet password-protected:

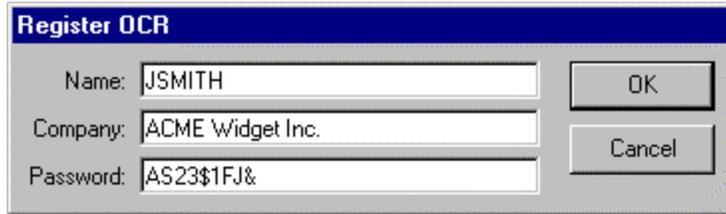
1. Select Search Database from the Query menu. The Search Document Database screen will display.
2. Search for and display the desired document using the Query screen. See Searching for Documents for more information.
3. Select the Information tab.
4. Choose Change Document Password from the File menu. If there is a password already assigned to the selected document, enter it when prompted.
5. The Change Password dialog will display. Enter the new document password in the New Password field (or leave blank to remove password).
6. Enter the new password again in the Verify field and click OK.



Registering OCR

Once the Caere OCR engine has been registered, a name and password will be provided for enabling the OCR capabilities of DMS. To enable OCR capabilities:

1. Choose About from the Help menu. The About screen will be displayed.



The image shows a dialog box titled "Register OCR". It contains three text input fields and two buttons. The first field is labeled "Name:" and contains the text "JSMITH". The second field is labeled "Company:" and contains the text "ACME Widget Inc.". The third field is labeled "Password:" and contains the text "AS23\$1FJ&". To the right of the fields are two buttons: "OK" and "Cancel".

2. Click Register OCR button. The Register OCR screen will be displayed. Note that OCR features are already activated if the Register OCR button on the About screen is disabled.
3. Enter the name and password supplied when the Caere OCR engine was registered. Enter an optional company name.
4. Click OK. If information was entered correctly a message will display indicating that OCR features have been activated.

Guidelines

Security Guidelines

Here are a few useful ideas to keep in mind when managing the security of DMS databases.

Password capitalization.

DMS passwords are case-sensitive, which means the password “secret”, “Secret”, and “SECRET” are not the same. Pay attention to the state of the Caps-lock key when typing passwords. Use all uppercase or all lowercase passwords to create simple passwords that are easy to remember. For passwords that are more difficult for others to guess or “crack,” use a combination of uppercase letters, lowercase letters, numbers and symbols.

Write down passwords

Always write down passwords and keep them in a safe place. Don’t rely on memory for important passwords. There could easily be a large number of passwords to remember if several databases or document types are implemented and individual documents or password-protected.. If a password for a database, document type or document is lost or forgotten, the password protected items will not be accessible. This is especially important since forgetting a database password could result in the loss of every document in the database. DMS database passwords provide true security for confidential documents. There is not a “magic emergency password” that GoughSoft can use to unlock a password-protected database after the password has been forgotten.

Re-use passwords

Minimize the number of passwords to keep track of whenever possible. Assign the same password to items that the same person or group of people regularly access.

Use security tiers

Whenever possible, minimize the number of password protected items that have to be kept track of by utilizing document type and database security features in lieu of password-protecting individual documents. Avoid assigning passwords to every document if a document type password will suffice. Don’t assign passwords to individual document types if a single database-level password will suffice.

Use separate databases

Instead of assigning password to individual documents or document types, separate groups of confidential documents into different password-protected databases based on the people that need access to them.

Use separate document types

Compartmentalize confidential documents by setting up additional password-protected document types. For example, the document type “Test Results” could contain general access documents and a password-protected document type named “Test Results (Confidential)” could be added for confidential documents.

Change passwords regularly

Be sure to change passwords on a regular basis, especially if someone has left the workgroup that previously had access to confidential data.

Scanning Guidelines

Here are a few useful ideas to keep in mind when scanning documents with DMS.

Use lowest acceptable resolution

The disk space required to store a scanned image increases by a factor of four each time the image resolution is doubled. For example, a 200 x 200 DPI image requires four times the disk space as a 100 x 100 DPI image. The same concept applied to the amount of time required to perform OCR on the image. Scanning in lower resolutions whenever possible will reduce disk space requirements and increase OCR performance. However, using lower resolution reduces OCR accuracy so a balance must be achieved between desired OCR accuracy and image resolution. Use the following as general resolution guidelines.

100 x 100	Screen viewing only, hand-written documents
200 x 100	Faxing, fast OCR
200 x 200	Minimum resolution for good OCR quality.
300 x 300	High quality printouts and extremely accurate OCR.

Avoid scanning in color or halftones

A scanner setting of Black and White Drawing or similar for best results. Color and halftone (sometime called grayscale) scans are best suited for photographs, not typeset documents. Color and halftone require many times the storage space of two-tone black and white scans. In addition, they result in unacceptable OCR quality and printouts that have a gray or dirty-looking background.

Use original word processor files

Store the original word processor files in the database if they are available. Word processor files take up less space and text is extracted faster and with 100% accuracy. Printouts and faxes of word processor documents are also of higher quality. In general it is of little benefit to print out a word processor file and then scan it into the database when the original word processor file could be imported into the database itself with better results.

Use Automatic Document Feeder

The ADF may be used even if single documents are being scanned using manual keywords. Placing documents in the ADF saves the time required to place individual documents under the scanner cover. If the check box on the Scan dialog titled "Scan and save all documents until Automatic Document Feeder is empty" is not marked, the scanner will scan the specified number of pages using the ADF and then stop. After entering keywords and saving, scanning may be resumed with the next page in the ADF by clicking scan again. An ADF is required for scanning multi-page documents.

Scan without OCR

To save time while scanning, unmark the Automatic OCR check box and save documents

without performing OCR. Then perform Batch OCR at a later time on all of the newly scanned documents using the Search Document Database screen.

Verify accuracy before saving

To ensure keyword accuracy, scan one document at a time and verify the accuracy of the automatically detected keywords before saving. If keywords are not correct due to OCR errors, they may be corrected before saving. The actual text of the document body may also be edited before saving by clicking the Edit Text button.

Enter a useful description

When a document is scanned or imported the description defaults to “Scan MM/DD/YY HH:MM:SS” or “Word MM/DD/YY HH:MM:SS” where “MM/DD/YY HH:MM:SS” is the date and time. Immediately after scanning or importing the Description field is highlighted for easy editing. Entering a more descriptive document name will make it easier to search for and find the document in the future.

Microsoft Word Guidelines

Here are a few useful ideas to keep in mind when using Microsoft Word with DMS.

Close document after viewing or editing

When a document icon on the Scan or Search screen is double-clicked, the document is opened using Microsoft Word. To accomplish this DMS extracts the document from the database to a temporary file for Microsoft Word to access. DMS attempts to save changes to the temporary file made using Microsoft Word back into the database and delete the temporary file when viewing or editing is complete. This cannot take place if the temporary file is still in use by Microsoft Word. To avoid wasting disk space by accumulating unwanted temporary files be sure to close the document by choosing Close or Exit from the File menu before returning to DMS.

Save changes

Changes must be saved using Microsoft Word when a word processor file is edited. After making changes to a document using Microsoft Word choose Save from the File menu or click the Save icon in the Microsoft Word toolbox. Then choose Close or Exit from the File menu and minimize word if necessary. If an attempt is made to close an unsaved document that has been changed, Microsoft Word will automatically prompt for changes to be saved.

Leave Microsoft Word loaded

To save time when viewing word processor files, don't exit Microsoft Word after viewing each document. Instead, only close the document in Microsoft Word by choosing Close from the file menu. Then minimize Microsoft Word, press Alt-Tab, or select DMS in the Windows Taskbar to return to DMS. Doing this leaves Microsoft Word running and saves the time required for it to load each time a document is viewed.

Document Type and Keyword Guidelines

Here are a few useful ideas to keep in mind when setting up document types and keywords.

Use Zoom

When defining zone-based keywords, use the Zoom, feature to view the document at a higher magnification and place the zone more accurately. Zoom is also useful with label-based keywords for determining the exact format or spelling of label text. Incremental adjustments to zone boundaries may also be made using the up and down arrow keys on the keyboard while the cursor is in the Top, Bottom, Left, or Right field.

Reposition existing zones

Instead of redrawing an incorrect zone from scratch, click the mouse pointer in the center of the zone and drag the box to the desired location.

Include label punctuation

Label punctuation is significant and must be included in the label text used to define a keyword. For example, if the label appears on the page as “Name:” with a colon, entering the label text “Name” without a colon is not adequate for automatic keyword detection.

Shorten label text

Avoid using long labels in keyword definitions. There is a higher chance that automatic keyword detection will fail when longer labels are used since the probability of an OCR error within the label itself is higher. Using label text such as “ame:” instead of the longer “Customer Name:” will produce more consistent results.

Allow for inaccurate positioning

When defining keyword zones, make allowances for the fact that documents may not always be formatted in exactly the same way and pages may not always be positioned exactly on the scanner glass. Define keyword zones slightly larger than the zone text to allow for varying positioning. Instead trying to position a zone boundary between words on the page, include headings or labels within the keyword zone and specify their automatic removal using the Remove feature.

Extended Search Capabilities

The extended search capabilities described here enable users of the Document Management System to perform more flexible and powerful searches than are currently possible. The new functions augment current keyword and full-text search capabilities with searches using Boolean, wildcard and comparison operators.

The new search capabilities are described below. Examples of valid searches using the new operators is also described. Limitations imposed on use of the new operators for the purpose of maximizing performance and functionality are also explained.

Keyword Searches

The following types of searches are supported when entering the keywords for a keyword search.

1. **Single-word searches**

Simple single-word keyword searches operate as before.

2. **OR searches**

OR searches are allowed within a keyword, but not between keywords. The following is an example of an OR keyword search.

```
Name:  Smith OR Jones OR White
```

The following search is not possible because the OR operation takes place between different keywords.

```
Name:      Smith
-OR-
Physician: Jones
```

3. **AND searches**

There is an implicit AND operation between different keywords. For example, the search below returns documents having the Name Smith and the Physician Jones.

```
Name:      Smith
Physician: Jones
```

AND searches do not make sense functionally within the same keyword and are not allowed since keywords are not multi-valued. For example, the search below would never return a matching document because it is impossible for any document to store both Jones and Smith in a single keyword.

```
Name:  Smith AND Jones
```

4. **NOT searches.**

NOT searches are allowed for single words only, but may be used for several keywords as once. For example:

```
Name:      NOT Smith
Physician: NOT Jones
```

Compound NOT searches are not allowed. In most cases compound NOT searches do not make sense functionally for search items that are not multi-valued, such as keywords. Such searches can usually be simplified to a single-word NOT search. For example, consider the following searches on the Name keyword:

```
NOT Smith OR Jones      may be simplified to NOT Smith.
NOT Smith AND Jones     may be simplified to Jones.
NOT Smith OR NOT Jones  may be simplified to (blank) since all keywords match this criteria.
```

Notice that compound searches of the type NOT Smith and NOT Jones cannot be reduced in this way. These types of searches are not allowed because they are very expensive computationally and take a long time to process. If this type of keyword search is required, it may be approximated using two separate searches. Alternately, searches of the type NOT Smith and NOT Jones may be performed using the full-text search field where these types of compound NOT search are allowed.

5. *Comparison searches*

Comparison searches return search results by making numeric and date comparisons using the greater than ">" and less than "<" operator. For example, the following search criteria returns documents for Smith with exam dates later than 1/1/96 and ages less than 50.

```
Name:      Smith
Exam Date: > 01/01/1996
Age:       < 50
```

Comparisons operators may only be used with numbers and dates. For the sake of simplicity, compound comparisons are not allowed within a single keyword. That is, searches of the type "> 20 AND < 50" are not allowed. Also for simplicity, the operators "greater than or equal" and "less than or equal" are not supported since the search ">= 21" may be expressed more simply as "> 20".

6. *Wildcard searches*

Wildcard searches provide the capability to search on partial strings using the "*" operator. For example a wildcard search using the search string Smith* returns all keywords starting with Smith such as Smith, Smithe and Smithsonian. Wildcard searches may be used in conjunction with any single-value, OR, or NOT keyword search. The following are examples of wildcard searches.

```
Name:      Smith*
Name:      Smith* OR Whit*
Name:      Smith OR White OR Jon*
Name:      NOT Smith*
Exam Date: 01/01/* OR 01/02/*
Age:       5* OR 6*
```

Note that Wildcard searches may be combined with the NOT operator for single words within a single keyword. However they may not be combined with comparison searches within the same keyword. That is, searches such as "> 01/01/97 OR 02/01/*" are not allowed.

Note that wildcard searches on numbers and dates provide a rudimentary way to overcome the limitations of comparison searches. For example, the wildcard search "5* OR 6*" on the Age keyword may be used to approximate the illegal search ">= 50 AND < 70".

Full-Text Searches

The following types of searches are supported when entering the criteria for a full-text search.

1. *Single-word searches*

Simple single-word full-text or "containing text" searches operate as before.

2. *OR searches*

OR full-text searches behave the same as for keyword searches. For example:

```
Containing Text:  Smith OR Jones OR White
```

3. *AND searches*

There is an implicit AND operation between full-text searches and any active keyword search.. In addition, AND searches may be used within the full-text search criteria. For example, the search below returns documents

having the Name Smith and containing the words abnormal, fibula, and fracture.

Name: Smith
Containing Text: abnormal AND fibula AND fracture

4. *Nested searches*

Nested full-text searches cannot be processed. A nested search is a search that contains parenthesis or both AND and OR operators. Following are several examples of nested searches that are not allowed. Note that in the second example there are implied parenthesis around the expression Jones AND White due to the AND operator having higher Boolean precedence than the OR operator.

Containing Text: Smith AND (Jones OR White)
Containing Text: Smith OR Jones AND White

5. *NOT searches.*

NOT searches may be combined with any AND or OR full-text search. For example:

Containing Text: Smith AND NOT Jones AND White
Containing Text: NOT Smith AND NOT Jones
Containing Text: NOT Smith OR Jones OR NOT White

6. *NEAR Searches*

The NEAR operator provides a mechanism for finding word combinations in a document. Two words are considered to be near each other if there are less than three words between them. For example, in the sentence “The quick brown fox jumped over the log” the words “quick” and “fox” are near each other but “quick” and “log” are not. NEAR full-text searches cannot be combined with AND, OR, or NOT searches. Two examples of NEAR searches are given below.

Containing Text: Robert NEAR Smith
Containing Text: blood NEAR cell

7. *Wildcard searches*

Full-text wildcard searches behave similar the keyword wildcard searches. Wildcard searches may be used in conjunction with AND, OR, NOT and NEAR full-text searches. The following are examples of wildcard searches.

Containing Text: Smith*
Containing Text: Smith* AND carpal*
Containing Text: Smith OR White OR Jon*
Containing Text: Robert NEAR Smith*
Containing Text: NOT cappel*
Containing Text: syndrome AND NOT carpal*
Containing Text: 01/01/* OR 01/02/*
Containing Text: 5* AND 6*

Custom Searches

Some possibilities are currently being explored to make searching even more flexible than the features described above. Possible future search capabilities may include some of the following.

Query builder

A query-builder screen would allow the user to build and save custom SQL queries using knowledge of the underlying database structure. In this way, specialized searches could be constructed on demand that would otherwise not be capable using the built-in search functions.

Merged searches

This feature would enable the results of several separate searches to be combined. Search results could either be “added” to show all the results of several searches at once (i.e. a set UNION), or “subtracted” to show only the

documents that were returned by all of several searches (i.e. a set INTERSECTION). One way this functionality could be implemented is via menu items titled "Add Last Search Result" and "Subtract Last Search Result". Another way to implement merged searches is via a system screen that lists several search results by name and allows them to be combined via a point-and-click interface.