

Libraries and Documents

VII

- ◆ Chapter 21, “Document Management Services Overview,” on page 293
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Document Management Services Overview

21

GroupWise® Document Management Services (DMS) lets users create documents with integrated applications, save them, then easily locate a specific document later without knowing the application, a specific document name, or the document's physical location. Users can create, share, locate, edit, view, and check out documents that are created under the management of GroupWise DMS.

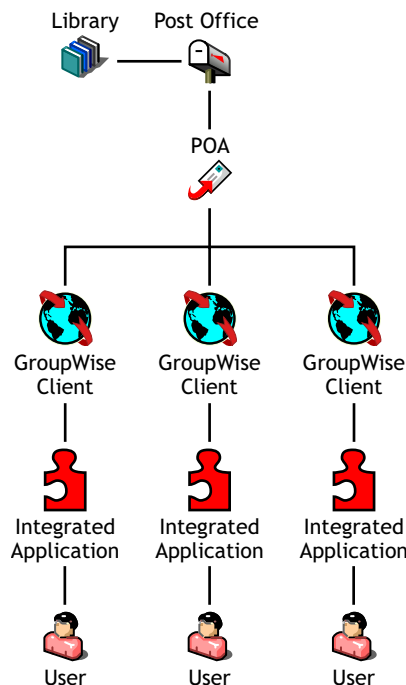
A GroupWise DMS system consists of the following components:

- ♦ [Section 21.1, "Libraries," on page 293](#)
- ♦ [Section 21.2, "Document Storage Areas," on page 295](#)
- ♦ [Section 21.3, "Documents," on page 295](#)
- ♦ [Section 21.4, "Integrations," on page 298](#)

21.1 Libraries

A library is a set of documents and a database that allows the documents to be managed as a unit. A library must belong to a specific post office but can be accessed by users in other post offices. The GroupWise client enables users to store and manage their documents in the library. The GroupWise Post Office Agent (POA) transfers documents between the GroupWise client and the library.

Figure 21-1 Relationship between the Library and the Clients, Applications, and Users Who Use It



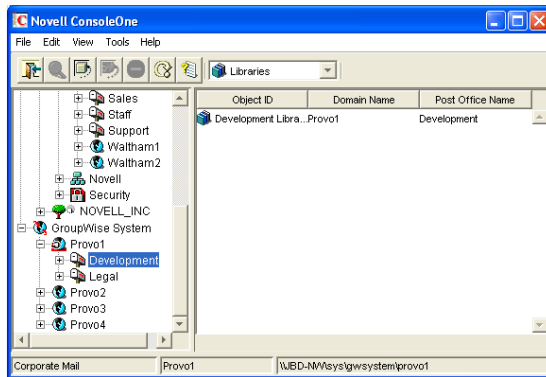
In ConsoleOne®, a library can be viewed where it resides in the Novell® eDirectory™ tree.

Figure 21-2 ConsoleOne View Showing its Location in the eDirectory Tree



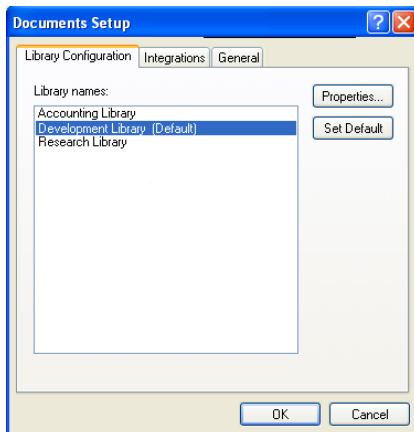
A library can also be viewed in relationship to the post office that owns it.

Figure 21-3 ConsoleOne View Showing the Library in Relationship to Its Post Office



In the GroupWise Windows client, users can view a list of all the libraries to which they have access by clicking *Tools > Options > Documents*.

Figure 21-4 GroupWise Documents Setup Dialog Box



NOTE: This feature is not available in the Cross-Platform client.

Physically, a library consists of a set of directories and databases stored in the gwdms subdirectory of the post office, as illustrated in “[Post Office Directory](#)” in *GroupWise 7 Troubleshooting 3: Message Flow and Directory Structure*.

For complete information on libraries, see [Chapter 22, “Creating and Managing Libraries,”](#) on [page 299](#).

21.2 Document Storage Areas

Documents can be stored at the post office, as illustrated in “[Post Office Directory](#)” in *GroupWise 7 Troubleshooting 3: Message Flow and Directory Structure*. This is the simplest configuration, but it is not recommended for libraries where substantial growth is anticipated because documents stored at the post office cannot easily be moved to a different location where additional storage space is available.

Preferably, documents should be stored outside the post office, in document storage areas. Document storage areas are physical locations, such as drive volumes, optical devices, hard drives on other servers, and so on. Document storage areas can be located anywhere that the POA can access them locally or using direct network access (mapped drive or mounted file system).

A document storage area has the same internal directory structure that is used to store documents at the post office. The only difference is that a document storage area can be located anywhere in your system. Therefore, a document storage area can be moved easily, so it is easy to expand your document storage capacity if you store documents in a document storage area rather than at the post office.

For complete information on document storage areas, see [Section 22.6.2, “Managing Document Storage Areas,”](#) on [page 321](#).

21.3 Documents

Documents created using GroupWise DMS are not stored as individual files. Instead, documents are stored in database structures called binary large objects (BLOBs). A document and all of its versions are stored in the separate BLOB files. BLOBs are compressed (50% or more) to conserve storage space. BLOBs are encrypted to provide security.

Because documents are stored in a database structure, information can be associated with each document that is not part of the document itself, such as:

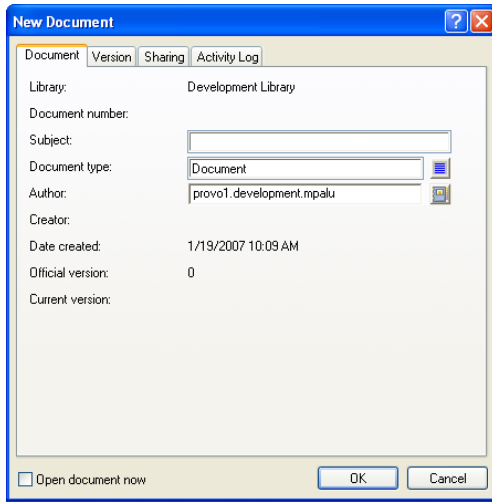
- ♦ [Section 21.3.1, “Document Properties,”](#) on [page 295](#)
- ♦ [Section 21.3.2, “Document Types,”](#) on [page 296](#)

For complete information on documents, see [Chapter 23, “Creating and Managing Documents,”](#) on [page 335](#).

21.3.1 Document Properties

Document properties are attributes that determine what users see on the document property sheets when they create DMS documents. In the GroupWise Windows client, the default document properties for a new document appear like this:

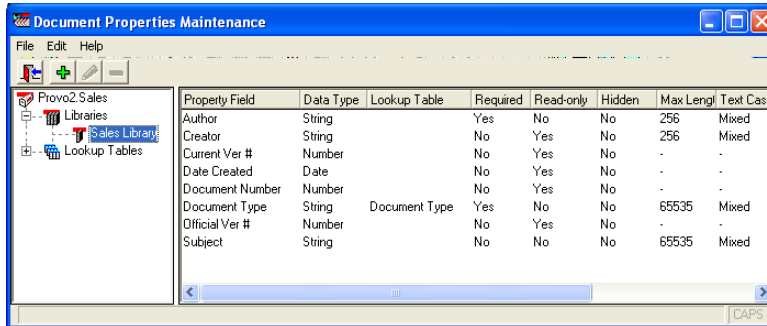
Figure 21-5 GroupWise Client New Document Dialog Box



NOTE: In the Cross-Platform client, you cannot create new documents in GroupWise.

In ConsoleOne, the default document properties for a library are defined like this:

Figure 21-6 ConsoleOne Document Properties Maintenance Window



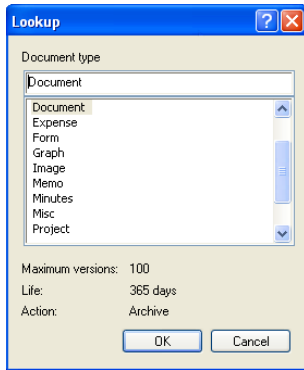
The default document properties are often adequate, but for some libraries, additional customized document properties can be very useful. For example, the legal department might want Client and Matter fields to be required for most documents created by anyone in that department.

NOTE: Document properties cannot be set in ConsoleOne on Linux. However, you can use ConsoleOne on Windows to set document properties for libraries that are located on Linux.

21.3.2 Document Types

The Document Type property defines how a document is disposed of when its “life” in the system has expired. It is a required field. Users select a document type each time they create a new document.

Figure 21-7 *Lookup Dialog Box*



A number of default document types are provided, as shown above. If needed, you can set up additional document types. For example, you could set up Pleading for the legal department, Spreadsheet for accounting, Correspondence for administration, RFP for marketing, White Paper for R&D, and so on.

The document type establishes the following document characteristics:

- ◆ “Maximum Versions” on page 297
- ◆ “Expiration Actions” on page 298
- ◆ “Document Life” on page 298

The following table lists some of the default document types and their default characteristics:

Table 21-1 *Document Types*

Document Type	Maximum Versions	Expiration Action	Document Life
Agenda	100	Archive	99 days
Document	100	Archive	365 days
Memo	1	Delete	99 days
Minutes	100	Archive	99 days
Misc	10	Archive	30 days
Proposal	100	Archive	99 days
Report	100	Archive	99 days
Template	100	Archive	365 days

Maximum Versions

Users can create new versions of their documents when they revise them. Version numbers are automatically incremented.

Any version of a document can be designated as the official version by the user. The official version, which is not necessarily the most recently edited version, is the one located in searches. GroupWise users have the right to designate an official version if they have Edit rights to the document.

Each document type property has a maximum number of versions (up to 50,000 per document). Most types have a default of 99 versions. A maximum of 0 (zero) versions means that documents of that type cannot have versions.

Document Life

Document life is the number of days that must pass between the time when a document is last accessed and when it is ready for archival or deletion. A document life value of 0 (zero) indicates that the document will never be available for archival or deletion.

Expiration Actions

When a document's life expires, its associated expiration action takes place:

Archive: The document is archived when it reaches its document life date. This is useful for important documents because archived documents can be unarchived.

Delete: The document is automatically deleted when its document life date is reached. This is useful for documents that are temporary in nature.

Retain: The document is not deleted or archived, and remains in the system indefinitely. This option is practical for documents that have a recurring use, such as template documents.

21.4 Integrations

Integrations serve as the “glue” between document-producing applications and your GroupWise DMS system. Integrations provide code specifically designed to allow function calls, such as Open or Save, to be redirected to the GroupWise Windows client. This allows GroupWise dialog boxes to be displayed instead of the application's normal dialog boxes for the integrated functions. Integrations also allow GroupWise to pull documents from a library and deliver them to applications for modification. Then, integrations enable GroupWise to return modified documents to the library so that other users can access them.

NOTE: The Cross-Platform client does not include integrations, which is why you cannot create and edit documents from the Cross-Platform client.

For complete information on the integrations available for the Windows client, see [Chapter 24, “Integrations,”](#) on page 363.

Creating and Managing Libraries

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When you first set up a new GroupWise® system, a basic library is automatically created for the first post office. A basic library is adequate when:

- ◆ Document management is not a primary activity of your GroupWise users.
- ◆ The library will store documents created and used by members of the post office that owns the library, or, if you do not need one basic library per post office, by all users within a domain.
- ◆ All documents will be stored at the post office or in a single document storage area external to the post office that owns the library.

If your anticipated document management needs are more demanding than those listed above, you can set up one or more full-service libraries, where you can implement the full range of document management capabilities offered by GroupWise Document Management Services (DMS).

NOTE: The Linux version of ConsoleOne® allows you to create libraries, but it does not allow you to set document properties as described in [Section 23.2, “Organizing Documents,” on page 338](#). As you plan for libraries on Linux, keep in mind that the Cross-Platform client has only basic document management capabilities when compared with the Windows client, as described in [“Working with Documents”](#) in the *GroupWise 7 Cross-Platform Client User Guide*.

To use one or more libraries as part of your GroupWise system, perform the following tasks as needed:

- ◆ [Section 22.1, “Planning a Basic Library,” on page 299](#)
- ◆ [Section 22.2, “Setting Up a Basic Library,” on page 302](#)
- ◆ [Section 22.3, “Planning Full-Service Libraries,” on page 303](#)
- ◆ [Section 22.4, “Setting Up a Full-Service Library,” on page 315](#)
- ◆ [Section 22.5, “Viewing a New Library in Your GroupWise System,” on page 318](#)
- ◆ [Section 22.6, “Managing Libraries,” on page 319](#)
- ◆ [Section 22.7, “Library Worksheets,” on page 331](#)

IMPORTANT: If you are creating a new library in a clustered GroupWise system, see the *GroupWise 7 Interoperability Guide* before you create the library.

22.1 Planning a Basic Library

An initial basic library was created along with the first post office when you set up your GroupWise system. That initial basic library is available for immediate use. However, you might want to change the location where documents are stored, as described in [Section 22.1.4, “Deciding Where to Store Documents,” on page 301](#). You can also create additional basic libraries as needed.

This section provides the information you need in order to set up a new basic library. [Section 22.7.1, “Basic Library Worksheet,” on page 331](#) lists all the information you need as you set up a basic library. You should print the worksheet and fill it out as you complete the tasks listed below:

- ◆ [Section 22.1.1, “Selecting the Post Office That the Library Will Belong To,” on page 300](#)
- ◆ [Section 22.1.2, “Determining the Context for the Library Object,” on page 300](#)
- ◆ [Section 22.1.3, “Choosing the Library Name,” on page 300](#)
- ◆ [Section 22.1.4, “Deciding Where to Store Documents,” on page 301](#)

After you have completed the tasks and filled out the worksheet, you are ready to continue with [Section 22.2, “Setting Up a Basic Library,” on page 302](#).

22.1.1 Selecting the Post Office That the Library Will Belong To

If you are creating a basic library for each post office in your GroupWise system, print a copy of [Section 22.7.1, “Basic Library Worksheet,” on page 331](#) for each post office.

If users in several post offices will store documents in the same basic library, you must decide which post office should own the library. A library can never be reassigned to a different post office, so you should choose the owning post office carefully. You should consider which users will use the library most frequently and where you might want to create additional libraries in the future.

BASIC LIBRARY WORKSHEET

Under [Item 3: Post Office](#), specify the name of the post office that will own the new basic library.

22.1.2 Determining the Context for the Library Object

Generally, you should create the Library object in the same context as its post office. You cannot move a Library object after you have created it.

BASIC LIBRARY WORKSHEET

Under [Item 1: eDirectory Container](#), specify the container for the Library object.

22.1.3 Choosing the Library Name

When you create the Library object, you must give the library a name. This is the name that is displayed in ConsoleOne.

After you have specified the library’s name and created the Library object, the name cannot be changed. Therefore, if you have or will have other libraries, you should pick a name that uniquely identifies the library. For example, use the name to identify the post office it is assigned to.

Do not use any of the following characters in the library’s name:

ASCII characters 0-13	Comma ,
Asterisk *	Double quote "

At sign @	Extended ASCII characters that are graphical or typographical symbols; accented characters in the extended range can be used
Braces { }	Parentheses ()
Colon :	Period .

By default, the library name that users see in the GroupWise client is the same as the Library object name. However, you can change the display name if you want it to be different from the Library object name.

BASIC LIBRARY WORKSHEET

Under **Item 2: Library Name**, specify the Library object name.

Under **Item 7: Library Description**, provide a brief description of the planned use for the library.

Under **Item 8: Display Name**, specify the library name you want users to see in the GroupWise client, if it is different from the Library object name.

22.1.4 Deciding Where to Store Documents

You can store documents at the post office in the `post_office\gwdms\library\docs` subdirectory of the post office. You can later add document storage areas outside the post office if DMS usage grows. However, the documents stored at the post office can never be moved.

A document storage area has the same internal directory structure that is used to store documents at the post office, but it can be located anywhere in your system. Document storage areas can be moved easily, so it is easy to expand your document storage capacity when you store documents in document storage areas rather than at the post office.

You might want to set up a document storage area on the same server where the POA runs so as not to increase network traffic. The POA can index and serve documents to users most efficiently if the document storage area is located locally.

BASIC LIBRARY WORKSHEET

Under **Item 4: Store Documents at the Post Office?**, mark Yes or No. (No is recommended for permanent document storage).

To define a document storage area, you must know its direct access path. For example, a UNC path specifies the absolute location of the document storage directory.

Syntax:

```
\\NetWare_server\volume\storage_directory
\\Windows_server\sharename\storage_directory
```

Example:

```
\\nw65\gwdocs\docs
\\winxp\c$\docs
```

NOTE: On Linux, ConsoleOne interprets a UNC path so that the first item in the UNC path is the Linux server hostname, followed by a Linux path to the document storage area.

BASIC LIBRARY WORKSHEET

If you entered No for **Item 4**, specify the direct access path under **Item 6: Document Storage Area Path**.

Under **Item 5: Document Storage Area Description**, enter a useful description of the document storage area. (This description is displayed only in ConsoleOne.)

If you need to add a document storage area to the initial library that was created with the first post office in your GroupWise system, use the Storage Areas properties page of the Library object in ConsoleOne to provide the direct access path, as described in “**Adding a Document Storage Area**” on page 321.

22.2 Setting Up a Basic Library

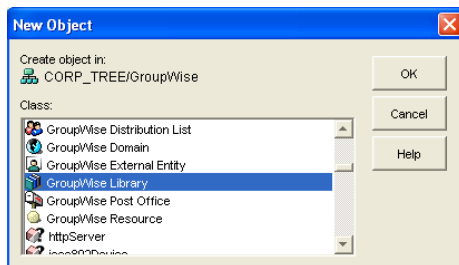
You should already have reviewed **Section 22.1, “Planning a Basic Library,”** on page 299 and filled out **Section 22.7.1, “Basic Library Worksheet,”** on page 331. Complete the following tasks to set up a new basic library:

- ◆ **Section 22.2.1, “Creating the Basic Library,”** on page 302
- ◆ **Section 22.5, “Viewing a New Library in Your GroupWise System,”** on page 318

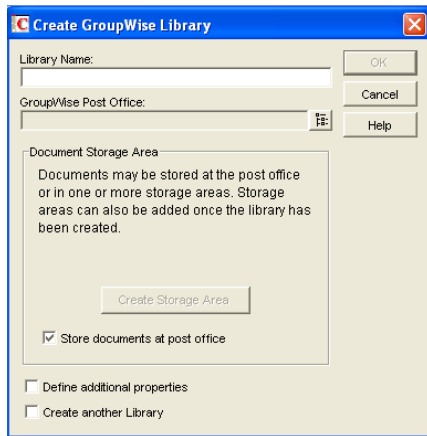
22.2.1 Creating the Basic Library

To create a new library:

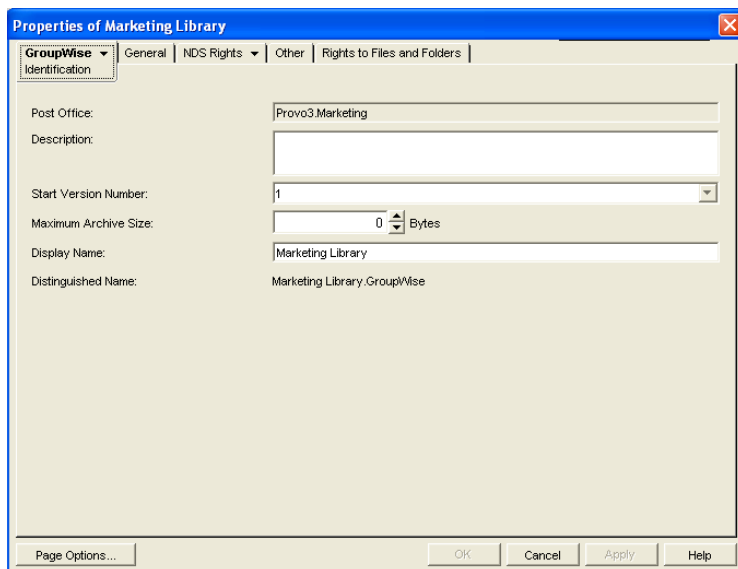
- 1 Make sure the POA is running for the post office that will own the new basic library.
- 2 In ConsoleOne, browse to and right-click the Novell® eDirectory™ container where you want to create the library (**worksheet item 1**), then click *New > Object*.



- 3 Double-click GroupWise Library, then fill in the fields in the Create GroupWise Library dialog box (**worksheet items 2 through 6**).



- 4 Click *Define Additional Properties*, then click *OK* to create the Library object and display the library Identification page.



- 5 Fill in the *Description* field ([worksheet item 7](#)).
- 6 If necessary, edit the *Display Name* field ([worksheet item 8](#)).
- 7 Click *OK* to save the library information.
- 8 Test the new library. See [Section 22.5, “Viewing a New Library in Your GroupWise System,” on page 318](#).

Although there are many configuration options for libraries and documents, as described in [Section 22.3, “Planning Full-Service Libraries,” on page 303](#), no additional setup is required for a basic library. GroupWise client users can begin to store documents in the new library at once.

22.3 Planning Full-Service Libraries

If your document management requirements go beyond basic libraries, you can create one or more full-service libraries. You might or might not need to make use of all document management features in order to meet your DMS users’ needs.

This section covers everything you should consider when you set up full-service libraries. The [“Full-Service Library Worksheet” on page 332](#) lists all the information you need as you set up a full-service library. You should print a copy of the worksheet for each library you plan to create. Fill out the worksheet for each library as you complete the tasks listed below.

- ◆ [Section 22.3.1, “Deciding Which Libraries to Create,” on page 304](#)
- ◆ [Section 22.3.2, “Selecting the Post Offices To Own Libraries,” on page 308](#)
- ◆ [Section 22.3.3, “Determining the Contexts for Library Objects,” on page 308](#)
- ◆ [Section 22.3.4, “Choosing Library Names,” on page 308](#)
- ◆ [Section 22.3.5, “Deciding Where to Store Documents,” on page 309](#)
- ◆ [Section 22.3.6, “Setting Document Version Options,” on page 311](#)
- ◆ [Section 22.3.7, “Figuring Maximum Archive Directory Size,” on page 312](#)
- ◆ [Section 22.3.8, “Designating Initial Librarians,” on page 312](#)
- ◆ [Section 22.3.9, “Restricting Initial Public Library Rights,” on page 313](#)
- ◆ [Section 22.3.10, “Determining Your Indexing Needs,” on page 314](#)
- ◆ [Section 22.3.11, “Determining If You Need to Set Up Integrations for DMS Users,” on page 314](#)

After you have completed the above tasks and filled out the worksheets, you are ready to continue with [Section 22.4, “Setting Up a Full-Service Library,” on page 315](#).

22.3.1 Deciding Which Libraries to Create

When designing a system of libraries for your GroupWise system, you should review the following considerations:

- ◆ [“Library Access for DMS Users” on page 304](#)
- ◆ [“Centralized vs. Decentralized Library Configurations” on page 304](#)
- ◆ [“Library Specialization” on page 307](#)

Library Access for DMS Users

Client/server access is the preferred access mode for GroupWise client users. It is the best access mode for DMS users because it enables them to access libraries outside their own post offices.

For information about access modes, see [Section 35.4, “Post Office Access Mode,” on page 468](#).

Centralized vs. Decentralized Library Configurations

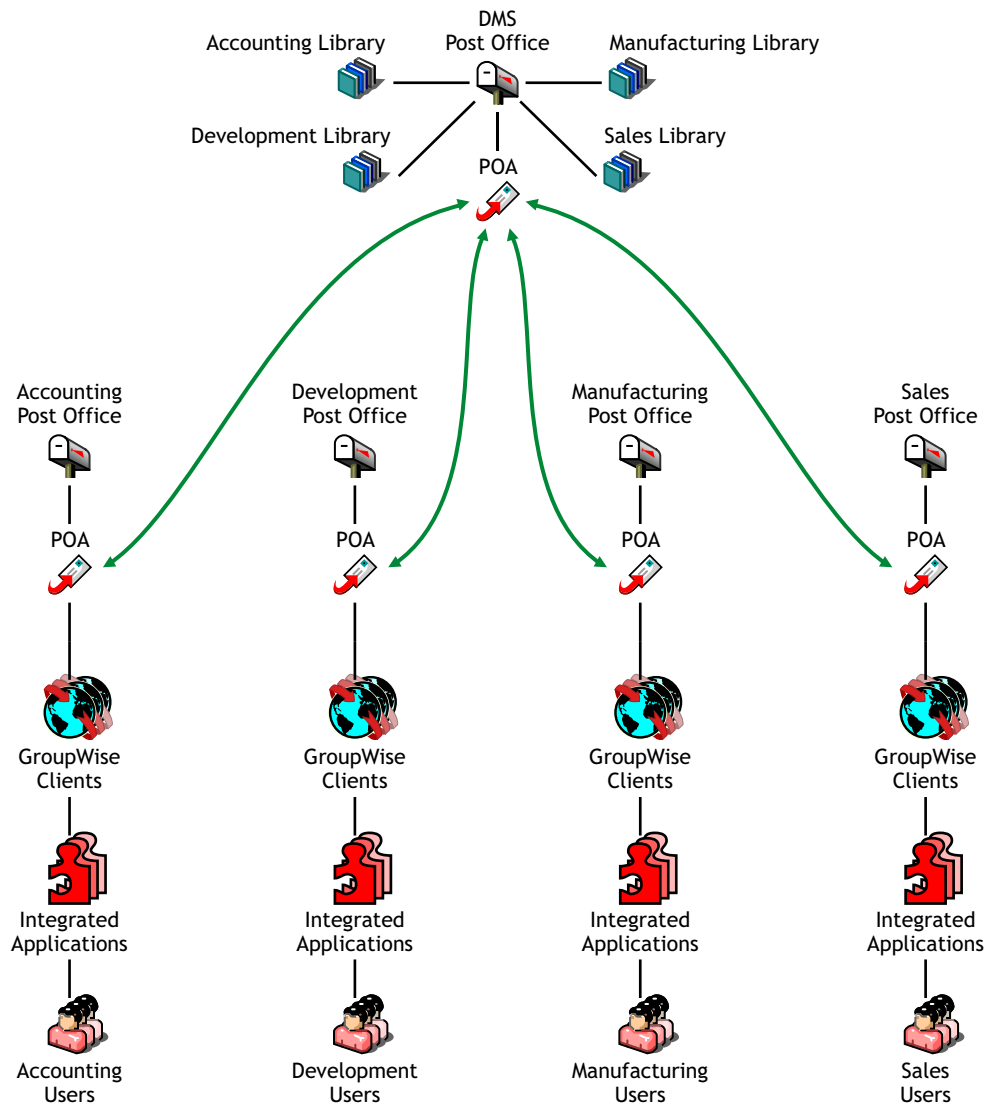
Reorganizing existing libraries is not a simple process. Therefore, you should determine whether you want a centralized or decentralized library configuration before you start creating libraries.

- ◆ [“Centralized Libraries” on page 305](#)
- ◆ [“Decentralized Libraries” on page 306](#)
- ◆ [“Comparative Scenarios” on page 307](#)

Centralized Libraries

Centralized libraries are located in a post office that is dedicated to libraries (no users). Centralized libraries are serviced by the POA in the dedicated DMS post office, as shown in the following illustration:

Figure 22-1 *Centralized Libraries*



In the illustration, notice that all libraries belong to the DMS post office, which has no users. All GroupWise client users are using client/server access mode, which is required because there are no libraries in their local post offices. Each user has access to all four libraries through TCP/IP links to the DMS POA.

The following table lists some advantages and disadvantages of centralized libraries:

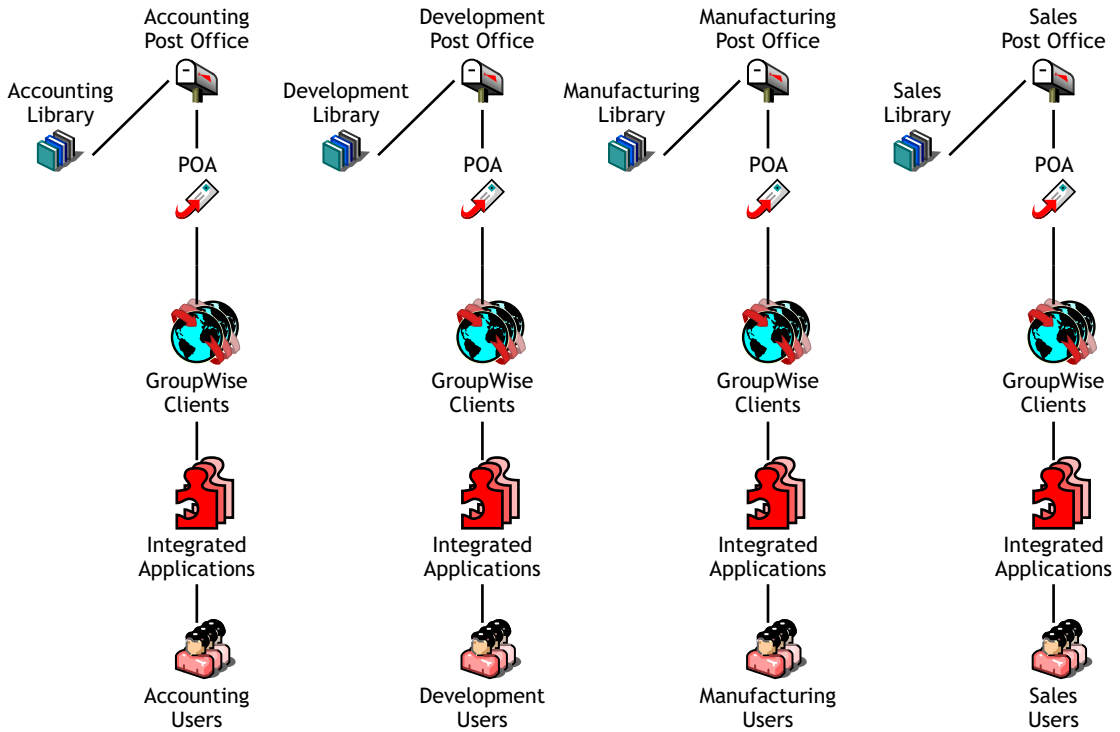
Table 22-1 *Centralized Libraries*

Advantages	Disadvantages
<ul style="list-style-type: none"> ◆ Administration can be consolidated, allowing one administrator to specialize in document management. ◆ Backup can be easier with hardware dedicated to one DMS post office, such as optical drives, RAID, fast backup units, and so on. ◆ If a post office server other than the one dedicated to libraries goes down, DMS access is unaffected for users in the remaining post offices. 	<ul style="list-style-type: none"> ◆ You must create and maintain a post office that is dedicated to libraries only (no users). ◆ This configuration guarantees that all document searching and accessing is back and forth between users' post offices and the libraries' post office, possibly degrading network performance. ◆ If the post office server dedicated to libraries goes down, DMS is unusable for the whole GroupWise system.

Decentralized Libraries

Decentralized libraries are located along with users in different post offices. Decentralized libraries are serviced by their own local POAs as shown in the following illustration:

Figure 22-2 *Decentralized Libraries*



In the illustration, notice that each post office has its own library. Users can see each others' libraries as well as their own because of client/server access mode.

The following table lists some advantages and disadvantages of decentralized libraries

Table 22-2 *Decentralized Libraries*

Advantages	Disadvantages
<ul style="list-style-type: none">◆ Network traffic is minimized because most document accessing are in users' local post offices.◆ You do not need to maintain an extra DMS post office dedicated to libraries only.◆ Users in a post office where a library resides can use direct access mode if necessary.	<ul style="list-style-type: none">◆ Libraries and their documents are scattered over different servers, adding to your administrative workload (such as doing backups).

Comparative Scenarios

The following scenarios further illustrate the differences between centralized and decentralized libraries:

- ◆ Assume that you assigned your first library to the same post office your users have membership in. By initially assigning a library to the same post office as your users, you establish a decentralized configuration for future libraries. You now want a centralized library configuration. However, because you cannot reassign the library to another post office, you must do one of the following:
 - ◆ Create one or more new libraries under a DMS post office, export all of the documents from the first library and import them to the new libraries, delete the first library, and then ensure that users can locate their documents.
 - ◆ Create one or more new libraries under a DMS post office and have your librarian use mass document operations to move the documents from the first library to the other libraries, delete the first library, and then ensure that users can locate their documents.
- ◆ Assume that you assigned your first library to a DMS post office that is used only for libraries. Now you can use either the centralized or decentralized library configuration for your additional libraries. The DMS post office can be used for all future libraries to create a centralized configuration, or you could assign future libraries to other post offices and leave that first one where it is, giving you a decentralized configuration. Setting up your first library on a post office server dedicated to only libraries allows you to use either configuration option. However, this method initially requires additional hardware and administration.

Library Specialization

You can create libraries for such user specialties as administration, accounting, development, human resources, legal, marketing, manufacturing, payroll, R&D, sales, shipping, and so on. You can also specialize libraries by such functions as general (for all users), administration (including legal and payroll), engineering and documentation development (R&D), marketing and sales, manufacturing and shipping, and so on.

You can also use specialization to provide security for sensitive libraries. You do this by setting up access restrictions for the libraries. The default is for all DMS users to have access to all libraries in the GroupWise system. For more information about restricting library access, see [Section 22.6.3, “Managing Library Access,” on page 324](#).

Restricting library access can also improve users' search time. When users install the GroupWise client on their workstations, they are either automatically assigned a default library (if there is one on their post office), or they are asked to select one from the libraries they have access to. By

default, DMS searches are performed only on the user's default library. To search other libraries ("global" search), users can select other libraries using the Look In list in the Find dialog box. If you limit users' access to libraries (perhaps by department), their global searches would also be faster.

Another reason for creating specialized libraries could be for different library configuration needs. For example, each library could have specialized document types and document properties that would not be needed in other libraries. For a review of document types and properties, see [Section 21.3, "Documents," on page 295](#). For more detailed information, see ["Customizing the Default Document Type Property" on page 339](#) and [Section 23.2.1, "Customizing Document Properties," on page 338](#).

Specialization can also facilitate library management activities, such as controlling library accessibility for individual users or groups of users, or managing different uses of document types, document properties, or field label naming schemes.

22.3.2 Selecting the Post Offices To Own Libraries

As a result of deciding whether you want to use a centralized or decentralized configuration for your libraries and whether or not you need specialized libraries, you should have a good idea of what post offices you want to create libraries in.

If you are using a centralized configuration, create the DMS post office by following the instructions in [Chapter 11, "Creating a New Post Office," on page 155](#), then return to this point.

FULL-SERVICE LIBRARY WORKSHEET

Under [Item 3: Post Office](#), specify the name of the post office that will own the new library.

22.3.3 Determining the Contexts for Library Objects

You can create a Library object in any container in the eDirectory tree. For example, you could create the Library object in the same container as its Post Office object. Or you could create it in a special container just for Library objects:

The containers in which you place the Library objects have no bearing on whether your libraries are centralized or decentralized. Library objects can be located anywhere in the tree, no matter which post offices the libraries belong to.

FULL-SERVICE LIBRARY WORKSHEET

Under [Item 1: eDirectory Container](#), specify the name of the eDirectory container where you want to create the new library.

22.3.4 Choosing Library Names

A library's name must be unique within the post office; it also must be unique within its container. You should devise a naming scheme that helps to identify all libraries in the GroupWise system. It can be useful to include within the library name an indication of which post office it belongs to.

After you have specified the library's name and created the Library object, the name cannot be changed.

Do not use any of the following characters in the library's name:

ASCII characters 0-13	Comma ,
Asterisk *	Double quote "
At sign @	Extended ASCII characters that are graphical or typographical symbols; accented characters in the extended range can be used
Braces { }	Parentheses ()
Colon :	Period .

By default, the library name that users see in the GroupWise client is the same as the Library object name. However, you can change the display name if you want it to be different from the Library object name.

FULL-SERVICE LIBRARY WORKSHEET

Under **Item 2: Library Name**, specify the Library object name.

Under **Item 7: Library Description**, provide a brief description of the planned use for the library.

Under **Item 10: Display Name**, specify the library name you want users to see in the GroupWise client, if it is different from the Library object name.

22.3.5 Deciding Where to Store Documents

When deciding where to store documents, you should review the following considerations:

- ◆ [“Document Storage Location” on page 309](#)
- ◆ [“Disk Space Requirements” on page 309](#)
- ◆ [“Direct Access Paths to Document Storage Areas” on page 310](#)

Document Storage Location

Documents belonging to full-service libraries should *not* be stored at the post office. Instead, they should be stored in document storage areas. For a review, see [Section 21.2, “Document Storage Areas,” on page 295](#).

A library can have more than one document storage area. The only requirement is that the POA that services the library must have direct network access (mapped drive or mounted file system) to each storage area.

You can set up one document storage area for each library as you create the Library object. Additional document storage areas can be set up using the Storage Areas properties page of the Library object, as described in [“Adding a Document Storage Area” on page 321](#).

Disk Space Requirements

You need to know the disk space requirements for your libraries in order to choose appropriate locations for document storage areas.

If you have chosen a centralized library configuration, your document storage areas are all serviced by the POA of the DMS post office. Therefore, you can calculate the disk space requirements for your GroupWise system as a whole. If you have chosen a decentralized configuration, document storage areas are located throughout your GroupWise system. Therefore, disk space requirements must be calculated separately for each library.

If your current document storage statistics are an accurate indicator for a given library or for your system, use them for calculating your disk space requirements. Otherwise, use the following formula for determining DMS storage needs:

Formula:

```
Number of Users
x Average Number of Documents per User
x Average Document Size
x Average Number of Versions per Document
-----
Disk Space Required for Library
```

Example:

```
250 Users
x 200 Documents per User
x 50 KB per Document
x 10 Versions per Document
-----
25 GB of Disk Space
```

Users might create a new version of a document any time they revise it. Because all versions of a document are saved in BLOB storage with the original document, disk space can be used up quickly! If you know how many versions per document your users average, use that value in the formula; otherwise, allow for an average of at least ten versions per document.

If your Average Document Size value for the formula is based on non-GroupWise documents, they will be compressed by about 50% after they have been imported into GroupWise and stored in BLOBs.

You should research your current or expected document usage before deciding where to store documents.

FULL-SERVICE LIBRARY WORKSHEET

Under **Item 7: Document Usage Estimate**, enter the requested values and calculate the resulting disk space requirements.

If your values are calculated for the system (rather than per library), enter this information on only one of the worksheets.

Direct Access Paths to Document Storage Areas

To define a document storage area, you need to know its direct access path. For example, a UNC path specifies the absolute location of the document storage directory.

Syntax:

```
\\NetWare_server\volume\storage_directory
\\Windows_server\sharename\storage_directory
```

Example:

```
\\nw65\gwdocs\docs  
\\winxp\c$\docs
```

NOTE: On Linux, ConsoleOne interprets a UNC path so that the first item in the UNC path is the Linux server hostname, followed by a Linux path to the document storage area.

You might want to set up a document storage area on the same server where the POA runs so as not to increase network traffic. The POA can index and serve documents to users most efficiently if the document storage area is located locally.

FULL-SERVICE LIBRARY WORKSHEET

Under **Item 6: Document Storage Area Path**, specify the direct access path.

Under **Item 5: Document Storage Area Description**, provide a useful description of the document storage area. (This description is displayed only in ConsoleOne.)

22.3.6 Setting Document Version Options

When you create a new library, you can establish how document versions are handled. For an overview of document versioning, see [“Maximum Versions” on page 297](#).

- ◆ [“Official Version” on page 311](#)
- ◆ [“Start Version Number” on page 311](#)

Restricting the maximum number of versions should be done after the library has been created, as described in [Section 22.6.1, “Editing Library Properties,” on page 320](#).

Official Version

By default, any user can establish the official version of a document. However, you can remove that right from one or more users if needed.

FULL-SERVICE LIBRARY WORKSHEET

Under **Item 11: Restrict Public Access Rights**, cross out Designate Official Version if you want to eliminate that right for all users.

You can later grant the Designate Official Version to specific users or distribution lists, as described in [Section 22.6.3, “Managing Library Access,” on page 324](#).

Start Version Number

You must set the start number for each library to either 0 (zero) or 1. The default is 1. This number identifies the original document.

Version numbers are automatically increased from the number you select. If you select 0, the first version of a document will be 000. If you select 1, the first version will be 001.

Under **Item 8: Start Version Number**, select 0 or 1.

22.3.7 Figuring Maximum Archive Directory Size

Documents created with GroupWise DMS can be archived, depending on their Document Type properties. A document's type determines its disposition, such as archiving or deleting. For more information, see [“Customizing the Default Document Type Property” on page 339](#).

When you archive documents, their BLOB files are moved into archive directories. Each library in a document storage area has its own set of archive directories that are automatically created as needed. They are named arxxxxxx (where xxxxxx is an incremental integer with leading zeros). A document storage area has the same archive directory structure as the gwdms subdirectory in the post office, as illustrated in [“Post Office Directory” in *GroupWise 7 Troubleshooting 3: Message Flow and Directory Structure*](#).

When a document is archived, GroupWise determines if the document's BLOB file can fit in the current archive directory. If it cannot fit, another archive directory is created and the BLOB is archived there.

An archive set consists of all documents in one archive directory. The Maximum Archive Size property on the Library object establishes in bytes each archive directory's size limit. You should set this to mirror the capacity of your archival medium (such as a CD). It should not be more than your archival medium's capacity.

It is usually better to keep archive sets small in comparison to the size of the backup medium. This lets you back up archive directories often enough to keep your hard disk space from being used up too quickly between backups. For example, if your backup medium has 1 GB capacity, you could limit your archive sets to a maximum archive size of 200 MB.

If your archival system only lets you back up in one pass (in other words, you cannot perform consecutive backups to the medium), the Maximum Archive Size should match the archival medium's capacity.

Some archival mediums require extra space for recording file storage data, such as an index of the files stored to tape. Ten percent is usually sufficient. For example, a tape system with 100 MB capacity means you should set your Maximum Archive Size to 90 MB.

Consult your archival medium documentation for information on setting up an effective backup strategy. Include in your strategy such concepts as multiple archive sets per backup medium, or allowing extra space for the medium's file storage data.

Under **Item 9: Maximum Archive Size**, enter a number (in bytes, with no abbreviations or commas).

22.3.8 Designating Initial Librarians

A librarian has full rights to the properties of every document in the library, and can therefore perform management tasks on all library documents. You can assign yourself as a librarian. You can also delegate these tasks by assigning responsible users in each library as librarians. Any GroupWise

user who normally has access to the library can be a librarian. You can also have multiple librarians for each library.

When you first create a new library, you might want to simply designate yourself as the librarian and assign other users later. For more detailed information, see [Section 22.6.4, “Adding and Training Librarians,”](#) on page 326.

ADDITIONAL LIBRARIES WORKSHEET

Under [Item 12: Librarians](#), list any users that you want to function as librarians for the new library.

22.3.9 Restricting Initial Public Library Rights

The rights to documents in a library apply to the library as a whole; therefore, they are referred to as public rights. By default, all public rights are granted to all users in a new library.

You can restrict which GroupWise library features individual users or distribution lists should have by removing the public rights and then restoring them for selected users or distribution lists.

The following table summarizes the public library rights:

Table 22-3 Public Library Rights

Public Right	Description
Add	Allows users to add new documents to the library.
Change	Allows users to make changes to existing documents in the library.
Delete	Allows users to delete documents, regardless of who else created them or has rights to the documents. However, to be able to delete a document, users must also have rights to locate and modify the document (View and Change rights), in addition to the Delete right.
View	By itself, this right allows searching, viewing, or copying documents, but does not permit editing them. Copies can be edited, because a copy is saved as a separate document. Therefore, editing a copy does not affect the original document or any of its versions.
Designate Official Version	Allows any version of a document to be designated as the official version. The official version, which is not necessarily the most recently-edited version, is the one located in searches. The official version is usually determined by the creator or author of the document. However, the official version can be designated by the last user to edit the document (if the user has this right). A user also needs the Change right to the document to be able to designate an official version. However, you might still want to deselect this as an initial public right.

Public Right	Description
Reset In-Use Flag	<p>The In-Use flag protects against data loss by preventing multiple users from concurrently opening the same document. The purpose of the Reset In-Use Flag right is to allow a user or librarian to reset a document's status when the document is in use by someone else or when it is erroneously flagged as in use.</p> <p>Because you can manually reset the In-Use flag to change a document's status, even if the document is currently open, you should use prudence in allowing users the public right to change the In-Use flag. You might want to deselect this as a public right.</p>

FULL-SERVICE LIBRARY WORKSHEET

Under **Item 11: Restrict Public Access Rights**, cross out any public rights you want to eliminate for all users.

You can later grant the rights to specified users or groups, as described in **Section 22.6.3, "Managing Library Access," on page 324**.

Rights to individual documents in a library can be modified at any time by the user listed as the creator or author of the document. Just because users might have public rights in a library does not mean that they have the equivalent rights to every document in the library. For additional information on rights, see **"Sharing Documents"** in **"Creating and Working with Documents"** in the *GroupWise 7 Windows Client User Guide*.

22.3.10 Determining Your Indexing Needs

The POA performs many tasks in the post offices, as described in **Section 35.5, "Role of the Post Office Agent," on page 469**. Indexing documents is just one of its many functions.

If necessary, you can configure an extra POA on another server to handle indexing. Separating POA functions can optimize the processing load for the respective POAs, particularly if your GroupWise system will regularly search and index a large number of documents.

If you feel you might need dedicated indexing for DMS documents, see **Section 23.3, "Indexing Documents," on page 351** for in-depth information on different configurations. Then determine whether you need dedicated indexing.

FULL-SERVICE LIBRARY WORKSHEET

Under **Item 11: Dedicated POA for Indexing**, mark whether or not you plan to set up a separate indexing POA.

22.3.11 Determining If You Need to Set Up Integrations for DMS Users

For an overview of integrations, see **Section 21.4, "Integrations," on page 298**. To determine if you should set up integrations for a given application, see **Chapter 24, "Integrations," on page 363**.

NOTE: This item does not apply if all of your users use the Cross-Platform client, where integrations are not available.

ADDITIONAL LIBRARIES WORKSHEET

Under **Item 14: Set Up Integrations**, mark whether or not you need to manually set up integrated applications for your DMS users.

22.4 Setting Up a Full-Service Library

You should have already reviewed [Section 22.3, “Planning Full-Service Libraries,” on page 303](#) and filled out [Section 22.7.2, “Full-Service Library Worksheet,” on page 332](#) for each new library. Before starting to create new libraries, be sure your system meets the following prerequisites:

- ♦ Make sure the eDirectory contexts exist where you will create new Library objects.
- ♦ Make sure the post offices exist that will own the new libraries. If you are using a centralized configuration, make sure you have created the DMS post office that will own all the libraries by following the instructions in [Chapter 11, “Creating a New Post Office,” on page 155](#).
- ♦ Make sure the POA is running for each post office that will own a new library.
- ♦ Make sure you have access to the physical locations where you will set up document storage areas.

After the prerequisites are met, you are ready set up one or more full-service libraries.

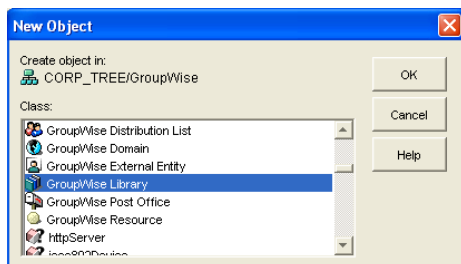
- ♦ [Section 22.4.1, “Creating the Full-Service Library,” on page 315](#)
- ♦ [Section 22.5, “Viewing a New Library in Your GroupWise System,” on page 318](#)
- ♦ [Section 22.4.2, “What’s Next,” on page 317](#)

22.4.1 Creating the Full-Service Library

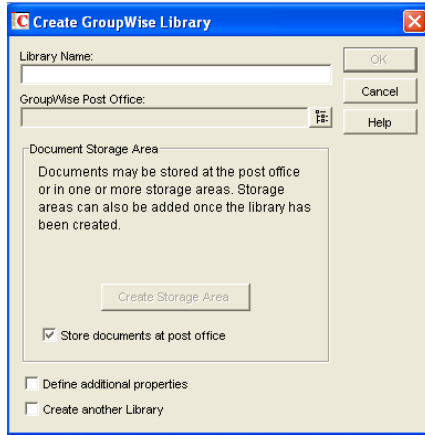
- 1 Make sure you are logged in to the eDirectory tree where you want to create the library.

This must be the same tree as the post office the library will belong to ([worksheet item 3](#)).

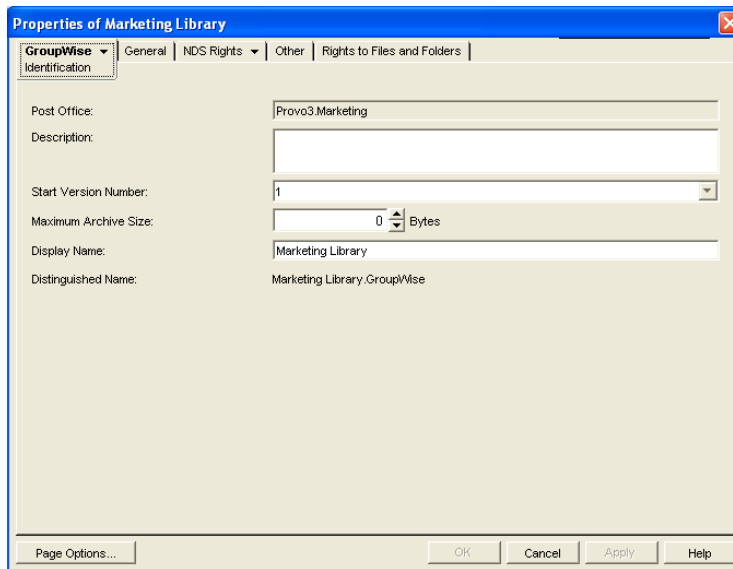
- 2 In ConsoleOne, browse to and right-click the eDirectory container where you want to create the library ([worksheet item 1](#)), then click *New > Object*.



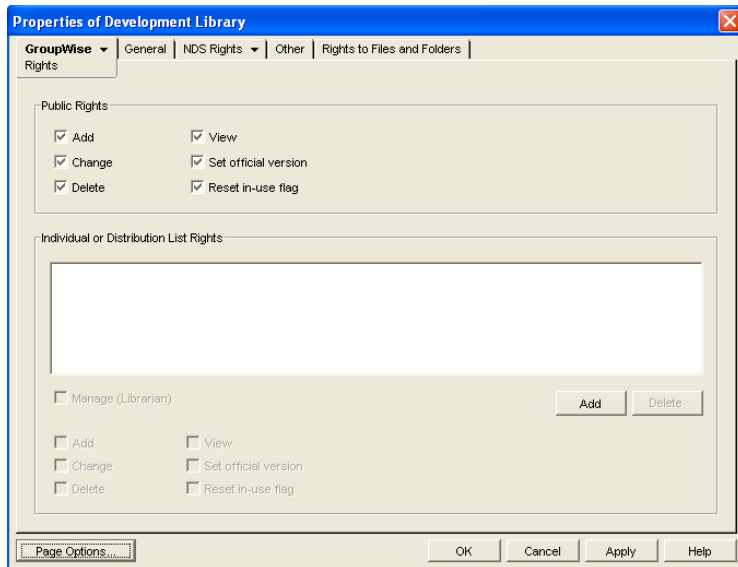
- 3 Double-click *GroupWise Library*, then fill in the fields in the *New Library* dialog box ([worksheet items 2 through 6](#)).



- 4 Click *Define Additional Properties*, then click *OK* to create the new Library object and display the library Identification page.



- 5 Fill in the fields (worksheet items 7 through 10).
- 6 Click *GroupWise > Rights* to display the Rights page.



- 7 In the Public Rights box, deselect any rights you want to remove from all library users ([worksheet item 11](#)).
- 8 If you want to set up one or more librarians, click *Add*, browse to and select one or more users or distribution lists ([worksheet item 12](#)), then click *OK*. Select the users and distribution lists, then select *Manage (Librarian)* to give them rights to the properties of all documents in the library.
- 9 Click *OK* to save the library information.
- 10 Test the library. See [Section 22.5, “Viewing a New Library in Your GroupWise System,” on page 318](#).

22.4.2 What’s Next

After you have created the new library, you can expand its capabilities as needed:

- ◆ Import and manage documents. See [Chapter 23, “Creating and Managing Documents,” on page 335](#)
- ◆ Set up integrated applications for DMS users ([worksheet item 14](#)). See [Chapter 24, “Integrations,” on page 363](#)
- ◆ Grant library rights to specific users or distribution lists. See [Section 22.6.3, “Managing Library Access,” on page 324](#).
- ◆ Assign librarians. See [Section 22.6.4, “Adding and Training Librarians,” on page 326](#).
- ◆ Set up multiple document storage areas. See [“Adding a Document Storage Area” on page 321](#).
- ◆ Set up a dedicated indexing POA ([worksheet item 13](#)). See [Section 23.3, “Indexing Documents,” on page 351](#)

22.5 Viewing a New Library in Your GroupWise System

After you create a new library, you can see it in ConsoleOne and GroupWise client users can see it in the GroupWise client.

- ♦ Section 22.5.1, “Seeing the New Library in ConsoleOne,” on page 318
- ♦ Section 22.5.2, “Seeing the New Library in the GroupWise Windows Client,” on page 319

22.5.1 Seeing the New Library in ConsoleOne

In the Console View in ConsoleOne, you can see the new Library object in the context of its eDirectory container object.

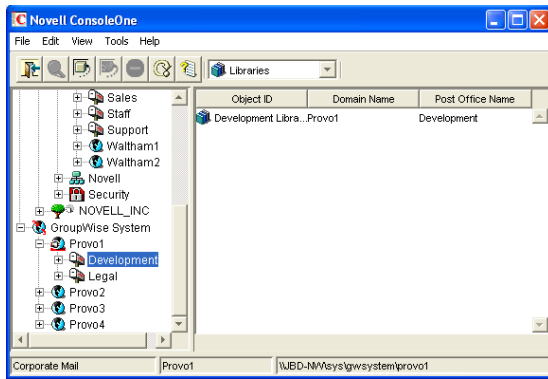
Figure 22-3 Console View Showing the New Library Object



In the GroupWise View, you can see the relationship between the new library and the post office it belongs to.

To locate the library in the GroupWise view:

- 1 Expand the GroupWise System object.
- 2 Expand the Domain object where the owning post office resides.
- 3 Select the owning post office.
- 4 In the drop-down list of objects, select *Libraries*.

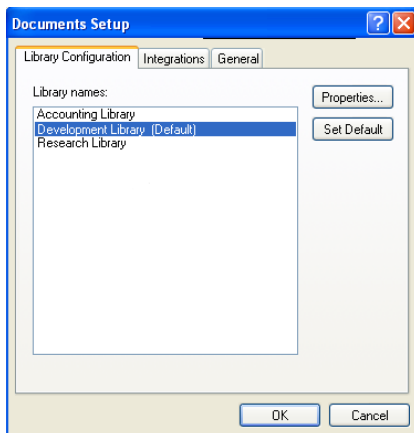


22.5.2 Seeing the New Library in the GroupWise Windows Client

GroupWise Windows client users can see that a new library has been created. They can set it as their default library if desired.

In the GroupWise client:

- 1 Click *Tools > Options > Documents*.



The *Library Configuration* tab should include the new library.

- 2 Select the new library, click *Set as Default*, then click *OK* to use the new library as the default location for storing documents and searching for documents.

22.6 Managing Libraries

As your GroupWise DMS system grows and evolves, you might need to perform the following activities:

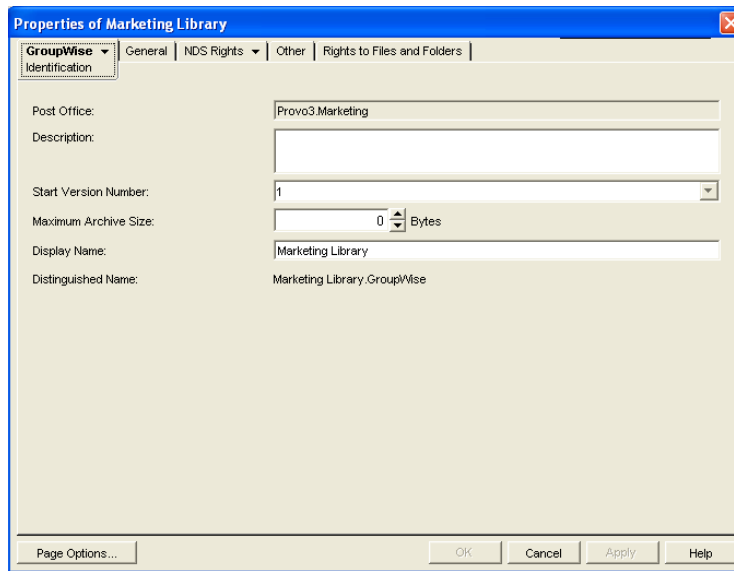
- ◆ Section 22.6.1, “Editing Library Properties,” on page 320
- ◆ Section 22.6.2, “Managing Document Storage Areas,” on page 321
- ◆ Section 22.6.3, “Managing Library Access,” on page 324
- ◆ Section 22.6.4, “Adding and Training Librarians,” on page 326

- ◆ Section 22.6.5, “Maintaining Library Databases,” on page 330
- ◆ Section 22.6.6, “Moving a Library,” on page 330
- ◆ Section 22.6.7, “Deleting a Library,” on page 330

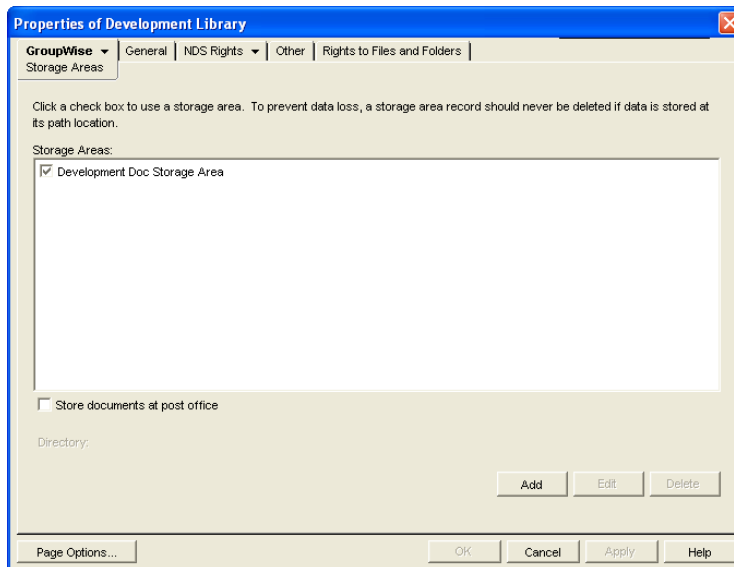
22.6.1 Editing Library Properties

After creating a library, you can change some library properties. Other library properties cannot be changed.

- 1 In ConsoleOne, browse to and right-click the Library object, then click *Properties* to display the library Identification page.

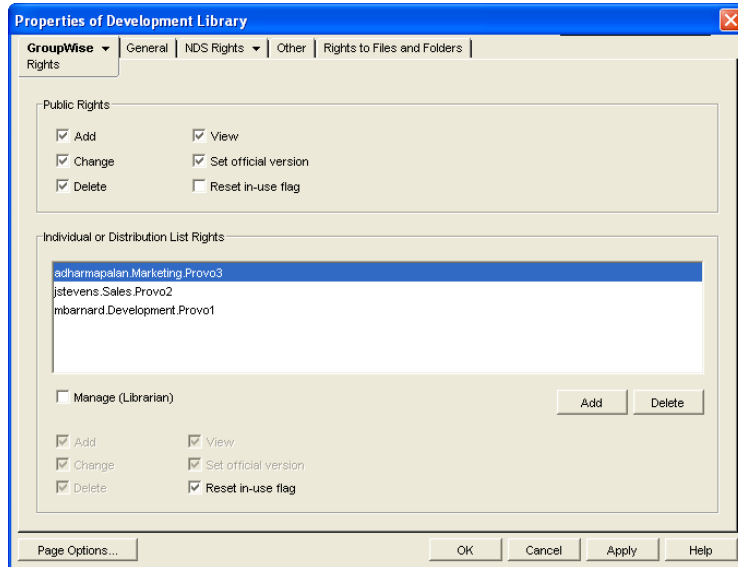


- 2 Change editable fields as needed. For information about individual fields, click *Help*.
- 3 Click *GroupWise > Storage Areas* to display the Storage Areas page.



All document storage areas associated with the library are listed, no matter where they are located. On this page, you can add, move, and delete document storage areas. See [Section 22.6.2, “Managing Document Storage Areas,” on page 321](#).

- 4 Click *GroupWise > Rights* to display the library Rights page.



Public library rights granted to all users are selected in the *Public Rights* box. The *Individual and Distribution List Rights* box shows any additional rights that have been granted to specific users. See [Section 22.6.3, “Managing Library Access,” on page 324](#) and [Section 22.6.4, “Adding and Training Librarians,” on page 326](#).

- 5 Click *OK* to save changes to the library properties.

22.6.2 Managing Document Storage Areas

For a review, see [Section 21.2, “Document Storage Areas,” on page 295](#) and [Section 22.1.4, “Deciding Where to Store Documents,” on page 301](#).

Typically, the initial document storage area for a library is set up when the library is created. Thereafter, you can create additional document storage areas as the library grows. You can move a document storage area to a location where more storage is available. You can delete a document storage area if it is no longer used.

- ♦ [“Adding a Document Storage Area” on page 321](#)
- ♦ [“Moving a Document Storage Area” on page 323](#)
- ♦ [“Deleting a Document Storage Area” on page 323](#)

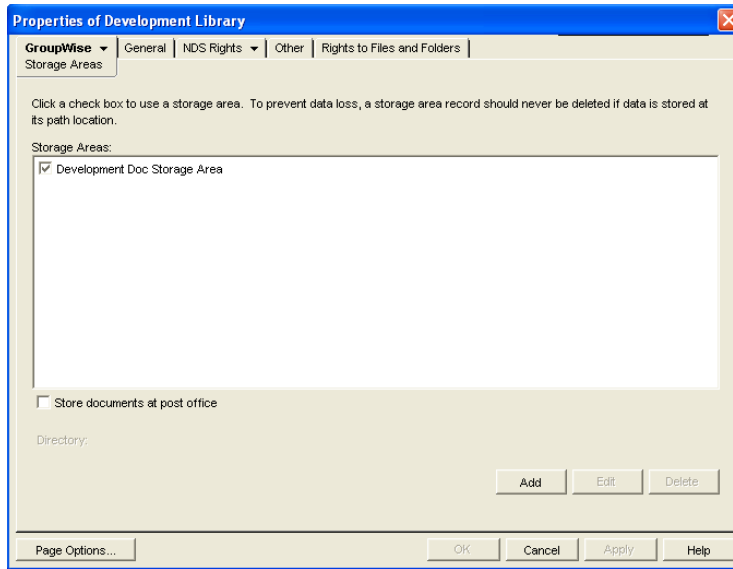
Adding a Document Storage Area

To help you plan where to create the new document storage area, see [Section 22.1.4, “Deciding Where to Store Documents,” on page 301](#).

To create a new document storage area for a library:

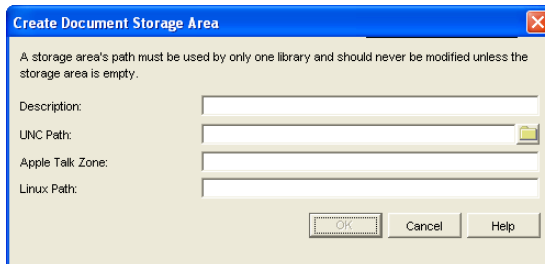
- 1 In ConsoleOne, browse to and right-click the Library object, then click *Properties*.

- 2 Click *GroupWise* > *Storage Areas* to display the Storage Areas page.



Existing document storage areas are listed.

- 3 Click *Add* to create a new document storage area.



- 4 Provide a description for the document storage area.

- 5 Specify the UNC path to the directory where you want to create the document storage area.

If the directory does not exist, it will be created as the document storage area is set up.

As an alternative, you can specify an AppleTalk zone to store documents on an Apple* computer, or you can specify a UNIX path to store documents on a UNIX server. On Linux, you can specify a Linux path. The POA that will service the library must have direct access to the location you specify.

- 6 Click *OK* to create the new document storage area and add it to the list of storage areas for the library.

If you have multiple document storage areas selected in the *Storage Areas* list, new and modified documents could be added to any one of them.

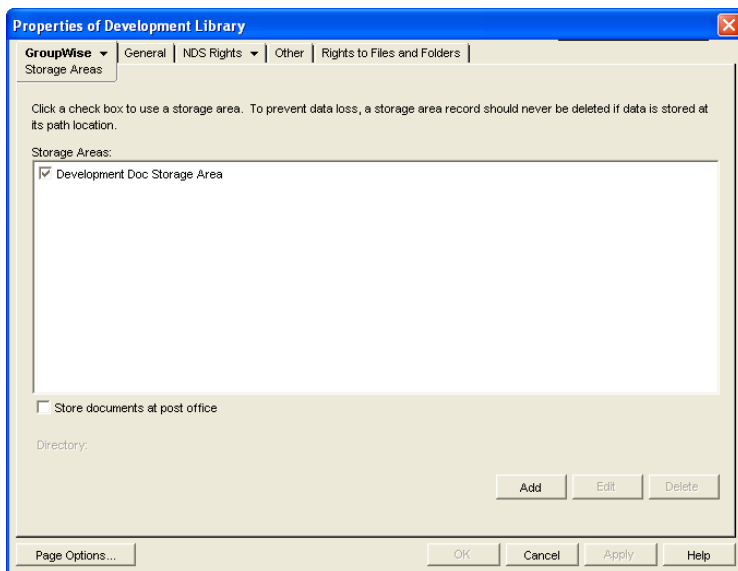
- 7 If you want to stop storing documents in the previous document storage area, deselect it in the *Storage Areas* list.

- 8 Click *OK* to save the document storage area information.

Moving a Document Storage Area

You might choose to move a document storage area if it is close to exceeding the available disk space at its current location and you do not want to create an additional document storage area.

- 1 Stop the POA that services the library.
- 2 Copy the document storage area directory and all of its contents to the desired location.
- 3 Make sure that the POA has access to the new location so that it can read and write documents in the document storage area.
- 4 In ConsoleOne, browse to and right-click the Library object, then click *Properties*.
- 5 Click *GroupWise > Storage Areas* to display the Storage Areas page.



Existing document storage areas are listed.

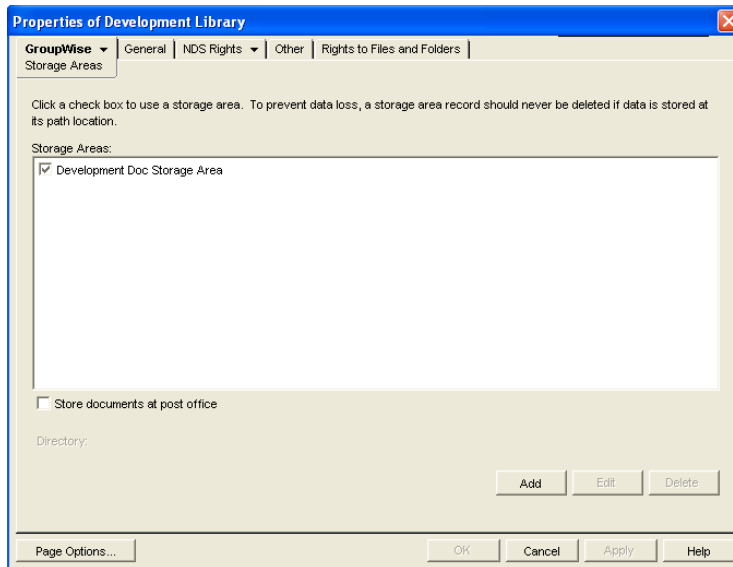
- 6 Select a document storage area, then click *Edit*.
- 7 Provide the new location for the document storage area, then click *OK* twice to save the new document storage information.
- 8 Restart the POA.

Deleting a Document Storage Area

When you delete a document storage area, any documents in the document storage area are moved to other valid document storage areas for the library. If you want to move documents to a specific location before deleting the document storage area, see [Section 23.1.3, “Managing Groups of Documents,”](#) on page 337.

To delete a document storage area:

- 1 In ConsoleOne, browse to and right-click the Library object that owns the document storage area, then click *Properties*.
- 2 Click *GroupWise > Storage Areas* to display the Storage Areas page.



- 3 Select a document storage area, then click *Delete*.
- 4 Click *OK* to close the Storage Areas page

If the above steps are not successful in deleting a document storage area, perhaps because one or more documents were in use during the deletion process, you can use the Analyze/Fix Library action of Mailbox/Library Maintenance, with the *Remove Deleted Storage Areas* and *Move Documents First* options selected, to finish cleaning up the deleted document storage area. For more information, see [Chapter 28, “Maintaining Library Databases and Documents,” on page 391](#).

22.6.3 Managing Library Access

Access to libraries is controlled by the rights users have to the Library object. By default, when a new library is created, all of the following rights are granted:

Table 22-4 *Public Library Rights*

Public Right	Description
Add	Allows users to add new documents to the library.
Change	Allows users to make changes to existing documents in the library.
Delete	Allows users to delete documents, regardless of who created them or has rights to the documents. However, to be able to delete a document, users must also have rights to locate and modify the document (View and Change rights), in addition to the Delete right.
View	By itself, this right allows searching, viewing, or copying documents, but does not permit editing them. Copies can be edited, because a copy is saved as a separate document. Therefore, editing a copy does not affect the original document or any of its versions.

Public Right	Description
Designate Official Version	<p>Allows any version of a document to be designated as the official version. The official version, which is not necessarily the most recently edited version, is the one located in searches.</p> <p>The official version is usually determined by the creator or author of the document. However, the official version can be designated by the last user to edit the document (if the user has this right). A user also needs the Change right to the document to be able to designate an official version.</p>
Reset In-Use Flag	<p>The In-Use flag protects against data loss by preventing multiple users from concurrently opening the same document. The purpose of the Reset In-Use Flag right is to allow a user or librarian to reset a document's status when the document is in use by someone else or when it is erroneously flagged as in use.</p> <p>In the GroupWise client the document properties Status field displays the current In-Use flag setting for a document. The Status field is automatically set to In Use when a document is opened and reset to Available when a document is closed. There can also be other values, such as Checked Out. A document cannot be checked out when its status is In Use.</p>

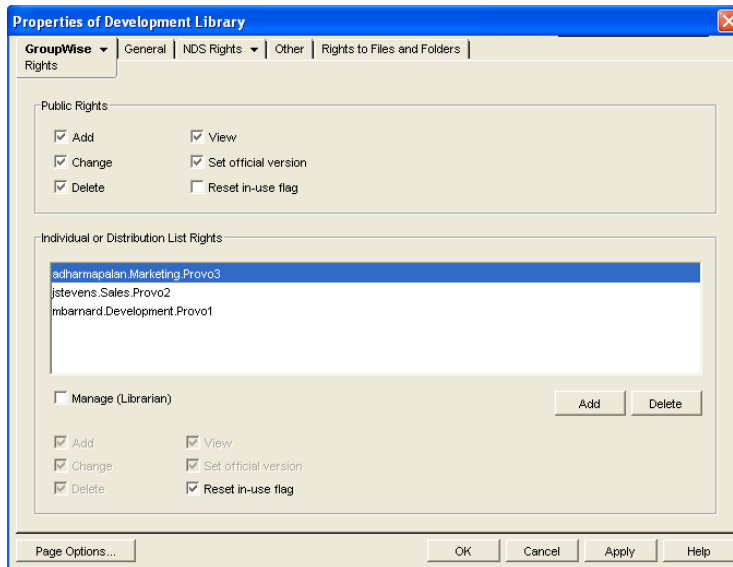
There are a variety of reasons for which you might want to restrict certain library rights, including:

- ◆ Your libraries are specialized by department and you want to restrict access to sensitive libraries, such as a payroll library.
- ◆ Your libraries are distributed across multiple post offices and you want to restrict the scope of user searches to only the libraries they should use, thereby speeding up searches.
- ◆ Your libraries are distributed across multiple servers and you want to minimize network traffic.
- ◆ You have some users who should have more rights than other users to certain libraries.

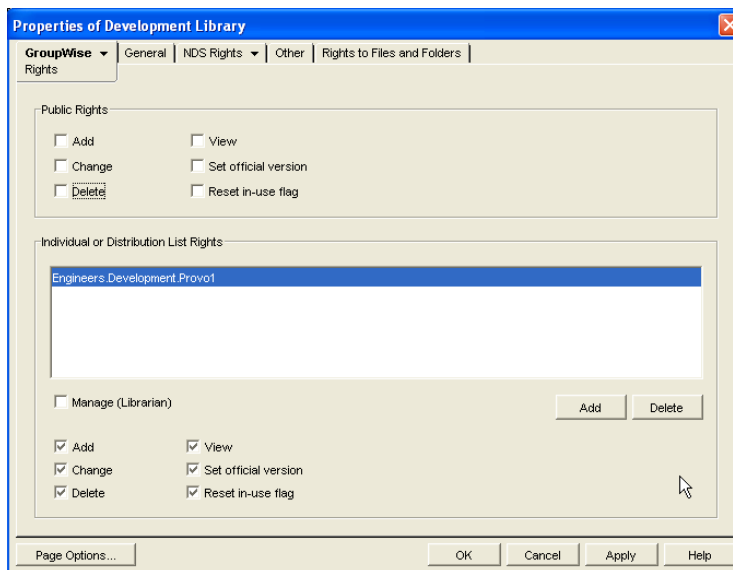
To restrict public rights while granting individual rights:

- 1 In ConsoleOne, browse to and right-click the Library object, then click *Properties*.
- 2 Click *GroupWise > Rights* to display the Rights page.
- 3 In the *Public Rights* box, deselect the rights that you want to remove from all users.
- 4 Click *Add*, then browse to and select the users who need to have rights to the library.

If the number is large, you might find it easier to create a distribution list for users who need rights. Then you can select one distribution list rather than multiple users. See [Chapter 18, "Creating and Managing Distribution Lists," on page 265](#)
- 5 In the *Individual or Distribution List Rights* box, select the users or distribution lists to grant rights to.
- 6 Below the list, select the rights that you want to grant.



In the first example, only one user is granted the Reset In-Use Flag right.



In the second example, only members of the Engineers group are granted any rights to the Development Library.

7 Click *OK* to save the updated library rights information.

22.6.4 Adding and Training Librarians

When you first create a library, you might for convenience assign yourself as the initial librarian. As library activity increases you can add librarians, and if desired, remove yourself as a librarian.

- ◆ “Understanding the Role of the Librarian” on page 327
- ◆ “Setting Up a Librarian GroupWise Account (Optional)” on page 329
- ◆ “Assigning Librarians” on page 329

Understanding the Role of the Librarian

Keep in mind the following when assigning librarians:

- ◆ “[Librarian Identity](#)” on page 327
- ◆ “[Librarian Functions](#)” on page 327
- ◆ “[Librarian Rights](#)” on page 328

Librarian Identity

Any GroupWise user with access to a library can be a librarian for the library. You can have multiple librarians for a single library. You can also assign a single user as a librarian for multiple libraries. Because being a librarian entails additional functions and rights in the library, you should choose responsible users as librarians.

Librarian Functions

A librarian can perform the following actions:

- ◆ Check out a document without a copy.
- ◆ Modify the properties of any document in the library.
- ◆ Copy documents to another library.
- ◆ Delete both documents and properties.
- ◆ Reassign document creators and authors to handle orphaned documents
- ◆ Reset a document’s status (change the In-Use flag).
- ◆ View all activity log records of any document in the library.
- ◆ Restore document BLOBs from backup.
- ◆ Perform mass operations, such as moving, deleting, archiving, and changing properties.
- ◆ Perform searches (but not full-text searches) on documents that are not available for searching by regular users.
- ◆ Use GroupWise third-party APIs to generate reports on all library documents.

All operations available to a normal user are also available to a librarian, as long as the security requirement discussed under “[Librarian Rights](#)” on page 328 is not compromised. The intention is that librarians can modify their own documents and document properties.

All actions taken by a librarian are written to a document’s activity log.

Unless the librarian’s own GroupWise user ID is in the *Author* or *Security* fields, a librarian cannot perform the following functions:

- ◆ Open a document
- ◆ View a document
- ◆ Save a document
- ◆ Check out a document with a copy

To help new librarians get started, you should explain these librarian functions to them. You can also refer new librarians to the “librarian users” topic in the GroupWise client help.

Librarian Rights

In addition to the six public rights, libraries also have a Manage right. When you grant the Manage right to a GroupWise user, you designate that user as a librarian. The Manage right gives the librarian full access to the properties of every document in the library. However, the Manage right does *not* grant the librarian direct access to the content of any document.

Because a librarian has full access to document properties, the librarian could add his or her own personal GroupWise user ID to the Author or Security field of a document, thus gaining access to the document's content. However, a high-priority e-mail notification would automatically be sent to the original person listed in the Author field informing him or her of the action by the librarian. Therefore, document privacy is maintained.

The following table lists the various librarian functions, and whether an e-mail notification is sent if the function is performed.

Table 22-5 *Librarian Functions*

Librarian Function	Notification?
Modify the Author or Security fields	High-priority e-mail to the author
Copy a document	High-priority e-mail to the author
Delete a document	High-priority e-mail to the author
Replace a document with a copy from backup	High-priority e-mail to the author
Perform a mass document operation (copy, move, delete, or archive documents; modify document properties)	Mass operation e-mails
Reset a document's status (In-Use flag)	None
Check out a document without a copy	None
View the activity log of any document	None
Generate reports on any documents (using GroupWise third-party APIs)	None

Mass operation notifications do not specify what action was taken by the librarian; they only specify that an action was taken.

The following table lists the document property fields that the librarian has rights to modify, and whether an e-mail notification is sent if the field is modified.

Property Field	Notification?
Subject	No
Author	Yes
Security (sharing list)	Yes
Document Type	No
Version Description	No

Property Field	Notification?
Custom Fields	No
File Extension	No
Official Version	No
Current Version	No

If you remove the Manage right from a user, you must manually deselect any rights that the user gained from being made a librarian that the user did not previously have.

Setting Up a Librarian GroupWise Account (Optional)

The Manage right is always in effect for those users who have been assigned as librarians. However, there might be times librarians want to act on their own accord without the possibility of seeing or modifying documents that belong to other users.

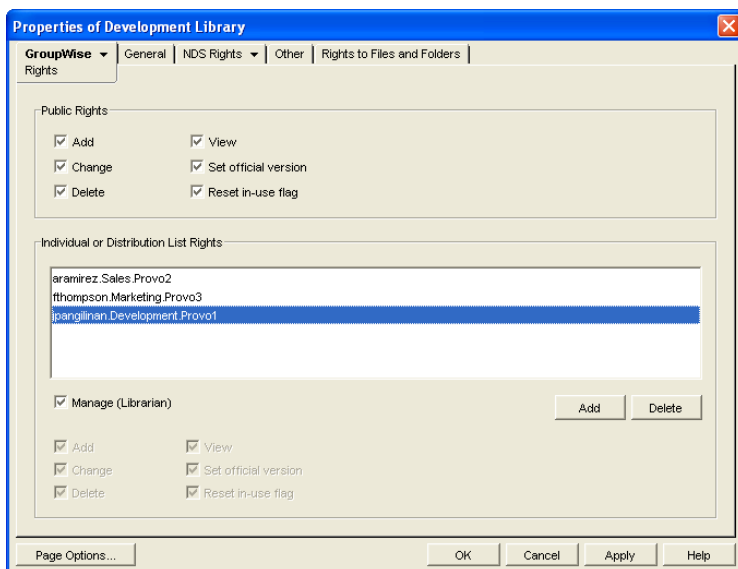
To allow users assigned as librarians to act as normal GroupWise users, you could create a single librarian account for a library and have users who need to perform librarian tasks log in using the librarian GroupWise account and password instead of their own.

If users assigned as librarians log in under a librarian GroupWise account, they do not have access to any documents they would normally have access to under their own accounts, except by altering the Author or Security fields.

Assigning Librarians

To add librarians to a library:

- 1 In ConsoleOne, browse to and right-click the Library object, then click *Properties*.
- 2 Click *GroupWise > Rights* to display the Rights page.
- 3 Click *Add*, browse to and select the users that you want to assign as librarians, then click *OK* to return to the Rights page.



- 4 In the *Individual or Distribution List Rights* box, select the librarian users, select *Manage (Librarian)*, then click *OK* to save the library rights changes.

22.6.5 Maintaining Library Databases

The Mailbox/Library Maintenance feature of ConsoleOne offers database maintenance features to keep your library and document databases in good condition. See [Chapter 28, “Maintaining Library Databases and Documents,” on page 391](#). It also helps you manage the disk space occupied by library and document databases and document storage areas. See [Section 30.4, “Reducing the Size of Libraries and Document Storage Areas,” on page 404](#).

When document creators or authors are removed from your GroupWise system, orphaned documents might be left behind. See [Section 23.4.3, “Handling Orphaned Documents,” on page 362](#).

To supplement your library maintenance procedures, you should back up your libraries and documents regularly. See [Section 31.3, “Backing Up a Library and Its Documents,” on page 408](#).

22.6.6 Moving a Library

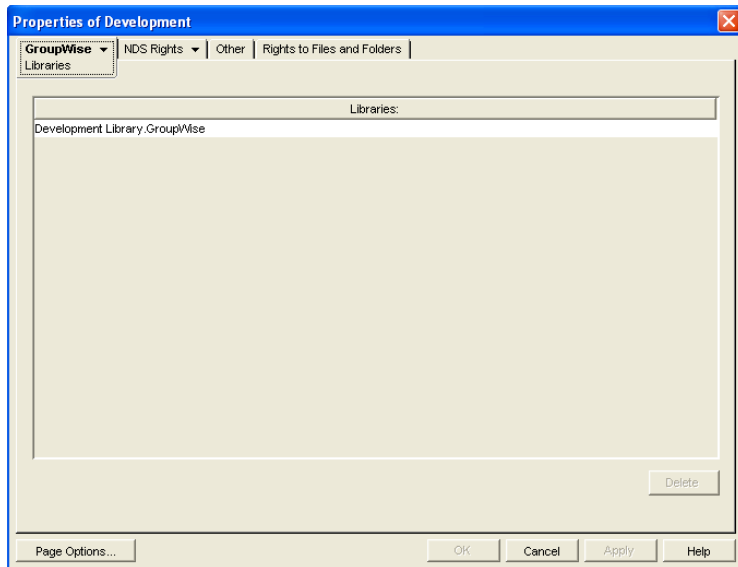
You cannot move a Library object from one location to another in the eDirectory tree. To accomplish the equivalent, you would need to create a new library in the desired location, use a mass move operation in the GroupWise client to move the library’s documents from the old library into the new library, and then delete the old library.

As an alternative to moving the library, you can move just its document storage areas. See [“Moving a Document Storage Area” on page 323](#).

22.6.7 Deleting a Library

You should not delete a library until you make sure that all documents still in the library are no longer needed.

- 1 In ConsoleOne, browse to and right-click the Post Office object that owns the library to delete, then click *Properties*.
- 2 Click *GroupWise > Libraries* to display the Libraries page.



3 Select the library to delete, then click *Delete*.

All document storages areas and documents are deleted along with the library.

4 Click *OK* to close the Libraries page and complete the deletion of the library.

22.7 Library Worksheets

- ♦ [Section 22.7.1, “Basic Library Worksheet,” on page 331](#)
- ♦ [Section 22.7.2, “Full-Service Library Worksheet,” on page 332](#)

22.7.1 Basic Library Worksheet

For instructions on how to use this worksheet, see [Section 22.1, “Planning a Basic Library,” on page 299](#).

Item	Explanation
1) eDirectory Container:	<p>Specify the eDirectory container where you will create the Library object. This could be the same container as the post office that the library is assigned to. The Library object cannot later be moved to a different location.</p> <p>For more information, see Section 22.1.2, “Determining the Context for the Library Object,” on page 300.</p>
2) Library Name:	<p>Specify a name for the new library. Choose the name carefully. After the library is created, it cannot be renamed.</p> <p>For more information, see Section 22.1.3, “Choosing the Library Name,” on page 300.</p>
3) Post Office:	<p>Indicate which post office the library will belong to. A library cannot later be assigned to a different post office.</p> <p>For more information, see Section 22.1.1, “Selecting the Post Office That the Library Will Belong To,” on page 300.</p>

Item	Explanation
4) Store Documents at the Post Office?	Mark No unless you are absolutely certain you will never need to move the documents stored at the post office
<ul style="list-style-type: none"> ◆ No ◆ Yes 	For more information, see Section 22.1.4, “Deciding Where to Store Documents,” on page 301.
5) Document Storage Area Description:	Provide a brief description for the document storage area, including such information as to which post office it belongs, its current capacity in megabytes, and the types of documents that might be stored in it.
	For more information, see Section 22.1.4, “Deciding Where to Store Documents,” on page 301.
6) Document Storage Area Path:	If you are not storing documents at the post office, specify the document storage area for the library.
	For more information, see Section 22.1.4, “Deciding Where to Store Documents,” on page 301.
7) Library Description:	Provide a description for the library to help you identify its function in the system.
	For more information, see Section 22.1.3, “Choosing the Library Name,” on page 300.
8) Display Name:	Specify the library name you want users to see in the GroupWise client, if it is different from the Library object name.
	For more information, see Section 22.1.3, “Choosing the Library Name,” on page 300.

22.7.2 Full-Service Library Worksheet

For instructions on how to use this worksheet, see [Section 22.3, “Planning Full-Service Libraries,” on page 303.](#)

Item	Explanation
1) eDirectory Container:	Specify the name of the eDirectory container where you will create the Library object. This could be the same container as for the post office that owns the library. The Library object cannot later be moved to a different context.
	For more information, see Section 22.3.3, “Determining the Contexts for Library Objects,” on page 308.
2) Library Name:	Specify a name for the new library. Choose the name carefully. After the library is created, it cannot be renamed.
	For more information, see Section 22.3.4, “Choosing Library Names,” on page 308.

Item	Explanation
3) Post Office:	<p>Specify the post office that the library will belong to. A library cannot later be assigned to a different library.</p> <p>If you will using a centralized library configuration and you have not yet created the DMS post office, follow the instructions in Chapter 11, “Creating a New Post Office,” on page 155 before you begin creating libraries.</p> <p>For more information, see Section 22.3.1, “Deciding Which Libraries to Create,” on page 304.</p>
<p>4) Document Usage Estimate:</p> <p>a) Number of DMS users:</p> <p>b) Average number of documents per user:</p> <p>c) Average document size (bytes):</p> <p>d) Average number of versions per document:</p> <p>e) Total: (multiply a times b times c times d)</p>	<p>Calculate how much disk space the new library will need in order to help you select a location where you will store documents.</p> <p>For more information, see Section 22.3.5, “Deciding Where to Store Documents,” on page 309.</p>
5) Document Storage Area Description:	<p>Provide a brief description for the document storage area, including such information as which library it belongs to, its current capacity in megabytes, and the types of documents stored in it.</p> <p>For more information, see Section 22.3.5, “Deciding Where to Store Documents,” on page 309.</p>
6) Document Storage Area Path:	<p>Specify the UNC path to the location where you want to create the initial document storage area for the post office.</p> <p>For more information, see Section 22.3.5, “Deciding Where to Store Documents,” on page 309.</p>
7) Library Description:	<p>Provide a brief description for the new library, including what post office it belongs to, what types of documents will be stored in it, and so on.</p> <p>For more information, see Section 22.3.1, “Deciding Which Libraries to Create,” on page 304.</p>
<p>8) Start Version Number:</p> <ul style="list-style-type: none"> ◆ 0 ◆ 1 	<p>Select 0 or 1.</p> <p>For more information, see Section 22.3.6, “Setting Document Version Options,” on page 311.</p>
9) Maximum Archive Size:	<p>Specify the maximum number of bytes to allow per archive directory. Use a size that conforms with your backup strategy and backup medium requirements.</p> <p>For more information, see Section 22.3.7, “Figuring Maximum Archive Directory Size,” on page 312.</p>

Item	Explanation
10) Display Name:	<p>Specify the library name you want users to see in the GroupWise client, if it is different from the Library object name.</p> <p>For more information, see Section 22.3.4, “Choosing Library Names,” on page 308.</p>
11) Restrict Public Library Rights: <ul style="list-style-type: none"> ◆ Add ◆ Change ◆ Delete ◆ View ◆ Designate Official Version ◆ Reset In-Use Flag 	<p>Cross out any public library rights you do not want all users to have.</p> <p>For more information, see Section 22.3.1, “Deciding Which Libraries to Create,” on page 304 or Section 22.3.6, “Setting Document Version Options,” on page 311.</p>
12) Librarians:	<p>List any users you want to have full rights to all documents in the library.</p> <p>For more information, see Section 22.3.8, “Designating Initial Librarians,” on page 312.</p>
13) Dedicated POA for Indexing <ul style="list-style-type: none"> ◆ Yes ◆ No 	<p>Mark whether or not you want to configure and run a separate POA dedicated to indexing documents.</p> <p>For more information, see Section 22.3.10, “Determining Your Indexing Needs,” on page 314.</p>
14) Set Up Integrations <ul style="list-style-type: none"> ◆ Yes ◆ No 	<p>Mark whether or not you need to manually set up integrations.</p> <p>For more information, see Chapter 24, “Integrations,” on page 363.</p>

Creating and Managing Documents

23

GroupWise® Document Management Services (DMS) lets Windows client users create documents with integrated applications, save them, then easily locate a specific document later without knowing the application, a specific document name, or the document's physical location. Windows client users can create, share, locate, edit, view, and check out documents that are created under the management of GroupWise DMS.

- ◆ [Section 23.1, “Adding Documents to Libraries,” on page 335](#)
- ◆ [Section 23.2, “Organizing Documents,” on page 338](#)
- ◆ [Section 23.3, “Indexing Documents,” on page 351](#)
- ◆ [Section 23.4, “Managing Documents,” on page 360](#)

NOTE: Cross-Platform client users have only basic DMS capabilities, as described in “[Working with Documents](#)” in the *GroupWise 7 Cross-Platform Client User Guide*.

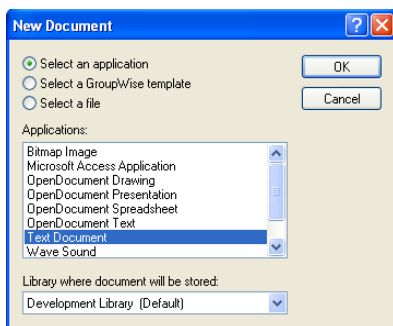
23.1 Adding Documents to Libraries

After you set up one or more libraries, users can add new documents to any library to which they have rights. They can also import existing documents into the GroupWise DMS system.

- ◆ [Section 23.1.1, “Creating New Documents in the GroupWise Windows Client,” on page 335](#)
- ◆ [Section 23.1.2, “Importing Existing Documents into the GroupWise DMS System,” on page 336](#)
- ◆ [Section 23.1.3, “Managing Groups of Documents,” on page 337](#)

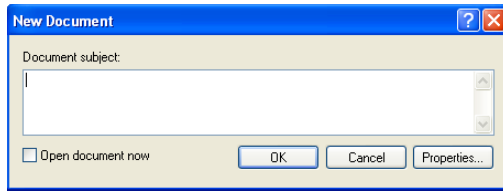
23.1.1 Creating New Documents in the GroupWise Windows Client

- 1 Click *File > New > Document*.

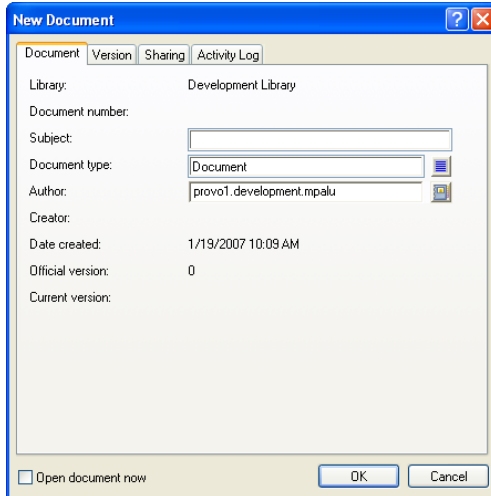


- 2 Select the program you want to use to create the document, select the library where you want to store the document, then click *OK*.

- 3 In the New Document dialog box, type a brief description of the document.



- 4 To set document properties, click *Properties*.



- 5 Set the document properties as needed, then click *OK*.

The selected program starts so you can create a new document.

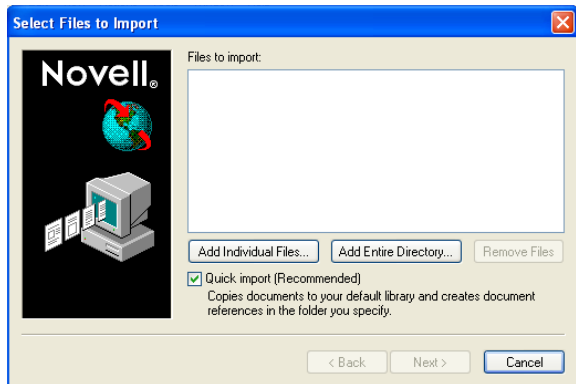
For more detailed information about creating documents in the GroupWise client, see “[Creating Documents](#)” in “[Creating and Working with Documents](#)” in the *GroupWise 7 Windows Client User Guide*. You can also look up “documents” in the GroupWise client help.

23.1.2 Importing Existing Documents into the GroupWise DMS System

Some users might have existing documents that they want to manage by adding them to a GroupWise library.

To import documents using the GroupWise Windows client:

- 1 Click *File > Import Documents*.



2 Click *Add Individual Documents*, browse to and select the documents to add, then click *OK*.

or

Click *Add Entire Directory*, browse to and select a directory containing documents to import, then click *OK*.

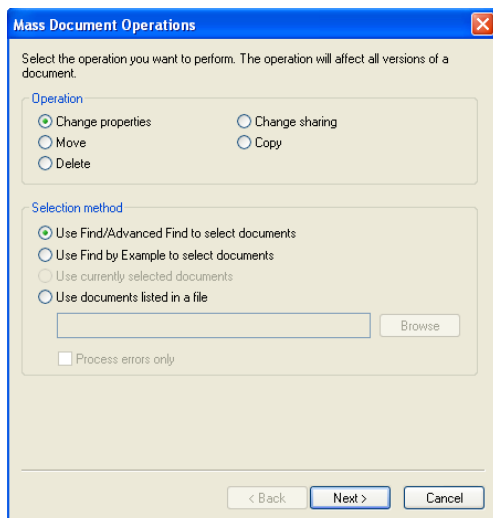
For additional instructions about creating documents in the GroupWise client, see “[Importing Documents into a GroupWise Library](#)” in “[Creating and Working with Documents](#)” in the *GroupWise 7 Windows Client User Guide*. You can also look up “import documents” in the GroupWise client help.

23.1.3 Managing Groups of Documents

As users add documents and your GroupWise DMS system grows, your librarians might need to assist users in managing large groups of documents. If you have not yet assigned librarians to your GroupWise libraries, see [Section 22.6.4, “Adding and Training Librarians,”](#) on page 326.

To manage large groups of documents in the GroupWise Windows client:

1 Click *Tools > Mass Document Operations*.



- 2 Select the operation to perform on the group of documents:
 - ♦ Change properties
 - ♦ Move
 - ♦ Delete
 - ♦ Change sharing
 - ♦ Copy
- 3 Select the method for identifying the group of documents to perform the operation on:
 - ♦ Use Find/Advanced Find to select documents
 - ♦ Use Find by Example to select documents
 - ♦ Use currently selected documents
 - ♦ Use documents listed in a file.

For additional instructions about creating documents in the GroupWise client, see “[Managing Groups of Documents](#)” in “[Creating and Working with Documents](#)” in the *GroupWise 7 Windows Client User Guide*. You can also look up “mass document operations” in the GroupWise client help.

23.2 Organizing Documents

Because documents are stored in a database structure, information can be associated with each document that is not part of the document itself. This additional information is stored as document properties.

- ♦ [Section 23.2.1, “Customizing Document Properties,” on page 338](#)
- ♦ [Section 23.2.2, “Defining Related Document Properties,” on page 347](#)

NOTE: Document properties cannot be set in ConsoleOne® on Linux. However, you can use ConsoleOne on Windows to set document properties for libraries that are located on Linux.

23.2.1 Customizing Document Properties

For a summary of document properties, see [Section 21.3.1, “Document Properties,” on page 295](#). To review, the following document properties are provided by default:

Author
Creator
Current Version Number
Date Created
Document Number
Document Type
Official Version Number
Subject

The default document property types cannot be deleted. Except for the Document Type property, they cannot be modified. However, you can add custom document types as needed.

- ♦ [“Customizing the Default Document Type Property” on page 339](#)
- ♦ [“Planning Custom Document Properties” on page 340](#)

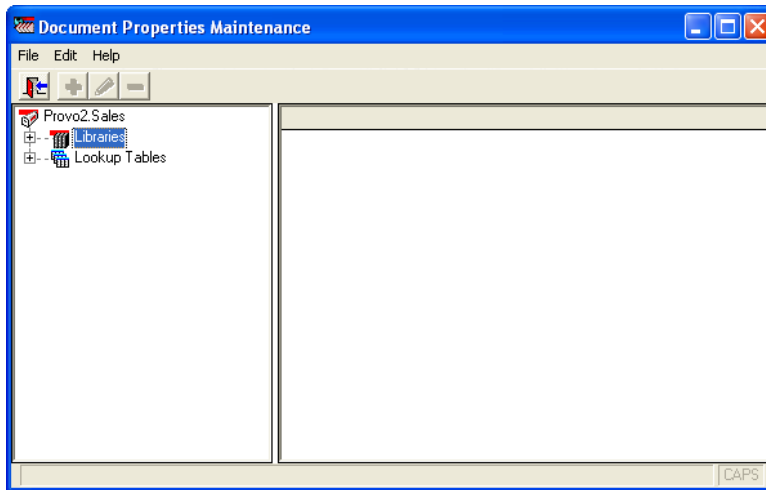
- ♦ “Adding Custom Document Properties” on page 343
- ♦ “Planning Custom Lookup Tables for Custom Document Properties” on page 344
- ♦ “Adding Custom Lookup Tables” on page 346

Customizing the Default Document Type Property

The Document Type property is the only default document property that you can modify. For a review of document types, see [Section 21.3.2, “Document Types,” on page 296](#). You must have at least one document type, because it is a required document property field.

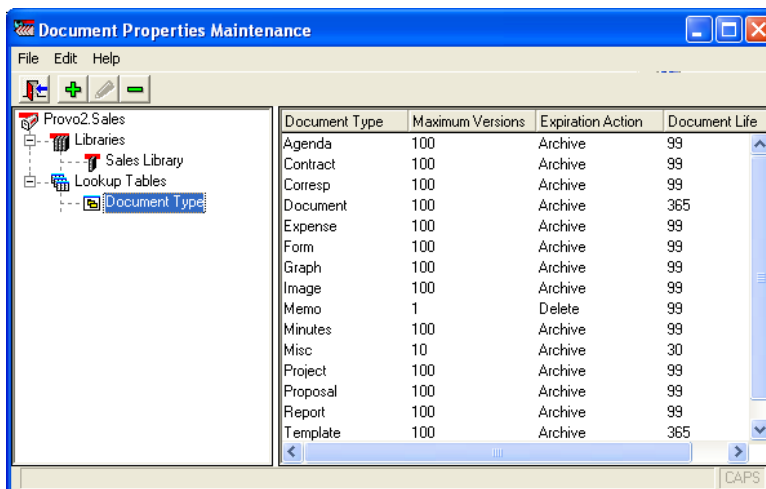
To modify the Document Type property for all libraries in a post office:

- 1 In ConsoleOne on Windows, browse to and select the post office that has libraries where you want to modify the Document Type property.
- 2 Click *Tools > GroupWise Utilities > Document Properties Maintenance*.



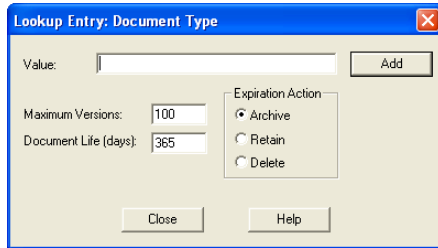
If you expand Libraries and select each library, you see that each library has the Document Type property. It is required.

- 3 Expand Lookup Tables, then select *Document Type*.

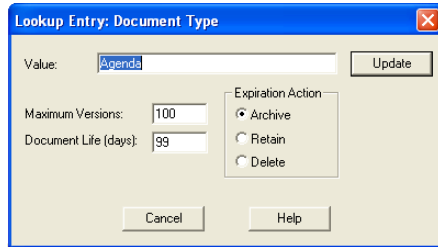


The lookup table defines the list of choices offered to users when they select a document type, no matter which library in the post office they are creating the document in.

- 4 To add a new document type, click *Edit > Add*. In the *Value* field, type the new document type, click *Add*, then click *Close*.



- 5 To edit an existing document type, click *Edit > Edit*. Change the settings as needed, click *Update*, then click *Close*.



For more details about the fields associated with the Document Type property, see [Section 21.3.2, “Document Types,” on page 296](#).

- 6 To delete a document type, select the document type, click *Edit*, then click *Delete*.

Planning Custom Document Properties

When you need to add custom document properties, print the [“Custom Document Properties Worksheet” on page 342](#). One copy of the worksheet accommodates three new document properties.

The following table describes the fields and values associated with custom document properties:

Table 23-1 Document Properties

Document Property Field	Field Values
<i>Property Field:</i>	The document property field is the label that GroupWise client users see in the document Properties dialog box. When you create a new document property, you can provide a description as well. However, the description displays only in ConsoleOne, not in the GroupWise client.
<i>Read-Only?</i>	Yes: The document property field displays information, but it is not accessible to users. No: Users can type in the document property field.

Document Property Field	Field Values
<i>Required?</i>	<p>Yes: The user must supply a value for the document property.</p> <p>No: The user can leave the document property field blank.</p>
<i>Hidden?</i>	<p>Yes: The document property field is not displayed in the GroupWise client interface.</p> <p>No: The document property field is displayed in the GroupWise client interface.</p>
<i>Lookup Table:</i>	A lookup table is required for a custom document property only when you want to offer the user a list of choices, rather than having the user type in the setting. The lookup table guarantees that the user provides a valid setting. For more information, see “Planning Custom Lookup Tables for Custom Document Properties” on page 344 .
<i>Related Property:</i>	A related property is required for a custom document property only when you create a lookup table that references a related lookup table. For more information, see Section 23.2.2, “Defining Related Document Properties,” on page 347 .
<i>Data Type:</i>	<p>Binary: An Object API reads and writes this information</p> <p>Date: Displayed in the Windows format selected by the user</p> <p>Number: Numerical only</p> <p>String: Alphanumeric</p>
<i>Maximum Length:</i>	For the String data type, you can specify the maximum number of characters allowed in the string. The longest possible string is 65535 alphanumeric characters.
<i>Case:</i>	For the String data type, you can control how the user’s input is handled: <p>Upper: Forces entries to display in uppercase</p> <p>Lower: Forces entries to display in lowercase</p> <p>Mixed: Allows alphabetical characters to be displayed as typed</p>
<i>Minimum Value:</i>	For the Number data type, you can specify a minimum acceptable value.
<i>Maximum Value:</i>	For the Number data type, you can specify a maximum acceptable value.
<i>Parent:</i>	If the new document property is related to an existing document property in a parent-child relationship, you must specify the parent document property. For more information, see Section 23.2.2, “Defining Related Document Properties,” on page 347 .

Use copies of the [“Custom Document Properties Worksheet” on page 342](#) to plan the custom document properties you want to add to libraries.

If you need to create one or more lookup tables for your custom document properties, follow the instructions in [“Planning Custom Lookup Tables for Custom Document Properties” on page 344](#) and [“Adding Custom Lookup Tables” on page 346](#). Lookup tables used by new document properties should exist before you create custom document properties.

Then continue with [“Adding Custom Document Properties” on page 343](#).

Custom Document Properties Worksheet

For instructions on how to use this worksheet, see [“Planning Custom Document Properties” on page 340](#).

Item	Custom Document Property	Custom Document Property	Custom Document Property
1) Post Office:			
2) Libraries:			
3) Property Label:			
4) Description:			
5) Read-Only?			
♦ Yes			
♦ No			
6) Required?			
♦ Yes			
♦ No			
7) Hidden?			
♦ Yes			
♦ No			
8) Lookup Table:			
9) Data Type:			
♦ Binary			
♦ Date			
♦ Number			
♦ String			
10) Maximum Length:			
11) Case:			
♦ Mixed			
♦ Upper			
♦ Lower			
12) Minimum Value:			
13) Maximum Value:			

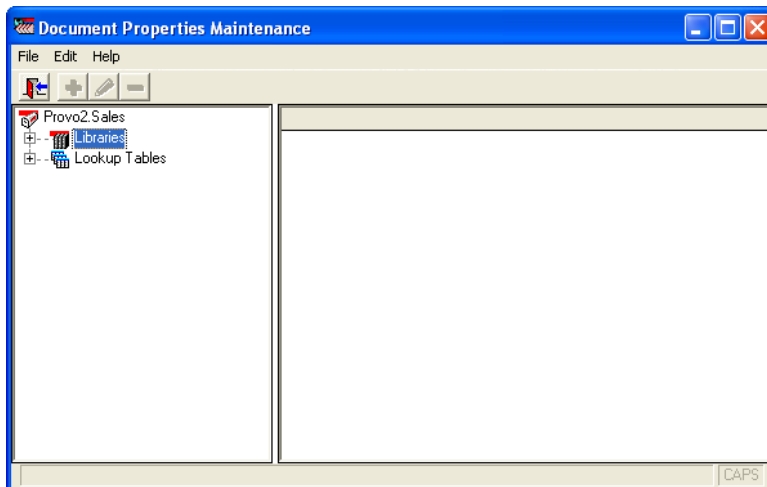
Item	Custom Document Property	Custom Document Property	Custom Document Property
14) Parent:			

Adding Custom Document Properties

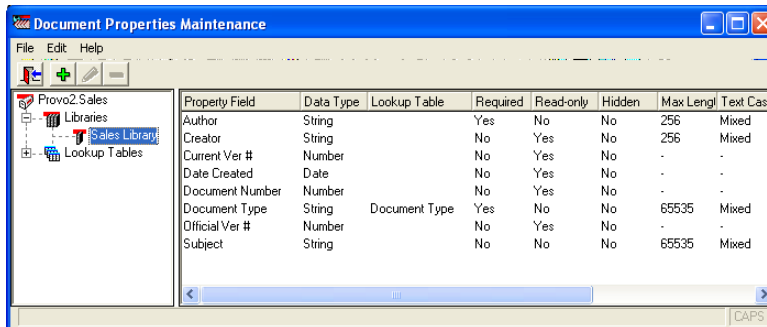
After you have determined what new document properties will meet the needs of your DMS system, as described in [“Planning Custom Document Properties” on page 340](#), and if necessary you have created lookup tables for your new document properties, as described in [“Planning Custom Lookup Tables for Custom Document Properties” on page 344](#) and [“Adding Custom Lookup Tables” on page 346](#), you are ready to add new custom document properties.

To add new custom document properties:

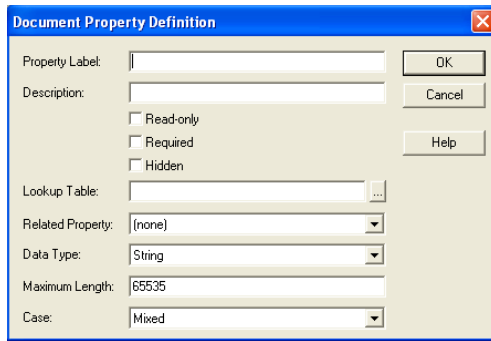
- 1 In ConsoleOne on Windows, browse to and select the Post Office object that owns the library for which you are creating custom document properties ([worksheet item 1](#)).
- 2 Click *Tools > GroupWise Utilities > Document Properties Maintenance*.



- 3 Expand Libraries, then select the library for which you are creating custom document properties ([worksheet item 2](#)).



- 4 Click *Edit > Add* to display the Document Property Definition dialog box.



Fields vary according to data type.

- 5 Fill in the fields ([worksheet items 3 through 14](#)).
- 6 Click *OK* to create the new custom document property.

In the Document Properties Maintenance window, the new document property is listed in alphabetical order. In the GroupWise client, custom document properties are listed after default document properties, in the order in which they are added to the library.

- 7 Repeat [Step 4](#) through [Step 6](#) for each new custom document property.

When users next create documents in the library, the new custom document properties will be available to them.

Planning Custom Lookup Tables for Custom Document Properties

A lookup table is required for a custom document property only when you want to offer the user a list of choices, rather than having the user type in the setting. The lookup table guarantees that the user provides a valid setting.

Lookup tables are defined for the post office, so that multiple libraries in the post office can reference the same lookup tables.

When you need to provide lookup tables for custom document properties, print the [“Custom Lookup Tables Worksheet”](#) on [page 345](#). One copy of the worksheet accommodates three new lookup tables.

The following table describes the fields and values associated with lookup tables:

Table 23-2 *Lookup Table Values*

Look Up Table Field	Field Values
<i>Lookup Table Name:</i>	<p>The lookup table name identifies the lookup table when you are assigning it to a property field.</p> <p>If the lookup table pertains to only one document property, you can name the lookup table the same as the document property. For example, the default property Document Type uses a lookup table named Document Type.</p> <p>However, lookup tables can be used by multiple document properties. For example, you could have a lookup table named Project used by document properties named Primary Project and Secondary Project.</p> <p>When you create a new lookup table, you can provide a description as well. If the lookup table name does not match a document property, you could indicate what document properties use the lookup table.</p>
<i>Related Table:</i>	<p>A related table is required for a lookup table only when you want to define related properties. For more information, see Section 23.2.2, “Defining Related Document Properties,” on page 347.</p>
<i>Data Type:</i>	<p>Binary: An Object API reads and writes this information</p> <p>Date: Displayed in the Windows format selected by the user</p> <p>Number: Numerical only</p> <p>String: Alphanumeric</p>
<i>Maximum Length:</i>	<p>For the String data type, you can specify the maximum number of characters allowed in the string. The longest possible string is 65535 alphanumeric characters.</p>
<i>Case:</i>	<p>For the String data type, you can control how the user’s input is handled:</p> <p>Upper: Forces entries to display in uppercase</p> <p>Lower: Forces entries to display in lowercase</p> <p>Mixed: Allows alphabetical characters to be displayed as typed</p>
<i>Minimum Value:</i>	<p>For the Number data type, you can specify a minimum acceptable value.</p>
<i>Maximum Value:</i>	<p>For the Number data type, you can specify a maximum acceptable value.</p>
<i>Lookup Table Entries:</i>	<p>The lookup table entries are the settings that users will choose from when they set the custom document property.</p>

Use copies of the [“Custom Lookup Tables Worksheet”](#) on page 345 to plan the lookup tables you need in order to provide values for new custom document properties. If you need to use related properties, follow the instructions in [Section 23.2.2, “Defining Related Document Properties,”](#) on page 347. Then continue with [“Adding Custom Lookup Tables”](#) on page 346.

Custom Lookup Tables Worksheet

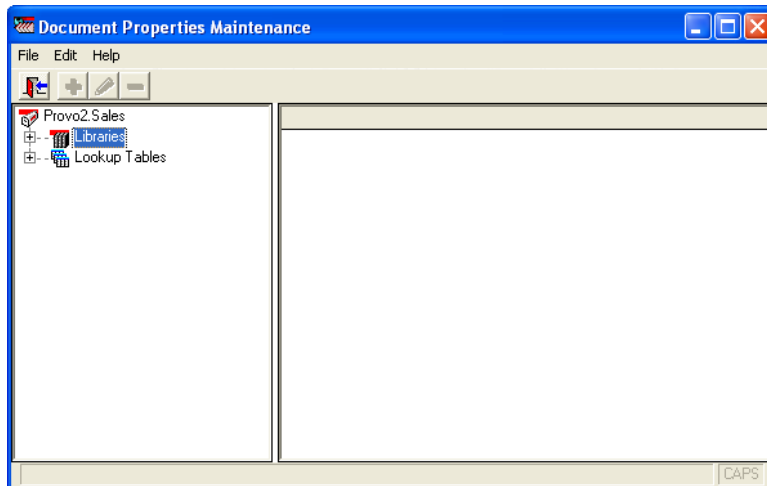
For instructions on how to use this worksheet, see [“Planning Custom Lookup Tables for Custom Document Properties”](#) on page 344.

Item	Custom Lookup Table	Custom Lookup Table	Custom Lookup Table
1) Post Office:			
2) Property Label:			
3) Lookup Table Name:			
4) Description:			
5) Related Table:			
6) Data Type:			
	<ul style="list-style-type: none"> ◆ Binary ◆ Date ◆ Number ◆ String 		
7) Maximum Length:			
8) Case:			
	<ul style="list-style-type: none"> ◆ Mixed ◆ Upper ◆ Lower 		
9) Minimum Value:			
10) Maximum Value:			
11) Lookup Table Entries:			

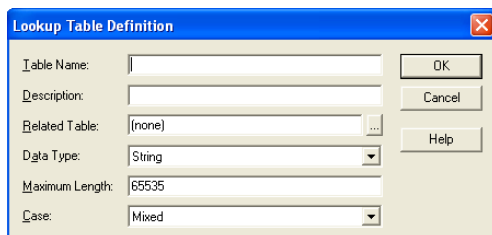
Adding Custom Lookup Tables

After you have determined what new lookup tables and lookup table entries you need to accommodate your new custom document properties, as described in [“Planning Custom Lookup Tables for Custom Document Properties” on page 344](#), you are ready to add new lookup tables.

- 1** In ConsoleOne on Windows, browse to and select the Post Office object that owns the libraries for which you are creating lookup tables ([worksheet item 1](#)).
- 2** Click *Tools > GroupWise Utilities > Document Properties Maintenance*.

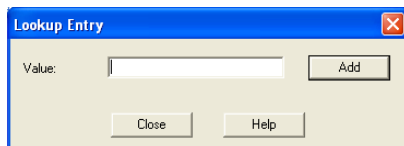


- 3 Select *Lookup Tables*, then click *Edit > Add* to display the Lookup Table Definition dialog box.



Fields vary depending on data type.

- 4 Fill in the fields ([worksheet items 3 through 10](#)).
- 5 Click *OK* to create the new lookup table.
- 6 Select the new lookup table, then click *Edit > Add* to display the Lookup Entry dialog box.



- 7 In the *Value* field, type one of the document property settings you want to offer to users ([worksheet item 11](#)), then click *Add*.
- 8 Repeat [Step 7](#) for all the lookup table entries listed on your worksheet for this lookup table, then click *Close*.
- 9 Click *OK* to create the custom lookup table.

23.2.2 Defining Related Document Properties

When document properties are related, your choice for the first property determines the settings you are offered for the second property. The user's selection in the first field determines what choices were offered in the second field.

Related document properties are set up by creating related lookup tables. Complete the following tasks to set up related document properties:

- ◆ [“Planning Related Document Properties” on page 348](#)
- ◆ [“Creating Related Lookup Tables” on page 350](#)
- ◆ [“Setting Up Related Document Properties” on page 351](#)

Planning Related Document Properties

Related document properties use a parent-child relationship. A parent property can have multiple child properties, but a child property can belong to only one parent. The relationship can include only two levels. A parent property cannot function as a child and a child property cannot function as a parent. The default document properties cannot participate as related properties.

In the Development Library example above, the Product document property would be the parent property and the Component document property would be the child property. If the Development Library belonged to Novell[®], products would include GroupWise, NetWare[®], ZENworks[®], and so on. When users selected GroupWise as the product, listed components could include the GroupWise client, the agents, GroupWise system administration, and so on. Or you could let users type in whatever components they wanted.

When you need to set up related document properties, print the [“Related Document Properties Worksheet” on page 349](#). One copy of the worksheet accommodates one pair of related property fields, one parent lookup table, and one child lookup table (optional).

The following table describes the document properties and lookup tables that are required in order to set up related document properties:

Table 23-3 *Document Properties and Lookup Tables*

Properties and Tables	Description
Parent Document Property	The parent document property is the user’s first selection. In the Development Library example above, the parent document property is Product.
Child Document Property	The child document property is the user’s second selection, based on the first selection. In the Development Library example above, the child document property is Component.
Parent Lookup Table	The entries in the parent lookup table provide the choices offered to the user in the parent document property field. In the Development Library example above, the user could select from GroupWise, NetWare, and ZENworks in the Product field.
Child Lookup Table	The entries in the child lookup table provide the choices offered to the user after a choice from the parent lookup table has been selected. In the Development Library example above, if the user selected GroupWise in the Product field, the child lookup table would provide choices such as Agents, Client, and Admin in the Component field. The child lookup table is not required if you want to allow the user to type in anything they want in the child document property field.

Use copies of the “[Related Document Properties Worksheet](#)” on page 349 to plan the related document properties you want to use. One copy of the worksheet accommodates one pair of related properties. Continuing with the Development Library example, a filled-in worksheet might look like this:

Table 23-4 *Sample Document Properties Worksheet*

Item	Setting	Item	Setting
1) Parent Document Property	Property Name: Product	4) Child Document Property	Property Name: Component
2) Parent Lookup Table	Table Name: Product	5) Child Lookup Table	Table Name: Component
3) Parent Lookup Entries	(required)	6) Child Lookup Entries	(optional)
	Parent Entry: GroupWise		Child Entries: Admin Agents Client
	Parent Entry: NetWare		Child Entries: Client eDirectory Servers
	Parent Entry: ZENworks		Child Entries: Desktops Servers

When you have finished planning related properties and their associated lookup tables, you should print and fill in a worksheet for each for each new related property, as described in “[Planning Custom Document Properties](#)” on page 340, and for each new lookup table, as described in “[Planning Custom Lookup Tables for Custom Document Properties](#)” on page 344.

Then you are ready to continue with “[Creating Related Lookup Tables](#)” on page 350.

Related Document Properties Worksheet

For instructions on how to use this worksheet, see “[Planning Related Document Properties](#)” on page 348.

Item	Setting	Item	Setting
1) Parent Document Property	Name:	4) Child Document Property	Name:
2) Parent Lookup Table	Name:	5) Child Lookup Table	Name:
3) Parent Lookup Entries	(required)	6) Child Lookup Entries	(optional)

Item	Setting	Item	Setting
	Entry:		Entries:
	Entry:		Entries:
	Entry:		Entries:

Creating Related Lookup Tables

If you are supplying the choices for both related fields, you need both a parent lookup table and a child lookup table. If you are going to have users type information into the child property field, then you only need to create the parent lookup table. You should create lookup tables before creating the document properties that use them.

- ♦ [“Creating the Parent Lookup Table” on page 350](#)
- ♦ [“Creating the Child Lookup Table \(Optional\)” on page 350](#)

Creating the Parent Lookup Table

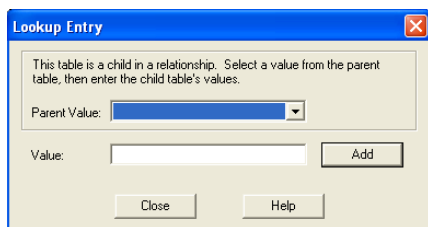
- 1 Create a new lookup table, as described in [Step 1](#) through [Step 5](#) in [“Adding Custom Lookup Tables” on page 346](#). Use [worksheet item 2](#) in the Table Name field. Leave the Related Table field set to (none).
- 2 Add entries to the new lookup table, as described in [Step 6](#) through [Step 8](#) in [“Adding Custom Lookup Tables” on page 346](#). Use the entries listed under [worksheet item 3](#) in the Value field.
- 3 Continue with [“Creating the Child Lookup Table \(Optional\)” on page 350](#).

or

If you are going to have users type information into the child property field, rather than selecting from a predefined list, skip to [“Setting Up Related Document Properties” on page 351](#)

Creating the Child Lookup Table (Optional)

- 1 Create a new lookup table, as described in [Step 1](#) through [Step 5](#) in [“Adding Custom Lookup Tables” on page 346](#). Use [worksheet item 5](#) in the Table Name field. Use [worksheet item 2](#) in the Related Table field to link the child table to the parent table.
- 2 Select the new lookup table, click *Edit*, then click *Add* to display the Lookup Entry dialog box.



- 3 Select a Parent value.
- 4 In the *Value* field, type one of the child lookup table entries for the selected parent value (worksheet item 6), then click *Add*.
- 5 Repeat Step 4 for each entry listed under worksheet item 6.
- 6 Repeat Step 3 through Step 5 for each parent value listed under worksheet item 3.
- 7 Continue with “Setting Up Related Document Properties” on page 351.

Setting Up Related Document Properties

After you have created related lookup tables, you are ready to set up the related document properties that use them. A few document property fields are required settings in the context of related properties:

- ♦ *Read-Only* must be set to No.
- ♦ *Hidden* must be set to No.
- ♦ *Required* must be set the same on the child property as it is on the parent property.

To set up related document properties:

- 1 Create the parent document property as described in “Adding Custom Document Properties” on page 343. Use worksheet item 1 in the Property Label field. Use worksheet item 2 in the Lookup Table field. Leave the Related Property field set to (none).
- 2 Create the child document property using the same procedure. Use worksheet item 4 in the Property Label field. Use worksheet item 5 in the Lookup Table field. The Related Property field should automatically display as worksheet item 1, showing that the child property is related to the parent property.

23.3 Indexing Documents

Documents stored in GroupWise libraries need to be indexed so users can locate documents using the Find feature in the GroupWise Windows client. Your organization might need dedicated indexing to minimize performance degradation and network congestion. You might also need dedicated indexing so users can have prompt access to newly created documents.

- ♦ Section 23.3.1, “Understanding DMS Indexing,” on page 352
- ♦ Section 23.3.2, “Determining Your Indexing Needs,” on page 358
- ♦ Section 23.3.3, “Implementing Indexing,” on page 360

23.3.1 Understanding DMS Indexing

Before determining if you will need dedicated indexing, you should have a basic understanding of how indexing works in GroupWise.

- ♦ [“Index Storage” on page 352](#)
- ♦ [“Index Content” on page 352](#)
- ♦ [“Indexing Performed by the POA” on page 352](#)
- ♦ [“Indexing Cycle” on page 353](#)
- ♦ [“Bandwidth Considerations” on page 353](#)
- ♦ [“Indexer Configurations” on page 353](#)

Index Storage

When documents are indexed, the information is stored in QuickFinder™ indexes, which are located in a library's `index` subdirectory. A library's QuickFinder index is partitioned into ten `*.idx` files. Additionally, temporary `*.inc` (incremental) files are created that contain each day's new index information. The `*.inc` files are combined once per day into the `*.idx` files (usually at midnight).

In a system with multiple libraries, each library has its own set of QuickFinder index files. Depending on how many libraries belong to a post office, and how many post offices with libraries are in your GroupWise system, there can be many sets of QuickFinder index files.

Index Content

Indexing can include a document's full text (depending on its document type), and always includes the document's property sheet information (subject, author, version descriptions, and so on). Both newly edited and newly created documents are indexed, which means indexing volume is determined by how many existing documents are edited as well as how many new documents are created.

Newly-created documents must be indexed before users can search for them. In setting up your indexing strategy, you must know how quickly users will need access to newly-created documents.

The standard search is limited to the QuickFinder indexes in the user's default library. But users can choose to search for documents in other libraries to which they have access.

Indexing Performed by the POA

Indexing is among the many functions of the Post Office Agent (POA). To learn more about POA functions, see [Section 35.5, “Role of the Post Office Agent,” on page 469](#).

You can configure the POA for a post office to meet basic indexing needs. See [Section 38.3.1, “Regulating Indexing,” on page 555](#).

To support greater indexing needs, you can set up an additional POA that is dedicated to indexing. See [Section 38.3.2, “Configuring a Dedicated Indexing POA,” on page 556](#).

Not all libraries need dedicated POAs for indexing documents because indexing needs vary widely:

- ♦ In a small GroupWise system that has only one post office and one library, indexing can easily be done by the one POA.

- ◆ In a post office with heavy DMS usage, one or more additional POAs can be dedicated to indexing the documents.
- ◆ In a large system that has a DMS post office housing all libraries in the GroupWise system, indexing can be done by the DMS post office's POAs.

A library can have more than one POA dedicated to indexing its documents. Because the library's QuickFinder index is partitioned into ten separate *.idx files, an organization that is extremely document-intensive can boost indexing performance by using up to ten POAs dedicated to indexing. These POAs do not conflict with each other in performing indexing because the *.idx and *.inc files are locked during the indexing process.

You can temporarily use multiple indexing POAs for importing documents to speed up importing time.

Indexing Cycle

The frequency of indexing is determined by the POA QuickFinder Interval setting. The default is once every 24 hours at 8:00 p.m. This might be often enough in an organization where document usage is minimal, or where searching for newly-created documents is not mission-critical.

You can specify the QuickFinder Interval setting in one-hour increments. For example, a setting of 1 would allow users to find documents created as recently as an hour ago. Whether you should use a dedicated indexer at this frequency would depend on the volume (per hour) of documents that get queued for indexing.

You can set the QuickFinder Interval to 0 (zero) for continuous indexing. This is recommended for organizations where document usage is intensive, or where users routinely need to find documents that have just been created. If document usage is intensive in your organization, you might need a separate indexer server dedicated to continuous indexing because the post office server's performance could become unacceptably slow if continuous indexing is performed on it.

Bandwidth Considerations

A primary factor in network speed is bandwidth. This is the amount of data that can be passed through the network per second. If a network's bandwidth is not sufficient for handling heavy traffic, intensive document indexing can degrade network performance.

A number of elements affect network bandwidth, including cable types, transmission protocols, and hardware. Ethernet networks are susceptible to wide fluctuations in transmission speed during periods of heavy traffic. WANs can benefit from reduced network traffic.

If you locate a post office in close proximity to its users, you have less traffic through routers, bridges, and other network hardware. Running GroupWise in client/server access mode also reduces network traffic.

GroupWise users can add heavy messaging traffic to your existing network. DMS usage adds document indexing traffic as well. These factors can create much more network bandwidth usage than you have previously experienced.

Indexer Configurations

Following are five basic examples of how dedicated indexers can be configured. The examples do not cover all possibilities. You can combine elements from these configurations to customize indexing for your organization.

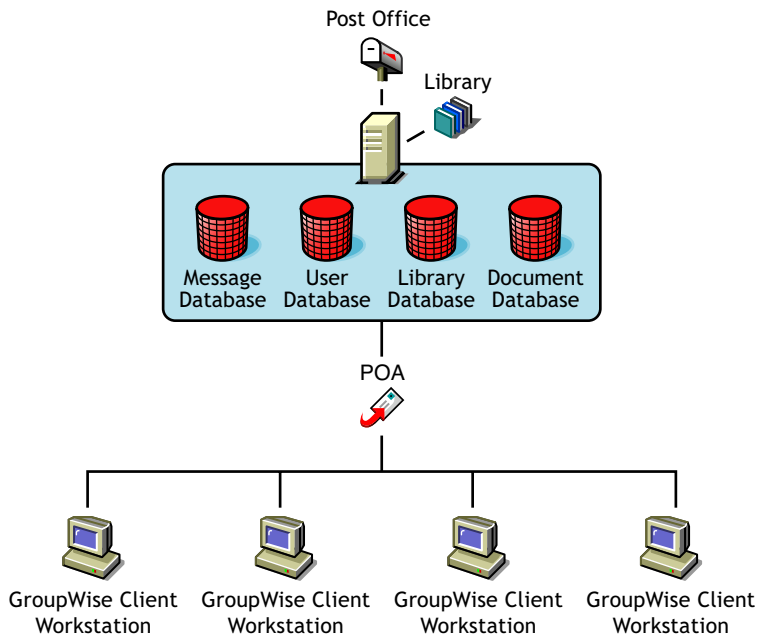
In all configuration examples, the post office can contain multiple libraries, although the Single Server with One POA configuration is best suited to only one library. In the other configuration examples, one or more POAs can be set up for indexing documents for all libraries in the post office.

- ◆ “Single Server with One POA” on page 354
- ◆ “Single Server with Multiple POAs” on page 355
- ◆ “Dedicated Indexer Server” on page 355
- ◆ “Dedicated Indexer Server on an Isolated Network Segment” on page 356
- ◆ “Dedicated DMS Post Office” on page 357

Single Server with One POA

One POA runs on the post office server and performs all POA functions for the post office and its libraries. This basic configuration is best suited for a small system, or a decentralized library configuration with small post offices that each have a library. For more information, see “Centralized vs. Decentralized Library Configurations” on page 304.

Figure 23-1 Single Machine with One POA



Advantages

- ◆ Default configuration; no additional setup is required.
- ◆ Troubleshooting is limited to a single server.

Disadvantages

- ◆ All operations are performed on one server, which can cause performance degradation if your organization does enough DMS operations.
- ◆ If you increase QuickFinder intervals to lessen the load on the POA, you lengthen the time users must wait to search for new files, or find modified information through new searching keywords.

Single Server with Multiple POAs

It is possible to run more than one POA for the same post office on the same server.

Figure 23-2 Single Machine with Multiple POAs

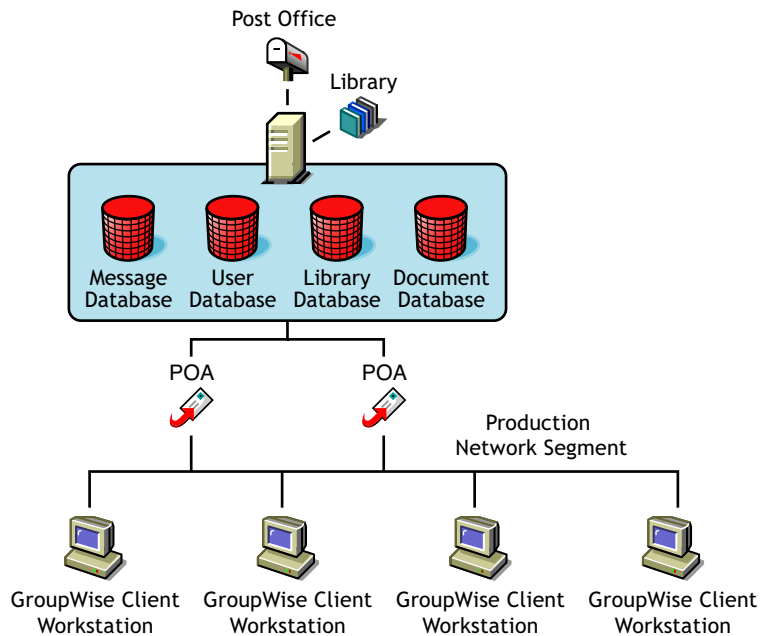


Table 23-5 Advantages and Disadvantages of a Single Server with Multiple POAs

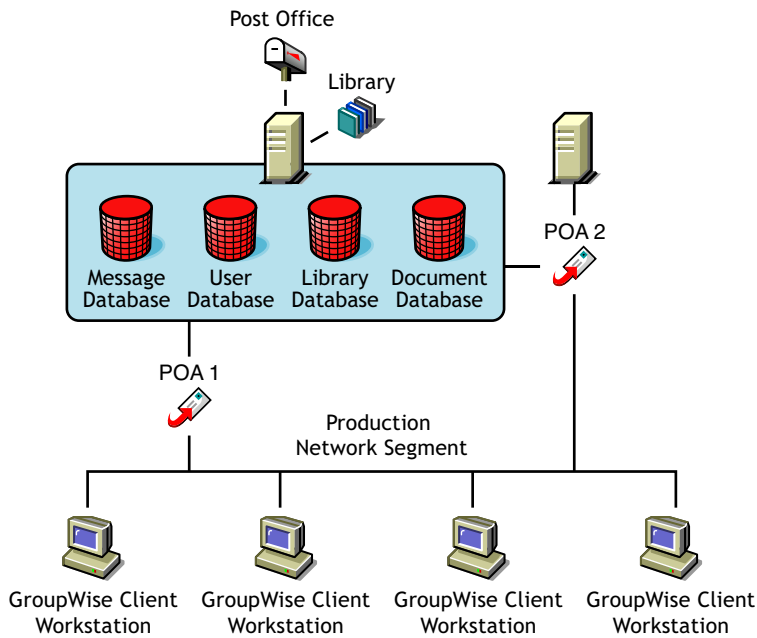
Advantages	Disadvantages
None.	<ul style="list-style-type: none">◆ Many processes running on one server can slow it down.◆ A single point of failure can cause the server to shut down when a problem is encountered.

There are no advantages to running multiple POAs on the same server. If you need more than one POA, run it on a separate server, as described in [“Dedicated Indexer Server” on page 355](#)

Dedicated Indexer Server

You can have the post office on one server and a POA dedicated to indexing DMS documents on another server. This configuration is useful for systems of any size with heavy DMS usage.

Figure 23-3 *Dedicated Indexing Machine*



Advantages

- ◆ A dedicated server for quicker DMS indexing. This is useful for organizations that are document-intensive.
- ◆ The messaging post office is not hampered by DMS indexing.

Disadvantages

- ◆ Network traffic can increase significantly during periods of intense indexing.
 - ◆ Multiple server hardware is required.
-

Dedicated Indexer Server on an Isolated Network Segment

You can have the post office on one server and a POA dedicated to indexing documents on another server that is on an isolated network segment. This configuration minimizes bandwidth congestion for the production network segment.

Figure 23-4 Post Office on One Machine and the Dedicated Indexing POA on Another Machine

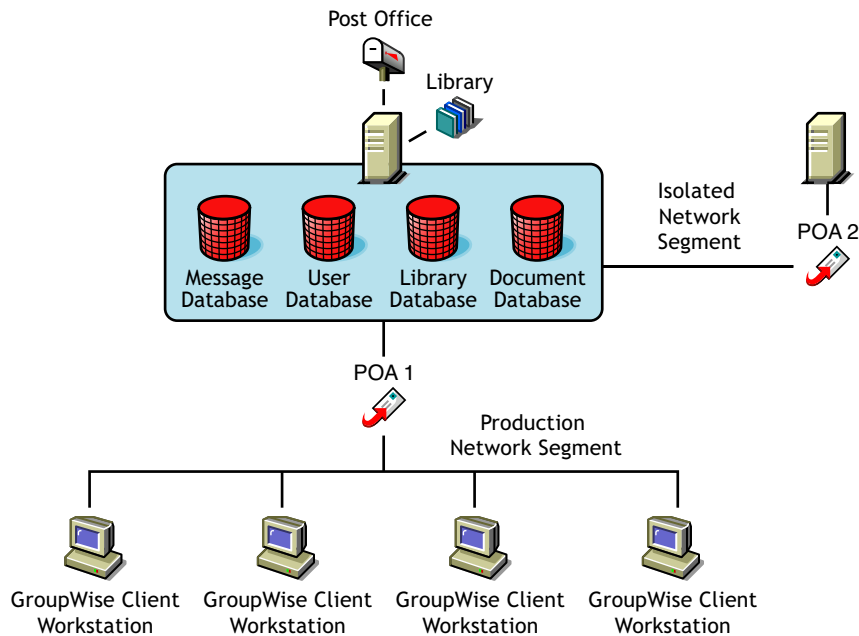


Table 23-6 Advantages and Disadvantages of a Dedicated Indexer Server on an Isolated Network Segment

Advantages	Disadvantages
<ul style="list-style-type: none"> ◆ Dedicated server for quicker DMS indexing. This is useful for organizations that are document-intensive. ◆ The messaging post office is not hampered by DMS indexing. ◆ The large amount of information that is passed between the post office server and the indexing server does not congest the bandwidth of the production network segment. 	<ul style="list-style-type: none"> ◆ Multiple server hardware is required. ◆ A dedicated network segment is required (including second network interface card that is directly linked to the indexer server). ◆ For multiple indexing servers, a dedicated hub might be needed.

Dedicated DMS Post Office

You can have one post office that is dedicated to messaging and another to DMS. This configuration is useful for post offices that have heavy DMS usage. For a review of this configuration, see [“Centralized Libraries” on page 305](#).

Figure 23-5 *Dedicated DMS Post Office*

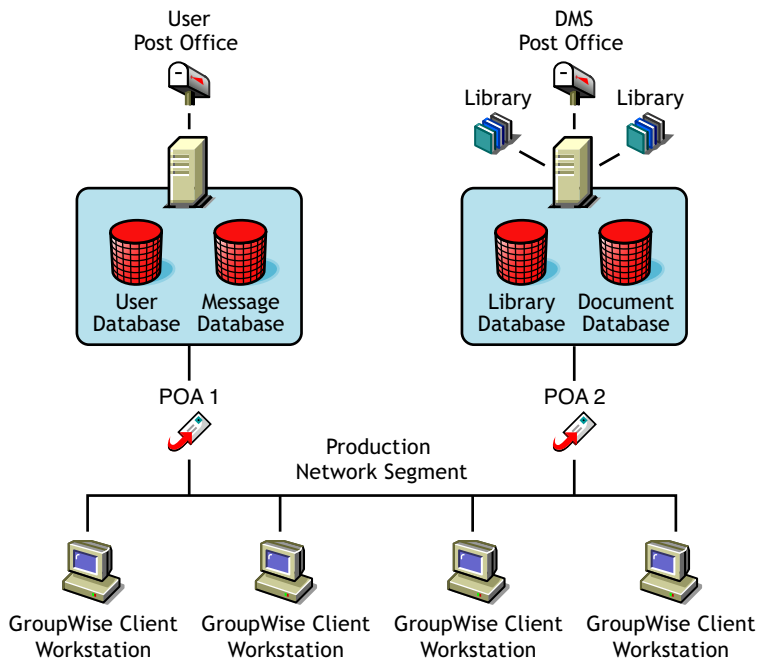


Table 23-7 *Advantages and Disadvantages of a Dedicated DMS Post Office*

Advantages	Disadvantages
<ul style="list-style-type: none"> ◆ A dedicated POA for quicker DMS indexing. This is useful for organizations that are document-intensive. ◆ The messaging post office is not hampered by DMS traffic and indexing. ◆ Logical separation of messaging and DMS databases. Processes such as backing up databases are easier. ◆ This configuration is ideal for creating a centralized library configuration. 	<ul style="list-style-type: none"> ◆ High-end hardware is required for DMS server. ◆ An additional post office and POA to be maintained. ◆ Client/server is required for searching and accessing documents. ◆ Remote access is required for users who cannot use client/server mode. This ensures that the slower store-and-forward process is used for remote searching and accessing of documents.

23.3.2 Determining Your Indexing Needs

The following table presents some indexing considerations and suggests an indexing configuration based on how the considerations pertain to your indexing needs:

Consideration	Single Server with One POA	Dedicated Indexer Server	Dedicated Indexer Server on an Isolated Network Segment	Dedicated DMS Post Office
Does the post office own multiple libraries?	No	Yes or No	Yes or No	Yes

Consideration	Single Server with One POA	Dedicated Indexer Server	Dedicated Indexer Server on an Isolated Network Segment	Dedicated DMS Post Office
What is the expected indexing volume (per hour)?	Light	Light or Moderate	Moderate or Heavy	Heavy
Is hardware available for a dedicated indexer server?	No	Yes	Yes	Yes
Could bandwidth congestion be a problem?	No	Maybe	Maybe or Yes	Yes

Use the “[Indexing Worksheet](#)” on [page 359](#) to estimate the indexing needs of the libraries in your GroupWise system. Each worksheet accommodates three libraries.

Identify each library ([worksheet items 1 and 2](#)). Estimate the impact of each consideration in each library ([worksheet items 3 through 6](#)). Then compare your estimates for each library to the values in the table above to determine the indexing configuration for each library ([worksheet item 7](#)).

Indexing Worksheet

For instructions on how to use this worksheet, see [Section 23.3.2, “Determining Your Indexing Needs,”](#) on [page 358](#).

	Library	Library	Library
1) Library:			
2) Library’s Post Office:			
3) Multiple Libraries per Post Office?			
♦ Yes			
♦ No			
4) Expected Indexing Volume (per hour):			
♦ Light			
♦ Moderate			
♦ Heavy			
5) Additional Server Available?			
♦ Yes			
♦ No			
6) Bandwidth Congestion Possible?			
♦ Yes			
♦ Maybe			
♦ No			

7) Indexer Configuration:

- ◆ Single server with one POA
 - ◆ Dedicated indexer server
 - ◆ Dedicated indexer server on an insulated network segment
 - ◆ Dedicated DMS post office
-

23.3.3 Implementing Indexing

For libraries where a single POA running on the post office server can provide adequate indexing support for the post office's libraries, follow the instructions in [Section 38.3.1, "Regulating Indexing," on page 555](#) to implement indexing.

For libraries where additional POAs running on separate servers are required to support the indexing needs of the post office's libraries, follow the instructions in [Section 38.3.2, "Configuring a Dedicated Indexing POA," on page 556](#) to implement indexing.

23.4 Managing Documents

As more and more documents are added to your GroupWise libraries, you must manage the disk space occupied by libraries and respond to various changes in your GroupWise system.

- ◆ [Section 23.4.1, "Archiving and Deleting Documents," on page 360](#)
- ◆ [Section 23.4.2, "Backing Up and Restoring Archived Documents," on page 360](#)
- ◆ [Section 23.4.3, "Handling Orphaned Documents," on page 362](#)

See also [Section 22.6.2, "Managing Document Storage Areas," on page 321](#).

23.4.1 Archiving and Deleting Documents

The Document Type property determines what happens to documents whose document life in your GroupWise system has expired. For a review of the document types and document life, see [Section 21.3.2, "Document Types," on page 296](#).

You can use the Mailbox/Library Maintenance feature in ConsoleOne to archive and delete documents on demand, as described in [Section 30.4, "Reducing the Size of Libraries and Document Storage Areas," on page 404](#).

You can also configure the POA to archive and delete documents on a regular schedule, as described in [Section 36.4.2, "Scheduling Disk Space Management," on page 510](#).

23.4.2 Backing Up and Restoring Archived Documents

When documents are archived, they are physically moved to a directory in the post office, where disk space can be limited. You should move archived documents to your backup medium regularly.

- ◆ ["Moving Archived Documents to Backup" on page 361](#)

- ◆ “Restoring Archived Documents” on page 361

Moving Archived Documents to Backup

When documents are archived, they are placed in automatically created archive directories. Each library has a set of archive directories. For example, `gwdms` (GroupWise Document Management Services) is one of the post office’s directories. The library directories exist under it, named `lib0001-ff`. Under each library directory is an archive directory, under which are the sequentially-numbered archival directories, named `arnnnnnn` (where `nnnnnn` is an integer with leading zeros). Each `arnnnnnn` directory is an archive set. To view the `gwdms` directory, see “Post Office Directory” in *GroupWise 7 Troubleshooting 3: Message Flow and Directory Structure*.

To move archived documents to backup:

- 1 Make sure you have a backup medium (such as tape or CD) operating with your system.
- 2 Make sure you have already archived documents that have reached their expiration dates. Documents that have not been archived cannot be removed to a backup medium.
- 3 Start the software for your backup medium.
- 4 When the backup software asks for the location of your archive files, give the full path.

Example:

```
j:\post_office\gwdms\lib0\archive\ar000001
```

If users need the backed-up documents in the future, see “Restoring Archived Documents” on page 361.

Restoring Archived Documents

When a user tries to access a document that has been archived, one of two things happens:

- ◆ If the document is in the post office archive set, and has not yet been physically moved from the archive location, the document opens normally. The user does not realize it was archived. The document is unarchived from the archive set at that time; that is, it is moved back to the library document directory from which it was archived. It is also given a new archive date according to the document type.
- ◆ The user sees a message indicating the document cannot be opened. In this case, the archive set containing the document has been physically moved to a backup medium. Therefore, the document cannot be automatically unarchived. In this case, the user might contact you, asking you to locate or recover the document. You can restore either the document’s BLOB or the archive set that contains the BLOB. After the document is restored to its archive directory, the user will be able to open the document normally.

To restore archived documents from a backup medium:

- 1 Obtain the Document Number for the document the user was trying to access.
- 2 In the GroupWise Windows client, click *Tools > Find*.
- 3 Specify the Document Number, then click *OK*.
- 4 Right-click the document in the *Find Results* listing, then click *Properties > Version*.
- 5 Note the archive directory in the path listed in the *Current Location* field.

The subdirectory listed after the `..\archive` directory is the archive set containing the document, for example, `\ar000001`.

- 6 If you have the ability to recover individual files from your backup medium, also note the BLOB filename listed in the Current Filename field.
- 7 Determine where you backed up the archive set, then copy either the archive set or the individual BLOB file to the archive directory specified in the Current Location field that you noted earlier.
- 8 You can now notify the user that the requested document is available.
- 9 When you are sure the user has opened the document (causing it to be unarchived), you should delete any files remaining in that archive directory because you have already backed them up.

23.4.3 Handling Orphaned Documents

If you remove public rights for a library, some documents might become inaccessible. For example, if a user who has been denied access to the library is the only user who had access to certain documents, those documents become orphaned. No other user can access or search for those orphaned documents. This is because document security is controlled by the user listed in the Author and Creator fields in the document's properties. In other words, if the author or creator no longer has access to a document, neither does anyone else.

However, orphaned documents can be reassigned to another author so that someone can access them again. This can be done in one of two ways:

- ◆ In ConsoleOne, the Analyze/Fix Library action in Mailbox/Library Maintenance can reassign orphaned documents to a specified user. Then, the new user has access to all orphaned documents in that library. For more information, see [Section 28.2, "Analyzing and Fixing Library and Document Information," on page 392](#).
- ◆ A librarian has the ability to alter the Author field of documents. Therefore, a librarian can replace the previous user's GroupWise ID with his or her own ID. In doing so, the librarian becomes the new author of the document. This can also be done as a mass operation for multiple documents with varying user IDs in the Author field. For more information, see [Section 22.6.4, "Adding and Training Librarians," on page 326](#).

Document-producing applications can be integrated with GroupWise® Document Management Services (DMS) to allow GroupWise management control over files produced by the integrated applications. Integrations provide code specifically designed to allow function calls, such as Open or Save, to be redirected to the GroupWise Windows client. This allows GroupWise dialog boxes to be displayed instead of the application's normal dialog boxes for the integrated functions.

NOTE: The Cross-Platform client does not include integrations, which is why you cannot create and edit documents from the Cross-Platform client.

GroupWise DMS includes standard integrations for the following applications:

- ◆ Corel* Presentations* 7.x through 10.x
- ◆ Corel Quattro Pro* 7.x and 8.x
- ◆ Corel WordPerfect 6.1 through 10.x
- ◆ Lotus* Word Pro* 96 and 97
- ◆ Microsoft Binder 97
- ◆ Microsoft Excel 95, 97, 2000, and 2002
- ◆ Microsoft PowerPoint* 97, 2000, and 2002
- ◆ Microsoft Word 95, 97, 2000, and 2002

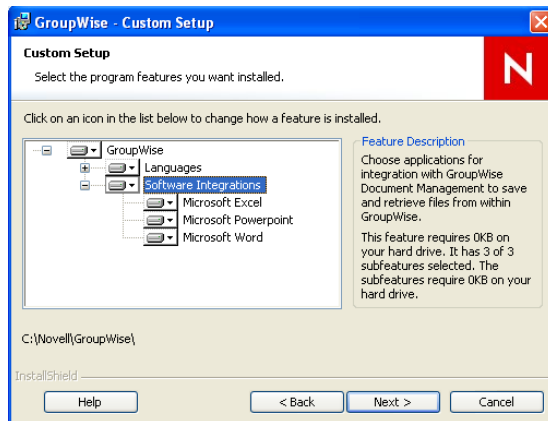
Other applications can be integrated manually using the gwappint.inf file.

- ◆ [Section 24.1, “Setting Up Integrations during Windows Client Installation,” on page 363](#)
- ◆ [Section 24.2, “Setting Up Integrations Using the gwappint.inf File,” on page 364](#)
- ◆ [Section 24.3, “Controlling Integrations in the GroupWise Windows Client,” on page 369](#)

24.1 Setting Up Integrations during Windows Client Installation

The GroupWise Windows client Setup program can offer users the opportunity to integrate their document-producing applications during client installation.

Figure 24-1 Software Integrations Wizard



This dialog box lists the applications that can be integrated with GroupWise that are currently installed on users' workstations. Therefore, it is important to make sure that the applications to integrate are installed *before* the GroupWise client is installed. However, it does not matter whether GroupWise and the applications are installed to run from the network or from the users' workstations. The integrations work with any combination of installation choices.

After selecting applications to integrate during GroupWise client integration, users can manage their integrations in the GroupWise client, as described in “[Integrating GroupWise with Your Applications](#)” in “[Creating and Working with Documents](#)” in the *GroupWise 7 Windows Client User Guide*.

If users need to install and integrate applications *after* installing the GroupWise client, they can install the new applications, then reinstall the GroupWise client so that they can select the new applications during GroupWise client installation. If reinstalling the GroupWise client is not an option, you might need to assist them in setting up additional integrations, as described in [Section 24.2, “Setting Up Integrations Using the gwappint.inf File,” on page 364](#).

24.2 Setting Up Integrations Using the gwappint.inf File

The `gwappint.inf` file controls how document-producing applications are integrated with the GroupWise Windows client. During client installation, the `gwappint.inf` file is installed in the Windows `system32` subdirectory. It is a text file that can be viewed and modified in a text editor such as Notepad. You might want to print the `gwappint.inf` file from a user workstation to help you understand how integrations have been set up for your users during GroupWise client installation.

- ◆ [Section 24.2.1, “Understanding the Three Levels of Integration,” on page 365](#)
- ◆ [Section 24.2.2, “Understanding the gwappint.inf File,” on page 365](#)
- ◆ [Section 24.2.3, “Editing the gwappint.inf File,” on page 368](#)

24.2.1 Understanding the Three Levels of Integration

The gwappint.inf file provides for three different levels of integration, to meet the needs of different types of document-producing applications:

- ♦ “ODMA Integration” on page 365
- ♦ “Point-to-Point Integration” on page 365
- ♦ “No Integration” on page 365

ODMA Integration

The Open Document Management API (ODMA) is an industry standard for applications and document management programs to use in achieving seamless integration. ODMA is platform-independent. GroupWise DMS is 32-bit ODMA-compliant, and can automatically integrate with all 32-bit ODMA-compliant applications. Applications that are not 32-bit ODMA-compliant must have integrations created for them to be used with GroupWise DMS.

The 16-bit ODMA integration standards are not 100% compatible with the 32-bit ODMA integration in Windows 95/98/2000. Therefore, 16-bit applications that are ODMA-compliant must still have integrations created for them to be used with the GroupWise DMS.

Point-to-Point Integration

This integration involves applications that are not 32-bit ODMA-compliant. Novell® has written macros for various applications, such as Microsoft Word, which allow them to be integrated with GroupWise. This provides the same functionality as for 32-bit ODMA-integrated applications. These applications can be selected for integration when the GroupWise client is installed.

Integration macros are written in the macro language of the application being integrated with GroupWise. Macro calls are made to GroupWise dialog boxes to replace access of the application’s own dialog boxes (for example, Open and Save).

No Integration

Non-integrated applications rely on Windows 95/98/2000 associations. When a reference icon is selected in GroupWise, the file’s extension is examined to determine which application to use. The application is launched and the file is opened.

Functions performed in a non-integrated application are not managed by GroupWise. So, if the file is renamed or saved to a different location, the file is not part of a GroupWise library. When the file is opened later, a message is displayed reminding the user that the file is not under management of GroupWise. However, if you simply edit the file and re-save it without changing the name or location, GroupWise continues to provide management of the file.

24.2.2 Understanding the gwappint.inf File

The gwappint.inf file includes the following sections and lines:

- ♦ *[executable_name]* sections
 - Integration= line
 - DualExe= line
 - AppName= line

- AppKey= line
- ◆ [ODMA Application Extensions] section
- ◆ [Integration State] section
- ◆ [Non-Integrated Defaults] section
- WaitInterval= line
- ShowMessage= line

[executable_name] Sections

The gwappint.inf file contains one [executable_name] section for each integrated application. It supplies the name of the executable for the program being integrated.

Integration= Line

Each [executable_name] section must have an Integration= line, where digits identify the type of integration employed for the executable:

Integration = 0 (No Integration)

Integration = 1 (Point-to-Point Integration)

Integration = 2 (ODMA Integration)

DualExe= Line

Some programs, such as Lotus Word Pro, use a small startup executable that, in turn, calls the main program. Use the DualExe= line to specify the name of the main executable. You can specify the full path to the main executable, or you can specify the path relative to the startup executable.

AppName= Line

The AppName= line assigns the application an arbitrary name for use in the [ODMA Application Extensions] and [Integration State] sections.

AppKey= Line

The AppKey= line is used only with point-to-point integrations (Integration=1). It specifies a value used by GroupWise to pass information to and from the integrated application. The value must be unique among the point-to-point integrations defined in the gwappint.inf file.

Examples Based on Standard Integrations

The table below shows how the standard integrations are implemented in the gwappint.inf file:

Table 24-1 *Integration Examples*

Application	Executable	Versi on	Comments
Corel Presentations	prwin.exe	3	If it is already installed on the workstation, GroupWise installation changes the Integrations= line to 0 and the application is available for selection as a non-integrated application.
		7	For ODMA integration, change the DualExe= line to system\prwin70.exe and the Integrations= line to 2.
		8, 9, 10	For ODMA integration, change the Integrations= line to 2.
Corel Quattro Pro	qpw.exe	6.1	If it is already installed on the workstation, the GroupWise client installation changes the Integrations= line to 0 and the application is available for selection as a non-integrated application.
		7	For ODMA integration, change the Integrations= line to 2
Corel WordPerfect	wpwin.exe	6.1	If it is already installed on the workstation, the GroupWise client installation changes the Integrations= line to 0 and the application is available for selection as a non-integrated application.
		7	For ODMA integration, change the DualExe= line to system\wpwin7.exe and the Integrations= line to 2.
		8, 9, 10	For ODMA integration, no DualExe= line is needed. Change the Integrations= line to 2.
Lotus Word Pro	wordpro.exe	96	This application is 32-bit ODMA-compliant. Therefore, if it is installed before GroupWise, it is available for selection as an ODMA-integrated application.
		97	For ODMA integration, change the DualExe= line to system\wordpro.exe and the Integrations= line to 2.
Microsoft Binder	binder.exe	97	This application is 32-bit ODMA-compliant. Therefore, if it is installed before GroupWise, it is available for selection as an ODMA-integrated application.
Microsoft Excel	excel.exe	95, 97, 2000, 2002	The Integrations= line is set to 1 for both versions.
Microsoft PowerPoint	powerpnt.exe	97, 2000, 2002	This application is 32-bit ODMA-compliant. Therefore, if it is installed before GroupWise, it is available for selection as an ODMA-integrated application.
Microsoft Word	winword.exe	95	If it is already installed on the workstation, GroupWise installation changes the Integrations= line to 1 and the application is available for selection for point-to-point integration.
		97, 2000, 2002	For ODMA integration, change the Integrations= line to 2.

[ODMA Application Extensions] Section

The [ODMA Application Extensions] section lists the file extensions GroupWise associates with particular document-producing applications. Examples include:

Table 24-2 Applications and Their Extensions

Application	File Extension
Corel WordPerfect	.wpd
Microsoft Excel	.xls
Microsoft PowerPoint	.ppt
Microsoft Word	.doc

[Integration State] Section

The [Integration State] section records whether the user has turned integrations on or off for integrated applications.

[Non-Integrated Defaults] Section

The [Non-Integrated Defaults] section provides two configuration settings that apply to all non-integrated applications:

- ◆ **WaitInterval= line**
- ◆ **ShowMessage= line**

WaitInterval= Line

The WaitInterval= line specifies a number of milliseconds for the GroupWise client to wait before it attempts to communicate with a non-integrated process. The wait interval allows the application to start completely before GroupWise contacts it. The default wait interval is 1000 milliseconds (one second).

The default setting supplied in the [Non-Integrated Defaults] section can be overridden for specific applications by including a WaitInterval= line in the application's *[executable_name]* section.

ShowMessage= Line

The ShowMessage= line indicates whether or not to display a message to the GroupWise client user if GroupWise cannot contact a non-integrated application. Use ShowMessage=1 to display the message or ShowMessage=0 to suppress the message.

The default setting supplied in the [Non-Integrated Defaults] section can be overridden for specific applications by including a ShowMessage= line in the application's *[executable_name]* section.

24.2.3 Editing the gwappint.inf File

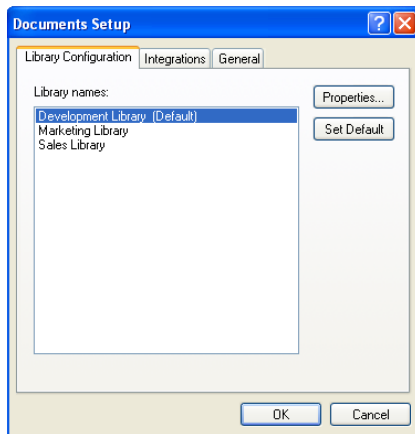
The gwappint.inf file is a text file that can be modified using any text editor (Notepad, for example). By editing the gwappint.inf file, you can add integrations for applications for which Novell has not provided integrations.

24.3 Controlling Integrations in the GroupWise Windows Client

For the convenience of GroupWise Windows client users, some settings in the gwappint.inf file can be modified from the client.

In the GroupWise client:

- 1 Click *Tools > Options > Documents > Integrations*.

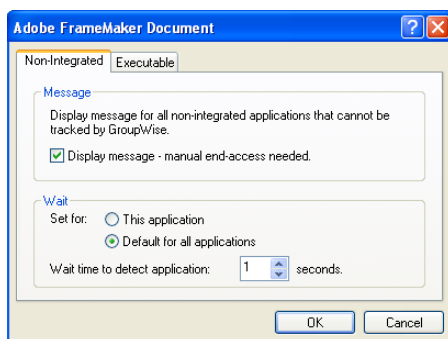


The *Integrations* tab of the Documents Setup dialog box lets users turn integrations on and off for the listed registered applications.

If the application that users want to integrate is does not appear in the registered applications list, users must first make sure the application is installed on their workstations. Then they can either reinstall the GroupWise client or modify the gwappint.inf file as described in [Section 24.2, “Setting Up Integrations Using the gwappint.inf File,” on page 364](#).

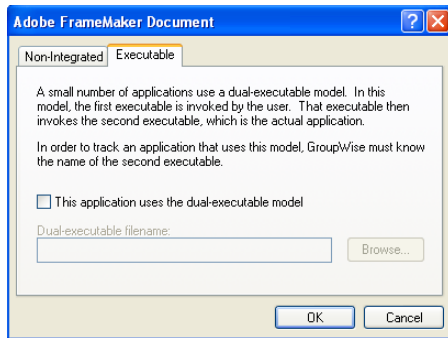
The users’ selections on the Integrations tab are recorded in the [\[Integration State\]](#) section of the gwappint.inf file.

- 2 Select an application to configure integration for, then click *Advanced*.



The *Non-Integrated* tab enables users to set values for the [ShowMessage=](#) and [WaitInterval=](#) lines in the gwappint.inf file.

- 3 Click *Executable*.



The *Executable* tab enables users to set the **DualExe=** line in the `gwappint.inf` file.

- 4 Click *OK* twice to save the updated integration information.

If users check the contents of the `gwappint.inf` file in the Windows system32 subdirectory, they see their integration configuration changes reflected there.