

ADSTAR Distributed Storage Manager



Using the Lotus Notes Backup Agent

Version 2

Note!

Before using this information and the product it supports, be sure to read the general information under "Notices" on page v.

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First Edition (November 1996)

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Preface

This publication provides information to help you use the ADSTAR Distributed Storage Manager (ADSM) Lotus Notes Backup Agent. It is for users of Lotus Notes 3.0 and higher on the OS/2 platform.

In this publication, we assume that you know how to use your OS/2 workstation and that you understand the general concepts of the operating system. We also assume that you know how to use Lotus Notes databases.

For information on installing, setting up, and customizing the ADSM Lotus Notes Backup Agent, see *Installing the Clients*.

You might need further assistance using ADSM after you have installed the Lotus Notes Backup Agent. Refer to the following publications for help:

Figure 1. Related Publications

Short Title	Publication Title	Order Number
Using the OS/2 Backup-Archive Client	<i>ADSTAR Distributed Storage Manager Using the OS/2 Backup-Archive Client</i>	SH26-4053
Using the API	<i>ADSTAR Distributed Storage Manager Using the Application Programming Interface</i>	SH26-4002
Installing the Clients	<i>ADSTAR Distributed Storage Manager Installing the Clients</i>	SH26-4049

The ADSM library is also available in softcopy on the following CD-ROMs:

<i>AIX Base Collection Kit</i>	(order number SK2T-2066)
<i>AS/400 Base Collection Kit</i>	(order number SK2T-2171)
<i>MVS Base Collection Kit</i>	(order number SK2T-0710)
<i>OS/2 Base Collection Kit</i>	(order number SK2T-2176)
<i>VM Base Collection Kit</i>	(order number SK2T-2067)
<i>VSE Base Collection Kit</i>	(order number SK2T-0060)
<i>IBM SystemView for AIX</i>	(order number SK2T-1451)

Summary of Changes

Major technical changes in this book since the previous release are indicated by a vertical bar (|) in the margin.

Version 2, Release 1, November 1996

These are the changes made for ADSM Version 2 Release 1.

Functional Enhancements

- A new environment variable, DSMNOTES_STATS, has been added.
- Each time an incremental backup or restore operation is performed, status messages are sent to the **log.dsm** file.
- Wildcard characters can be used in the path name of the DSMNOTES RESTORE command to indicate multiple NSF files.

Reading Syntax Diagrams

This section describes how to read the syntax diagrams used in this book.

To read a syntax diagram, follow the path of the line. Read from left to right and top to bottom.

- The \blacktriangleright — symbol indicates the beginning of a syntax diagram.
- The — \blacktriangleright symbol at the end of a line indicates the syntax diagram continues on the next line.
- The \blacktriangleright — symbol at the beginning of a line indicates a syntax diagram continues from the previous line.
- The — \blacktriangleleft symbol indicates the end of a syntax diagram.

Syntax items, such as a keyword or variable, can be:

- On the line (required element)
- Above the line (default element)
- Below the line (optional element).

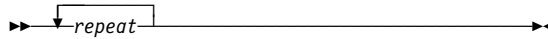
Syntax Diagram Description	Example
<p>Abbreviations:</p> <p>Uppercase letters denote the shortest acceptable truncation. If an item appears entirely in uppercase letters, it cannot be truncated.</p> <p>You can type the item in any combination of uppercase or lowercase letters.</p> <p>In this example, you can enter KEYWO, KEYWORD, or KEYWOrd.</p>	\blacktriangleright —KEYWOrd— \blacktriangleleft
<p>Symbols:</p> <p>Enter these symbols exactly as they appear in the syntax diagram.</p>	<ul style="list-style-type: none"> * Asterisk { } Braces : , = Equal Sign - Hyphen () Parentheses . Space
<p>Variables:</p> <p>Italicized lowercase items (<i>var_name</i>) denote variables.</p> <p>In this example, you can specify a <i>var_name</i> when you enter the KEYWORD command.</p>	\blacktriangleright —KEYWOrd— <i>var_name</i> — \blacktriangleleft

Syntax Diagram Description

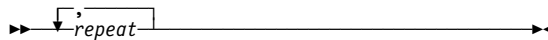
Example

Repetition:

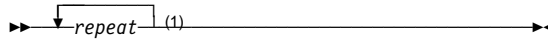
An arrow returning to the left means you can repeat the item.



A character within the arrow means you must separate repeated items with that character.



A footnote by the arrow references the number of times you can repeat the item.



Note:

1 Specify *repeat* as many as 5 times.

Required Choices:

When two or more items are in a stack and one of them is on the line, you *must* specify one item.



In this example, you *must* choose A, B, or C.

Optional Choice:

When an item is below the line, that item is optional. In the first example, you can choose A or nothing at all.



When two or more items are in a stack below the line, all of them are optional. In the second example, you can choose A, B, C, or nothing at all.



Defaults:

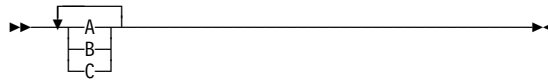
Defaults are above the line. The default is selected unless you override it. You can override the default by including an option from the stack below the line.



In this example, A is the default. You can override A by choosing B or C. You can also specify the default explicitly.

Repeatable Choices:

A stack of items followed by an arrow returning to the left means you can select more than one item or, in some cases, repeat a single item.



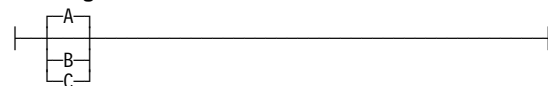
In this example, you can choose any combination of A, B, or C.

Syntax Fragments:

Some diagrams, because of their length, must fragment the syntax. The fragment name appears between vertical bars in the diagram. The expanded fragment appears between vertical bars in the diagram after a heading with the same fragment name.



The fragment name:



Chapter 1. Introduction

The ADSTAR Distributed Storage Manager Lotus Notes Backup Agent helps you protect your Lotus Notes databases by using the backup and recovery services of ADSM. Commands are available that enable you to:

- Back up only those portions of a database that have changed since the last backup
- Restore selected documents from a database
- Restore documents that have been deleted but not yet purged from a database
- Restore a copy of an entire database

Some of these tasks can be performed by using a graphical user interface (the Lotus Notes Workspace). Others can be accomplished through a command line interface.

Using the ADSM Backup-Archive Client

You can also use the regular ADSM backup-archive client to back up or restore an entire Lotus Notes database. ADSM can do this because a single Lotus Notes database is self-contained within a single flat file (either FAT or HPFS format).

The ADSM backup-archive client and the ADSM Notes agent can run simultaneously on the same workstation. This approach is useful because each application provides capabilities that the other does not have:

- The ADSM client can back up or archive an entire database, but not individual portions of it.
- The ADSM Notes agent can back up and restore smaller pieces of data (notes), but it lacks archiving capabilities. Also, without strict control of the environment, the ADSM Notes agent might not be able to restore an entire database.

You should give a different node name to the ADSM Notes agent than the one for the ADSM client that resides on the same machine.

However, note that there is no interoperability between the ADSM Notes agent and the ADSM backup-archive client. This means that the ADSM Notes agent is not aware of actions done by the ADSM client and vice versa. If you back up a Lotus Notes database with the ADSM client, you cannot restore individual notes from that database with the ADSM Lotus Notes Backup Agent.

Chapter 2. Using ADSM with Lotus Notes

The ADSM Lotus Notes Backup Agent enables you to perform the following tasks:

- Back up a database
- Restore selected documents from a database
- Restore documents that have been deleted but not yet purged
- Restore a copy of an entire database
- Set and change the ADSM password
- Get online help
- Schedule particular operations to be performed at a specified time

Some of these tasks can be performed by using a graphical user interface (the Lotus Notes Workspace). Others can be accomplished through a command line interface.

Note that backup and restore can occur only for databases that reside on the node on which the `dsmnotes` command runs.

Note: Although the “wait” cursor is not displayed while the restore is taking place, the Notes workspace does not accept screen input during this time. This is true with all of the dialog boxes described in this section. However, the user can continue to interact with other processes.

For information on installing the ADSM Lotus Notes Backup Agent, see the *Installing the Clients* manual.

Using the Command Line

Enter commands for the ADSM Notes agent on the command line in an OS/2 window.

Within a command the *path* variable and the options can be in either order. For example, you may enter either of the following:

```
dsmnotes command path [options]
dsmnotes command [options] path
```

When an option is used, it must start with a hyphen and have no spaces around the equals sign. For example, use

```
-adsmpw=mypass
```

not one of the following:

```
adsmpw=mypass
-adsmpw = mypass
```

For an explanation of the syntax diagrams that accompany each command, see “Reading Syntax Diagrams” on page ix.

Using the Lotus Notes Workspace

When the ADSM Notes agent is run, it appends three commands to the bottom of the Tools menu in the Action bar of the Lotus Notes Workspace. Clicking on the Tools button displays the following commands in the Tools menu:

- ADSM Restore Document(s)
- ADSM Rebuild Database
- ADSM Restore Deleted Document(s)

These commands can only be selected when a database is open. If no database is open, the commands are disabled.

Using Online Help

You can get online help by pressing the F1 key.

Backing Up a Database

Use the DSMNOTES INCR command to incrementally back up a Notes database. If no backup copy of the database file exists on the ADSM server, then a copy of the entire database is sent to the server. If the ADSM Notes agent has previously been used to back up the database, then only the changes in the database since the last backup are sent to the server.

Both documents and design notes, such as forms and views, are backed up. Because each note is backed up as a separate object, individual data notes can be restored later.

Be sure that each note in a given Notes database is assigned to the same management class. If all of the notes in a database are not managed in the same way, you may not be able to rebuild the entire database from the backup copies of the notes.

Each time a backup operation is performed, summary messages are sent to the **log.dsm** file. When a single database is backed up, the following information is sent to **log.dsm**:

```
Database: d:\notes\data\test\abc.nsf
Documents backed up: 100, documents deleted: 1
Total number of bytes sent: 60873
ANS0900I dsmnotes completed
```

If you use a wildcard character in the path name to back up multiple databases, statistics on each database, as well as an overall total, are sent to **log.dsm**:

```

Database: d\notes\data\test\abc.nsf
Documents backed up: 100, documents deleted: 1
Database: d\notes\data\test\def.nsf
Documents backed up: 500, documents deleted: 1
Total number of documents backed up: 600
Total number of documents deleted: 2
Total number of bytes sent: 1256.1 KB
ANS0900I dsmnotes completed

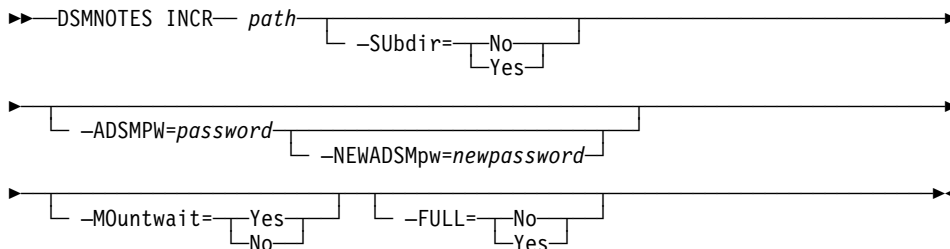
```

Note that the **log.dsm** file continues to grow as DSMNOTES operations send messages to it. You should monitor the size of the file and trim messages or archive the file regularly to control its growth.

A database can only be backed up by using the command line interface.

Command Line

The DSMNOTES INCR command has the following syntax:



Parameters

path

This parameter is required. The path name describes one of the following:

- The NSF file in which the Notes database resides
- A directory that contains one or more Notes databases

To specify a directory, the path name must end with *. A path name that does not end with * is interpreted as a file name.

To back up all of the databases in the Lotus Notes data directory, specify * for the path. Use the -subdir parameter to specify whether or not the subdirectories in the Notes data directory should be included in the backup.

If only a partially qualified path name is given, the path defaults to be relative to the Lotus Notes data directory.

-SUBdir=value

This parameter is optional. It is used only when the *path* parameter specifies a directory. If the path is a file, -subdir is ignored. The default is **No**. Possible values are:

No Do not process any subdirectories of the specified directory.

Yes Process all Notes databases in all subdirectories of the specified directory.

-ADSMPW=*password*

The ADSM password that is recognized by the ADSM server for your workstation. The workstation whose databases are being backed up is the ADSM client. If you are using the automatic ADSM password handler, which you can initiate through the NOTES.INI file, then -adsmpw is optional.

-NEWADSMpw=*newpassword*

This parameter is used if the ADSM password needs to be reset. For example, this could happen if the password expires on the ADSM server. If you use this option, you must also use the -adsmpw option. ADSM uses -adsmpw to validate the old ADSM password and then uses -newadsmpw to set the new ADSM password.

-MOUNTwait=*value*

This parameter is used if you do not want ADSM to wait for a tape mount if one is necessary. The default is **Yes**. Possible values are:

Yes The backup process will wait for a tape mount if one is necessary.

No The backup process will not wait for a tape mount.

-FULL=*value*

This parameter is used to initiate a complete backup, including notes that have not been modified since the last backup. The default is **No**. Possible values are:

No Back up only new and modified notes in the database.

Yes Back up all of the notes in the specified database, whether or not they have been modified since the last backup.

Example 1

Task: Back up the database LNOTES1.NSF. Do not wait for tape mounts.

Command: `dsmnotes incr c:\lotus\tallan\lnotes1.nsf -mountwait=no`

Example 2

Task: Perform a complete backup of all databases in the directory LOTUS and in any subdirectories on LOTUS.

Command: `dsmnotes incr c:\lotus* -subdir=y -full=y`

Restoring Selected Documents from a Database

You can restore backed up copies of individual documents from the ADSM server to a Notes database on your workstation. The documents must still be present in the database. If the documents have been deleted, see "Restoring Documents from Deletion Stubs" on page 8.

This operation is only available in the Lotus Notes Workspace.

Notes Workspace

From the Lotus Notes Workspace you can restore documents from databases on Notes servers other than your local server. Because Notes security is honored, you cannot restore documents from a remote database that Notes would not normally give you access to. Also, you cannot restore a document if you do not have both read and write access to that document.

ADSM security is also honored. To gain access to a remote server, you must enter both the ADSM node name of the machine on which the database resides and the corresponding ADSM password. This information is required, even if the automatic password handler is on (see “Accessing a Remote Notes Database” on page 18).

Follow these steps to restore selected documents to your Notes database:

- 1 Open the database and put a check in the left-hand column of the documents you want to restore.
- 2 Open the Tools menu in the Action bar and select **ADSM Restore Document(s)**.

The ADSM Restore Documents dialog box appears (Figure 2).

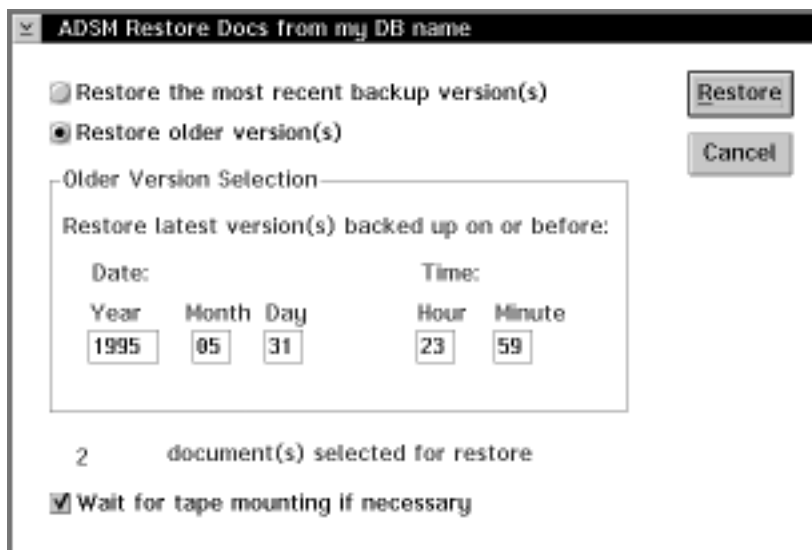


Figure 2. Restoring specific documents from a database

- 3 Select one of the two radio buttons at the top of the dialog box:
 - **Restore the most recent backup version(s)** — Restore the active copies of documents (this is the default).

- **Restore older version(s)** — Restore inactive copies of documents. Enter values in the **Date** and **Time** fields of the **Older Version Selection** box to set a limit on the age of the restored files. The documents restored are those that were backed up on or before the given date and time. If there are more than one copy that meet this criterion, then the copy whose backup date and time is closest to the given value is restored.

4 If tapes need to be mounted for the documents to be restored, the default is for ADSM to wait until the necessary tapes are available. If you do not want ADSM to wait for tapes to be mounted, then deselect the box for **Wait for tape mounting if necessary**.

5 Click on **Restore** to begin the restore procedure. If you want to stop the operation, click on **Cancel** instead.

Restoring Documents from Deletion Stubs

When you delete a Notes document, the note generally is not immediately removed from the database. Instead, the note is converted to a *deletion stub*. The deletion stub resides in the database, but cannot be accessed directly. The deletion stubs are eventually removed from the database, according to a “purge” value set by the Notes administrator.

You can restore documents to your database after they have been deleted if the deletion stubs are still present. In the Notes Workspace, use the Restore Deleted Documents dialog box. On the command line, use the DSMNOTES RESTDEL command.

If the document has already been purged from the database, then you must restore an earlier copy of the database in order to obtain the document that you want (see “Restoring a Copy of a Database” on page 10).

Notes Workspace

From the Lotus Notes Workspace you can restore documents from databases on Notes servers other than your local server. Because Notes security is honored, you cannot restore documents from a remote database that Notes would not normally give you access to. Also, you cannot restore a document if you do not have both read and write access to that document.

ADSM security is also honored. To gain access to a remote server, you must enter both the ADSM node name of the machine on which the database resides and the corresponding ADSM password. This information is required, even if DSMNOTES_AUTO_PW is set to “on.”

Follow these steps to restore documents that have been deleted but not yet purged from your Notes database:

1 Open the database to which you want to restore documents.

- 2** Open the Tools menu in the Action bar and select **ADSM Restore Deleted Document(s)**.

The ADSM Restore Deleted Documents dialog box appears (Figure 3).

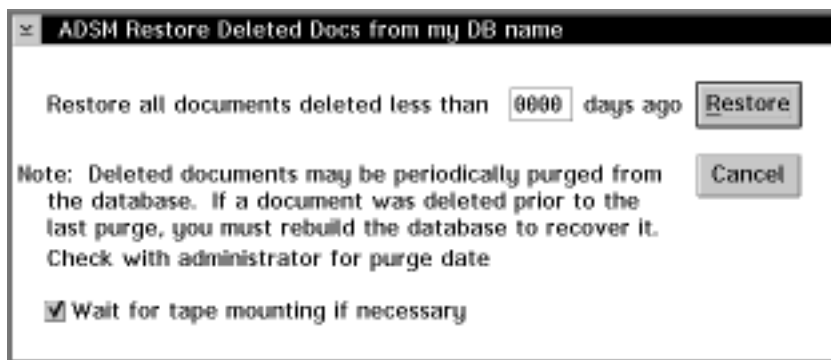


Figure 3. Restoring data documents from deletion stubs

- 3** You can specify that you only want to restore documents that were deleted less than a certain number of days ago from the current date/time. Enter this number in the field at the top of the dialog box.

If you specify 0 days (the default), then all notes that have been deleted but not yet purged from the database are restored.

- 4** If tapes need to be mounted for the documents to be restored, the default is for ADSM to wait until the necessary tapes are available. If you do not want ADSM to wait for tapes to be mounted, then deselect the box for **Wait for tape mounting if necessary**.

- 5** Click on **Restore** to begin the restore procedure. If you want to stop the operation, click on **Cancel** instead.

Command line

The DSMNOTES RESTDEL command has the following syntax:

```
►► DSMNOTES RESTDEL— path— [ -DAYS=numdays ]
[ -ADSMPW=password ] [ -NEWADSMpw=newpassword ]
[ -MOUNTwait= [ Yes ] [ No ] ]
```

Parameters

path

The fully qualified path name of the NSF file whose notes are to be restored. This value is required. If only a partially qualified path name is given, but a full file name is given, then the path defaults to be relative to the Lotus Notes data directory.

-DAYS=*numdays*

The notes to be restored were deleted within this many days ago from the current date/time. If this option is not specified or is set to 0, then all notes that have been deleted but not yet purged from the database are restored.

-ADSM*pw=password*

The ADSM password that is recognized by the ADSM server for your workstation. The workstation whose databases are being backed up is the ADSM client. If you are using the automatic ADSM password handler, which you can initiate through the NOTES.INI file, then -adsmpw is optional.

-NEWADSM*pw=newpassword*

This parameter is used if the ADSM password needs to be reset. For example, this could happen if the password expires on the ADSM server. If you use this option, you must also use the -adsmpw option. ADSM uses -adsmpw to validate the old ADSM password and then uses -newadsmpw to set the new ADSM password.

-M*Outwait=value*

This parameter is used if you do not want ADSM to wait for a tape mount if one is necessary. The default is **Yes**. Possible values are:

Yes The restore process will wait for a tape mount if one is necessary.

No The restore process will not wait for a tape mount.

Example

Task: Restore all documents which have been deleted in the past 30 days from the LNOTES2.NSF database, but not yet purged.

Command: `dsmnotes restdel c:\plan\lnotes2.nsf -days=30`

Restoring a Copy of a Database

When you restore a backed up Notes database, you can either restore it to a new database or merge the documents from the backed up database into a database that already exists on your workstation.

If you restore the backed up database to a new database, you can choose to restore either the active version of the database or an inactive version that is closest to a specified date. You must choose a target name for the new database that is not the name of an existing file. ADSM does not allow the database to be restored to the original database file.

If you choose to merge the restored documents into an existing Notes database, you can select a date/time range from which to draw the documents. This operation is useful if you have used the ADSM backup-archive client to restore a database file and want to update it with any notes that have been incrementally backed up since the database itself was backed up.

Using collocation when storing documents can help performance when you restore or merge a large number of objects into a database.

Each time a restore operation is performed, summary messages are sent to the **log.dsm** file. When the notes are restored to a single database, the following information is sent to **log.dsm**:

```
Database: d:\notes\data\test\abc.nsf
Documents restored: 28, overwritten: 0, deletion stubs overwritten: 0
(dsmnotes restore OK)
```

If you use a wildcard character in the path name to restore the notes to multiple databases, statistics on each database are sent to **log.dsm**:

```
Database: d:\notes\data\test\abc.nsf
Documents restored: 28, overwritten: 0, deletion stubs overwritten: 0
Database: d:\notes\data\test\xyz.nsf
Documents restored: 78, overwritten: 0, deletion stubs overwritten: 0
(dsmnotes restore OK)
```

Note that the **log.dsm** file continues to grow as DSMNOTES operations send messages to it. You should monitor the size of the file and trim messages or archive the file regularly to control its growth.

You can use either the Lotus Notes Workspace or the command line to rebuild a Notes database.

Note: An unsorted view in a rebuilt database might show the documents in a different order from what you would see in the original database. A sorted view is not affected.

Notes Workspace

Follow these steps to rebuild a database or merge selected documents into a database that already exists:

- 1** Open a database in the Notes Workspace.
- 2** Open the Tools menu in the Action bar and select **ADSM Rebuild Database**.
The ADSM Rebuild Database dialog box appears (Figure 4 on page 12).

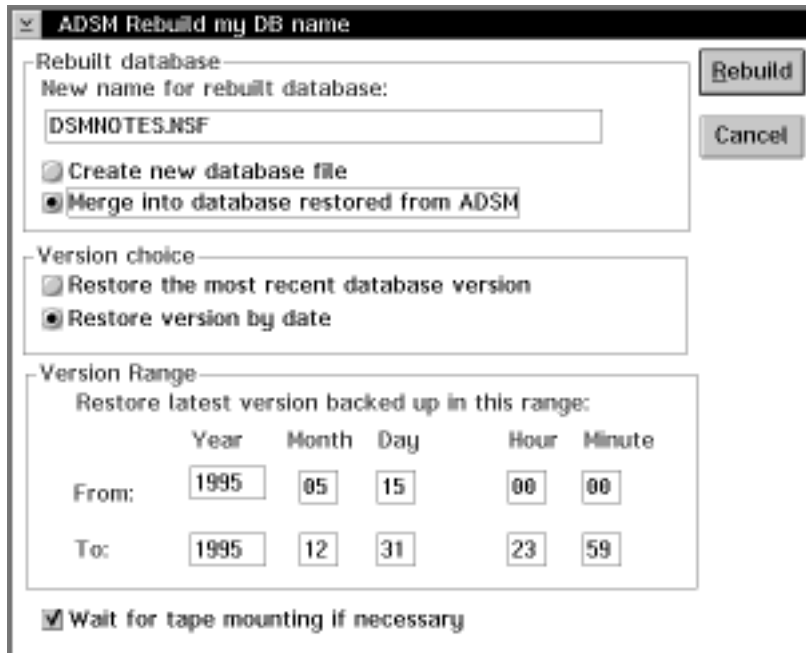


Figure 4. Rebuilding a database

3 In the box labeled **Rebuilt database** enter the target database name in the **New name for rebuilt database** field. This name is required. The default name is DSMNOTES.NSF.

4 Select one of the two radio buttons:

- **Create new database file** — Restore the Notes database into the target database named in step 3 (this is the default).
- **Merge into database restored from ADSM** — Merge the restored documents into the existing database named in step 3.

5 Select one of the two radio buttons in the box labeled **Version choice**:

- **Restore the most recent database version** — Restore the active backed up copy of the database (this is the default).
- **Restore version by date** — Restore documents from the range specified in the **From** and **To** fields below.

6 If appropriate, fill in the **From** and **To** fields in the box labeled **Version Range**. The most recent version of the documents within the specified range are restored.

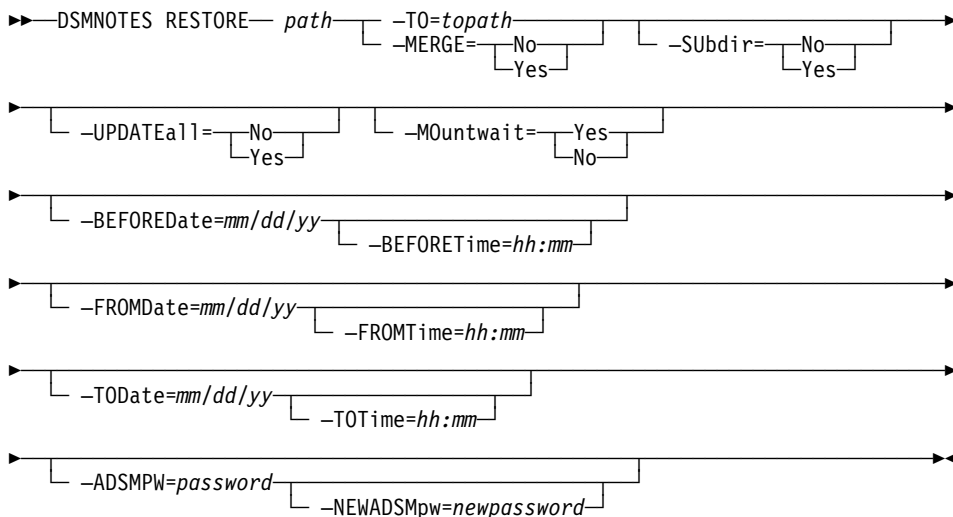
7 If tapes need to be mounted for the documents to be restored, the default is for ADSM to wait until the necessary tapes are available. If you do not want ADSM to wait for tapes to be mounted, then deselect the box for **Wait for tape mounting if necessary**.

8 Click on **Rebuild** to begin the copy operation. If you want to stop the operation, click on **Cancel** instead.

Command Line

You generally use the Lotus Notes Workspace to restore a database. The DSMNOTES RESTORE command is provided for those times when use of the Notes Workspace is inappropriate, for example, when the restore needs to be scheduled.

The DSMNOTES RESTORE command has the following syntax:



Parameters

path

The fully qualified path name of the NSF file whose notes are to be restored. This value is required. If only a partially qualified path name is given, but a full file name is given, then the path defaults to be relative to the Lotus Notes data directory. Subdirectories are included in the processing only if the -subdir=yes option is specified.

You can use wildcard characters in the path name. This capability is useful when you need to restore notes from multiple NSF files. The rules are the same as for the DSMNOTES INCR command.

In the following example, the lone asterisk indicates that the incrementally backed up notes are restored to all of the databases in the Notes data directory.

```
dsmdir restore -merge=y -fromdate=02/01/96 -todate=03/01/96 *
```

In the next example, the backed up notes are restored to all of the databases in the current directory.

```
dsmdir restore -merge=y -fromdate=02/01/96 -todate=03/01/96 .*
```

In the final example, the incrementally backed up notes are restored to the d:\notes\data\mail subdirectory.

```
dsmdir restore -merge=y -fromd=2/1/96 -tod=3/1/96 d:\notes\data\mail\*
```

-TO=*topath*

The fully qualified path name of the NSF file to which the notes are to be restored. This option is mutually exclusive of the `-merge` option and is required if the `-merge` option is not used. Further, the file represented by *topath* must not already exist. If only a partially qualified path name is given, but a full file name is given, then the path defaults to be relative to the Lotus Notes data directory.

-MERGE=*value*

Specifying `-merge=yes` indicates that you want to merge the restored notes into a database file that has been restored as a file from the ADSM server. This option is generally used with the `-fromdate`, `-fromtime`, `-todate`, and `-totime` parameters to indicate a date/time range of notes to restore.

This option is mutually exclusive of the `-to` option and is required if the `-to` option is not used. The default is **No**. Possible values are:

No Put the restored notes into a new database file.

Yes Merge the restored notes into an existing database file.

-SUBDIR=*value*

This parameter is optional. It is used only when the *path* parameter specifies a directory. If the path is a file, `-subdir` is ignored. The default is **No**. Possible values are:

No Do not process any subdirectories of the specified directory.

Yes Process all Notes databases in all subdirectories of the specified directory.

-UPDATEall=*value*

This option can be used only if the `-merge=yes` option is also specified.

When you merge data into an existing database, setting `-updateall=yes` changes the modification date and time of all the notes in the database to be the current date and time. This means that during the next incremental backup, all of the notes in the database are considered to be modified and will be backed up to the ADSM server.

This option is useful when a restored database needs to appear as a newly-created database. The implication is that the entire database would be backed up during the next incremental backup. Also, the updated notes will normally be replicated to other Notes servers. Because of these effects, this option is not usually set.

This parameter is optional. The default is **No**. Possible values are:

No Do not update the modification date/time field to show the current date and time.

Yes Update the modification date/time field of all documents to have the current date and time.

-MOUNTwait=value

This parameter is used if you do not want ADSM to wait for a tape mount if one is necessary. The default is **Yes**. Possible values are:

Yes The restore process will wait for a tape mount if one is necessary.

No The restore process will not wait for a tape mount.

-BEFOREDate=mm/dd/yy

If this option is specified, then the backup copy taken closest to but before this date is restored. This option and the `-beforetime` option apply to both active and inactive copies. If neither option is specified, then ADSM attempts to restore the active copy.

This option should be used if you are rebuilding a database with the `-to` option and want to restore an inactive copy of the database.

-BEFORETime=hh:mm

The `-beforetime` option can only be used if the `-beforedate` option is also used.

The copy of the database that is restored is the one that was backed up closest to but before the specified date/time combination.

-FROMDate=mm/dd/yy

This option is used to help specify a date/time range. All notes backed up within this date/time range will be restored. If more than one backup copy of a note were made during that time range, then only the most recently backed up version will be restored. The `-fromdate` and `-todate` options must both be specified if either is specified. If these options are used, `-beforedate` and `-beforetime` cannot be used.

-FROMTime=hh:mm

This option works with `-fromdate` to specify a date/time range. The `-fromtime` option can only be used if the `-fromdate` option is also used.

-TODate=mm/dd/yy

This option is used with `-fromdate` to help specify a date/time range. All notes backed up within this date/time range will be restored. If more than one backup copy of a note were made during that time range, then only the most recently backed up version will be restored. The `-fromdate` and `-todate` options must both be specified if either is specified.

-TOTime=hh:mm

This option works with `-todate` to specify a date/time range. The `-totime` option can only be used if the `-todate` option is also used.

-ADSMPW=*password*

The ADSM password that is recognized by the ADSM server for your workstation. The workstation whose databases are being backed up is the ADSM client. If you are using the automatic ADSM password handler, which you can initiate through the NOTES.INI file, then -adsmpw is optional.

-NEWADSMpw=*newpassword*

This parameter is used if the ADSM password needs to be reset. For example, this could happen if the password expires on the ADSM server. If you use this option, you must also use the -adsmpw option. ADSM uses -adsmpw to validate the old ADSM password and then uses -newadsmpw to set the new ADSM password.

Examples

Task: Restore the last version of the database named LNOTES3.NSF that was backed up in 1994. Call the new database LNOTES3A.NSF.

Command: `dsmnotes restore c:\plan\proj1\lnotes3.nsf
-to=c:\plan\proj1\lnotes3a.nsf -beforedate=1/1/95
-beforetime=00:00`

Task: Restore all notes that were backed up in April 1995 and merge them into a database named LNOTES4.NSF. Change the modification date for all notes in the database to the current date.

Command: `dsmnotes restore -merge=y -updateall=y -fromdate=4/1/95
-todate=4/30/95 c:\plan\lnotes4.nsf`

Entering and Changing the ADSM Password

You need a password in order to use the ADSM Lotus Notes Backup Agent. If the ADSM Notes agent is the first ADSM application that you have run for your node, then you will be prompted to set up a password.

Each time you access a Lotus Notes database, whether to back it up or to restore documents to it, ADSM needs to know your password. If you are using the automatic password handler, then ADSM takes care of it for you. (For more information, see "Using the Automatic Password Handler" on page 17.)

If you are not using the automatic password handler, then you must supply your password. On the command line, use the -adsmpw parameter with the command you are entering. In the Lotus Notes Workspace, ADSM brings up the dialog box shown in Figure 5 on page 17. Enter your password and click on **OK**.

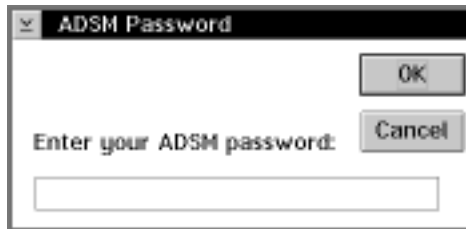


Figure 5. Entering your password

If your password has expired, ADSM provides the dialog box shown in Figure 6. Enter your old password and a new one, then click on **OK**.

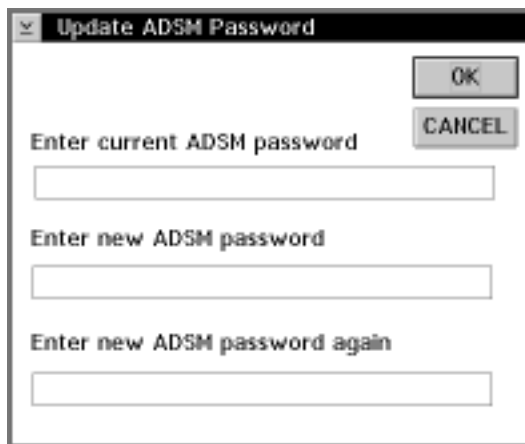


Figure 6. Changing your password

To update an expired password from the command line, use the `-newadmpw` option with a `DSMNOTES` command.

Using the Automatic Password Handler

The automatic password handler enables ADSM to keep track of your password for you. Once the password handler is set up, you do not have to enter your ADSM password every time you connect to the ADSM server.

To enable the password handler, set the following environment variable in your `NOTES.INI` file:

```
DSMNOTES_AUTO_PW=on
```

The first time you invoke an ADSM function, you will be prompted for your ADSM password. ADSM creates a file called `DSMNOTES.PWD`, encrypts the password, and stores it in `DSMNOTES.PWD`. The file is stored in the Lotus Notes data directory unless you specify a different location with the `DSMNOTES_PWDIR` environment variable in `NOTES.INI`. In future ADSM operations, ADSM gets the password from the `DSMNOTES.PWD` file.

If your ADSM password expires and DSMNOTES_AUTO_PW is on, a new password is automatically generated for the workstation, encrypted, and stored in the DSMNOTES.PWD file.

Accessing a Remote Notes Database

With the ADSM Lotus Notes Backup Agent you can back up or restore notes on a remote Notes server. Most remote operations can be performed through the command line interface.

From the Notes Workspace you can restore specific documents to an existing remote database (see “Restoring Selected Documents from a Database” on page 6). When you start this operation, the dialog box shown in Figure 7 appears. Fill in the nodename and password for the remote Notes server and click on **OK**.

Note: The automatic password handler does not apply when restoring documents remotely.

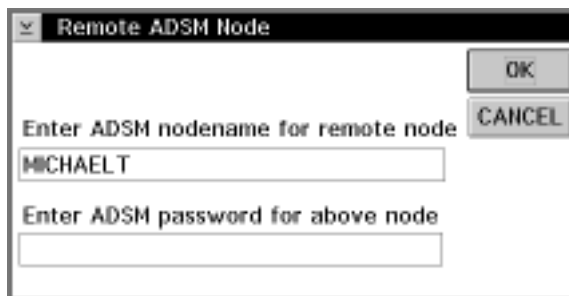


Figure 7. Restoring documents from a remote database

If you do not have the authority to back up Notes data on the remote server, then the operation will not continue.

Scheduling

The ADSM Lotus Notes Backup Agent does not have its own scheduling mechanism. However, Lotus Notes provides a facility through which the backup agent commands can be scheduled to run at some later time. You can also use the scheduling facility of the ADSM backup-archive client to schedule the backup agent commands.

For example, you can set up a Lotus Notes Program form or an ADSM schedule to run a DSMNOTES INCR command on a particular database at a certain time each week.

See the *Lotus Notes Administrator's Guide* (published by Lotus) or *Using the OS/2 Backup-Archive Client* for more information on the automatic scheduling facility.

Example: What Happens Over Time

Backup versions of notes on an ADSM server are similar to the backup versions of files stored by the ADSM backup-archive client. The file space on an ADSM server in which a set of backup copies of notes resides corresponds to a Notes database.

Whether a particular version of a database can be rebuilt depends on the number of inactive copies that are kept on the ADSM server. When the maximum number allowed is reached, new backups cause the oldest inactive copies to be rolled off. Once a backup copy of a note has been removed from the ADSM server, it cannot be restored.

For example, suppose you have a Notes database with only two notes in it, **Note A** and **Note B**. **Note A** is updated frequently, while **Note B** seldom changes. An incremental backup is performed on the Notes database each night. Assume the ADSM server keeps one active copy and one inactive copy of a backed up note.

On day 1, after the first incremental backup, the ADSM server contains an active copy of **Note A** and an active copy of **Note B**. On day 2, **Note A** is updated, while **Note B** is not. After the nightly backup, the ADSM server contains one active and one inactive copy of **Note A** and the original active copy of **Note B**.

On day 3, **Note A** is updated again, while **Note B** is not. During the next incremental backup, the current version of **Note A** becomes the active backup copy and the active copy on the ADSM server becomes the inactive copy. Because only one inactive backup copy is maintained on the ADSM server, the inactive copy created on day 2 is rolled off. The active copy of **Note B** remains unchanged.

Given this scenario, you can rebuild the database to either a day 3 or a day 2 version. You cannot rebuild a day 1 version of the database because the day 1 version of **Note A** is no longer available. You could restore a day 1 version of **Note B** because that version is still available on the ADSM server.

This example illustrates the importance of determining the optimal number of backup copies to keep on the ADSM server. Your ADSM administrator may want to set up a separate domain with a suitable default management class specifically for Notes data.

To avoid the need for keeping many backup copies of individual notes on the ADSM server, the ADSM administrator may choose to combine periodic full file backups of Notes databases with more frequent incremental backups. For example, the ADSM client could be used to perform full file backups once a week, while the ADSM Notes agent could perform a daily incremental backup. If you needed to rebuild the database later, you could restore the last full file backup with the ADSM client. Then you could use the ADSM Notes agent DSMNOTES RESTORE command with the `-merge=yes` option to combine the most recently backed up notes with the Notes database.

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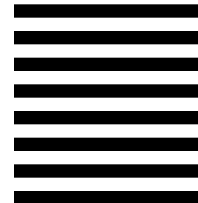
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