

IBM FileNet Image Services
Version 4.2

Upgrading the MKF Security Database



IBM FileNet Image Services
Version 4.2

Upgrading the MKF Security Database



Note

Before using this information and the product it supports, read the information in “Notices” on page 27.

This edition applies to version 4.2 of IBM FileNet Image Services (product number 5724-R95) and to all subsequent releases and modifications until otherwise indicated in new editions.

© Copyright IBM Corporation 2006, 2011.

US Government Users Restricted Rights – Use, duplication or disclosure restricted by GSA ADP Schedule Contract with IBM Corp.

Contents

Updating the MKF Security Database 7

Introduction 7

Document revision history 7

Accessing IBM FileNet documentation 8

IBM FileNet Education 8

Feedback 8

Documentation feedback 8

Product consumability feedback 9

Starting points 9

Prepare for the update 10

Verify the current values 10

(The Answers) 11

Update the MKF Security Database 12

Back Up the Current SEC_db0 12

Log on to the Security System 13

UNIX Server Users Logon 13

Windows Server Users Logon 13

Export the database 14

Reconfigure the system configuration parameters 14

Stop the Image Services software 15

Rebuild the system configuration files 15

Increase the logical volume size 15

For AIX/6000 servers 16

For HP-UX servers	16
For Solaris servers	17
For Windows servers	18
Initialize the Security Database	18
Import the database	19
About the overwrite_all option	20
Back up the system	20
Return to production mode	21
Complete the Image Services upgrade	21

Appendix A – Determining the Ideal Size for SEC_db0 22

Requirements	22
Security Database Tables	23
Minimum SEC_db0 Sizes	24

Notices 27

Trademarks	31
U.S. Patents Disclosure	31

Updating the MKF Security Database

Introduction

This document provides instructions for expanding the MKF Security database for existing IBM® FileNet® Image Services customers who plan to upgrade to Image Services 4.1 or later.

This database expansion is required for additional columns that will be automatically added to the MKF Security database when you install Image Services 4.1 or later. The new columns will be used for enhanced user and group security.

Note Image Services systems that are currently running **Image Services 4.0 SP5, Image Services 4.0 HP Integrity Edition, Image Services 4.1.0** or later, already contain expanded MKF Security databases and do not require this procedure.

You can perform this update to the MKF Security database several weeks or months before upgrading Image Services.

Document revision history

Image Services version	Date	Comment
4.1	Nov. 2008	Initial release.

Accessing IBM FileNet documentation

To access documentation for IBM FileNet Image Services products:

- 1 On the www.ibm.com website, enter “Image Services Documentation” in the search box on the menu bar.
- 2 Select **IBM - Product Documentation for FileNet Image Services** from the list of search results.

IBM FileNet Education

IBM provides various forms of education. Please visit the IBM Training and Certification for IBM software page at:

www.ibm.com/software/sw-training.

Feedback

We value your opinion, experience, and use of our products. Please help us improve our products by providing feedback or by completing a consumability survey.

Documentation feedback

Send comments on this publication or other IBM FileNet Image Services documentation by e-mail to comments@us.ibm.com. Be sure to include the name of the product, the version number of the product, and the name and part number of the book (if applicable). If you are commenting on specific text, include the location of the text (for example, a help topic title, a chapter and section title, a table number, or a page number).

Product consumability feedback

Help us identify product enhancements by taking a Consumability Survey (<http://www-306.ibm.com/software/data/info/consumability-survey/>). The results of this comprehensive survey are used by product development teams when planning future releases. Although we are especially interested in survey responses regarding the most recent product releases, we welcome your feedback on any of our products.

The survey will take approximately 30 minutes to complete and must be completed in a single session; there is no option to save a partially completed response.

Starting points

For this MKF Security database upgrade, your Image Services system must already be running one of these Image Services releases:

- **Image Services 3.6 SP3 HFP14 or higher**
- **Image Services 3.6 ESE SP1 HFP14 or higher**
- **Image Services 4.0 SP4 HFP5 or higher**

These releases of Image Services contain an updated version of the SEC_tool, which is used in the following procedure. A new overwrite_all option has been added to the import function of SEC_tool.

Prepare for the update

Image Services 4.0 SP5 introduced a structural change to the sec_db0 and sec_rl0 tables in the MKF Security database to support enhanced user and group security.

Note This procedure only needs to be performed on the Root/Index server of a multi-server Image Services system.

Verify the current values

To verify your current MKF database configuration settings, launch the configuration editor, **fn_edit**, and check the following values:

Tab	Field	Minimum Value	Yes	No
Datasets	Sec_db0 Sec_rl0	64 MB* 64 MB		
MKF databases	Security database Block Size	8 KB		
Performance Tuning > (Server Memory subtab)	Security Buffer Pool Size	2000 (2 MB)		

* While 64 MB is the recommended minimum size for sec_db0, you might be able to use a smaller size if space on the hard drive is limited. See **“Appendix A – Determining the Ideal Size for SEC_db0” on page 22.**

- a In **fn_edit**, select the Datasets tab. Are the sizes of sec_db0 and sec_rl0 set to 64 MB or higher?

- b Select the MKF databases tab. Is the Security database Block Size set to 8 KB or higher?
- c Select the Performance Tuning tab, and then select the Server Memory subtab. Is the Security Buffer Pool Size set to 2000 (2 MB) or higher?

(The Answers)

- If the answer is **Yes** to **all three** settings, **STOP**. Your MKF Security database is ready for the enhanced user and group security provided in Image Services 4.0 SP5. You do not need to continue this procedure.
- If the answer is **No** to **any** of the settings above, you need to update the MKF Security database. Continue with the steps in the next section.

Update the MKF Security Database

Back Up the Current SEC_db0

Make sure you have a recent backup of SEC_db0 as a safeguard. Follow the customer's standard backup strategy, such as EBR, to back up SEC_db0 and SEC_rl0.

Remove Old Security Objects (Optional)

You can save time and reduce the size of the export file by removing old security objects from SEC_db0. For example, on a Windows server, you would enter:

UNIX

MKF_tool :: /fnsw/dev/1/sec_db0

- or -

WIN

MKF_tool :: <drive>:\FNSW\DEV\1\SEC_DB0

<MKF_tool> allowupdates

(Enter the appropriate password.)

<MKF_tool> count sec_object * where obj_class=4

Total of 29266 records counted

<MKF_tool> del sec_object * where obj_class=4

<MKF_tool> del sec_groups * where member_class=4

Total of 29266 records deleted

<MKF_tool> count sec_object * where obj_class=4

Total of 0 records counted

<MKF_tool> q

Log on to the Security System

UNIX Server Users Logon

To log on to FileNet security from the command line, enter:

fnlogon

The fnlogon command gives the current command line shell security access. If you switch to another shell, you need to run fnlogon from the new shell.

Tip Use Control+d to exit fnlogon at any time.

Enter the commands in the following sections at the fnlogon prompt.

Windows Server Users Logon

Start the FileNet Application Executive by selecting it from the Start menu path Programs > FileNet Image Services Server Applications.

Log on as a user with administrative privileges, such as SysAdmin. Then enter the commands in the following sections in a command prompt window.

Export the database

Since you'll be expanding the MKF Security database you need to export your current SEC_db0 database. Enter:

SEC_tool

SEC_tool> **export <filename>**

where <filename> is the name of the file you want the security data exported to. You can choose any file name you wish, such as SECexp, for example.

Important

Do not make any changes to any user, group, or device security between the database export and the import.

Reconfigure the system configuration parameters

As the FileNet user, such as **fns**, launch **fn_edit**, and make the following modifications, if necessary:

- On the MKF databases tab, change Security database Block Size to **8 KB**.
- On the Datasets tab, change sec_db0 and sec_r10 sizes to a minimum of **64 MB**. See [**“Appendix A – Determining the Ideal Size for SEC_db0” on page 22.**](#)

Tip

Although the minimum sizes of both sec_db0 and sec_r10 are the same, sec_db0 is typically two or three time larger than sec_r10.

- On the Performance Tuning tab, select Server Memory.

- Set the Security Buffer Pool Size to **2000 (2 MB)**

Exit from `fn_edit` and save your changes.

Stop the Image Services software

As the FileNet user, such as **fnsw**, stop all Image Services processes by entering:

UNIX

killfnsw -DAy

WIN

killfnsw -D -y

Rebuild the system configuration files

Still as **fnsw** user, enter the following command to build the system configuration files:

fn_build -a

Increase the logical volume size

To make sure there is enough space for the expanded Security database, use the appropriate tools for your platform to verify and, if necessary, increase the volume size.

Tip

The steps in the following sub-sections are typical. They might vary slightly for your version of a specific operating system.

For AIX/6000 servers

On AIX servers, use **SMIT** to verify and set the volume size.

- 1 In **SMIT**, choose System Storage Management (Physical & Logical Storage) → Logical Volume Manager → Logical Volumes → Set Characteristics of a Logical Volume → Increase the Size of a Logical Volume.
- 2 Click List and select **fn_sec_db0**.
- 3 At the prompt Number of ADDitional Logical Partitions (NUM) enter the number of logical partitions that will bring the total size of fn_sec_db0 to 64 MB (or whatever size you entered in fn_edit.)

Tip To determine the size of the logical partitions on your server, enter:

lsvg <volume_group>

The resulting display shows both logical partitions (LP) and physical partitions (PP).

- 4 Repeat these steps to increase the size of fn_sec_rl0.
- 5 Click **OK**. (or press the Return key).
- 6 Skip to **[“Initialize the Security Database” on page 18.](#)**

For HP-UX servers

On HP-UX servers, use **SAM** to verify and set the volume size.

- 1 In **SAM**, select Disks and File systems > Logical Volumes.

- 2 Select **fn_sec_db0**.
- 3 From the Actions menu, select Increase Size.
- 4 At the prompt New Size (Mbytes), increase the total size of **fn_sec_db0** to 64 MB (or whatever size you entered in **fn_edit**). Click OK.
- 5 Repeat steps 2 through 4 to increase the size of **fn_sec_rl0**.
- 6 From the File menu, select Exit and continue until you are completely out of SAM.
- 7 Skip to **"Initialize the Security Database" on page 18.**

For Solaris servers

On Solaris servers, use the Volume Manager (such as Veritas) to make sure the underlying volume size is at least **64 MB**.

Note **For Sites with Disk Arrays ONLY:** Disk arrays managed by the Veritas volume management software, do not always expand to an even MB boundary. You should verify the new size, after expanding a volume, by displaying the volume information. The new volume size will display in Kilobytes if it did not expand to an even Megabyte boundary.

Previous installations with a disk array (configured for RAID-5) have determined that the correct procedure for accurately expanding a volume to an even Megabyte boundary is to make the new volume size evenly divisible by seven. It is uncertain if this suggestion is applicable for all disk arrays. (Check the most current version of the Image Services Release Notes for more information.)

Use the Volume Manager (such as Veritas) to increase the size of the appropriate volume(s).

Volume Name	Mount Point	Minimum Size	Actual Size You Create	User Name	Group Name	Mode
fn_sec_db0	n/a	64m		fnsw	fnusr	664
fn_sec_rl0	n/a	64m		fnsw	fnusr	664

As an alternative, you can use the **vxvol** command to adjust the volume size. For example, on a server with Veritas Volume Manager, you might enter a command similar to this:

```
vxvol -o force set len=64m fn_sec_db0
vxvol -o force set len=64m fn_sec_rl0
```

- 8 Skip to **[“Initialize the Security Database” on page 18.](#)**

For Windows servers

Since Windows Servers do not use logical volumes, you only need to make sure there is enough free space on the appropriate hard drive to contain the updated Security database, plus room for expansion.

Initialize the Security Database

- 1 As **fnsw** user, make sure all Image Services processes have been stopped:

```
 initfnsw -y stop
killfnsw -DAy
```

WIN

```
initfnsw -y stop  
killfnsw -D -y
```

- 2 Reinitialize SEC tables by entering:

```
fn_util initsec
```

The initialization process only takes a few minutes.

- 3 View the system event log to make sure the initialization was successful. Enter:

```
vl
```

- 4 Still as **fnsw** user, restart the Image Services software by entering:

```
initfnsw restart
```

Import the database

Important

As before, make sure you're logged on to FileNet security through fnlogon (UNIX servers) or through the Application Executive (Windows Servers).

- 1 Reload your MKF security database by entering:

```
SEC_tool
```

```
SEC_tool> import <filename> overwrite_all
```

where <filename> is the name of the export file.

The import process only takes a few minutes.

- 2 The MKF Security database update is complete and your Image Services system is ready for the user and group security enhancements provided in Image Services 4.1.

About the `overwrite_all` option

This option was added specifically for use during this MKF Security database upgrade. Using it in other situations could give you unexpected results.

Tip Because this option overwrites ALL security objects in the security database, any changes made since the export will be overwritten by the imported file. See the description of SEC_tool in the *Image Services System Tools Reference Manual* for more information. To download this document from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 8.**](#)

Back up the system

When the Image Services update is finished, make a complete backup of your system configuration in case something unforeseen occurs. For complete information on making system backups refer to:

- *Image Services System Administrator's Companion for UNIX*
- *Image Services Enterprise Backup and Restore User's Guide*
- *Image Services Third-Party Backup/Restore Guidelines*

To download these documents from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 8.**](#)

Important

It is especially important to make a backup after this update to the MKF Security database. Earlier backups cannot be restored after the database has been modified.

Return to production mode

Now that you've finished updating the MKF Security database, you can place your Image Services system back in normal operation. There should be no change in operation or performance at your current Image Services release level.

Complete the Image Services upgrade

When the time comes for you to upgrade your Image Services system to Image Services 4.1 or later, the MKF Security database is ready.

The first time you start Image Services after the upgrade, the MKF_update utility automatically creates the new columns in sec_db0 database **sec_object** table and adds three new tables, **sec_rm_config**, **sec_map_prin_to_dn**, and **sec_ce_dom_to_id**.

After Image Services has been upgraded, you can use MKF_tool to display these new tables. For example, to display a description of the columns in the sec_rm_config table, you would log in to MKF_tool and enter:

```
<MKF_tool> desc sec_rm_config
```

To display the data in the sec_rm_config table, you would enter:

```
<MKF_tool> select sec_rm_config *
```

Exit MKF_tool by entering:

```
<MKF_tool> q
```

Tip

See the *Image Services System Reference Guide* for more information on MKF Security database tables and their contents. To download this document from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 8.**](#)

Appendix A – Determining the Ideal Size for SEC_db0

This appendix provides general guidelines for determining the size of sec_db0 if hard drive space becomes limited.

Requirements

The required MKF Security database and redo log parameters for Image Services 4.0 SP5 and higher are as follows:

- **SEC_db0:**
 - **Block size: 8 KB**
(to allow for more than 32 columns in Image Services 4.0 SP5 and higher)
 - **File size: 28 MB (absolute minimum size)**
64 MB (recommended minimum size)
(in multiples of 4)
- **SEC_rl0:**
 - **Block size: 8 KB**
 - **File size: 64 MB (minimum size)**
- **Security Buffer Pool:**
 - **Size: 2000 (2 MB)**

The only parameter that can be adjusted to the available disk space or to the total number of security objects (users and groups) is the SEC_

db0 file size. MKF documentation states it must be at least 28 MB, but how large does it actually need to be?

Security Database Tables

Since every customer has a different business environment, the calculation method used here is based solely on typical Image Services environments.

The following table describes all records within the SEC_db0 file:

Table Name	Approx. Required Size Per Record (bytes)	Number of Records
sec_object	369	anywhere from 1 KB to 100 KB
sec_system	110	always 1
sec_deleted	96	not used
sec_groups	31	number of elements in sec_objects * 3
sec_functions:	138	few at most
sec_funcmbr	31	few at most
sec_namemap	31	few at most
sec_dbinfo	130	few at most
sec_rm_config	28	few at most
sec_map_prin_to_dn	124 (avg dn size = 100)	50% of sec_object elements
sec_ce_dom_to_id	56	few at most

Record Size calculation is based on the record size + (key fields * 0.66)

Note These tables are described in more detail in the *Image Services System Reference Manual*. To download this document from the IBM support page, see [**“Accessing IBM FileNet documentation” on page 8**](#)

Minimum SEC_db0 Sizes

Based on the typical usage described in the previous table, the minimum recommended size for SEC_db0 can be determined by the number of security objects created on your system:

SEC_db0 size (MB)	Approximate Number of Security Objects
28	15000
32	21000
36	27000
40	33000
44	39000
48	45000
52	51000
56	57000
60	63000
64	69000
68	75000
72	81000
76	87000
80	93000
84	99000

SEC_db0 size (MB)	Approximate Number of Security Objects
88	105000
176	210000

Notices

This information was developed for products and services offered in the U.S.A.

IBM may not offer the products, services, or features discussed in this document in other countries. Consult your local IBM representative for information on the products and services currently available in your area. Any reference to an IBM product, program, or service is not intended to state or imply that only that IBM product, program, or service may be used. Any functionally equivalent product, program, or service that does not infringe any IBM intellectual property right may be used instead. However, it is the user's responsibility to evaluate and verify the operation of any non-IBM product, program, or service.

IBM may have patents or pending patent applications covering subject matter described in this document. The furnishing of this document does not grant you any license to these patents. You can send license inquiries, in writing, to:

IBM Corporation
J74/G4
555 Bailey Avenue
San Jose, CA 95141
U.S.A.

For license inquiries regarding double-byte (DBCS) information, contact the IBM Intellectual Property Department in your country or send inquiries, in writing, to:

Intellectual Property Licensing
Legal and Intellectual Property Law
IBM Japan, Ltd.
1623-14, Shimotsuruma, Yamato-shi
Kanagawa 242-8502 Japan

The following paragraph does not apply to the United Kingdom or any other country where such provisions are inconsistent with local law: INTERNATIONAL BUSINESS MACHINES CORPORATION PROVIDES THIS PUBLICATION “AS IS” WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF NON-INFRINGEMENT, MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE. Some states do not allow disclaimer of express or implied warranties in certain transactions, therefore, this statement may not apply to you.

This information could include technical inaccuracies or typographical errors. Changes are periodically made to the information herein; these changes will be incorporated in new editions of the publication. IBM may make improvements and/or changes in the product(s) and/or the program(s) described in this publication at any time without notice.

Any references in this information to non-IBM Web sites are provided for convenience only and do not in any manner serve as an endorsement of those Web sites. The materials at those Web sites are not part of the materials for this IBM product and use of those Web sites is at your own risk.

IBM may use or distribute any of the information you supply in any way it believes appropriate without incurring any obligation to you.

Licensees of this program who wish to have information about it for the purpose of enabling: (i) the exchange of information between independently created programs and other programs (including this one) and (ii) the mutual use of the information which has been exchanged, should contact:

IBM Corporation
J46A/G4
555 Bailey Avenue
San Jose, CA 95141-1003
U.S.A.

Such information may be available, subject to appropriate terms and conditions, including in some cases, payment of a fee.

The licensed program described in this document and all licensed material available for it are provided by IBM under terms of the IBM Customer Agreement, IBM International Program License Agreement or any equivalent agreement between us.

Any performance data contained herein was determined in a controlled environment. Therefore, the results obtained in other operating environments may vary significantly. Some measurements may have been made on development-level systems and there is no guarantee that these measurements will be the same on generally available systems. Furthermore, some measurements may have been estimated through extrapolation. Actual results may vary. Users of this document should verify the applicable data for their specific environment.

Information concerning non-IBM products was obtained from the suppliers of those products, their published announcements or other publicly available sources. IBM has not tested those products and cannot confirm the accuracy of performance, compatibility or any other claims

related to non-IBM products. Questions on the capabilities of non-IBM products should be addressed to the suppliers of those products.

All statements regarding IBM's future direction or intent are subject to change or withdrawal without notice, and represent goals and objectives only.

This information contains examples of data and reports used in daily business operations. To illustrate them as completely as possible, the examples include the names of individuals, companies, brands, and products. All of these names are fictitious and any similarity to the names and addresses used by an actual business enterprise is entirely coincidental.

COPYRIGHT LICENSE:

This information contains sample application programs in source language, which illustrate programming techniques on various operating platforms. You may copy, modify, and distribute these sample programs in any form without payment to IBM, for the purposes of developing, using, marketing or distributing application programs conforming to the application programming interface for the operating platform for which the sample programs are written. These examples have not been thoroughly tested under all conditions. IBM, therefore, cannot guarantee or imply reliability, serviceability, or function of these programs. The sample programs are provided "AS IS", without warranty of any kind. IBM shall not be liable for any damages arising out of your use of the sample programs.

Trademarks

IBM, the IBM logo, and ibm.com are trademarks or registered trademarks of International Business Machines Corp., registered in many jurisdictions worldwide. Other product and service names might be trademarks of IBM or other companies. A current list of IBM trademarks is available on the Web at “Copyright and trademark information” at www.ibm.com/legal/copytrade.shtml.

Microsoft and Windows are trademarks of Microsoft Corporation in the United States, other countries, or both.

UNIX is a registered trademark of The Open Group in the United States and other countries.

Other company, product, and service names might be trademarks of IBM or other companies.

U.S. Patents Disclosure

This product incorporates technology covered by one or more of the following patents: U.S. Patent Numbers: 6,094,505; 5,768,416; 5,625,465; 5,369,508; 5,258,855.



Product Number: 5724-R95

Printed in USA

SC19-3334-00

