System Administration Guide

Version 4

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Updates to This Guide

This guide is being reissued due to the following changes:

- **Taylor & Francis (Books) Autoloader** on page 172 was added.
- The Taylor & Francis eBook autoloader task was added to **Working with Task Manager** on page 198.
- The **Automated localization of the Taylor & Francis eBook target** task was added to **Maintenance Task Checklist** on page 221.

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Introducing System Administration

This guide describes how to perform many administrative tasks in SFX. The tasks described in sections 1-4 are performed via the UNIX server and the tasks described in section 5 are performed via a special administrative tool called the Server Admin Utility.

This guide covers system administration topics for both of the operating systems on which SFX operates, Solaris and Linux. When instructions are specific to a particular operating system, they are noted as such.

This guide includes the following sections:

- **Creating Additional Instances** on page 13 – This section describes how to add additional instances to your SFX installation.
- **SFX Environment** on page 17 – This section describes how SFX uses features such as symbolic links and Apache Web servers and how to perform tasks such as changing an instance name, changing the HTTP port, and using the SFX daemons.
- **SFX Backup and Recovery** on page 53 – This section describes how to back up SFX files and databases and how to recover the files from the backup.
- **Security** on page 63 – This section describes several security features in SFX, such as configuring SFX to work with SSL, restricting access to SFX Admin and SFX menus to a specific IP, and preventing a cross-site security breach.
- **Testing and Debugging** on page 81 – This section describes how to use the SFX Admin Debugging Tool and Apache log files to debug SFX.
- **Server Admin Utility** on page 85 – This section describes how to perform various administrative tasks, such as system maintenance, diagnostics, creating indices, and running exports.

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1

Creating Additional Instances

Three instances are provided with the basic installation of SFX 4. If you have purchased licenses for additional instances, you can create these instances at the time of the initial installation, or you can choose to create them later. For more information about additional licenses and instances, contact your Ex Libris representative.

The following instructions describe the process of creating additional instances after the basic installation is complete. Note that you must have additional license keys provided to you by Ex Libris in order to create additional instances.

To create additional local instances:

1. Log on to the server as the `root` user.
2. Load the environment variables of the `sfxglb41` user:

```
tcsh
source ~sfxglb41/.cshrc
```

3. Move to the directory of the `create_instance` script:

```
da
cd imanager/
```

4. Run the `create_instance` script using the following information:
   - The instance template to be used to create the instance (`sfxglb41` is recommended)
   - The license key provided to you by Ex Libris
   - The MySQL root password for the server: `dbrootpassword`

- The MySQL password to be assigned to the new instance: `dbinspassword`

For example, type the following command (on one line):

```
create_instance.sh --template=sfxglb41
--license=332372f333e29393e273c7c69626279637c74363c7c7
e6f6f556870727563737c7534333535303236303
--dbrootpassword=xxxxxxxx --dbinspassword=newinstancename
```

5 After creating a new instance, restart MySQL if the instance is used as a shared instance in Consortia model 2.

For more information on Consortia model 2, refer to the document *Using SFX in a Consortium Environment*. For more information on stopping and restarting MySQL, see **Start/Stop Services** on page **87**.

After creating a new instance, make sure that all database triggers are in place for the new instance:

1 Log on to the server as the `sfxglb41` user.

2 Type `da`.

3 Type `./server_admin_util`.

4 Select **13 TRACKING table set-up and maintenance** and then **1 Check status of TRACKING table and triggers**.

5 Restart the Proxy Apache and start the instance Apache using the Server Admin Utility. For more information, see **Start/Stop Services** on page **87**.

If the triggers exist, then this instance has been set up to use the tracking table. Select **2 Create table and triggers** to recreate the triggers for the new instance.

NOTE:
For more information on setting up the TRACKING table, see **TRACKING Table Set-Up and Maintenance** on page **192**.

To display a help screen for the `create_instance` script, type:

```
create_instance.pl --help
```

The following is displayed:

```
create_instance.pl --help
Creates a new instance, includes a database and files.
Version:$Id: create_instance.pl,v 1.16 2004/11/09 16:50:26 jc_3
Exp$
usage: ./create_instance.pl --license=<key> --dbrootpassword=<mysql
root password> [options]
    --license=KEY               License key for the new instance
    --template=NAME            Name of the instance to be used as a
template
    --dbrootpassword=PASSWORD   MySql root password
    --dbinspassword=PASSWORD    Password for the new instance
    --verbose                   Print messages, default yes
    --help                      This help
```

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2

SFX Environment

This section describes how SFX uses features such as symbolic links and Apache Web servers and how to perform tasks such as changing an instance name, changing the HTTP port, and using the SFX daemons.

This section includes:

- **UNIX Symbolic Links** on page 17
- **SFX Installation Granularity** on page 19
- **Databases and MySQL** on page 23
- **Configuring External Applications to View the SFX Databases** on page 27
- **Sphinx** on page 28
- **Apache Web Servers** on page 29
- **Changing the Name of an SFX Instance** on page 32
- **Changing the HTTP Port** on page 38
- **SFX Related Daemons** on page 39
- **Startup Scripts** on page 42
- **SFX Maintenance Tasks** on page 43
- **MySQL Replication** on page 51

UNIX Symbolic Links

All files for SFX exist in the global instance. These files are symbolically linked to the local instance, which gives the appearance that they exist there as well.

File Editing

The sfxglb41 instance should remain a clean copy of the SFX installation and files there should not be edited. Instead, perform file localization by editing the files in the local instances, after the symbolic link to the global instance has been broken.

When editing files on an instance other than sfxglb41, bear in mind that most of the files are actually links to files in the sfxglb41 instance. Therefore, it is strongly recommended to use vi as your text editor, since it displays a warning when you are editing a file that is actually a link.

If you want to edit one of the files under the sfxlcl41 instance using vi, you receive a message asking if you want to break the symbolic link. For example, when sfxlcl41 tries to edit the file locater.config_:

```
vi locater.config_
[break symbolic link 'locater.config_' ?] [y/N]
```

If you answer Yes, vi creates a copy of the file in the sfxlcl41 instance. If you answer No, vi opens the file residing in the sfxglb41 instance in read-only mode.

NOTE:
It is generally recommended not to make any local changes to any file in the sfxglb41 instance, as these files may be changed without warning during the SFX update.

After editing any mod_perl or configuration file (files that end with .pm or .config), Apache needs to be restarted for that instance so that the changes made to the files can take effect. This can be done either by typing apachectl stop and then apachectl start (with a few seconds interval between the two commands) or via the Server Admin Utility. For more information on using the Server Admin Utility, see **Start/Stop Services** on page 87.

Recreating a Symbolic Link

If you have broken the symbolic link and created a local copy of a file, you can undo your changes and recreate the symbolic link by using the procedure below.

To recreate a broken link:

1. Log on as the user of the instance in the location that you want to recreate the link.
2. Delete the local copy of the file. For example, if you want to recreate the link to a target parser for Yahoo under `/exlibris/sfx_ver/sfx4_1/sfxlcl41/lib/Parsers/TargetParser/WWW/`:

```
tp
cd WWW
rm Yahoo.pm
```

3. Create the symbolic link to the global instance. For the Yahoo example:

   (Type the following command on one line.)

```
ln -s /exlibris/sfx_ver/sfx4_1/sfxglb41/lib/Parsers/
TargetParser/WWW/Yahoo.pm
```

SFX Installation Granularity

The SFX database structure has the following three levels of granularity:

- **Installation** – the complete SFX application. More than one installation can be installed on a server.
- **Instance** – a subdivision of the installation according to function. There are two types of instances:
  - **Global** – contains information about objects that is relevant for all customers. For example, target, target service, and portfolio information including names, descriptions, global coverage, and linking information.
  - **Local** – contains information relevant only to your specific installation, such as activation information, local coverage, and local administrator-specific linking information. Local information also includes overrides of global data. In a default installation, there are two local instances. One is used as the production environment (named `sfxlcl41`, by default), and one is used as the test environment (called `sfxtst41`, by default).
- **Institute** – a localized subdivision of a local instance. Institutes have their own configuration settings that can be different from the instance default (regarding activation, coverage, proxy, and linking parameter information). An institute can be assigned to one or more groups.

Multiple SFX installations can exist on the same server, but instance names and apache ports should be chosen to be unique per server. Each installation is located at: `/exlibris/sfx_ver/sfx4_x` (where `x` is the installation number).

By default, the first installation created is named `sfx4_1` and is located at `/exlibris/sfx_ver/sfx4_1`. The global instance of this installation is named `sfxglb41`. Additional installations are named `sfx4_2`, `sfx4_3`, etc.

The following figure illustrates an example of a two installation setup:

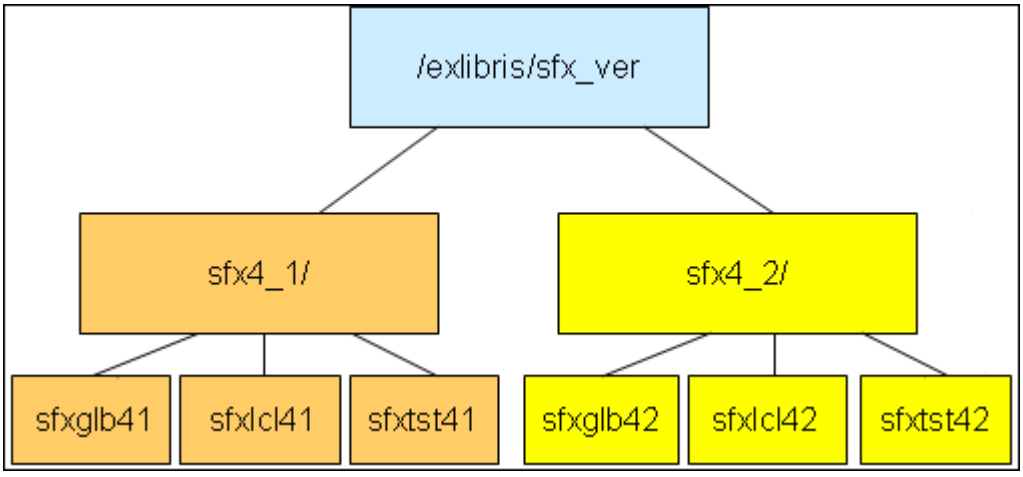

Figure 1: Database Structure in SFX

SFX Databases

Global information is stored in the global instance (`sfxglb41`). Only one copy of the global information exists per SFX installation. This global information is maintained by Ex Libris as part of the global KnowledgeBase. Additionally, any locally created database items that describe global information (for example – targets, target services, portfolios, and objects) are stored in the global instance.

Activation information for objects in the global database is stored in the INVENTORY tables, whereas other localization information and overrides of global data are stored in the LINKING_INFO tables.

Local information is stored only in the local instance. An installation can have more than one local instance.

To support the separation of global and local information in SFX 4, the database tables have been changed. Database tables starting with KB_ store global data, whereas database tables starting with LCL_ store local information and local overrides of global data.

When a new target, target service, and portfolio is created, information is stored in the appropriate KB_ (global) and LCL_ tables.

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Each table has an owner field, to ensure that SFX can identify to which installation, instance, and institute the table corresponds.

The following table describes some examples of global and local tables:

Table 1. Global and Local Tables

Global	Local
KB_TARGETS KB_TARGET_SERVICES These tables store global information. All local administrator, context specific data is moved to the LCL_ tables.	LCL_TARGET_LINKING_INFO LCL_TARGET_SERVICE_LINKING_INFO These tables store local information and local overrides of global data (such as ENABLE_PROXY, PARSER, PARSE_PARAM, and local THRESHOLD). LCL_SERVICE_INVENTORY This table stores activation status (active/inactive)
KB_OBJECT_PORTFOLIOS	LCL_OBJECT_PORTFOLIO_LINKING_INFO These tables store local information and local overrides of global data LCL_OBJECT_PORTFOLIO_INVENTORY This table stores activation status (active/inactive)
KB_LINKING_PARAMETERS Contains L/P information, with or without out-of-the-box values	LCL_LINKING_PARAMETERS Contains L/P parameter information filled in by the local administrator

The global and local instances are illustrateed in **Figure 2** on page **22** with the following types of information:

- **Global** – for example, the DESCRIPTION field in KB_TARGETS is used to store a global description of the target.
- **Local overrides of global information** – for example, KB_TARGET_SERVICES has the TARGET_PARSER_PROGRAM, PARSE_PARAM, and THRESHOLD fields. The local administrator can override these fields per instance by creating a local THRESHOLD, TARGET_PARSER_PROGRAM, and PARSE_PARAM. These local overrides are stored in the LCL_TARGET_SERVICE_LINKING_INFO table.
- **Local overrides of local information** – for example, a local administrator can fill in local threshold for DEFAULT (stored in the LCL_OBJECT_PORTFOLIO_LINKING_INFO table), but override this local

threshold for an institute by specifying an institute specific local threshold that is also stored in the LCL_OBJECT_PORTFOLIO_LINKING_INFO table.

- **Local** – for example, the LCL_TARGET_ LINKING_INFO table has the AUTHENTICATION field. This field is used by the local administrator to display information related to authentication in the SFX menu.

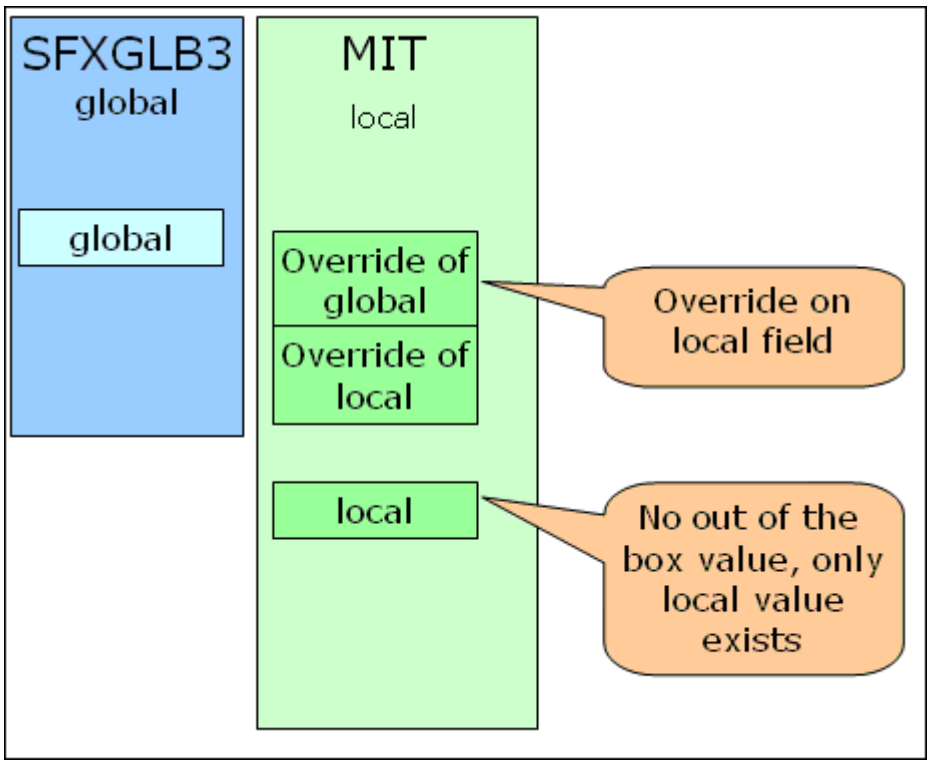

Figure 2: Global and Local Information – Example 1

In this example, the local instance contains a local override of the global information, local information that is independent, and a local override of that local information for a specific institute.

The following figure illustrates another example of global, local, and local override information:

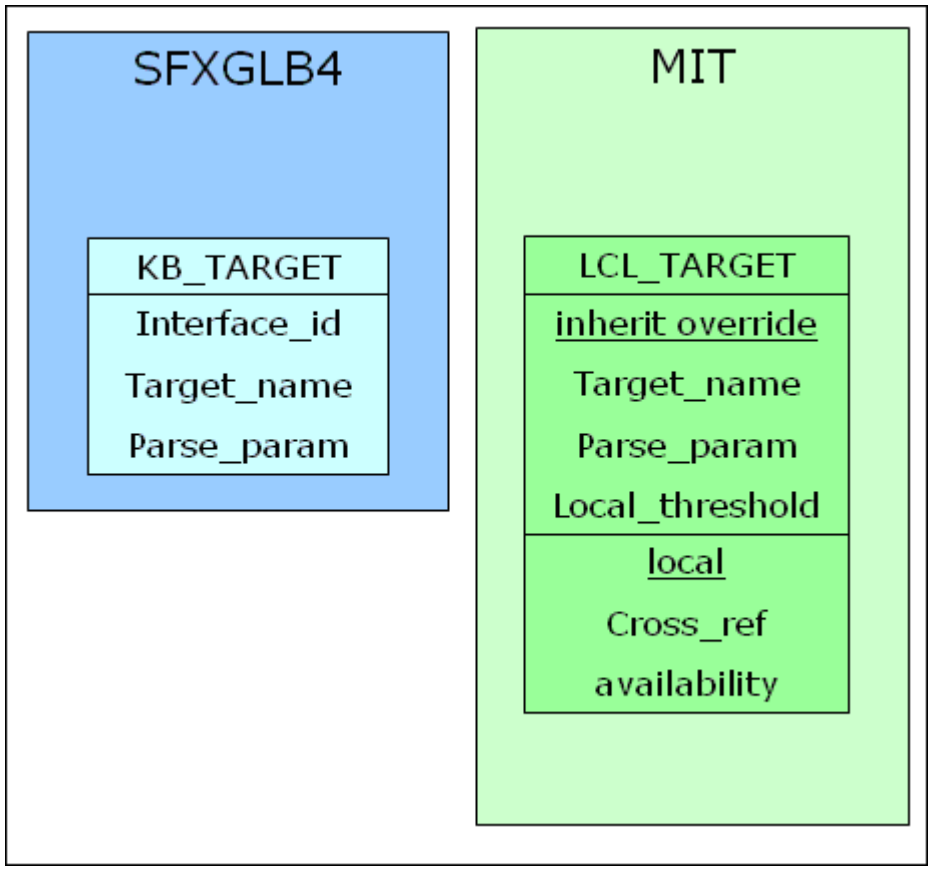

Figure 3: Global and Local Information – Example 2

In this example, the local instance contains a local override of the global target name, parse param, and threshold and has independently local CrossRef and availability information.

Databases and MySQL

Besides the global and local instances, there are also three other directories in SFX:

- **App** – contains all supporting software required to run SFX (MySQL, Perl programming environment, Java, and an Apache Web server)
- **Data** – contains MySQL databases
- **Proxy** – contains reverse proxy apache files

The following figure illustrates the SFX directory structure:

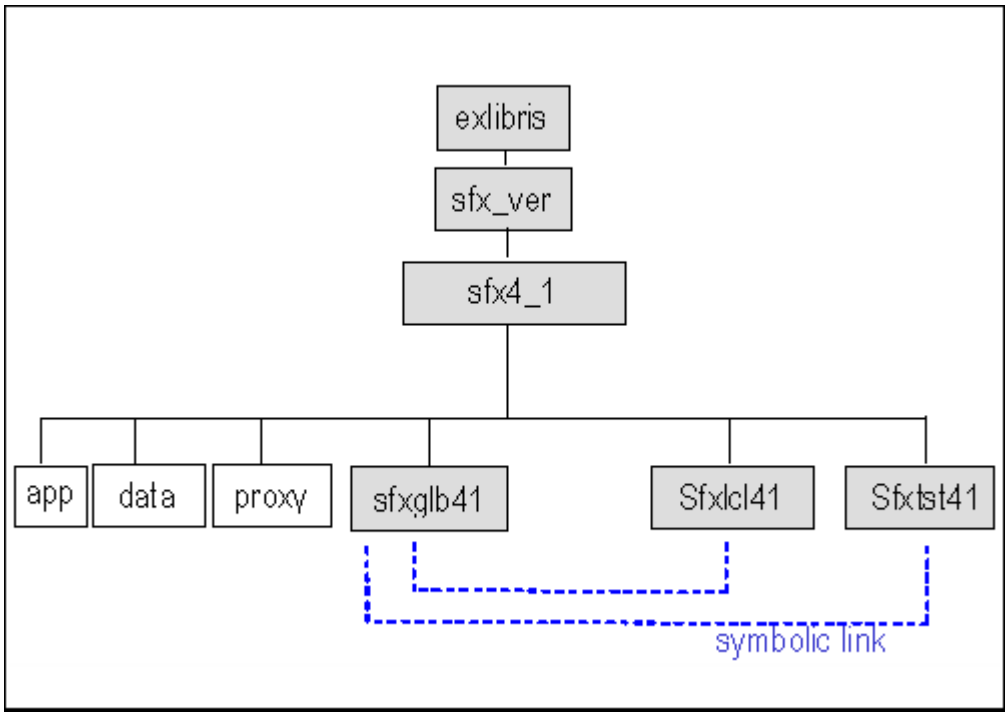

Figure 4: SFX Directory Structure

The files in the local and test instance use UNIX symbolic links to connect them to files in the global instance. When Ex Libris updates the files on the `sfxglb41` instance, the updates are immediately transferred to the `sfxlcl41` and `sfxtst41` instances.

The following tables describes the subdirectories of the application directory:

Table 2. Application Directory

Directory	Description
`/exlibris/sfx_ver/sfx4_x/app/apache`	Contains all software required to run and administer an Apache HTTP daemon
`/exlibris/sfx_ver/sfx4_x/app/mysql`	Contains all software required to run and administer a MySQL database
`/exlibris/sfx_ver/sfx4_x/app/openssl`	Contains software for HTTPs
`/exlibris/sfx_ver/sfx4_x/app/oracle`	Contains Oracle table client used for Verde - SFX synchronization
`/exlibris/sfx_ver/sfx4_x/app/perl`	Contains all Perl software and modules required for SFX
`/exlibris/sfx_ver/sfx4_x/app/python`	Contains Python, programming language used by Sphinx

Table 2. Application Directory

Directory	Description
/exlibris/sfx_ver/sfx4_x/app/sphinx	Contains Sphinx, an SQL full-text search engine used for Author searching
/exlibris/sfx_ver/sfx4_x/app/utils	Contains utilities like UNZIP
/exlibris/sfx_ver/sfx4_x/app/yaz	Contains YAZ z39.50 client

The following table describes the structure of an SFX instance:

Table 3. SFX Structure

Directory	Description
/exlibris/sfx_ver/sfx4_x/<instance>/admin	Contains command line tools
/exlibris/sfx_ver/sfx4_x/<instance>/archive	Contains statistics archive files
/exlibris/sfx_ver/sfx4_x/<instance>/cgi/core	Contains SFX core CGI programs (encrypted), such as sfxmenu.cgi, sfxresolver.cgi, and sfxctrl.cgi
/exlibris/sfx_ver/sfx4_x/<instance>/cgi/public	Contains CGI programs required for certain targets (not encrypted - intended to be editable)
/exlibris/sfx_ver/sfx4_x/<instance>/config	Contains all configuration files
/exlibris/sfx_ver/sfx4_x/<instance>/dbs	Contains SQL table definitions and the scratch directory
/exlibris/sfx_ver/sfx4_x/<instance>/export	Contains export files from KBTools
/exlibris/sfx_ver/sfx4_x/<instance>/home	Home directory of the instance
/exlibris/sfx_ver/sfx4_x/<instance>/lib	Contains perl modules, target parsers, source parsers and target displayer programs

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Table 3. SFX Structure

Directory	Description
/exlibris/sfx_ver/sfx4_x/<instance>/logs	Contains SFX requests logs when redirection is used
/exlibris/sfx_ver/sfx4_x/<instance>/sfxadmin	Contains programs for the SFXAdmin Center
/exlibris/sfx_ver/sfx4_x/<instance>/templates	Contains HTML pages for the SFX menu screen, the HTM Update reports, the HTML electronic journal lists, and SFXAdmin

The databases of an SFX installation are placed in the /exlibris/sfx_ver/sfx4_1/data directory. The names of the databases are the same as the name of the SFX instance. For example, the sfxlcl41 instance uses the sfxlcl41 database.

All MySQL processes are owned by the sfxglb41 user.

The MySQL configuration is located in the my.cnf file at: /exlibris/sfx_ver/sfx4_1/data

This configuration file contains, for example, the MySQL port. It is recommended to check this configuration file to make sure that the Performance

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Settings section as shown below is configured optimally according to the number of concurrent users of your installation.

```
#
# Performance Settings
#
#   Definition of Customer size by number of concurrent users
#     Small  - 100 (max_connections)
#     Medium - 150       "
#     Large  - 200       "
#
#   Recommendations for 32bit (2G process limitation)
#     Small  key_buffer_size=512M  read_buffer_size=8M    sort_buffer_size=8M
#     Medium key_buffer_size=1G    read_buffer_size=4M    sort_buffer_size=4M
#     Large  key_buffer_size=1G    read_buffer_size=2M    sort_buffer_size=2M
#
#   Recommendations for 64bit
#     Small  key_buffer_size=2G    read_buffer_size=8M    sort_buffer_size=8M
#     Medium key_buffer_size=2G    read_buffer_size=6M    sort_buffer_size=6M
#     Large  key_buffer_size=2G    read_buffer_size=4M    sort_buffer_size=4M
#
key_buffer_size=1G
sort_buffer_size=8M
read_buffer_size=4M
max_connections=150
```

Configuring External Applications to View the SFX Databases

For a general description of the SFX databases, .

A list of database tables and fields, as well as a section of the ERD diagram that shows the connections between the most important database tables, can be found in .

After installation, access to the MySQL databases of each instance is available only via the UNIX MySQL interface, not via a GUI client. If access via a GUI client is needed, you need to grant permissions for external applications to access the local SFX database.

To grant permissions for external applications to access the local SFX database:

1 Type the following:

```
mysql -p<root_password> -uroot
use mysql
select password('<local instance>');
```

You will see something similar to the following:

```
+-------------------------------------------+
| password('sfxlcl42')                      |
+-------------------------------------------+
| *82B3FB27642224053A89127297A4AE73FE4EF235 |
+-------------------------------------------+
```

2 Type the following:

```
GRANT SELECT ON *.* TO '<local instance>'@'%.<local
hostname>' IDENTIFIED BY PASSWORD '<password>';
```

For example:

```
mysql -p1q2w3e4r -uroot
use mysql
select password('sfxlcl42');
GRANT  SELECT ON *.* TO 'sfxlcl42'@'%.exlibrisgroup.com'
IDENTIFIED BY PASSWORD
'*82B3FB27642224053A89127297A4AE73FE4EF235';
```

Sphinx

SFX uses Sphinx, an SQL full-text search engine, for Author information indexing and searching.

When using Sphinx, indexing does not occur automatically as it does for regular MySQL indexes and therefore needs to be scheduled. As a result, there is a new event scheduler in the MySQL process list in SFX version 4.

The Sphinx programs included in SFX are:

- Indexer – the program that creates the index
- Searched – the search daemon used to perform searches

The following tables store Author information in SFX version 4:

- KB_AUTHORS
- KB_AUTHORS_SPHINX

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- KB_AUTHORS_DELTA
- KB_AUTHORS_SPHINX_DELTA

The delta tables are included to avoid recreating the index for every new author entry in the table. Instead, new authors are added to the delta table, and only the delta table is reindexed immediately. SFX uses a scheduled task that runs every night to merge the delta table into the main index.

Apache Web Servers

Reverse Proxy Apache Web Server and Local Apache Web Servers

SFX version 4 runs several Apache HTTP servers, including one for each instance and one that serves as a reverse proxy server, acting as a front end or gateway to the Apache servers of all of the instances. This allows each instance to have its own Apache server and for all instances to be contacted via similar URLs. For example, http://sfx.university.edu:3410/sfxlcl41 and http://sfx.university.edu:3410/sfxtst41.

The following diagram illustrates the relationship between the different local Apache servers and the reverse Apache server.

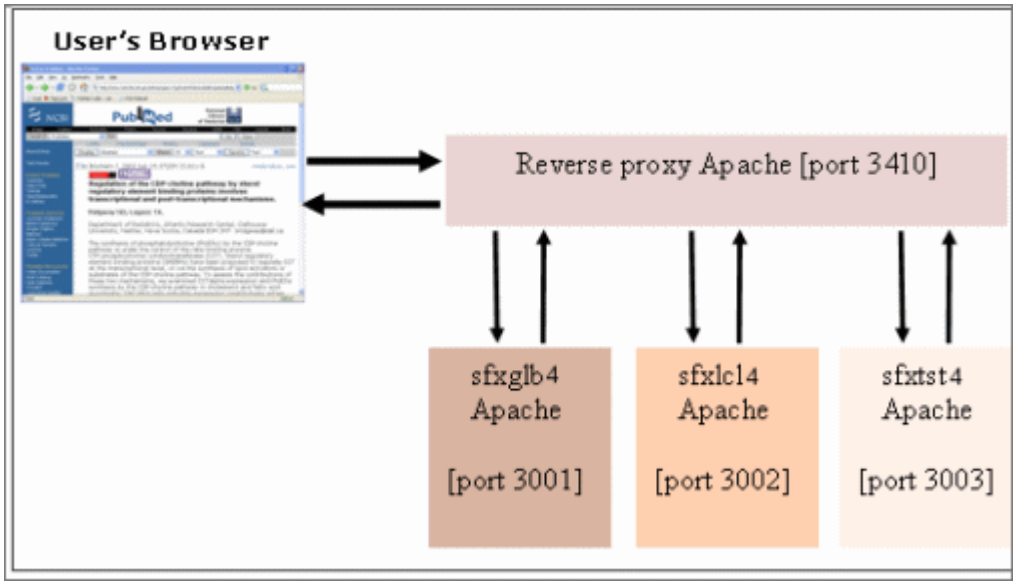

Figure 5: Apache Reverse Proxy

Location of the Apache Configuration Files

The following table lists the location of several important configuration files:

Table 4. Location of Apache Configuration Files

File	Location
Reverse Proxy Apache Configuration	`exlibris/sfx_ver/sfx4_1/proxy/conf/httpd.conf`
Reverse Proxy Apache Configuration (to reference all instances)	`/exlibris/sfx_ver/sfx4_1/sfxglb41/config/reverse_proxy_httpd.config__`
Instance-specific Local Apache Configuration	`/exlibris/sfx_ver/sfx4_1/<instance_name>/config/local_httpd.config`
Instance-specific Apache Configuration	`/exlibris/sfx_ver/sfx4_1/<instance_name>/config/httpd.conf`

NOTE:
The instance-specific Apache configuration file includes a local file, `local_httpd.config`, that may contain additions to Apache that are specific to the SFX instance.

Apache Log Files

All local instance apache log files are stored in the following directory of each instance:

`/exlibris/sfx_ver/sfx4_1/<instance>/logs/apache`

The reverse proxy apache log files can be found in the following directory:

`/exlibris/sfx_ver/sfx4_2/proxy/logs`

The apache logs directory contains the following log files

- `error_log` – This is the place where Apache httpd sends diagnostic information and record any errors that it encounters in processing requests. It is the first place to look when a problem occurs with starting the server or with the operation of the server, since it often contains details of what went wrong and how to fix it.
- `access_log` – This file contains log records for all requests processed by the server.

Additionally, the `sfxglb41` apache logs directory contains the following log file:

- `rewrite.log` – The purpose of this file is to record all redirections that occur in the apaches httpd. For example, when you change the name of an SFX instance, the log records all of the redirections.

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More information about using Apache logs for debugging purposes can be found in **Using the Apache Log Files** on page **81**.

For more information on cleaning Apache logs refer to **Clean Apache and MySQL Logs** on page **90** and **Appendix C: Maintenance Task Checklist** on page **221**.

Apache Error Log Rotation

It is possible to configure Apache to rotate log information based on either a specific time interval (rotation time) or the size of the log file (file size). During log rotation, the old log is kept as is, and a new log file is created, allowing you to save or remove old log information. This option can be used for both error and access logs in both the reverse proxy and local instance apache configuration files.

In the following example, SFX uses Apache's rotatelogs program in conjunction with Apache's piped logfile feature to rotate the reverse proxy Apache `error_log` file every 24 hours:

1 Log on as `sfxglb41`:

```
vi /exlibris/sfx_ver/sfx4_1/proxy/conf/httpd.conf
```

2 Change the following line:

```
ErrorLog logs/error_log
```

to:

```
ErrorLog "| /exlibris/sfx_ver/sfx4_1/app/apache/bin/
rotatelogs /exlibris/sfx_ver/sfx4_1/proxy/logs/error_log.%Y-
%m-%d 86400"
```

3 Save and close the file:

```
:wq
```

This rotates the `error_log` file every 24 hours, creating a log file with the file name: `error_log.YYYY-MM-DD`.

The rotatelogs tool can be used with the following parameters::

```
rotatelogs [ -l ] [ -f ] logfile rotationtime|filesizeM
```

The following are the parameters for this command:

- rotationtime – The time between log file rotations in seconds. The rotation occurs at the beginning of this interval. For example, if the rotation time is 3600, the log file is rotated at the beginning of every hour; if the rotation

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time is 86400, the log file is rotated every night at midnight. (If no data is logged during an interval, no file is created.)

- filesizeM – The maximum file size in megabytes followed by the letter M to specify size rather than time.

For more information and examples, see: http://httpd.apache.org/docs/2.1/programs/rotatelogs.html

Changing the Name of an SFX Instance

The default installation and setup (refer to the *SFX Installation Guide*) creates an `sfxlcl41` instance on the server. In order to point to this SFX instance, OpenURL links should include the following base URL (in this example, the name of the server is `sfx.myserver.com`):

http://<your_sfx_server>:<port>/<instance_name>

For example:

http://sfx.myserver.com:3410/sfxlcl41

If you want to change the instance name so that its base URL contains a more meaningful name– for example, `new_name` instead of `sfxlcl41` – perform the procedure below:

To change the name of an SFX instance:

1. Log on as `sfxglb41` and open the following file in the global instance:
   `/exlibris/sfx_ver/sfx4_1/sfxglb41/config/reverse_proxy_httpd.config_`
2. Manually change the instance name to `new_name` or type the following:

```
:%s/old_name/new_name/g
```


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The screen should look like the following:

```
# For instance sfxlcl41
ProxyPass /new_name http://localhost:3003/new_name
ProxyPassReverse /new_name http://localhost:3003/new_name
ProxyPass /sfxadmin/new_name http://localhost:3003/sfxadmin/
new_name
ProxyPassReverse /sfxadmin/new_name http://localhost:3003/
sfxadmin/new_name
RewriteRule ^/new_name-([^/]+)$ http://localhost:3003/
new_name?sfx.institute=$1   [QSA,P]
RewriteRule^/new_name-([^/]*)/([^.]+).gif$ http://
localhost:3003/new_name/sfxadmin/
gif.cgi?gif=$2.gif&sfx.institute=$1   [QSA ,P]
RewriteRule ^/new_name-([^/]+)/(.*)$  http://localhost:3003/
new_name-$1/$2 [P]
ProxyPass /SFX_API/new_name http://localhost:3003/SFX_API/
new_name
ProxyPassReverse /SFX_API/new_name http://localhost:3003/
SFX_API/new_name
ProxyPass /external_export/new_name http://localhost:3003/
external_export/new_name
ProxyPassReverse /external_export/new_name http://
localhost:3003/external_export/new_name
```

3 Log on as `sfxlcl41` and open the following file in the local instance:

`/exlibris/sfx_ver/sfx4_1/sfxlcl41/config/local_httpd.config`

4 Manually change the instance name to `new_name` in all cases where the name is not part of a directory path or type the following:

```
:%s/old_name/new_name/g
:%s/\/exlibris\/sfx_ver\/sfx4_1\/new_name/\/exlibris\/
sfx_ver\/sfx4_1\/old_name/g
```


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The screen should look like the following:

```
# Version : $Id: local_httpd.config,v 1.34 2010/06/13
14:43:27 davidg Exp $
# SFX Related CGI's. This config file is called by the main
httpd.config.
# Search and replace new_name for the instance name

RewriteEngine on

RewriteRule ^/new_name-([^/]+)/azlist$ /new_name/azlist/$1
[PT,E=__INST_URL_PART:-$1]
RewriteRule ^/new_name-([^/]+)/(.*)$ /new_name/$2
[PT,E=__INST_URL_PART:-$1]

# For static output
Alias /new_name/img/ /exlibris/sfx_ver/sfx4_1/sfxlcl41/
templates/img/
Alias /new_name/js/ /exlibris/sfx_ver/sfx4_1/sfxlcl41/
templates/js/
Alias /new_name/css/ /exlibris/sfx_ver/sfx4_1/sfxlcl41/
templates/css/

#Alias to v2 sfx gif
Alias /new_name/sfx_v2.gif /exlibris/sfx_ver/sfx4_1/sfxlcl41/
templates/img/sfxmenu/sfx_v2.gif

#Alias to sfx gif
Alias /new_name/sfx.gif /exlibris/sfx_ver/sfx4_1/sfxlcl41/
templates/img/sfxmenu/sfx.gif

# for HTML export
Alias /new_name/e_collection/ /exlibris/sfx_ver/sfx4_1/
sfxlcl41/templates/e-collection-html/results/

# Environment for scripts
PassEnv SFX_INST
PassEnv SFXCTRL_HOME
PassEnv SFX_HOME
PassEnv MYSQL_UNIX_PORT
PassEnv PERL5LIB
PassEnv SFX_COPY
PassEnv SFX_VERSION
PassEnv PERL_NO_VALIDATION
# Relevant for Solaris
SetEnv LD_LIBRARY_PATH /exlibris/sfx_ver/sfx4_2/app/lib:/usr/
local/lib/:/usr/lib/:/exlibris/sfx_ver/sfx4_2/app/mysql/lib/
mysql/

PerlPassEnv SFXCTRL_HOME
```


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```
# All core cgi's handled by ModPerl
ScriptAlias /new_name/cgi /exlibris/sfx_ver/sfx4_1/sfxlcl41/
cgi
<Location /new_name/cgi/>
SetHandler perl-script
PerlResponseHandler ModPerl::Registry
PerlOptions +ParseHeaders
Options +ExecCGI
</Location>

# For the azlist script redirector
ScriptAlias /new_name/az /exlibris/sfx_ver/sfx4_1/sfxlcl41/
cgi/core/azlist_ver3/a-z.cgi

<Directory "/exlibris/sfx_ver/sfx4_1/sfxlcl41/cgi/core/
azlist_ver3/">
SetHandler perl-script
PerlResponseHandler ModPerl::Registry
PerlOptions +ParseHeaders
Options +ExecCGI
</Directory>

# SFX eXpress
ScriptAlias /new_name/express/ /exlibris/sfx_ver/sfx4_1/
sfxlcl41/sfxadmin/express/
ScriptAlias /new_name/express /exlibris/sfx_ver/sfx4_1/
sfxlcl41/sfxadmin/express/login.cgi
RewriteRule /new_name/sfx.gif /new_name/sfxadmin/
gif.cgi?gif=sfx.gif [PT]

# SFX Admin (new)
ScriptAlias /new_name/admin/ /exlibris/sfx_ver/sfx4_1/
sfxlcl41/sfxadmin/admin/
ScriptAlias /new_name/admin /exlibris/sfx_ver/sfx4_1/
sfxlcl41/sfxadmin/admin/login.cgi

ScriptAlias /new_name/et4/ /exlibris/sfx_ver/et4/new_name/
cgi/

# For administration cgi's
# SSL later
ScriptAlias /sfxadmin/new_name/validations /exlibris/sfx_ver/
sfx4_1/sfxlcl41/sfxadmin/validations/
ScriptAlias /new_name/sfxadmin /exlibris/sfx_ver/sfx4_1/
sfxlcl41/sfxadmin
ScriptAlias /sfxadmin/new_name /exlibris/sfx_ver/sfx4_1/
sfxlcl41/sfxadmin/sfxctrl.cgi
```

```
<Directory "/exlibris/sfx_ver/sfx4_1/sfxlcl41/sfxadmin/
print_footer.cgi">
SetHandler perl-script
PerlResponseHandler ModPerl::Registry
PerlOptions +ParseHeaders
Options +ExecCGI
</Directory>

<Directory "/exlibris/sfx_ver/sfx4_1/sfxlcl41/sfxadmin/
print_header.cgi">
SetHandler perl-script
PerlResponseHandler ModPerl::Registry
PerlOptions +ParseHeaders
Options +ExecCGI
</Directory>

<Directory "/exlibris/sfx_ver/sfx4_1/sfxlcl41/sfxadmin/
print_refresh_frame.cgi">
SetHandler perl-script
PerlResponseHandler ModPerl::Registry
PerlOptions +ParseHeaders
Options +ExecCGI
</Directory>


# For backward compatibility
ScriptAlias /new_name /exlibris/sfx_ver/sfx4_1/sfxlcl41/cgi/
core/sfxmenu.cgi

ScriptAlias /SFX_API/new_name /exlibris/sfx_ver/sfx4_1/
sfxlcl41/cgi/core/sfxmenu.cgi

ScriptAlias /external_export/new_name /exlibris/sfx_ver/
sfx4_1/sfxlcl41/sfxadmin/external_export.cgi

<Directory "/exlibris/sfx_ver/sfx4_1/sfxlcl41/sfxadmin/
log_search_objects.cgi">
SetHandler perl-script
PerlResponseHandler ModPerl::Registry
PerlOptions +ParseHeaders
Options +ExecCGI
</Directory>

<Directory "/exlibris/sfx_ver/sfx4_1/sfxlcl41/cgi/core/
sfxmenu.cgi">
SetHandler perl-script
PerlResponseHandler ModPerl::Registry
PerlOptions +ParseHeaders
Options +ExecCGI
</Directory>
```

```
# Custom error pages
LanguagePriority en fr de
Alias /http_errors /exlibris/sfx_ver/sfx4_1/sfxlcl41/
templates/http_errors
<Directory /exlibris/sfx_ver/sfx4_1/sfxlcl41/templates/
http_errors>
AllowOverride none
Options MultiViews IncludesNoExec FollowSymLinks
AddType text/html .shtml
AddHandler server-parsed .shtml
</Directory>
ErrorDocument 506 /http_errors/506
ErrorDocument 404 /http_errors/404
ErrorDocument 500 /http_errors/500
```

5 Log on as the local instance user and comment out the following lines in: `/exlibris/sfx_ver/sfx4_1/<instance>/config/local_httpd.config`:

```
PassEnv SFX_INST
PassEnv SFXCTRL_HOME
PassEnv SFX_HOME
PassEnv MYSQL_UNIX_PORT
PassEnv PERL5LIB
```

6 Add these lines instead. Replace `new_name` with your new instance name and `sfxlcl41` with your old instance name:

```
# Environment for scripts
SetEnv SFX_INST new_name
SetEnv SFXCTRL_HOME         /exlibris/sfx_ver/sfx4_1/sfxlcl41
SetEnv SFX_HOME             /exlibris/sfx_ver/sfx4_1
SetEnv MYSQL_UNIX_PORT      /exlibris/sfx_ver/sfx4_1/app/
mysql/socket/mysql.sock
SetEnv PERL5LIB            /exlibris/sfx_ver/sfx4_1/sfxlcl41/
lib
```

7 Restart the instance and the reverse proxy Apaches using the Server Admin Utility. For more information, see **Start/Stop Services** on page 87.

8 Test the following:

- The SFX menu using the new base URL
- Access to the KBManager section in the SFX Admin Center using the new base URL

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- The A-Z list using the new base URL

NOTE:
Changing the name of an instance only changes the way it is being accessed via HTTP (via the base URL). It does not change the name of the UNIX user associated with it or the name of the MySQL database. All the internal references to the instance remain unchanged.

Changing the HTTP Port

The SFX package comes with Apache as the HTTP server. The default port for the SFX reverse proxy server is 3410. If you want to change the port, configure the Apache configuration file.

To change the HTTP port:

1. Log on as `sfxglb41`.
2. Open the reverse proxy server configuration file:

```
vi /exlibris/sfx_ver/sfx4_1/proxy/conf/httpd.conf
```

3. Edit the Listen element of the configuration file, where XXXX is the number of the port where you want to set the reverse proxy server for SFX. Since you can be running different Web servers in the same system, make sure the port is free to be used:

```
#
# Listen: Allows you to bind Apache to specific IP
addresses and/or # ports, instead of the default. See
also the <VirtualHost> directive.
#
# Change this to Listen on specific IP addresses as
shown below to prevent Apache from glomming onto all
bound IP addresses (0.0.0.0)
#
#Listen 12.34.56.78:80
Listen XXXX
```

4. Restart the reverse proxy server using the Server Admin Utility. For more information, see **Start/Stop Services** on page **87**.

When running the server on a port number lower than 1024, its processes need to be started by the `root` user.

To start the reverse proxy server as the root user:

1 Type the following command when logged on as the `root` user:

```
tcsh
source ~sfxglb41/.cshrc
```

2 Type the following command to start the reverse proxy server:

```
/exlibris/sfx_ver/sfx4_1/sfxglb41/admin/init_scripts/
proxyctl start
```

SFX Related Daemons

Besides using the procedures mentioned in this section, all daemons can be stopped and restarted using the Server Admin Utility described in **Start/Stop Services** on page 87.

MySQL Daemon

To start the MySQL daemon:

1 Log on as the `sfxglb41` user:

```
login as sfxglb41
```

2 Move to the `mysql bin` directory:

```
cd /exlibris/sfx_ver/sfx4_1/app/mysql/
```

3 Start the daemon:

```
./bin/mysqld_safe --defaults-file=/exlibris/
sfx_ver/sfx4_1/data/my.cnf &
```

To stop the MySQL daemon:

1 Log on as the `sfxglb41` user:

```
login as sfxglb41
```

2 Move to the `mysql bin` directory:

```
cd /exlibris/sfx_ver/sfx4_1/app/mysql/bin
```

3 Stop the daemon:

```
mysqladmin -p --user=root shutdown
```

4 Enter the MySQL root password.

Apache Daemons

It is recommended to change the default webmaster e-mail address displayed in Apache error messages to reflect the e-mail address of the local server administrator. By default, the error message says:

```
For help, please send mail to the webmaster
(you@example.com), giving this error message and the
time and date of the error.
```

Change the e-mail address for both the reverse proxy server and the individual instance servers.

To change the webmaster address for the reverse proxy server:

1 Log on as the `sfxglb41` user.

2 Type the following:

```
cv
cd proxy/conf
vi httpd.conf
```

3 Change the following parameter:

```
ServerAdmin you@example.com
```

To change the webmaster address for the individual instance servers:

1 Log on as an instance user (for example, `sfxlcl41`).

2 Type the following:

```
cn
vi httpd.conf
```

3 Change the following parameter:

```
ServerAdmin <some address>
```

4 Restart both the reverse proxy server and the local Apache daemons.

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Starting the Reverse Proxy Apache Daemon

To start the reverse proxy Apache daemon:

1. Log on as the `sfxglb41` user.
2. Move to the `Apache bin` directory:

```
cd /exlibris/sfx_ver/sfx4_1/proxy/bin
```

3. Start the daemon:

```
./apachectl start
```

NOTE:
Type the following command to start the reverse proxy server when running it on a port lower than 1024 while logged on as the `root` user:

```
/exlibris/sfx_ver/sfx4_1/sfxglb41/admin/init_scripts/
proxyctl start
```

Stopping the Reverse Proxy Apache Daemon

To stop the reverse proxy Apache daemon:

1. Log on as the `sfxglb41` user.
2. Move to the `Apache bin` directory:

```
cd /exlibris/sfx_ver/sfx4_1/proxy/bin
```

3. Stop the daemon:

```
./apachectl stop
```

Starting an Individual Instance Apache Daemon

To start an individual instance Apache daemon:

1. Log on as an instance user (for example, `sfxlcl41`).
2. Move to the instance's admin directory using the shortcut:

```
da
```

3 Start the daemon:

```
./apachectl start
```

Stopping an Individual Instance Apache Daemon

To stop an individual instance Apache daemon:

1 Log on as an instance user (for example, `sfxlcl41`).

2 Move to the instance's admin directory using the shortcut:

```
da
```

3 Stop the daemon:

```
./apachectl stop
```

Startup Scripts

The location of the startup scripts depends on the configuration of your system. It is recommended that your system administrator assist in this process, since the system administrator is the most knowledgeable person about the specific configuration of your system. It is also useful to understand how the startup scripts work. In basic terms, the process is the following:

- After booting up, the operating system runs the `init` process.
- `init` reads the configuration file `/etc/inittab` which describes, among other things, the default run-level. The run-level could be from 0 to 6. For example, a common Linux machine starts in run-level 5, which means it supports a graphic user interface (X11 server), multiusers, and networks. Run-level 3 is also very common in Linux and Solaris. This means that the system has support for multiusers and networks but not for a graphic user interface (X11 server).
- Based on the run-level, `init` goes to the corresponding `rc*.d` directory and loads all the startup scripts that are there. For example, if the run-level is 3, `init` reads and executes all the scripts under `/etc/rc3.d`. The name of the scripts is also important. Those with a name starting with `s` are loaded when starting the system and those starting with `k` are loaded when shutting down the system. The number in the name helps `init` run the scripts in the correct order.

The location of the `rc*.d` directories and the default run-level varies between operating systems. Make sure that you have a symbolic link to the SFX startup scripts under the `rc*.d` directory that corresponds to the system's run-level.

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One script, `sfxd`, handles the startup for Apache and MySQL processes. During installation, `sfxd` is located at `/etc/init.d`. Typically, a startup symbolic link is created for it from `/etc/rc2.d`, but depending on your system it could be from `/etc/rc3.d` or any other `/etc/rcX.d` directory. `sfxd` needs to be run by the `root` user. It runs two scripts, one to start Apache and one to start MySQL. `sfxd` first starts the reverse proxy Apache server and then starts the individual Apache servers for each instance. Output from the script is placed in `/exlibris/sfx_ver/sfx4_1/tmp/sfxd.log`.

SFX Maintenance Tasks

Recommended SFX Maintenance Tasks

There are several maintenance procedures that are recommended to ensure the system's ongoing performance. It is highly recommended to perform all recommended maintenance procedures once a month.

Database Maintenance

We recommend running the `CHECK` and `REPAIR` functions using the Server Admin Utility once a month. This process is described in **Database Maintenance** on page **100**.

File System Maintenance

We recommend running a cleanup of the `/exlibris` directory every month. The cleanup clears enough disk space for the revision update to run and allows SFX to function smoothly.

Do the following in order to clean up the `/exlibris` directory:

- Archive statistics – Archiving statistics is recommended whenever your offline table reaches over 200,000 records. For more information regarding statistics maintenance, refer to the **SFX Statistics Module** section of the *SFX Advanced User's Guide*.
- Clean the session and temporary files – These files are created under each instance in the `<instance>/dbs/scratch/` directory. These also include files created using export tools in SFX Admin.

  The number of files created varies depending on use of the different SFX tools. Do not to remove any files when someone is working in SFX Admin.

  To clean this directory, log on to the SFX server as an instance user and select option **5 Clean /exlibris/sfx_ver/sfx4_1/sfxlcl41/dbs/scratch/** from the Filesystem Maintenance menu of the Server Admin Utility. (For more information, see **Clean /exlibris/sfx_ver/sfx4_1/sfxlcl41/dbs/scratch/** on page **91**.)

NOTE:
Do not manually delete the entire `<instance>/dbs/scratch/sessions` directory. If you do, SFX Admin access is disabled.

- Clean the files created during the revision update – The files such as logs, downloaded packages, and backup files are created during the revision update in the `/exlibris/sfx_ver/sfx4_1/tmp` directory. Clean this directory every few months before running a revision update.

  To clean this directory, log on to the SFX server as the `sfxglb41` user and select option **1 Clean /exlibris/sfx_ver/sfx4_1/tmp/** from the Filesystem Maintenance menu of the Server Admin Utility. (For more information, see **Clean /exlibris/sfx_ver/sfx4_1/tmp/** on page 89.)

- Clean the reverse proxy Apache logs – These log files are located in the `/exlibris/sfx_ver/sfx4_1/proxy/logs` directory.

  To clean this directory, log on to the SFX server as any user and select option **2 Clean Apache log** from the Filesystem Maintenance menu of the Server Admin Utility. (For more information, see **Clean Apache and MySQL Logs** on page 90.)

- Clean the instance Apache logs – Each Apache instance also creates log files in the `<instance>/logs/apache/` directory. To clean these files, log on to the SFX server as an instance user. There are two options:

  - Automatically – Use the `server_admin_util` by selecting option **4 /exlibris/sfx_ver/sfx4_1/<instance>/logs/** from the Filesystem Maintenance menu of the Server Admin Utility. (For more information, see **Clean /exlibris/sfx_ver/sfx4_1/sfxlcl41/logs/** on page 91.)
  - Manually – Navigate to the `<instance>/logs/apache/` directory and clean the `access_log` and `error_log` files, as follows:

  a Type the following:

```
lg
cd apache
rm access_log
rm error_log
```

  b Restart Apache by typing:

```
apachectl restart
```

NOTE:
When cleaning files, do not remove the `httpd.pid` file or you will be unable to restart Apache.

- Clean the MySQL logs – If you enabled MySQL binary logging (it is not enabled by default in SFX), binary log files are created in the `/exlibris/sfx_ver/sfx4_1/data` directory.

  To clean this directory, log on to the SFX server as any user and select option **3 Clean MySQL log** from the Filesystem Maintenance menu of the Server Admin Utility. (For more information, see **Clean Apache and MySQL Logs** on page **90**.)

  Cleaning the MySQL logs requires the MySQL root password and the UNIX password of the `sfxglb41` user.

- Clean the MARCit! export files – When exporting files to MARCit!, several files are created in different locations on the SFX server, such as the `<instance>/export` and `<instance>/home` directories. Clean these files once they are no longer used.

  Note that the recommended frequency of cleaning files can vary depending on the amount of usage different SFX components receive and the amount of free disk space available on the SFX server.

- Clean the `SFX_REQUEST` table – The `SFX_REQUEST` table is used to store data required to generate each SFX menu screen. This data is of requests before they get processed by the statistics module. It is not directly related to statistics tables, so cleaning it does not result in a loss of statistical data.

  When you clean the `SFX_REQUEST` table using the Server Admin Utility, the last 24 hours of requests in the table are saved. This information is necessary for `SFX_REQUEST` to function so that the end users can continue to use the system.

  For information on cleaning the `SFX_REQUEST` table immediately, see **Clear SFX_REQUEST Table** on page **123**.

  To schedule the cleaning of the `SFX_REQUEST` table for a later time, see **Schedule Clearing of SFX_REQUEST Table** on page **121**.

Centralized Management of Maintenance Tasks

Centralized Management of Maintenance Tasks is designed for SFX installations with multiple SFX instances. It allows the SFX administrator to schedule recommended maintenance tasks centrally, by configuring the tasks to be run as the global user. The maintenance tasks are run on each instance for which they are configured one after another, with no time gap between them. This saves time over the method of scheduling individual maintenance tasks manually.

When using centralized management, the tasks covered by centralized management are disabled in the Server Admin Utility of the local instances. Although you can run these tasks manually on the local instance, you cannot

locally schedule these tasks to be run. If you attempt to, the following is displayed:

```
Maintenance tasks can be scheduled only by the system
administrator of this SFX installation. This option is
not available for local SFX instances.
```

NOTE:
If you activate centralized management, you must remove existing cron jobs from the local instances manually - they are not migrated automatically.

You can request email notification in case of errors and statistic information on the time it took for the maintenance tasks to be run for each instance via the Server Admin Utility. For more information, see **Report Centralized Management Maintenance Tasks** on page **136**.

The following table lists the tasks performed by the Centralized Management of Maintenance Tasks:

Table 5. Centralized Management of Maintenance Tasks

Task	Type	Default Frequency	Description
statistics_Online2offline	Fundamental	Every day	
cleanup_sfx_request_table	Fundamental	Every day	
Cleanup_logs	Fundamental	Every day	
Cleanup_tmp	Fundamental	Once a week	The only instance that can be chosen is `#global#`
cleanup_ip_from_tables	Fundamental	Once a week	This option cleans IP information from statistics offline statistics data. It should be run before the Offline2file task.
statistics_Offline2file			Not set up by default. Moves to an archive file all SFX usage statistics older than 1 year
indices_RSI_complete			Not set up by default
indices_RSI_incremental			Not set up by default

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Table 5. Centralized Management of Maintenance Tasks

Task	Type	Default Frequency	Description
indices_RSI_incremental_unless_complete_required	Fundamental	Every day	
indices_AZ	Subscription	Each Sunday	
indices_ebookSearch_complete			Not set up by default
indices_ebookSearch_incremental unless_complete_required	Subscription	Every day	
indices_ebookSearch_incremental			Not set up by default
Elsevier_SD_Autoloader	Subscription	Once a month	Not set up by default
CDI_export	Only when using CDI	Every day	Set up when configured to use CDI

Configuring Centralized Management of Maintenance Tasks

The Centralized Management of Maintenance tasks is configured via a configuration file in the `sfxglb4x` instance.

The configuration file contains the following for each maintenance task:

- A switch to turn centralized management on/off
- The frequency and day of the week or month the task is run. Values can be
  - every_day
  - one or more weekdays (comma delimited)
  - day_of_month_<two-digit number between 01-31>>
  - specific dates by setting the `frequency` parameter in the following format: specific_dates_<MMM-DD>. It is possible to specify more than one date (comma delimited) for example:

```
Section "cleanup_sfx_request_table"
active "1"
frequency "specific_dates_JAN-01,APR-015,JUL-01,OCT-15"
instances "#all#"
```

- A list of instances for which the job should be run. Values can be `#all#`, `#all_except_tst#`, `#file#`, `#global#` or a comma delimited list of one or more instances.
  - If you entered `#all#` the `config/instances.config` list of local instances is used.

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- If `#all_except_tst#` is entered, the `config/instances.config` list of local instances is used except for any instances that have `tst` or `test` in the instance name.
- If `#file#` is entered, the list of instances is taken from `sfxglb41/config/rsi_ebook_setup.config_` in the `index_build` section.

NOTE:
In the `cleanup_tmp` job, the only instance that can be entered is `#global#`.

At the end of the configuration file, a list of commands is included in the `all_jobs` section (one command for each maintenance task). The order of the commands in this section determines the order in which the tasks are run. This is important in case more than one task is run in the same session.

You can run the same task for a different set of instances. Note that in this case, the instances need to be specified - it is not possible to use `all`, `all_except_tst` or `file`.

To run the same task for a different set of instances:

1 Add a new section with name of the tasks in the `config/central_management.config_ file`:

```
Section "indices_AZ_Journals_1"
        active          "1"
        frequency       "sunday,wednesday"
        instances      "instance1,instance2"
EndSection
Section "indices_AZ_Journals_2"
        active          "1"
        frequency       "monday,thursday"
        instances       "instance3,instance4,instance5"
EndSection
```

2 Add the following lines in the `all_jobs` section:

```
indices_AZ_Journals_1     "admin/aztools/az_index_builder.pl"
indices_AZ_Journals_2     "admin/aztools/az_index_builder.pl"
```

To run the CDI_export consecutively for multiple institutes in the same SFX instance:

In the CDI_export job, it is possible to define for a specific instance the institutes for which a separate CDI export should be created. This can be done by adding the parameter `--institute=<institute_name>` at the end of the configuration file, in the all_jobs section > CDI_export command.

For example:

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```
Section "CDI_export_1"
active "1"
frequency "every_day"
instances "A"
EndSection

Section "AllJobs"
CDI_export_1      "admin/kbtools/cdi_export.cron  -
service=getFullTxt --service=getSelectedFullTxt  --
original_title_format=both --object_type=JOURNAL --
object_type=BOOK --mode=manual --format=CDI --institute=InstA
--institute=InstB --institute=InstC"
```

Create a separate section per instance where you want to run multiple CDI exports, one for each institute.

Additionally, if there are instances on the SFX server for which you want to run the CDI export without creating institute specific export files, list them all in the following manner:

```
# Multiple instances - no institutes
Section "CDI_export_2"
active "0"
frequency "every_day"
instances "B,C,D"
EndSection

Section "AllJobs"
# Multiple instances - no institutes
CDI_export_2      "admin/kbtools/cdi_export.cron  --
service=getFullTxt --service=getSelectedFullTxt  --
original_title_format=both --object_type=JOURNAL --
object_type=BOOK --mode=manual --format=CDI"
```

To configure the Centralized Management of Maintenance Tasks:

1. As the root user, create a cronjob that starts the centralized maintenance script every night (for example at midnight) to check if any tasks should be run that night:
   a. Type `crontab -e`.
   b. Enter the following at the top of the maintenance window of the server.:

```
00 20 * * * /exlibris/sfx_ver/sfx4_1/sfxglb41/admin/
CentralJobManagement/central_crons.cron
```

NOTE:
For more information on cron jobs, including the structure of the scheduling time/date definition, see http://en.wikipedia.org/wiki/Cron.

2 Activate Central Job Management:

   a In the `centralized_management` section of the `/exlibris/sfx_ver/sfx4_1/sfxglb41/config/central_management.config_ file`, set the `active` parameter to `1`.

   b Set the `email` parameter to a comma separated list of email addresses (no spaces) to which you to send a report of errors in jobs.

3 For each maintenance task, check its frequency and the list of instances for which the task should be run.

4 For the eBook Search index, the configuration file is set up to use the list of instances specified in the `sfxglb41/config/rsi_ebook_setup.config_file` in the `index_build` section. If this configuration file does not contain the list of instances for which you want to build the index, use one of the following options to configure the relevant instances:

   - List of specific instances
   - `#all#` - not recommended
   - `#all_except_test#`

5 Validate the configuration file. As the root user, `run /exlibris/sfx_ver/sfx4_1/sfxglb41/admin/CentralJobManagement/central_crons.cron --validate`. The output should be `Configuration is valid`.

6 Remove or comment out the existing crontabs entries that have been replaced by the centralized management of maintenance tasks script.

   a Log on to the SFX server as each instance user and type:

```
crontab -e
```

   b Remove the following crontab jobs:

   - `admin/stats/online2offline.pl --f`
   - `admin/filesystem/clean_dir.pl --directory=logs --type=scheduled`
   - `admin/filesystem/clean_dir.pl --directory=scratch --type=scheduled`
   - `admin/filesystem/clean_dir.pl --directory=export --type=scheduled`
   - `admin/filesystem/clean_dir.pl --directory=tmp --type=scheduled`
   - `admin/database/clear_sfx_requests.pl --force`

- `admin/rsi_tools/rsi_index_builder.pl`
- `admin/rsi_tools/rsi_index_builder.pl --object_type=m --build_type=c`
- `admin/rsi_tools/rsi_index_builder.pl --object_type=m --build_type=i --no_complete_build`
- `admin/rsi_tools/rsi_index_builder.pl --object_type=m --build_type=i`
- `admin/aztools/az_index_builder.pl`
- `admin/aztools/solr_index_builder.pl --build_type=c`
- `admin/aztools/solr_index_builder.pl --build_type=i --no_complete_build`
- `admin/aztools/solr_index_builder.pl --build_type=i`

NOTE:
We recommend that you add a small number of servers to use the Centralized Management of Maintenance Tasks option when you first configure it to make trouble shooting easier.

MySQL Replication

It is possible to use MySQL replication with SFX, for example, to create a failover system. When setting up replication, you must add a parameter to the `my.cnf` file to prevent problems with the triggers for Verde and the eBook Search index.

To add the parameter:

1. As the `sfxglb41` user, add the following line to the `my.cnf` file in the `exlibris/sfx_ver/sfx4_1/data` directory of the `sfxglb41` instance in both the master and slave:

```
log_bin_trust_function_creators=1
```

2. Restart MySQL.

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3

SFX Backup and Recovery

This section describes how to back up SFX files and databases and how to recover the files from the backup. Ex Libris recommends performing a backup with downtime once a week and a daily backup with no downtime. For information concerning the backup and recovery of files relating to revision updates, see **Revision Backup/Rollback** on page **178**.

This section includes:

- **Performing a Backup** on page **53**
- **Database and File Recovery** on page **56**

Performing a Backup

This section describes how to use the scripts installed with the Exlibris backup package. Refer to the *Backup Package Guide* for information on installing and configuring the scripts described in this section. All examples show the default installation location of the backup package and the `backup_files` directory.

NOTE:
Using the UNIX root user and password is required in almost all of the instructions below. In a few cases, for instructions related to database backup and recovery, the sfxglb41 UNIX user is used.

This section includes:

- **Backup with Downtime** on page **53**
- **Backup with No Downtime** on page **54**

Backup with Downtime

The `.tar` archive of the SFX tree that is created when this backup is performed includes a backup of the SFX files and MySQL databases. (MySQL keeps its data

in regular files that are part of the SFX tree.) This backup can be run every day, but because of the required downtime of the server, this may be inconvenient.

- Advantages – The recovery is fast, easy, and very straightforward.
- Disadvantages – This method requires shutting down the MySQL and Apache servers. The length of the downtime depends on how long it takes to create a `.tar` file of the SFX tree.

NOTE:
The directory `/exlibris/sfx_ver/sfx4_1/app` (with applications used by SFX) is not included in this backup.

To perform a backup with downtime:

Create a backup of the complete SFX installation, including software files and MySQL data files.

Log on as the UNIX `root` user and type the following:

```
csh -f /exlibris/backup/scripts/exec_backup_main s1
```

Backup with No Downtime

Conducting the backup using this method creates a `.tar` archive of the SFX tree that includes the SFX files and a `.tar` archive per instance, which is a MySQL hotcopy dump of the database files.

Since there is no downtime with this backup method, it is convenient to run this backup daily.

- Advantages – Does not require shutting down the MySQL and Apache servers.
- Disadvantages – The recovery requires more manual work since it is based on a binary copy of the MySQL databases.

NOTE:
To ensure that both files and databases are backed up, perform both options below to do a full restore: s2 (for database backup) and s4 (for file backup).

To perform a backup with no downtime:

There are three ways to perform a backup with no downtime:

- Hot backup of MySQL data files

1 Create a hot backup of the MySQL data files.

NOTE:

With SFX version 4.1.1, a new hot backup method is available. The new method creates a MySQL hotcopy dump of the database files, as did the old method. However, the new method extracts the locally created data stored in the global instance to a separate file for each local instance. Backups created using the new method can be used to restore a single instance or move one local instance to a different server that has a different global instance, which is not possible using the old method.

The new method is useful for large SFX installations that have many instances for which it may be necessary to recover local instances separately, as opposed to recovering all of the databases at one time, which the old backup method requires. The new method takes slightly more execution time and disk space than the old method, depending on the number of local targets, portfolios, and objects that have been created.

Note that the recovery of a single instance database cannot be performed for instances set up for Verde publishing.

To use the new method, set `SFX_USE_NEW_HBKP=Y` in the Ex Libris backup configuration file, `/exlibris/backup/conf/bkp_param.conf`. (The default of `SFX_USE_NEW_HBKP` is `N` so if you do not want to use the new hot backup method, no action is required.)

The procedure for performing a database recovery from the new hot backup method is different than the procedure for performing a database recovery from the old method. For more information, see **Single Instance Database Recovery When Using the New Hot Backup Method** on page **58**.

2 As the UNIX `root` user, run the following command to create backup files in `/exlibris/backup_files`:

```
csh -f /exlibris/backup/scripts/exec_backup_main s2
```

- Software excluding MySQL data files

1 As the `root` user, create a `.tar` archive of the SFX tree, excluding the database files `*.MYI`, `*.MYD` and `*.frm` and the Apache and MySQL logs and sockets. Perform this task as the `root` user to preserve ownership and permissions of the files.

2 Log on as the UNIX `root` user and type the following:

```
csh -f /exlibris/backup/scripts/exec_backup_main s4
```


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- Incremental backup of the `bin` log

  1. Create an incremental backup of the MySQL databases. (This option is applicable only if you have enabled MySQL binary logging. Binary logging is not enabled by default in SFX 4. For information on enabling binary logging, see **Appendix A: Enabling Binary Logging and Recovering Binary Logs** on page **211**.)

     This option flushes the MySQL `bin` logs and removes the old (now backup) `bin` logs.

  2. Log on as the UNIX `root` user and type the following:

```
csh -f /exlibris/backup/scripts/exec_backup_main s3
```

NOTE:
The /exlibris/backup_files directory should be writable by the sfxglb41:sfx user, because MySQL/MariaDB writes exports in this directory.

Database and File Recovery

You can recover databases and files using the backup files.

In SFX 4, database information for each local instance is stored in two separate database schemas:

- Global or descriptive information such as target, target service, and portfolio information is stored in the global schema (`sfxglb41`).
- Local information such as activation, local coverage, and customer-specific linking information is stored in the local instance schema (for example, `sfxlcl41`).

Only one copy of the global information exists per SFX installation. This global information is largely maintained by Ex Libris as part of the global KnowledgeBase. Additionally, any locally created descriptive database items (for example, targets, target services, portfolios, and objects) for each of the local instances are stored in the global schema.

As a result, when a local instance database needs to be restored, the following two options exist:

- A full restore, which includes all the databases in the installation. A full restore ensures that the global database and all the instance databases are synchronized. Perform this restore when either the cold backup or the old hot backup method are used for the recovery.

- A recovery of one instance, which involves restoring both the instance local database schema and those database records in the global schema that are owned by the local instance.

  This single instance restore can be performed only if the new hot backup method is used.

This section includes:

- **Full Database Recovery of All Databases in the SFX Installation Using the Old Hot or Cold Backup Method** on page 57
- **Single Instance Database Recovery When Using the New Hot Backup Method** on page 58
- **Full Recovery of All Files and Databases in the SFX Installation Using the New Hot Backup Method** on page 60
- **File Recovery** on page 62

NOTES:

- When recovering databases for SFX instances set up for Verde publishing, it is very important to make sure that after recovery, the Verde installation is restored so that it is synchronized with SFX. SFX publishing can be resumed only if the necessary changes have been made in Verde to ensure that SFX and Verde are synchronized.
- Database recovery for a single instance cannot be performed if the instance is set up for Verde publishing.

Full Database Recovery of All Databases in the SFX Installation Using the Old Hot or Cold Backup Method

The following instructions explain how to perform a database recovery using a backup file with downtime (cold backup) or without downtime (hot backup). It is highly recommended to execute all recovery steps as the `root` user to preserve permissions and ownership of the files.

NOTE:

During the cold backup, do not make any changes in the SFX installation. If an SFX UNIX user is logged in and working on one of the UNIX files, the backup fails.

In the following example, all SFX databases are recovered, starting with the `sfxlcl41` instance:

To recover all databases, starting with the sfxlcl41 instance:

Repeat the following commands for the `sfxglb41` database, the MySQL database, and each local instance database:

1 Shut down MySQL and Apache using the Server Admin Utility. (For more information, see Start/Stop Services on page 87.)

2 Save the `sfxlcl41` database directory to a temporary directory.

a Log on as the `sfxglb41` user and type the following:

```
cd /exlibris/sfx_ver/sfx4_1/data
```

b Type the following command on one line:

```
mv sfxlcl41/ /exlibris/sfx_ver/sfx4_1/tmp/sfxlcl41.bak/
```

3 As the `root` user, extract the `.tar` file to the `/exlibris/sfx_ver/sfx4_1/data` directory:

```
cd /exlibris/sfx_ver/sfx4_1/data
cat /exlibris/backup_files/sfx_<hot/cold><s2/
s1><YYMMDD>_<HHMM>_sfxlcl41.tar.gz | tar -xzvf -
mv /exlibris/sfx_ver/sfx4_1/data/exlibris/sfx_ver/sfx4_1/data/
/exlibris/sfx_ver/sfx4_1/data/
mv /exlibris/sfx_ver/sfx4_1/data/exlibris/sfx_ver/sfx4_1/data/
/exlibris/sfx_ver/sfx4_1/data/
```

4 Ensure that the `sfxglb41` user owns the files by typing the following command (on one line):

```
chown -R sfxglb41:sfx /exlibris/sfx_ver/sfx4_1/data/
```

5 Start MySQL and Apache using the Server Admin Utility. (For more information, see Start/Stop Services on page 87.)

6 Test that the data has been restored by reviewing the holdings in the SFX Admin Center and by sending OpenURL requests and reviewing the services displayed in the SFX menu.

Single Instance Database Recovery When Using the New Hot Backup Method

The following instructions explain how to perform a database recovery using a backup file without downtime, using the new backup method available with SFX 4.1.1. Execute all recovery steps as the global user (for example, `sfxglb41`).

NOTE:
No Apache shutdown is required for this recovery method.

In the following example, the database of the `sfxlcl41` instance is recovered.

To recover the database of the sfxlcl41 instance:

1 Save the `sfxlcl41` database directory to a temporary directory.

a Log on as the `sfxglb41` user and type the following:

```
cd /exlibris/sfx_ver/sfx4_1/data
```

b Type the following commands to copy the old directory to a temporary directory:

```
mkdir /exlibris/sfx_ver/sfx4_1/tmp/sfxlcl41.bak/
cp sfxlcl41/* /exlibris/sfx_ver/sfx4_1/tmp/sfxlcl41.bak/
```

2 Type each of the following commands on one line:

```
cd /exlibris/sfx_ver/sfx4_1/sfxglb41/admin/database
perl db_maintanance.pl --instance=sfxlcl41 --action=load --
set=full --path=/exlibris/backup_files --file=sfx_hot_s2_
sfx_hot_s2_<YYMMDD>_<HHMM>_sfxlcl41.tar.gz
```

NOTE:
Some error messages are displayed regarding the fixing of sequence numbers for local tables (such as `LCL_CAT`, `LCL_LINKING_PARAMETERS`, `LCL_MULTILANGUAGE`) . These tables do not exist in `sfxglb41`, so the error messages can be ignored.

3 Test that the data has been restored by reviewing the holdings in the SFX Admin Center and by sending OpenURL requests and reviewing the services displayed in the SFX menu.

Database Recovery Error Fix

NOTE:
Perform the procedure below as sfxglb41.

Perform the following procedure if the database directory or one or more of the database tables are missing, the database directory is empty, or the following error message is displayed:

```
DBI
connect('database=<instance_name>;host=localhost;port=3311;my
sql_socket=/exlibris/sfx_ver/sfx4_1/tmp/socket/
mysql.sock;mysql_client_found_rows=1','<instance_name>',...)
failed: Unknown database '<instance_name>' at /exlibris/
sfx_ver/sfx4_1/sfxglb41/lib/Manager/Connection.pm line 164
```

To correct the error:

1 Go to the directory in which the backup file is stored.

For example, if `--path=/exlibris/sfx_ver/sfx4_1/sfxglb41/archive`:

```
cd /exlibris/sfx_ver/sfx4_1/sfxglb41/archive/
```

2 Unpack the `tar -zxf <backup file> .tar` file.

For example: `tar -zxf sfxlcl41_pack.tar.gz`

The following two directories and two files are displayed:

```
/GLB
/LCL
db_rev_num
license.config
```

3 Go to the `/data` directory and create a directory for the instance that you are restoring:

```
cd /exlibris/sfx_ver/sfx4_1/data
mkdir <instance name>
```

For example: `mkdir sfxlcl41`

4 Copy the local data from the `/LCL` directory you extracted:

```
cp /exlibris/sfx_ver/sfx4_1/sfxglb41/archive/LCL/* /<instance
name>
```

For example: `cp /exlibris/sfx_ver/sfx4_1/sfxglb41/archive/LCL/* /sfxlcl41`

5 Rerun the database recovery procedure.

Full Recovery of All Files and Databases in the SFX Installation Using the New Hot Backup Method

The following instructions describe how to perform a full recovery of all files and databases in the SFX installation in the event of a catastrophic failure in which all data and files are lost (such as a fire or a crash of the data file server).

NOTE:
No Apache shutdown is required for this recovery method.

Execute the steps as the `root` user.

To recover the SFX files:

1 Restore the SFX software in the directory where the backup files exist. (Note that the backup of the SFX software should have been performed with the same KB version as the hot backup of the database). The complete SFX directory structure is created in the backup directory:

```
cat /exlibris/backup_files/sfx_software_s4_110127_1018.tar.gz
| tar -xzvf -
```

2 Move the newly created backup directories to their correct location in the SFX installation:

```
mv sfx4_1 /exlibris/sfx_ver/sfx4_1
```

3 Create directories:

```
cd /exlibris/sfx_ver/sfx4_1
mkdir tmp
mkdir tmp/socket
mkdir data
mkdir data/sfxglb41    (a directory for each instance)
mkdir data/sfxlcl41
mkdir data/sphinx
```

4 Restore the `mysql` database and `mysql` config files:

```
tar -xzvf sfx_hot_s2_110126_1746_mysql.tar
mv mysql /exlibris/sfx_ver/sfx4_1/data
cd /exlibris/sfx_ver/sfx4_1/data/mysql
mv my.cnf  ..
mv stopword.txt ..
cd ..
mv mysql/S* sphinx/
mv mysql/exc* sphinx/
```

5 Restore the global database:

```
tar -xzvf sfx_hot_s2_110126_1746_sfxglb41.tar.gz
mv LCL/* /exlibris/sfx_ver/sfx4_1/data/sfxglb41
```

6 Set permissions:

```
cd /exlibris/sfx_ver/sfx4_1
chown -R sfxglb41:sfx app
```

To recover each local database, execute the following steps for each database in the environment as the global user (`sfxglb41`). In the following example, the database of the `sfxlcl41` instance is recovered.

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To recover the database of the sfxlcl41 instance:

1 Navigate to the directory of the backup files (by default, `/exlibris/backup_files`).

2 Untar the backup file:

```
tar -xzvf sfx_hot_s2_110125_1213_sfxlcl41.tar.gz
```

3 Move to the `mysql` data directory:

```
mv LCL/*  /exlibris/sfx_ver/sfx4_1/data/sfxlcl41
```

4 Confirm that the data has been restored by reviewing the KnowledgeBase localizations with KBManager in the SFX Admin Center and by sending OpenURL requests and reviewing the services displayed in the SFX menu.

File Recovery

NOTES:

- No Apache shutdown is required for this recovery method.
- Perform the procedure below as root.

Any file that has been lost can be recovered from the backup. Copy the lost file from the backup archive to the same location under the `/exlibris/sfx_ver/sfx4_1` tree by running the following. (Enter the following on one line with a space after the first line) :

```
tar -zxvf sfx_software_s4_<YYMMDD>_<HHMM>_sfxlcl41.tar.gz
/exlibris/sfx_ver/sfx4_1/sfxlcl41/dbs/sqltab/
KB_MULTILANGUAGE.drp
```

The file `KB_MULTILANGUAGE.drp` is restored to its original location.

NOTE:

The file recovery recovers the file from the last backup made. Changes made in the interim are lost.

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4

Security

This section describes several features in SFX that contribute to the security of the system.

This section includes:

- **Support for SSL** on page 63
- **Restricting Access to SFXAdmin** on page 71
- **Restricting Access to SFX Menus and A-Z Interfaces** on page 72
- **Session Timeout in SFXAdmin** on page 76
- **XSS - Cross-Site Scripting Security Breach** on page 76
- **Password Configuration** on page 79
- **SFX Hostname Configuration for Emails from the SFX Server** on page 79

Support for SSL

It is possible to configure an SFX instance so that SFX and SFXAdmin are accessible using HTTPS. There are two reasons for doing this:

- To make SFX more secure
- To support the UNIX file manager in SFXAdmin

NOTE:
Do not configure SSL SFX if the SFX menu direct link banner is in use. The SFX menu banner will result in a mixed content error, since it will contain a mixture of HTTPS (SFX content) and HTTP (target / vendor pages).

This section includes:

- **SSL Configuration** on page 64
- **Starting Apache with SSL** on page 70

- **Recommended Tests** on page 71

SSL Configuration

NOTES:

- Ex-Libris hosted customers (both Direct and Total Care) are not required to perform manual changes. Any changes necessary are done on the infrastructure level by Ex Libris.
- Customers who configured part of their instances for SSL support using documentation from before March 2016 should continue configuring future instances in the same way.
- Customers who use different hostnames for accessing different instances on the same SFX server should contact SFX Support for SSL configuration. The section below does not describe this scenario.

Setup Types

Two types of setup are available: Simple/Automated and Advanced. The Simple/Automated setup is relevant for customers who did not do any non-supported customizations to the following Proxy Apache configuration files:

- `proxy/conf/httpd.conf`
- `sfxglb41/config/reversed_proxy_httpd.config__`

Prerequisites

The following are the prerequisites for configuring SSL for SFX:

- SSL certificate – When setting up an HTTPS, an SSL certificate and key is required. There are two possible ways to obtain the certificate and key:
  - You can generate your own certificate for testing purposes. See **Generating a Self-Signed Certificate** on page 69 for instructions how to create a self-signed certificate.
  - A site certificate can be obtained through the UW/IST Certificate Authority. This is recommended for a production environment. See **Creating a Certificate Request File** on page 68 for instructions on how to install this certificate.

NOTE:
Without a site certificate, Proxy Apache fails after configuration and SFX goes down.

- Environment information – Proxy SSL port number (usually 443 or 3443)

NOTES:

- During the configuration of the SSL script, you are prompted to enter the port for which HTTPS should be set up.
- Do not configure default SSL port (443) if you do not already use the default port for regular traffic (80). If you do, Proxy Apache is not able to start using the built-in utilities.

- SFX Server hostname (the hostname used in links to SFX) – use the same server name used for SSL certificate creation)

Simple/Automated Setup

The following section describes how to perform the simple/automated setup.

To perform the simple/automated setup:

1 Log on to the SFX server as the sfxglb41 user and execute the following script:

```
sx
admin/filesystem/ssl_config.pl
```

You are asked the following questions:

- **Enter SSL port number for Proxy Apache** – The proxy port for SSL communication with the end-user. This is the port that is used for accessing SFX via HTTPS (browser).
- **Enter SFX hostname you use** – The hostname used in links to SFX, for example – `mylibrary.org`. Use the same server name used for SSL certificate creation.

NOTE:
The script checks whether you have the SSL certificate files (server.pem__, server.crt__) in the correct location and warns you if they are missing. If the certificate files are missing, Proxy Apache fails to start after you run the script.

2 Restart Proxy Apache. (See **Start/Stop Services** on page 87).

NOTE:
If you changed ports for both SSL and regular traffic to use the default ports (80 and 443), delete manually the Apache .pid file:
`/exlibris/sfx_ver/sfx4_1/proxy/logs/httpd.pid`

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3 Test that Proxy Apache operates correctly. (See **Recommended Tests** on page **71**.)

Advanced Setup

The manual setup is the same as the automated setup, except that you perform manually each step of the configuration. This allows you to gain an understanding of each activity and how they can be altered in case you need to make unexpected configuration file changes.

The following are the steps for configuring the advanced setup of SSL/HTTPS for SFX:

- Generate or obtain an SSL certificate.
- Configure Reverse Proxy Apache to support SSL.
  - Copy from the example file and customize it.
  - Insert a reference to the `ssl.config` file in the Reverse Proxy Apache `httpd.conf` file.
  - Restart Proxy Apache.
  - Test that Proxy Apache operates correctly.

NOTE:
See **Apache Configuration File Hierarchy** on page **69** for a schematic presentation of Apache configuration files for Proxy Apache for HTTP and HTTPS setups.

Configure Proxy Apache

Copy from sample and adjust the ssl.config file

All Proxy Apache SSL related configuration is placed in the ssl.config file and pre-configured. The configuration file contains the following instructions:

- Load the Apache SSL module.
- Add the VirtualHost definition to Apache for processing HTTPS traffic.
- Point HTTPS VirtualHost to the SSL certificate files, logs, and other auxiliary files. VirtualHost defines the port that end-users access the SFX server when using a browser (library pages).

To configure Proxy Apache:

1 Log on to SFX server as the sfxglb41 user:

```
cn
cp ssl.config.sample ssl.config
sed -i 's/PROXY_HTTPS_PORT/<proxy ssl port>/g' ssl.config
sed -i 's/SERVER_HOST_NAME/<sfx server hostname>/g'
ssl.config
cp ssl.config /exlibris/sfx_ver/sfx4_1/proxy/conf/
```

<proxy ssl port> – the port to use for SFX HTTPS traffic. (Your browser uses port 443 if you do not specify a port, and the root password is required for Proxy Apache restart).

<sfx server hostname> – the full server name (for example – `mylibrary.org`). It should be same as the one you used for creating the SSL certificate.

The following are examples of commands for <https proxy port> 3443, <http proxy port 3410>, <sfx server hostname> mylibrary.org:

- `sed -i 's/PROXY_HTTPS_PORT/3443/g' ssl.config`
- `sed -i 's/SERVER_HOST_NAME/mylibrary.org/g' ssl.config`

2 Log on to SFX server as sfxglb41 user and enter the following to add a reference to the `ssl.config` file in the Proxy Apache `httpd.conf` file.

After the `ssl.config` file is created and configured, put it in the correct place and include it using the correct command in the main Apache configuration file: `httpd.conf`.

```
cv
cd proxy/conf
printf '\nInclude /exlibris/sfx_ver/sfx4_1/proxy/conf/
ssl.config\n' >> /exlibris/sfx_ver/sfx4_1/proxy/conf/
httpd.conf
```

3 Restart Proxy Apache. See **Start/Stop Services** on page **87**.

NOTE:
If you changed ports for both SSL and regular traffic to use the default ports (80 and 443), delete manually the Apache .pid file: `/exlibris/sfx_ver/sfx4_1/proxy/logs/httpd.pid`

4 Test that Proxy Apache operates correctly. (See **Recommended Tests** on page **71**.)

- Perform acceptance testing of all the instances on the SFX server.

- Instances that were not configured to use SSL should be tested also because all the instances share Proxy Apache configuration.
- Instances that were configured to use SSL should be tested with both HTTP and HTTPS requests.

Creating a Certificate Request File

To create a create a certificate request fie:

1 Log on as sfxglb41 and create a subdirectory for the certificate and key:

```
cd /exlibris/sfx_ver/sfx4_1/sfxglb41/config/
mkdir -p keys
```

2 Go to the subdirectory you created and create an RSA private key:

```
cd /exlibris/sfx_ver/sfx4_1/sfxglb41/config/keys
openssl genrsa -des3 -rand file1:file2:file3:file4:file5 -out
server.key 2048
```

3 Remove the pass-phrase from the key:

```
openssl rsa -in server.key -out server.pem__
```

4 Generate the CSR:

```
openssl req -new -key server.pem__ -out server.csr
```

Two new files are added to the `/exlibris/sfx_ver/sfx4_1/sfxglb41/config/keys` directory: `server.pem__` (server key without passphrase) and `server.csr` (server certificate request). Both files are likely to be requested by the certificate providing authority.

5 After the certification process authority processes your request, it provides you with a certificate file with the `.crt` extension. Rename this file to `server.crt__` and place it in the same directory as the above files.

NOTE:
If you store the `.pem` and `.crt` files in the `sfxglb41/config/keys` directory, they must end with a double underscore (__). Otherwise, later software revision updates may fail.

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Generating a Self-Signed Certificate

To generate a self-signed certificate:

1 Log on as the sfxglb41 user and create a subdirectory for the certificate and key:

```
cd /exlibris/sfx_ver/sfx4_1/sfxglb41/config/
mkdir -p keys
```

2 Go to the subdirectory you created and create a self-signed certificate by running the following. (Replace `<server name>` in the command with your actual server name, for example – `mylibrary.org`):

```
cd /exlibris/sfx_ver/sfx4_1/sfxglb41/config/keys
openssl req -x509 -newkey rsa:2048 -keyout server.pem__ -out
server.crt__ -days 365 -nodes -subj '/CN=<server name>'
```

3 For security reasons (not obligatory), the owner of the directory `keys` and the files located in this directory should be the `root` user:

```
su -
cd /exlibris/sfx_ver/sfx4_1/sfxglb41/config/keys/
rm key.pem
chmod 600 server.*
cd ..
chmod 700 keys
exit
```

Apache Configuration File Hierarchy

The following diagram illustrates the Proxy Apache configuration file hierarchy for HTTP and HTTPS setups:

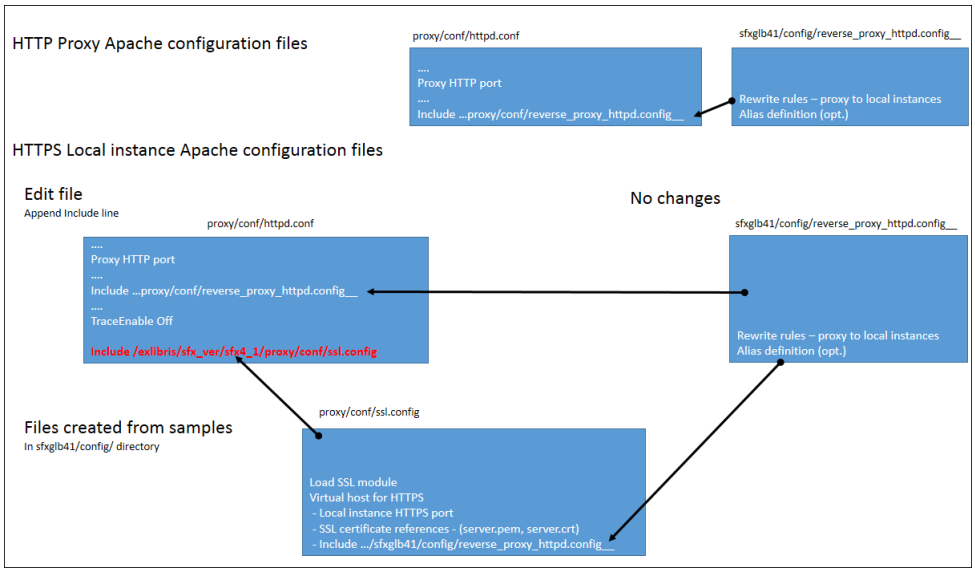

Figure 6: Proxy Apache Configuration File Hierarchy

Starting Apache with SSL

The section describes how to start Apache with SSL.

Starting Apache with SSL for All Local Instances

Start Apache instances, as usual, with the command:

```
apachectl start
(apachectl restart)
```

NOTE:
The following syntax is now deprecated: `./apachectl startssl`. Use the regular start command above instead.

Starting the Reverse Proxy Server with SSL

Start the proxy as usual with the command:

```
su - sfxglb41
cv
cd proxy/conf
./apachectl start
(./apachectl restart)
```

NOTE:
The following syntax is now deprecated: `./apachectl startssl`. Use the regular start command above instead.

Recommended Tests

It is recommended to test the new SSL configuration by sending several URLs to the SFX server using the SSL port. The following are a few examples:

- Test SFXAdmin access by sending the following URL:

  `https://hostname:PROXY_SSL_PORT_NUMBER/sfxadmin/<instance>`

- Test access to the SFX menu by sending the following URL:

  `https://hostname:PROXY_SSL_PORT_NUMBER/<instance>/az`

NOTE:
If the SFX instance has an alias (for example, `sfx_local` instead of `sfxlcl41`), use the alias instead of the instance in the URLs above.

Restricting Access to SFXAdmin

You can restrict access to SFXAdmin for a specific instance based on IP addresses.

To restrict access to SFXAdmin for a specific instance based on IP addresses:

1. Log on as an instance user.
2. Change the directory to the `config` directory of the instance:

   ```
   cn
   ```

3. Create a local copy of `connection_admin.config_` by breaking the symbolic link to the file:

   ```
   vi connection_admin.config_
   ```

   The following is displayed:

   ```
   [break symbolic link 'connection_admin.config_' ?] [y/N]
   ```

4. Type `y`.

5 Edit `connection_admin.config_`. In this file, specify the IP ranges that should have access to the SFXAdmin center. The IP information can be specified as a single address or a range of addresses. It is possible to use an asteriks (`*`) and a hyphen (`-`) to define IP ranges. See the following examples:

```
Section "connection"
10.1.1.1
10.1.2.11-13
10.1.4.*
10.8.0-79.*-10.8.81-255.*
11.1.*.*
EndSection
```

Restricting Access to SFX Menus and A-Z Interfaces

You can restrict access to the SFX menu, A-Z interfaces (both A-Z list for journals and eBook search), XML API, and RSI API for a specific instance based on IP addresses.

You can define IP addresses or IP ranges that should be allowed access in the following sections:

- Section "connection"
- Section "sfxmenu_api_connection"
- Section "rsi_api_connection"
- Section "az_connection"

Additionally, you can define IP addresses or IP ranges that should be denied access in the following sections:

- Section "connection_deny"
- Section "sfxmenu_api_connection_deny"
- Section "rsi_api_connection_deny"
- Section "az_connection_deny"

If all sections are left blank, there are no restrictions and all IP addresses have access to the SFX services.

If the same IP (specific or range) appears in both the 'allowed' and 'deny' sections, the 'deny' section takes priority.

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To restrict access based on IP addresses:

1 Log on as an instance user.

2 Change the directory to the `config` directory of the instance:

```
cn
```

3 Create a local copy of `connection_user.config_` by breaking the symbolic link to the file:

```
vi connection_user.config_
```

The following is displayed:

```
[break symbolic link 'connection_user.config_' ?] [y/N]
```

Edit `connection_user.config_`. In this file, specify the IP ranges that should have access to the following:

- the SFX menu screen, including any DirectLink or DirectLink Banner windows
- A-Z interfaces (both A-Z list for journals and eBook search)
- the SFX API, including all XML and image-based responses
- the RSI API

The IP information can be specified as a single address or a range of addresses.
It is possible to use an asteriks (*) and a hyphen (-) to define IP ranges. See the following examples:

```
# Restrict access to the SFX menu, SFX API or RSI API
based on IP information.
# Specify a single address or a range of addresses in
the sections below.
# Use an asteriks (*)and/or a hyphen (-)to define IP
ranges.


#
# define IP range(s) that will have access to SFX menu
(HTML format)
#
Section "connection"
10.1.1.1
10.1.2.11-13
10.1.4.*
10.8.0-79.*-10.8.81-255.*
11.1.*.*
EndSection


# define IP range(s) that will have access to SFX API
(XML or image formats)
Section "sfxmenu_api_connection"
10.1.1.1
10.1.2.11-13
10.1.4.*
10.8.0-79.*-10.8.81-255.*
11.1.*.*
EndSectio
```


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```
# define IP range(s) that will have access to RSI API
Section "rsi_api_connection"
10.1.1.1
10.1.2.11-13
10.1.4.*
10.8.0-79.*-10.8.81-255.*
11.1.*.*
EndSection

# define IP range(s) that will have access to AZ
journals and eBooks
Section "az_connection"
10.1.1.1
10.1.2.11-13
10.1.4.*
10.8.0-79.*-10.8.81-255.*
11.1.*.*
EndSection

# define IP range(s) that will be blocked in SFX menu
(HTML format)
Section "connection_deny"
        # IP Range
EndSection

# define IP range(s) that will be blocked in SFX API
(XML or image formats)
Section "sfxmenu_api_connection_deny"
        # IP Range
EndSection

# define IP range(s) that will be blocked in RSI API
Section "rsi_api_connection_deny"
        # IP Range
EndSection
```

```
# define IP range(s) that will be blocked in AZ
journals and eBooks
Section "az_connection_deny"
        # IP Range
EndSection
```

Session Timeout in SFXAdmin

The following file controls the session timeout of the SFXAdmin Center connection:

`/exlibris/sfx_ver/sfx4_1/<instance>/config/sfxctrl.config`

The section **extra** contains a parameter called `session_expire`. The SFXAdmin Center session expires according to this parameter. If the parameter `session_expire` is not defined in the configuration file, the default value `4h` is used.

The format of the `session_expire` parameter is `Xt`, where `X` is a digit and `t` is a time frame. See the following table for possible time frames:

Table 6. Time Frames

Alias	Time Frame
s	second
m	minute
h	hour
w	week
M	month
y	year

When the session expires, the user is redirected to the SFXAdmin logon page.

XSS - Cross-Site Scripting Security Breach

This section describes how SFX handles a security breach called XSS or cross-site scripting.

A cross-site scripting attack is a security breach caused by harmful HTML tags sent via an OpenURL request. A Web site is vulnerable if it displays user-submitted content without first checking for malicious script tags. When parsing

a malicious OpenURL without validation, the SFX software and database can be harmed.

The Common Gateway Interfaces (CGIs) that have been protected from an XSS attack are:

- CGIs that handle the SFX menu (both advanced and simplified template sets) and the CitationLinker:

  `/exlibris/sfx_ver/sfx4_1/<instance>/cgi/core/sfxmenu.cgi`

- The CGI for SFX A-Z version 4:

  `/exlibris/sfx_ver/sfx4_1/<instance>/cgi/core/azlist_ver3/a-z.cgi`

- The CGI for SFXAdmin > KBManager:

  `/exlibris/sfx_ver/sfx4_1/<instance>/sfxadmin/sfxctrl.cgi`

  It is possible to disable the XSS validation for specific fields in KBManager. See below.

XSS in SFX is handled by:

- A validation function to verify that requests received by SFX do not contain one of the tags from a list of unacceptable tags.

  This function can be found at:

  `/exlibris/sfx_ver/sfx4_1/<instance>/lib/MetaData/Validator.pm`

- A configuration file, `XSSlist.config`, that contains a list of all tags not allowed in any SFX request.

  This configuration file can be found at:

  `/exlibris/sfx_ver/sfx4_1/<instance>/config/XSSlist.config`

When SFX detects that a tag has not been accepted, the following error message is displayed: `XXS violation occurred`.

This text can be translated via the SFX template file (for the SFX advanced template set) or via the **Translations & Display** section of the SFXAdmin center (for the simplified template set and the SFX A-Z list version 4).

The following is an example of an XSS violation in the A-Z and SFX menus:

```
<SFX_base_URL>/
az?&param_sid_save=e711b29592ea8a3a8e33b4df6b240338&pa
ram_letter_group_script_save=&param_current_view_save=
detail&param_textSearchType_save=contains&param_lang_s
ave=jpn&param_letter_group_save=&param_perform_save=se
archCategories&param_chinese_checkbox_save=%22%3E%3Csc
ript%3Ealert(%27Cross%20Site%20Scripting%20Success!%27
)%3C/
script%3E&param_services2filter_save=getFullTxt&param_
jumpToPage_save=1&param_type_save=textSearch&&param_pe
rform_value=searchTitle

<SFX_base_URL>?isbn=059600313788&rft.title=%22%27%3E%3
Cscript%3Ealert(%27Cross%20Site%20Scripting%20Success!
%27)%3C/script%3E%22
```

It is possible to disable/opt out of XSS vulnerability checking in **SFXAdmin > KBmanager** for Iframe code used in note or authentication fields (for example, to embed license information in an Iframe in the SFX menu).

Add the following option to the `extra` section of `config/sfxctrl.config`:

```
disable_XSS_validation "1"
```

By default, or if the option does not exist, the value will be `0` and the XSS check is performed. When the value is `1`, the XSS check is disabled only for the following fields:

- In the Edit Target window:
  - Public name (global)
  - Public name (local) – for both default and institute/group
  - Authentication note
  - General note
- In the Edit Target Service window:
  - Public name(global)
  - Public name(local)
  - Authentication note
  - General note
- In the Object Portfolio window:
  - Authentication note
  - General note

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Password Configuration

In the `extra` section of the `config/sfxctrl.config` configuration file, the following parameters handle password authentication for the SFXAdmin Center:

- `password_expiration` – defines the number of days after a password is set that it expires. The default is 0, which means passwords do not expire.
- `pre_expiration_warning` – defines the number of days before password expiration to display a warning about the expiration. The default is 10 days.

For example:

```
password_expiration    "0"
pre_expiration_warning      "10"
clean_failed_attempts_table_frequency       "7"
```

Additionally, the `captch_keys` section has been added to the `config/sfxctrl.config` configuration file for the Captcha that is displayed after five failed SFXAdmin Center sign-in attempts. It contains the following parameters:

- `Captcha_private_key` – the CAPTCHA private key for sending to API
- `Captcha_public_key` – the CAPTCHA public key for sending to API
- Timeout values for Captcha verification and loading

For example:

```
Section "captcha_keys"
   # adding Captcha keys for use in login screen
   captcha_private_key
"6Ldlh9wSAAAAAFDAvMcck1DEXmN62r6sD7czKvzU"
 captcha_public_key
"6Ldlh9wSAAAAAL6C2fFP3xNxVc3xsVR6KVMYt6s7"
 captcha_verification_timeout    "2"
 captcha_loading_timeout         "5"
        EndSection
```

SFX Hostname Configuration for Emails from the SFX Server

In some cases, the SFX server DNS does not resolve and emails sent by the SFX server are treated as spam by the email server. This leads to emails from the SFX server (including the Broken Link report, statistic queries, and collection tool results) not being received by the SFX administrator.

To resolve this issue, change the SFX hostname to something besides the default:

At: `/exlibris/sfx_ver/sfx4_1/<instance>/config/sfxctrl.config`

add the requested hostname as a new parameter under the Section `extra`:

```
sfx_host_name              "{value}"
```

5

Testing and Debugging

This section includes:

- **SFX Admin Debugging Tool** on page 81
- **Using the Apache Log Files** on page 81
- **SFX Menu Monitoring** on page 82
- **SFX Menu Log Files** on page 82

SFX Admin Debugging Tool

The Debugging tool allows the SFX administrator to determine the source of errors that may occur in the SFX flow, such as missing targets from the SFX menu, corrupted target URLs, proxy problems, and some server errors.

Debugging can be used in:

- The SFX menu screen
- The target window

For a full description of the debugging tool, refer to the **Troubleshooting and Debugging** section of the *SFX Advanced User's Guide*.

Using the Apache Log Files

Apache log files can be used in order to debug requests sent to the SFX server. The log files that are created by each Apache server (reverse proxy server and instance-specific server) are:

- `error_log` – Any error that occurs while sending a request to the server is logged in this file.
- `access_log` – Any access request made to the SFX server is logged in this file.

Both files are located at the following paths:

- For the reverse proxy Apache server:

  `/exlibris/sfx_ver/sfx4_1/proxy/logs`

  In order to view the content of the files, you must log on to the server as the `sfxglb41` user.

- For the instance-specific Apache server:

  `/exlibris/sfx_ver/sfx4_1/<instance>/logs/apache`

  In order to view the content of the files, you must log on to the server as an instance user.

SFX Menu Monitoring

SFX includes a source that can be used to check whether the SFX server is up and running, without affecting SFX statistics.

When sending an OpenURL for monitoring purposes, use following sid:

```
rfr_id=info:sid/sfxit.com:site_up_check
```

Where the value (after `rfr_id=`) should be URL encoded.

For example:

```
<base_url?url_ver=Z39.88-
2004&url_ctx_fmt=infofi%2Ffmt%3Akev%3Amtx%3Actx&ctx_ver=Z39.8
8-2004&ctx_enc=info%3Aofi%2Fenc%3AUTF-
8&rfr_id=info%3Asid%2Fsfxit.com%3Asite_up_check&rft.genre=jou
rnal&rft.issn=0000-
0019&rft.date=2009&rft_val_fmt=info%3Aofi%2Ffmt%3Akev%3Amtx%3
Ajournal
```

In the SFX KnowledgeBase, this sid corresponds to the following source:

Source name: SFX_SITE_UP_CHECK

Source ID: SITE_UP_CHECK

Requests using this source information are not included in the statistics table, so this is the recommended sid for any SFX menu monitoring tool.

SFX Menu Log Files

By default, a log file of each SFX menu is generated by SFX in the `/exlibris/sfx_ver/sfx4_1/<instance>/logs` directory of each instance named `sfxmenu.<pid>`. It is removed automatically when the SFX menu is displayed

to the end user. It is possible to temporarily disable the deletion of the log file for debugging purposes.

To temporarily disable the deletion of the log file:

1. Log on as the instance user:
2. Type `cn` to go to the configuration directory.
3. Type `vi ctx_object.config` to open the file.
4. Locate the `html_menu` section.
5. In the `keep_log` parameter:
   - set the value to `0` to have the SFX menu log file removed automatically.
   - set the value to `1` to disable the automatic removal of the SFX menu log file.

NOTE:
It is not recommended to disable the deletion of log files for a long period, since this causes a large amount of files to be generated in the `/exlibris/sfx_ver/sfx4_1/<instance>/logs` directory.

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Server Admin Utility

This section includes:

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- Start/Stop Services on page 87
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- Change Passwords on page 96
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- Diagnostics on page 127
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- Solr Index on page 194

Overview of the Server Admin Utility

Each instance of the SFX server contains an administrative tool called the Server Admin Utility that is used to perform various administrative tasks, such as system maintenance, diagnostics, creating indices, and running exports.

This tool is located at:

`/exlibris/sfx_ver/sfx4_1/<instance>/admin/server_admin_util`

To start the Server Admin Utility:

1. Log on to the SFX server as an instance user (for example, `sfxlcl41`).
2. Type `da` to move to the admin directory.
3. Type `./server_admin_util`.

The main menu of the Server Admin Utility is displayed:

```
Main Menu
 1 Start/Stop services
 2 Filesystem maintenance
 3 Change passwords
 4 Database maintenance
 5 Statistics
 6 Diagnostics
 7 AZ Index
 8 Import/Export (not by sfxglb41)
 9 Revision update
10 build RSI index
11 Verde Publishing (only by sfxglb41)
12 TRACKING table set-up and maintenance (only by
sfxglb41)
13 Solr index (only by sfxglb41)
```

Start/Stop Services

This option allows you to start and stop the MySQL and Apache daemons and the Solr index. To access this section, select **1 Start Stop Services** from the main menu. The following screen is displayed:

```
Start/Stop services
  1 Proxy Apache start
  2 Proxy Apache stop
  3 Proxy Apache restart
  4 MySQL start
  5 MySQL stop
  6 Instance Apache start
  7 Instance Apache stop
  8 Instance Apache restart
  9 All Apache start
 10 All Apache stop
 11 All Apache restart
 12 Solr start (only by sfxglb41)
 13 Solr stop (only by sfxglb41)
 14 Solr restart (only by sfxglb41)
```

NOTES:

- Apache provides three main functions: start, stop, and restart. In some cases when a restart of Apache is required (especially in case of changes to reverse proxy configuration changes or in case of changes to core SFX programs), it is recommended to use the `apachectl stop` and `apachectl start` commands (with a few seconds interval between the two commands), instead of using the `restart` option. This is needed because the `restart` command restarts the main process only. If there are child processes running, they might not be restarted.

  The `restart` option can be used after cleaning the Apache logs.

- The UNIX password of the `sfxglb41` user is required to perform tasks 1-5 and 9-11 in this section. The UNIX passwords for each of the SFX instance users are required to perform tasks 9-11.

- Select option **8 Instance Apache restart** after any `mod_perl` or configuration files are edited so that the changes to the files take effect.

Solr Start/Stop/Restart

The eBook Search uses a dedicated Solr index. Within the Solr index, each instance has its own Solr core. The Solr index is build and updated using the following two sources of information:

- the SFX databases (both global and local)
- the monograph RSI (for activation information)

Before the Solr index can be used, Solr must be up and running in the SFX installation.

To ensure that the monograph RSI index is used, change the `config/rsi.config` configuration file for each local instance to use a separate RSI index for eBooks and eJournals. For more information, see **Rapid Service Indicator** on page **249**.

Solr restart is required if you change the Solr password. Solr restart is also required after adding or removing a Solr core, but only if you have chosen not to do an automatic Solr restart as part of the Add/remove Solr core option in the Server Admin Utility.

IMPORTANT:
Do not perform a Solr start, stop, or restart while a Solr index build is being performed in the SFX installation.

File System Maintenance

This option allows you to:

- Clean various directories of the SFX server
- Check for local files and broken symbolic links
- Copy local files from one SFX instance to another

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To access this option, select option **2 File System Maintenance** from the main menu. The Filesystem Maintenance menu is displayed:

```
Filesystem Maintenance
  1 Clean /exlibris/sfx_ver/sfx4_1/tmp/ (only by sfxglb41)
  2 Clean Apache log
  3 Clean Mysql log
  4 Clean /exlibris/sfx_ver/sfx4_1/sfxglb41/logs/
  5 Clean /exlibris/sfx_ver/sfx4_1/sfxglb41/dbs/scratch/
  6 Clean /exlibris/sfx_ver/sfx4_1/sfxglb41/export
  7 Check for broken symbolic links (except for sfxglb41)
  8 Check for local files
  9 Check for orphan links and remove them
 10 Copy files from one instance to another
 11 Scheduling file system maintenance tasks
```

NOTE:
For a maintenance task checklist, see **Appendix C: Maintenance Task Checklist** on page **221**.

Clean /exlibris/sfx_ver/sfx4_1/tmp/

This directory contains a number of files and subdirectories with files that are generated during various maintenance tasks in the SFX system. It is recommended to clean this directory regularly. Note that this option can only be run as the `sfxglb41` user.

The following subdirectory exists under `/exlibris/sfx_ver/sfx4_1/tmp/`:

`/exlibris/sfx_ver/sfx4_1/tmp/backup`

This directory contains the backups of all `sfxglb41` files and all instance databases that were made before each revision update.

When removing files from this directory, we recommend keeping at least the last two or three backups.

When running the option to clean the `tmp` directory, the backup subdirectory is not cleaned automatically. Instead, the user is prompted for the deletion of each backup file, regardless of whether the option to prompt for the removal of each file is chosen.

To run this option, select **4 Clean /exlibris/sfx_ver/sfx4_1/sfxglb41/logs/**. The following is displayed:

```
Prompt for removal of each file? [Y/n]
```

Type `Y` to be prompted before the removal of each file. Type `N` if this is not required. The following is displayed:

```
Files in tmp are:
<list of files>
Would you like to only delete files older than a specific
date? [Y/n]
```

Type `Y` to define a date and remove files older than this date. Enter the date in `YYYYMMDD` format. Type `N` to remove all the files in the directory.

If backups are found in the `tmp/backup` directory, you are prompted for the removal of each of the backup files. For example:

```
Are you sure you want to delete '/exlibris/sfx_ver/sfx4_1/
tmp/backup/2011-09-19_12.04-Automatic_pre-
revision_backup.tgz' it's one of two latest revision backup
files? [y/N] n
```

At the end of the process, the following is displayed:

```
Removed 58 files
See /exlibris/sfx_ver/sfx4_1/sfxglb41/logs/
server_admin_util.log for details
```

For more information about backups performed during the revision update, refer to the **SFX Knowledgebase Update** section of the *SFX Advanced User's Guide*.

Clean Apache and MySQL Logs

The Apache and MySQL logs contain messages produced from the Apache and MySQL servers. When these log files become too large, use this option to clean them.

NOTES:

- Cleaning the Apache logs requires restarting the Apache server (you need the UNIX password of the `sfxglb41` user).
- By default, cleaning the MySQL logs requires the MySQL root password and UNIX password of the `sfxglb41` user. By default, MySQL binary logging is not enabled in version 4. Only use this option if you have enabled binary logging. For information on enabling binary logging, see **Appendix A: Enabling Binary Logging and Recovering Binary Logs** on page **211**.

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Clean /exlibris/sfx_ver/sfx4_1/sfxlcl41/logs/

The logs directory contains log files related to the instance, such as RSI and A-Z build log files and Verde Publishing log files. When this option is run, SFX removes all log files, except for files created or updated that day (since midnight- server time).

To run this option, select option **4 Clean /exlibris/sfx_ver/sfx4_1/sfxglb41/logs/.** The following is displayed:

```
Prompt for removal of each file? [Y/n] n
```

Type `Y` to be prompted before the removal of each file. Type `N` if this is not needed. After removal of the log files, the following is displayed:

```
Removed 27 files
See /exlibris/sfx_ver/sfx4_1/sfxglb41/logs/
server_admin_util.log for details.
```

NOTE:
The bX recommendations log is deleted on a different schedule. If bX is used in the SFX instance, a new log file is generated each week to collect bX log messages (with a timestamp as part of the file name). Log files older than a week are deleted when the log directory is cleaned.

Clean /exlibris/sfx_ver/sfx4_1/sfxlcl41/dbs/scratch/

This directory contains:

- Input files loaded using DataLoader
- Export files from the Export tool and the TargetMatcher tool
- Log files from the DataLoader, Export tool, and TargetMatcher tool
- Session files in the `./dbs/scratch/sessions/` directory

The following scenarios create new session files:

- Any logon to SFXAdmin.
- Each user accessing the A-Z List (Version 4) creates a new session that stores information when the user moves between pages.
- The Ebsco Article Matcher Target Parser creates a session file when more then one URL is retrieved from Ebsco.

Removing session files that are currently in use logs off anyone working in SFXAdmin at that time. Old session files created can be safely removed. Note that completely removing the `sessions/` directory causes SFXAdmin to stop working. The A-Z List and Ebsco Target Parser are not affected by this.

When running this option, SFX does not remove the session directory itself, and only removes session files older than one day. The following is displayed:

```
Prompt for removal of each file? [Y/n] Y
```

Type `Y` to be prompted before the removal of each file. Type `N` if this is not required. The following is displayed:

```
Cleaning sessions...
Cleaning scratch...
Are you sure you want to delete '/exlibris/sfx_ver/sfx4_4/
sfxglb41/dbs/scratch/dataloader01.txt'? [y/N] Y
Are you sure you want to delete '/exlibris/sfx_ver/sfx4_4/
sfxglb41/dbs/scratch/e-collection.20110920112148'? [y/N] Y
Removed 2 files
```

See `/exlibris/sfx_ver/sfx4_4/sfxglb41/logs/server_admin_util.log` for details.

Clean /exlibris/sfx_ver/sfx4_1/sfxglb41/export

This option allows you to select files to be removed from the export directory and to remove all files older than a specific date from the export directory. You are prompted with the following questions:

```
Prompt for removal of each file?  [Y/n]
Would you like to only delete files older than a specific
date? [Y/n]
```

Check for Broken Symbolic Links

This program reports which files in the local SFX instance have a broken symbolic link to the `sfxglb41` instance.

If broken symbolic links are found, the program asks whether the broken links should be restored. If you select `Y`, for each broken link you are prompted to either restore the broken link or keep it as is. It is possible to make a backup copy of the broken link file before restoring the link to `sfxglb41`.

The program uses a configuration file that contains a list of files that exist in `sfxglb41` but should not be symbolically linked to `sfxglb41`. The configuration file is: `./config/list_non_symlink.config_`.

Note that this option cannot be run by the `sfxglb41` user.

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The following is an example of this option. (Bold text is typed by the user):

```
Check for broken symbolic links
Please select [1-12,q,m]: 8
Do you want to save the output in a file? [y/N] y
File location? /exlibris/sfx_ver/sfx4_1/sfxlcl41/out.txt
List of files is at '/exlibris/sfx_ver/sfx4_1/sfxlcl41/
out.txt'.
Would you like to recreate broken symbolic link/s [y/N] y
Would you like to backup the local file/s [Y/n] y
Repair file /exlibris/sfx_ver/sfx4_1/sfxlcl41/templates/
sfxmenu/target_list.tmpl ? [Y/n] y
Broken link to /exlibris/sfx_ver/sfx4_1/sfxglb41/
templates/sfxmenu/target_list.tmpl was repaired
successfully
Local file /exlibris/sfx_ver/sfx4_1/sfxlcl41/templates/
sfxmenu/target_list.tmpl was backed up to /exlibris/
sfx_ver/sfx4_1/sfxlcl41/templates/sfxmenu/
target_list.tmpl.bak.20080617
```

Check for Local Files

This program reports files in an SFX instance that are local (not symbolically linked to `sfxglb41`).

The following is an example of this option. (Bold text is typed by the user):

```
10 Check for local files
Please select [1-12,q,m]: 9
Search for local files in '/exlibris/sfx_ver/sfx4_1/
sfxlcl41'
Do you want to save the output in a file? [y/N] y
File location? /exlibris/sfx_ver/sfx4_1/sfxlcl41/
out.txt
List of files is at '/exlibris/sfx_ver/sfx4_1/sfxlcl41/
out.txt'.
```

Check for Orphan Links and Remove Them

This option removes symbolic links pointing to non-existent files.

The following is an example of this option. (Bold text is typed by the user):

```
10 Check for orphan links and remove them
Please select [1-12,q,m]: 10
Removing orphaned symbolic links at /exlibris/sfx_ver/
sfx4_1/sfxlcl41.
Removed '/exlibris/sfx_ver/sfx4_1/sfxlcl41/dbs/scratch/
test41.txt'.
```

Copy Files from One Instance to Another

This option copies files, directories, and symbolic links from the origin to the destination instance. Files listed in the configuration file cannot be copied. The configuration file is: `./config/avoid_copying.config`.

The following is an example of this option. (Bold text is typed by the user):

```
12 Copy files from one instance to another
Please select [1-12,q,m]: 11
Origin instance? sfxlcl41
Destination instance? sfxtst41
Log stored in '/exlibris/sfx_ver/sfx4_1/sfxtst41/logs/
copy_instance_files.log'.
```

Scheduling File System Maintenance Tasks

NOTE:

These tasks (except for Cleaning MySQL Logs) cannot be scheduled when Centralized Management of Maintenance Tasks is activated. If you attempt to do so, the following is displayed:

```
Maintenance tasks can be scheduled only by the system
administrator of this SFX installation. This option is not
available for local SFX instances.
```


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This option allows you to schedule file system maintenance tasks. Select **11 Scheduling File System Maintenance Tasks** from the main menu. The following is displayed:

```
Scheduling file system maintenance tasks
1 List scheduled tasks
2 Schedule cleaning /exlibris/sfx_ver/sfx4_1/sfxlcl41/logs/
3 Schedule cleaning /exlibris/sfx_ver/sfx4_1/sfxlcl41/dbs/
scratch/
4 Schedule cleaning /exlibris/sfx_ver/sfx4_1/sfxlcl41/export
5 Scheduling cleaning /exlibris/sfx_ver/sfx4_1/tmp/ (only by
sfxglb41)
6 Schedule cleaning mysql logs (only by sfxglb41)
```

For each cleaning option there is a specific time-frame for which old files are deleted. Refer to the following table:

Table 7. Cleaning Time-Frames

Directory	Time-Frame
scratch/sessions'	2 days
scratch/e_collection_update	14 days
dbs/scratch	7 days
tmp/ and tmp/backup	3 months
logs	1 month
export/	1 month

The following is an example of the `config/server_maintenance_tasks.config_` file with the default settings:

```
Section "cleanup"
     clean_sessions_dir                 "2 days"
     clean_scratch_e_collection_dir     "14 days"
     clean_scratch_dir                  "7 days"
     clean_tmp_dir                      "3 months"
     clean_logs_dir                     "1 month"
     clean_export_dir                   "1 month"
EndSection
```

NOTE:

It is possible to change the default SFX Server Maintenance clean-up task time frame from the configuration file in the SFX config directory at: `/exlibris/sfx_ver/sfx4_1/<instance>/config/server_maintenance_tasks.config_`

By default, the file is symbolically linked to sfxglb41. If you want to

change the default settings, you must break the symbolic link in the local SFX instance.

To see a list of scheduled tasks or to delete a task, select **1 List scheduled tasks**. The following is displayed:

```
File system maintenance schedule is as follows:
[1] clean_logs 22:00 of every day of every month
[2] clean_scratch 00:00 of every Monday of every month
[3] clean_mysql_logs 22:00 of every day of every month
[4] clean_tmp 00:00 of every Monday of every month
[5] clean_export 00:00 of every Monday of every month
Would you like to remove any of these? [y/N] Y
Please enter the number of the task to remove or <ENTER> to
cancel: 2
Successfully deleted the crontab line
```

NOTE:
Option **6 Schedule cleaning mysql logs (only by sfxglb41)** can be run only as the `sfxglb41` user. If you try to run it as a local user, the following error message is displayed: `Need to run as sfxglb41 user.`

Change Passwords

This section allows you to change and encrypt passwords. To access this section, select **3 Change Passwords** from the main menu. The Passwords menu is displayed:

```
Passwords
  1 Change Unix password
  2 Change MySQL instance password
  3 Change MySQL root password
  4 Change Solr password for a specific instance (only
by sfxglb41
  5 Generate encrypted password for use in
configuration files
  6 Set Solr shared instance password (only by
sfxglb41)
  7 Store MySQL root password in encrypted form in
configuration file
  Please select [1-7,q,m]:
```

Change UNIX Password

This option allows you to change the UNIX passwords of the SFX instance users.

Change MySQL Instance Password

The MySQL user is necessary to access the SFX databases and perform various activities, such as running commands in the database, running the KnowledgeBase update, and executing statistic queries. The database of each SFX instance can be accessed by a separate MySQL user with a separate user name and password. There is also a MySQL `root` user that is used to administer the MySQL server.

Option **2 Change MySQL instance password** allows you to change any MySQL password. It makes internal changes in the following file:

`/exlibris/sfx_ver/sfx4_1/<instance>/config/ctx_login.config`

Note that the password string stored in this file is an encrypted version of the actual password. Before SP 4.3.1, the encryption method used was Fidelis. From 4.3.1 onwards, any MySQL password change automatically uses AES encryption instead of Fidelis when storing password data. In the example below, the MySQL password is changed for the `sfxlcl41` instance.

After selecting Option **2 Change MySQL instance password**, the following is displayed:

```
The MySQL root password is required to change MySQL user
passwords.
Please enter the MySQL root password:
```

Type the MySQL root password (not to be confused with the UNIX root password). The program prompts you to type your new password and to re-type it.

```
New password for sfxlcl41:

Confirm password for sfxlcl41:
```

IMPORTANT:
The MySQL passwords must contain only alphanumeric characters.

Change MySQL Root Password

Option **3 Change MySQL Root Password** allows you to change the MySQL root password. The following screen is displayed:

```
The MySQL root password is required to change MySQL
user passwords.
Please enter the MySQL root password:

New Password for root:

Confirm password for root:
```

Type the MySQL root password (not to be confused with the UNIX root password). The program prompts you to type the new root password and to re-type it.

NOTES:

If you change the MySQL root password, specify the new password in encrypted form in the backup configuration file of your SFX installation. Refer to the *Backup Package Guide* for information on installing and configuring the backup.

In the `bk_param.conf` file, change the SFX_RT parameter. This parameter contains the SFX MySQL root password in encrypted format.

To find the encrypted version of the MySQL root password:

- Type da.
- Type `./server_admin_util`.
- Select **3 Change passwords** and then **5 Generate encrypted password for use in configuration files**.
- Enter a password to encrypt.
- Copy and paste the string returned into the backup configuration file `bk_param.conf`.

Perform the encryption from the Server Admin Utility and save the result in `exlibris/backup/conf/bkp_param.conf`

Change Solr Password for a Specific Instance (Only By sfxglb41)

The eBook Search uses a dedicated Solr index. Within the Solr index, each instance (both local and global) has its own Solr core, with a corresponding user

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name (identical to the instance name) and password. This option allows you to change the Solr password. The following is an example of this option:

```
Please enter sfxglb41 password
Password:
Please enter UNIX user name of the instance: SST05
Please enter current Solr password:
New password for Solr:
Confirm password for Solr:
Updating local file. Please use SST05's instance UNIX
password.
Please enter SST05 password
Password:
Starting update Solr password for local instance
Done!
```

NOTE:
A Solr restart is required after you change the Solr password.

Generate Encrypted Passwords for Use in Configuration Files

This option generates an encrypted password for configuration files, such as those relating to MARCIt!, MetaLib, `sfx_crm.config`, and any other file where password encryption is required.

The following is an example of this option. (Bold text is typed by the user):

```
5 Generate encrypted password for use in configuration files
Please select [1-4,q,m]: 4
Please enter password to encrypt:****** <password, no
output visible>[Enter]
Confirm password:******  <password, no output
visible>[Enter]
The encrypted password is:
672617b7268733535303236303
```

Set Solr Shared Instance Password (only by sfxglb41)

If you have set up Consortia Model 2 (consortia API) in the SFX instance, where the shared and local instance do not exist in the same SFX installation and you changed the password in the shared installation, use this option to change the password also in the SFX installation of the local instances. Set the shared instance Solr password to be identical to the Solr password in the local instance, or the index build in the shared instance fails.

Store MySQL Root Password in Encrypted Form in Configuration File

This option stores the MySQL root password in encrypted form in the configuration file. This allows the mysql_upgrade command to be run automatically during MariaDB upgrades. If a password was already stored in the MySQL root password configuration file, it is overwritten by the new password you provide.

Database Maintenance

To access this section, select **4 Database maintenance** from the main menu. The Database menu is displayed:

```
Database
  1 Show database status
  2 CHECK MySQL tables
  3 REPAIR MySQL tables
  4 ANALYZE MySQL tables
  5 OPTIMIZE MySQL tables
  6 Create a snapshot of the database
  7 Export
  8 Import
  9 Drop indices
 10 Create indices
 11 Copy database to a different instance
 12 Export local database information (used for copy-
    single-instance to another server)
 13 Import local instance database information (used
    for copy-single-instance to another server)
 14 Clean local instance database information
 15 Remove local duplicate objects
```

Show Database Status

This option is used to view general information about the current instance's database (record count and disk space per table) and information about the

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MySQL server's workload. When first selected, the program displays a table such as the following:

```
+------------------------------+------------+----------------------+
| Table                        |  Row count |     Disk space (MB)  |
|                              |            |      data/index      |
+------------------------------+------------+----------------------+
| AZ_EXTRA_INFO                |         83 |      0.16 |      0.00 |
| AZ_FILTER                    |         98 |      0.02 |      0.01 |
| AZ_LETTER_GROUP              |         83 |      0.00 |      0.00 |
| AZ_TITLE                     |         83 |      0.01 |      0.01 |
| AZ_TITLE_SEARCH              |        311 |      0.01 |      0.04 |
| CACHE                        |          9 |      0.97 |      0.01 |
| CATEGORY_SUBCATEGORY_TEMP    |          0 |      0.00 |      0.00 |
| CONTROL                      |        478 |      0.03 |      0.04 |
| INSTITUTE                    |          6 |      0.00 |      0.01 |
| INSTITUTE_IP                 |          1 |      0.00 |      0.00 |
| INTERNAL_LOCK_OBJECT         |          0 |      0.00 |      0.00 |
| INTERNAL_LOCK_OBJECT_PORTFOLIO|         0 |      0.00 |      0.00 |
| INTERNAL_TS_AUDIT            |          0 |      0.00 |      0.00 |
| JOURNAL_SUBSCRIPTION         |          0 |      0.00 |      0.00 |
| KB_AUTHORS                   |          0 |      0.00 |      0.00 |
| KB_OBJECTS                   |          0 |      0.00 |      0.00 |
| KB_TITLE                     |          0 |      0.00 |      0.00 |
| LCL_CAT                      |         21 |      0.00 |      0.00 |
| LCL_CAT_ASSIGN               |          1 |      0.00 |      0.00 |
| LCL_CAT_ASSIGN_REPORT        |          0 |      0.00 |      0.00 |
| LCL_CAT_SUBCAT               |        394 |      0.02 |      0.01 |
| LCL_LINKING_PARAMETERS       |          0 |      0.00 |      0.00 |
| LCL_LINKING_PARAMETERS_REPORT |         0 |      0.00 |      0.00 |
| LCL_MULTILANGUAGE            |          0 |      0.00 |      0.00 |
| LCL_OBJECT_IDENTIFIERS       |          0 |      0.00 |      0.00 |
| LCL_OBJECT_IDENTIFIERS_REPORT |         0 |      0.00 |      0.00 |
| LCL_OBJECT_PORTFOLIO_INVENTORY |        6 |      0.00 |      0.00 |
| LCL_OBJECT_PORTFOLIO_INVENTORY_REPORT|  1 |      0.00 |      0.00 |
| LCL_OBJECT_PORTFOLIO_LINKING_INFO |      2 |      0.00 |      0.00 |
| LCL_OBJECT_PORTFOLIO_LINKING_INFO_REPORT|2 |      0.00 |      0.00 |
| LCL_SERVICE_INVENTORY        |          7 |      0.00 |      0.00 |
| LCL_SERVICE_INVENTORY_REPORT |          0 |      0.00 |      0.00 |
| LCL_SERVICE_LINKING_INFO     |          4 |      0.00 |      0.00 |
| LCL_SERVICE_LINKING_INFO_REPORT |        0 |      0.00 |      0.00 |
| LCL_SOURCE_LINKING_INFO      |          0 |      0.00 |      0.00 |
| LCL_SOURCE_SERVICE_INVENTORY |          0 |      0.00 |      0.00 |
| LCL_SOURCE_SERVICE_INVENTORY_REPORT |   0 |      0.00 |      0.00 |
| LCL_SUBCAT                   |        360 |      0.02 |      0.01 |
| LCL_TARGET_INVENTORY         |          4 |      0.00 |      0.00 |
| LCL_TARGET_INVENTORY_REPORT  |          2 |      0.00 |      0.00 |
| LCL_TARGET_LINKING_INFO      |          0 |      0.00 |      0.00 |
| LCL_TARGET_LINKING_INFO_REPORT |        1 |      0.00 |      0.00|
| LCL_TITLE                    |          0 |      0.00 |      0.00 |
| LCL_TITLE_KEYS               |          0 |      0.00 |      0.00 |
| LCL_TITLE_REPORT             |          0 |      0.00 |      0.00 |
| LCL_TRANS_CAT                |          0 |      0.00 |      0.00 |
| LCL_TRANS_SUBCAT             |          0 |      0.00 |      0.00 |
```

```
| OAI_REPOSITORY                |          0 |      0.00 |      0.00 |
| OBJECT_PROFILE                |          0 |      0.00 |      0.00 |
| OPI_RANK                      |          0 |      0.00 |      0.00 |
| PROFILE                       |          0 |      0.00 |      0.00 |
| RAPID_SERVICE_INDICATOR       |       3328 |      0.16 |      0.17 |
| RAPID_SERVICE_INDICATOR_TEMP |       3348 |      0.49 |      0.09 |
| SFX_REQUEST                   |        435 |      3.45 |      0.02 |
| STAT_OBJECT                   |        135 |      0.06 |      0.00 |
| STAT_OBJECT_OFFLINE           |          0 |      0.00 |      0.00 |
| STAT_REPEATABLES              |         90 |      0.00 |      0.00 |
| STAT_REPEATABLES_OFFLINE      |          0 |      0.00 |      0.00 |
| STAT_TARGET_SERVICE           |        356 |      0.02 |      0.02 |
| STAT_TARGET_SERVICE_OFFLINE  |          0 |      0.00 |      0.00 |
| SYNONYM                       |          4 |      0.00 |      0.00 |
| TI_RANK                       |          0 |      0.00 |      0.00 |
| TSI_RANK                      |          0 |      0.00 |      0.00 |
| USERS                         |          1 |      0.00 |      0.00 |
| VERDE_LOCAL                   |          0 |      0.00 |      0.00 |
| X_WIZ_OP                      |          0 |      0.00 |      0.00 |
| X_WIZ_TS                      |          0 |      0.00 |      0.00 |
| X_WIZ_TSA                     |          0 |      0.00 |      0.00 |
| test                          |          1 |      0.00 |      0.00 |
+-------------------------------+------------+-----------+-----------+
```

Figure 7: Database Table Listing

After displaying the database table listing, the program asks if you want to see the server information (database process listing). If you answer `yes`, you are prompted for the password of the MySQL root user. The server information corresponds to the `top` program in Linux and the `prstat` program in Solaris. It shows all the connections, queries, and any other process that is running on the MySQL server (including other instances). (In some installations this information may be considered sensitive. That is why the MySQL root password is required.)

The database process listing is similar to the following example:

```
+------+------------+----------+--------------+---------+------+-------------+
| Id   | User       | Host     | db           | Command | Time |  Info       |
+------+------------+----------+--------------+---------+------+-------------+
| 917  | sfxlcl3    | 10.1.2.20 | Andres       | Sleep   | 2265 |             |
| 1005 | sfxglb3    | localhost | sfxglb3      | Sleep   | 802  |             |
| 1045 | root       | localhost |              | Query   | 0    | show        |
|      |            |          |              |         |      | processlist |
+------+------------+----------+--------------+---------+------+-------------+
```

Figure 8: Database Process Listing

CHECK MySQL Tables

This option checks for errors in the MySQL database tables. These errors are usually discrepancies between the binary files, in-memory data, and indices that may occur after an abrupt server power-off or improper process termination.

This option detects problems in the tables but does not fix them. Run this option on the `sfxglb41` and local instance databases according to the schedule described in **Appendix C: Maintenance Task Checklist** on page 221. If errors are discovered, run the `REPAIR_TABLE` script to fix them. (For more information, see **The table_maintenance.pl Script** on page 111.) The advantage of this option is that it runs much faster than option **3 REPAIR MySQL Tables**, described below. It is recommended to run this option on a regular (at least monthly) basis.

NOTE:
The following message may be displayed: `Warning: 1 client is using or hasn't closed the table properly`. This is a notice that something non-fatal is out of sync with the table's index. It does not qualify as a corruption, but it is recommended that the table be fixed using `REPAIR_TABLE`.

REPAIR MySQL Tables

This option fixes any errors found in the MySQL database tables. This option locks the current instance's database tables, making the `sfxmenu.cgi` script (and all other database-dependent CGI scripts) temporarily unavailable.

IMPORTANT:
It is strongly recommended that you back up the database before starting this process.

The process needs to run uninterrupted until it finishes. Stopping the process corrupts the database.

ANALYZE MySQL Tables

This option analyzes and stores the key distribution for a table. During the analysis, the table is locked with a read-only lock, so that it is not able to be updated during the operation. Message type results can be **status**, **error**, **info**, or **warning**. If the table has not changed since it was last analyzed, the message text reads `Table is already up to date` and the table is not analyzed.

OPTIMIZE MySQL Tables

This option is useful when large parts of a table have been deleted. You can use this option to reclaim the unused space and to defragment the data file. This option repairs some row problems and sorts the indices. During the optimization, the table is locked so that no data can be written to it.

Create a Snapshot of the Database

NOTE:
This option can be used only by the `sfxglb41` user.

This option creates a binary replica of the working database. It copies all the files that correspond to the current instance's database. This option:

- Prompts the user for a path in which to place the snapshot
- Creates a directory inside the specified path
- Creates inside the new directory two files for each table in the database — one for the data itself and another one for the indices

For example, if you are running the option as the `sfxlcl41` user (and instance) and specify `/other/snapshots` as the directory in which to place the snapshot, the program creates a directory called `sfx_myinstance` inside `/other/snapshots` and in that location places the files `<TABLE NAME>.MYD` and `<TABLE NAME>.MYI`, where `<TABLE NAME>` corresponds to each one of the tables in the database.

NOTE:
The path specified in `/other/snapshots` is not under an SFX directory but is under the server's root directory. The `sfxglb41` user must have permissions to write to this path.

Export, Import, Drop Indices, Create Indices

It is possible to export and import database tables (or the complete database) using options **7 Export** and **8 Import**. Options **9 Drop indices** and **10 Create indices** allow dropping and creating of database indices.

NOTE:
These options are not required for day-to-day maintenance of the SFX server. Contact your local Ex Libris support center if you have any questions about the use of these options.

Copy Database to a Different Instance

If you are using the `sfxtst41` instance as a staging instance in the SFX environment, periodically copy the `sfxtst41` database to the production instance `sfxlcl41`. This option copies all tables relevant for local data settings from an origin database to a destination database.

Note that while copying the database from the source to the destination instance, the destination instance is down. All SFX functionality in this instance (including the SFX menu, A-Z List, and SFX Admin Utility) are inaccessible.

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Before starting the copying process, shut down the apache server of the destination instance.

Before you use this option, make sure that you have a backup of the database that you want to replace. (For more information, see **SFX Backup and Recovery** on page 53.) This is not necessary for cloud customers (where backups are part of Ex Libris server maintenance).

IMPORTANT:

It is recommended not to use the Copy Database to a Different Instance option if the destination instance has been set up for SFX-Verde publishing and harvesting. The changes in the destination instance as part of the copying process are not included in the publishing process, causing SFX and Verde to no longer be synchronized.

If the Copy Database to a Different Instance option must be used for a destination instance set up for SFX-Verde publishing and harvesting, do the following:

1. Verify that publishing has been completed. (It is recommended to manually run the publishing process to make sure it is completed successfully).
2. Select the **2 Configure Sfx->Verde Publishing** option from **12 Verde Publishing** in the Server Admin Utility and enter `n` to disable Verde bulk creation.
3. Select the **11 Copy Database to a Different Instance** option from **4 Database maintenance** in the Server Admin Utility.

NOTE:

During the copy database process, the database triggers for the destination instance are disabled. (They are enabled again after the process has been completed). Afterwards, a complete build of the RSI and A-Z indexes need to be performed, since these indexes are not part of the copy database process.

4. Publishing to Verde may be enabled again, but only if the necessary changes have been made in Verde to ensure that SFX and Verde are synchronized. This is done by performing the initial localization step.

For more information about changing the SFX-Verde publishing harvesting setup, refer to the *SFX-Verde Interoperability Guide*.

In the following example, `sfxtst41` is copied to `sfxlcl41`.

To copy a database to a different instance:

1. Create a backup of `sfxlcl41`.
2. Shut down apache of the `sfxlcl41` instance. (For more information on how to stop the instance apache, see Start/Stop Services on page 87.)
3. Log on as `sfxglb41`.
4. Type `da`.
5. Type `./server_admin_util`.
6. Select **4 Database Maintenance** and then **11 Copy Database to a Different Instance**.
7. Enter the names of the instances you want to work with and the MySQL passwords for the instances. (Bold text is typed by the user.)

```
What will be the source instance? sfxtst41
Enter MySQL password for sfxtst41:
What will be the destination instance? sfxlcl41
Enter MySQL password for sfxlcl41?
```

The program verifies the information you have entered and checks the origin database for records with a problematic internal ID range. If such records are found, the program changes the ID range of these records when it copies the data to ensure that the internal IDs in the destination database have the correct ID range.

After ID verification, the following is displayed:

```
About to delete data from sfxlcl42 and sfxlcl42 records in
global instance.

Press <ENTER> to continue
```

8. Press ENTER. The following is displayed:

```
Deleting local records from global DB...done!
Deleting local records from local DB...done!
Reset prefix for sfxlcl42 DB...done!
About to copy data from sfxtst41 to sfxlcl41

Press <ENTER> to continue
```


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After you press ENTER the tables from `sfxtst41` are exported to `sfxlcl41` and the prefixes are reset for `sfxlcl41`. The procedure creates a report.

If the destination directory already exists, the following error message is displayed:

```
ERROR: There is already a directory '/exlibris/sfx_ver/
sfx4_1/tmp/db_copy'.
Please remove this directory. To do this, type
rm -rf /exlibris/sfx_ver/sfx4_1/tmp/db_copy
```

9 If this message is displayed, remove the directory, and rerun the copy database tool.

The tables from `sfxtst41` are exported to `sfxlcl41` and the indices are recreated for `sfxlcl41`. A report is produced as the procedure runs.

10 Start apache of the `sfxlcl41` instance. (For more information on how to start the instance apache, see **Start/Stop Services** on page **87**.)

11 When the procedure is completed, verify that the tables were copied correctly. In your browser, enter the URL of the `sfxlcl41` instance SFXAdmin interface:

```
http://<sfx_server>:<port>/sfxadmin/sfxlcl41
```

NOTE:
Press CTRL-C to quit the copy database tool.

Export Local Database Information

This option exports all records created and owned by the local instance from the `sfxglb41` database. This option has been developed to allow the copying of a single instance from one installation to another. This procedure is only available for Ex Libris support staff.

Import Local Instance Database Information

This option imports all of the records created and owned by a specific instance to the `sfxglb41` database, using the export file created with the Export Local Database Information option. This option has been developed to allow the copying of a single instance from one installation to another. This procedure is only available for Ex Libris support staff.

Clean Local Instance Database Information

This option removes all localizations for one specific instance, from both the `sfxglb41` and local instance database schema. It can be run only as the `sfxglb41` user.

NOTES:

- This option should only be used if you want to completely erase all localizations stored in the database – including statistics – and start with a completely clean SFX instance. Use extreme caution, as you are not able to undo this process.
- The USERS and CONTROL tables are not cleaned.

To access this section, select **14 Clean local instance database information (only by sfxglb41)** from the Database menu. The following is displayed:

```
Please provide instance name: SST05
Table list created.
Cleaning local data in global tables...
Finished.
Fixing sequence numbers for global tables...
Finished
Cleaning local data in local tables...
Finished.
```

Remove Local Duplicate Objects

This option checks the locally created objects in all the local instances for duplicates using the same mechanism as described in the **Database Cleaning for New Objects** section of the *SFX General User's Guide*. It can be run only as the `sfxglb41` user.

After running this option, reports on this process are available in the Revision Reports section of the SFX Admin Center, with the same revision release number as the last KBDB that was applied on the SFX installation, except the last two digits are `99` instead of `00`. So for example, if 20112700 is the last revision applied, 20112799 is the release number of the revision reports.

The revision number is listed in the Server Admin Utility output:

```
Process finished. Reports can be found in SFXAdmin > Revision
Reports > Revision 20112799 which started at: 20110714161513
```

Other Database Maintenance Options

The following other database maintenance optoins are available:

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Copying Instances in Cron Jobs

It is possible to set up a cron job to copy a database from one instance to another. The program is located at:

`exlibris/sfx_ver/sfx4_1/<instance>/admin/database/copy_db.pl`

The following table describes the options available to configure the cron job:

Table 8. Cron Job Options

Option	Description	Required
`logfile`	Alternate log file	No
`dborig`	Origin database	Yes
`dbdest`	Destination database	Yes
`usrorig`	Owner of origin database	Yes
`usrdest`	Owner of destination database	Yes
`pwdorig`	Password for origin database	Yes
`pwddest`	Password for destination database	Yes
`tmpdir`	Temporary directory	No
`no_user_prompt`	No prompts to user	Yes
keep_pckey	Copies the source PC key to the destination instance during the copy_db process. This option overrides the default behavior (not copying the source PC key to the destination instance during the copy_db process).	No

The program works in cron only if it is scheduled by the `root` or the destination instance user. In all other cases, the program prompts for the destination user's UNIX password when resetting prefix IDs. The program works in cron only if the destination Apache is down during the database copy process. Therefore, perform the following when scheduling the database copy process:

- Shut down the destination instance apache.
- Run the copy database program.
- Start the destination instance apache.

To set up a cron job with Apache shutdown and restart:

1 Log on as the destination user.

2 Create a file to stop the instance apache, for example:

```
/exlibris/sfx_ver/sfx4_1/tmp/apachecron_stop
```

The file should contain one line with following `apachectl` command:

```
apachectl stop
```

3 Create a file to start the instance apache for example with the following name and location:

```
/exlibris/sfx_ver/sfx4_1/tmp/apachecron_start
```

The file should contain one line with following `apachectl` command:

```
apachectl start
```

4 Edit the crontab:

```
crontab -e
```

5 Add the scheduled build similar to the one listed in example below using the following syntax:

```
<scheduling time/date/frequency> csh <apache_stop_file>;bin/
tcsh -c 'source /exlibris/sfx_ver/sfx4_1/
<destination_instance>/home/.cshrc;/exlibris/sfx_ver/sfx4_1/
<destination_instance>/admin/database/copy_db.pl --
dborig=<source_instance> --usrorig=<source_instance> --
pwdorig=<source_db_password> --dbdest=<destination_instance>
--usrdest=<destination_instance> --
pwddest=<destination_db_password> --noverbose --
no_user_prompt';csh <apache_start_file>
```

The text should be all in one line and without hard returns. Make sure the source and destination instance names are specified correctly and the path

and file names for the apache commands match the files created in steps 2 and 3.

In the example below, `sfxtst41` is the destination instance and `sfxlcl41` is the source instance:

```
16 12 * * 01 csh /exlibris/sfx_ver/sfx4_1/tmp/
apachecron_stop;/bin/tcsh -c 'source /exlibris/sfx_ver/
sfx4_1/sfxtst41/home/.cshrc;/exlibris/sfx_ver/sfx4_1/
sfxtst41/admin/database/copy_db.pl --dborig=sfxlcl41 --
usrorig=sfxlcl41 --pwdorig=xxxx --dbdest=sfxtst41 --
usrdest=sfxtst41 --pwddest=xxxx --noverbose --
no_user_prompt';csh /exlibris/sfx_ver/sfx4_1/tmp/
apachecron_start
```

For more information on cron jobs, including the structure of the scheduling time/date definition, see http://en.wikipedia.org/wiki/Cron.

NOTE:
If the SFX instance contains a PC key for use in CDI, it is not copied by default from the source to the destination instance (so as not to overwrite the destination PC key configuration). It is possible to change this default and include all PC keys when copying by using the `--keep_pckey` option.

The table_maintenance.pl Script

The script used for the **Check**, **Repair**, **Analyze**, and **Optimize MySQL Tables** options may be used separately from the Server Admin Utility and can be included in an SFX server's crontab (using the no interactive option). The script is located at:

`/exlibris/sfx_ver/sfx4_1/<instance_name>/admin/database`

Run the script. The following is displayed:

```
Usage: ./table_maintenance.pl [options] [--table=..., --
table=...] [--alltables] [--op=check|repair|analyze|optimize,...]

Options:

    --help          print this help content

    --logfile       indicate location of output log

    --extended      performs a more extensive (lengthy) check or
repair

    --quick         check/repair only the table indexes

    --nointeractive skip confirmation prompts and only print non-
error output to the log

    --alltables     runs the operation on all the SFX tables

    --table        specify a table to operate on; can be repeated
for more tables

    --op            specify what operation to run; options are
check, repair, optimize and analyze; more than one --op is allowed

Example: ./table_maintenance.pl --table=TITLE --table=ISSN --
op=check --quick --logfile=/exlibris/sfx_ver/sfx4_1/sfxlcl41/
logs/checktable.log
```

NOTES:

- When using the script with the Check operation, make sure the script is run on `sfxglb41` and all local instance databases according to the schedule described in **Appendix C: Maintenance Task Checklist** on page **221**.
- If you want to add this to your crontab, you need to modify the form of the command slightly so that SFX environment variables get loaded before the `table_maintenance.pl` script is run. The command in the crontab looks like the following:

  ```
  /bin/tcsh -c 'source /exlibris/sfx_ver/sfx4_1/
  <instance_name>/home/.cshrc; /exlibris/sfx_ver/sfx4_1/
  <instance_name>/admin/database/table_maintenance.pl
  [options, etc.]'
  ```

Statistics

To access this option, select **5 Statistics** from the main menu. The Statistics menu is displayed:

```
Statistics
  1 Move data from online to offline
  2 Archive statistics
  3 Load statistics from a file
  4 Show stats tables monitor information
  5 Scheduling for statistics maintenance tasks
  6 Clear SFX_REQUEST table
  7 bX Registration & Configuration
  8 Publish Historical Stats for bX
  9 Clean OAI_REPOSITORY table
 10 Remove SFX requests as part of IE8 fix from online
    and offline tables
 11 Fix statistics file to make it OS independent
 12 Clean CENTRAL_CRON_STATS table (only by sfxglb41)
 13 Clean IP information from statistics data
Please select [1-13,q,m]:
```

Move Data from Online to Offline

In order for statistics to be queried, they must be in the offline tables. Select **1 Move data from online to offline** from the Statistics menu to move statistics to the offline tables.

You are asked whether you want to specify a date range to move all data in the online tables. Press ENTER if you do not want to specify a date range. See the following example. (Bold text is typed by the user):

```
Please select: [1-13,q,m]: 1
Type the begin date (YYYYMMDD) of the date range of
data to move or <ENTER> to ignore: [ignore]
Type the end date (YYYYMMDD) of the date range of data
to move or <ENTER> to ignore: [ignore]
About to move from online to offline... Do you want to
continue? [Y/n] y
Transferring records, please wait...
```

Alternatively, you can perform this task directly from the server. Type the following command from the `admin/stats` directory of your instance:

```
./online2offline.pl --f <options>
```

To see more information on the different options, type:

```
./online2offline.pl --help
```

You can schedule this task to be done automatically every day or week. More information about scheduling statistics tasks can be found in **Scheduling for Statistics Maintenance Tasks** on page **118**.

Archiving Statistics

When the offline table contains a large amount of statistics data, it is best to archive the statistics records and store them on a different server. (Guidelines for archiving can be found in the **Guidelines for Statistics Maintenance** section of the *SFX Advanced User's Guide*.) Make sure to run all desired statistics queries on the statistics records before they are archived.

Select option **2 Archive Statistics** from the Statistics menu. This option removes the statistics data from the SFX database and stores the data instead in an archive file.

You are asked if you want to archive all statistics data except for the current calendar year statistics data or specify a date range to move all data in the online tables.

The archive file is placed in the following location:

`/exlibris/sfx_ver/sfx4_1/<sfx_instance>/archive/`

Type `y` to archive all statistics data except for the current calendar year statistics data. See the following example (Bold text is typed by the user):

```
Please select [1-11,q,m]: 2
Do you want to exclude the current year statistics data from
the archiving task? [y/n]: y
About to move stats from offline to file.
Do you want to continue? [Y/n] y
Done. Moved 1200/1200 records
Cleaning up...
Compressing the file '/exlibris/sfx_ver/sfx4_1/sst1_3/
archive/stats.20160524-12:07:40_from_2016-04-
05_11:28:24_to_2016-05-24_12:03:43.saf'
Done. File compressed successfully into '/exlibris/sfx_ver/
sfx4_1/sst1_3/archive/stats.20160524-12:07:40_from_2016-04-
05_11:28:24_to_2016-05-24_12:03:43_sfx_compress.saf.gz'
```

The file name and location of the archive file is:

```
/exlibris/sfx_ver/sfx4_1/<sfx_instance>/archive/stats.<YYYYMMDD-
HH:MM:SS_from_YYYYMMDD-HH:MM:SS_to_YYYYMMDD-HH:MM:SS>.saf
```

NOTE:
The file name includes the date and time of the last (from_) and first (to_) statistics record included in the file.

Type `n` to specify a date range to archive. See the following example (Bold text is typed by the user):

```
Please select [1-11,q,m]: 2
Do you want to exclude the current year statistics data from
the archiving task? [y/n]: n
Type the begin date (YYYYMMDD) of the date range to archive or
<ENTER> to ignore: [ignore] 20130101
Type the end date (YYYYMMDD) of the date range to archive or
<ENTER> to ignore: [ignore] 20131231
About to move stats from offline to file.
Do you want to continue? [Y/n] y
Done. Moved 1200/1200 records
Cleaning up...
Compressing the file '/exlibris/sfx_ver/sfx4_1/sst1_3/
archive/stats.20160524-12:07:40_from_2016-04-
05_11:28:24_to_2016-05-24_12:03:43.saf'
Done. File compressed successfully into '/exlibris/sfx_ver/
sfx4_1/sst1_3/archive/stats.20160524-12:07:40_from_2016-04-
05_11:28:24_to_2016-05-24_12:03:43_sfx_compress.saf.gz'
```

The file name and location of the archive file is:

```
exlibris/sfx_ver/sfx4_1/<sfx_instance>/archive/stats.<YYYYMMDD-
HH:MM:SS_from_YYYYMMDD-HH:MM:SS_to_YYYYMMDD-HH:MM:SS>.saf
```

NOTE:
The file name includes the date and time of the last (from_) and first (to_) statistics record included in the file.

Alternatively, you can perform this task directly from the server. Type the following command from the `admin/stats` directory of your instance:

```
./offline2file.pl --f --file=<file name> <options>
```

For more information on the different options, type:

```
./offline2file.pl --help
```

To exclude the current year statistics data from the archiving task, type the following command:

```
./offline2file.pl --f --leaveLastYear
```

To exclude a specific number of days from the archiving task, type the following command:

```
./offline2file.pl --f --
leaveDays=<nr_of_days_to_exclude_from_archiving>
```

You can schedule this task to be done automatically every day or week. More information about scheduling statistics tasks can be found in **Scheduling for Statistics Maintenance Tasks** on page **118**.

Load Statistics from a File

This option allows you to import an archived flat file back into the offline tables so that the statistical information can be queried. To access this option, select **3 Load statistics from a file** from the Statistics menu.

You are asked whether you want to specify a date range (optional) or copy all data into the offline tables. Press ENTER if you do not want to specify a date range.

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The program asks you to specify the location of the archived file. See the following example:

```
Please select [1-6,q,m]: 3

Enter complete path and filename to extract the records
from: /exlibris/sfx_ver/sfx4_1/sst1_3/archive/
stats.20160524-12:07:40_from_2016-04-
05_11:28:24_to_2016-05-24_12:03:43_sfx_compress.saf.gz

About to load offline stats from file:

/exlibris/sfx_ver/sfx4_1/sst1_3/archive/
stats.20160524-12:07:40_from_2016-04-
05_11:28:24_to_2016-05-24_12:03:43_sfx_compress.saf.gz

Do you want to continue? [Y/n]

Extracting the file '/exlibris/sfx_ver/sfx4_1/sst1_3/
archive/stats.20160524-12:07:40_from_2016-04-
05_11:28:24_to_2016-05-24_12:03:43_sfx_com-
press.saf.gz'

Done. File '/exlibris/sfx_ver/sfx4_1/sst1_3/archive/
stats.20160524-12:07:40_from_2016-04-
05_11:28:24_to_2016-05-24_12:03:43_sfx_com-
press.saf.gz' was extracted successfully

Done. Loaded 54/54 records

Removing uncompressed file '/exlibris/sfx_ver/sfx4_1/
sst1_3/archive/stats.20160524-12:07:40_from_2016-04-
05_11:28:24_to_2016-05-24_12:03:43.saf'
```

Alternatively, you can perform this task by typing the following command from the admin/stats directory of your instance:

```
./file2offline.pl --f --file=<file name> <options>
```

For more information on the different options, type:

```
./file2offline.pl --help
```

Show Stats Tables Monitor Information

This option allows you to check the size of the statistics tables and whether statistics maintenance tasks (such as archiving) need to be performed. Select option **4 Show Stats Tables Monitor Information** from the Statistics menu.

The following is an example of the information displayed on the screen:

```
+----------------+------------+----------------------+------------+------------
+
| Tables         |  Row count |    Disk space (MB)   |   Min date |   Max date
|                |            |       data/index     |            |
+----------------+------------+----------------------+------------+------------
+
| SFX Requests   |        747 |     18.87 |      0.03 |            |
| Online Stats   |          0 |      0.25 |      0.32 |            |
| Offline Stats  |        580 |      1.04 |      2.40 | 2004-09-27 | 2004-10-25
+----------------+------------+----------------------+------------+------------
```

Figure 9: Stats Tables Monitor Information

In this example, the online statistics tables are empty. This means that all information was recently moved from the online to the offline statistics tables.

In this example, the offline statistics tables contain information about the usage of SFX in this instance between 2004-09-27 and 2004-10-25.

Scheduling for Statistics Maintenance Tasks

This option allows you to:

- Schedule maintenance tasks
- List currently scheduled maintenance tasks
- Remove currently scheduled maintenance tasks

To access this option, select **5 Scheduling for statistics maintenance tasks** from the Statistics menu. The following menu is displayed:

```
Scheduling for statistics maintenance tasks
  1 List scheduled tasks for online to offline process
  2 Schedule online to offline process
  3 List scheduled archiving tasks
  4 Schedule archiving task
  5 Schedule clearing of SFX_REQUEST table
  6 List scheduled tasks of clearing CENTRAL_CRON_STATS
table (only by sfxglb41)
  7 Schedule clearing of CENTRAL_CRON_STATS table (only
by sfxglb41)
  8 Show scheduled IP clean-up tasks
  9 Schedule IP information clean-up task

Please select [1-8,q,m]:
```


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List Scheduled Tasks for Online to Offline Process

Select **1 List Scheduled Tasks for Online to Offline Process** from the Scheduling for statistics maintenance tasks menu to list and delete scheduled tasks. A screen such as the following is displayed:

```
Online to offline schedule is as follows:
[1] 22:00 of every day of every month
[2] 00:00 of every Monday of every month
Would you like to remove any of these? [y/N] Y
Please enter the number of the task to remove or
<ENTER> to cancel: 2
Successfully deleted the crontab line
```

Type the number of a task to delete it.

Schedule Online to Offline Process

NOTE:
This task cannot be scheduled when Centralized Management of Maintenance Tasks is activated. If you attempt to do so, the following is displayed:

```
Maintenance tasks can be scheduled only by the system
administrator of this SFX installation. This option is not
available for local SFX instances.
```

Select **2 Schedule online to offline process** from the Scheduling for statistics maintenance tasks menu to schedule online to offline processes. The following screen is displayed:

```
Please enter scheduling parameters
Time must be in the form HH:MM where
HH can be: 00-23 for midnight-11PM or * for every hour
MM can be: 00-59 or * for every minute
Enter the time to run [00:00]:
```

Enter a time to run. The following is displayed:

```
Would you like to schedule for a certain weekday? [Y/n]
```

If you would like to schedule for a specific day of the week, type `Y`. The following is displayed:

```
Please select a weekday (1-7 Sunday-Saturday respec-
tively) [1]: 2
Successfully added the refresh task to your crontab.
```

If you do not want to schedule for a specific day of the week, type `n`. The following is displayed:

```
Please enter month (1-12 for January-December
respectively or '*' for every month) [*]
```

Either type the number of the month for which you would like to schedule or type an asterisk (*) to schedule for every month. The following is displayed:

```
Please enter day of the month (1-31 or '*' for every
day) [1]:
```

Type the day of the month or type an asterisk (*) to schedule for every day. The following is displayed:

```
Successfully added the refresh task to your crontab.
```

List Scheduled Archiving Tasks

Select **3 List Scheduled Archiving Tasks** from the Scheduling for statistics maintenance tasks menu to list and delete scheduled archiving tasks. A screen such as the following is displayed:

```
Archiving schedule is as follows:
[1] 00:00 of day 01 of January
[2] 12:12 of every Sunday of every month
Would you like to remove any of these? [y/N]y
Please enter the number of the task to remove or
<ENTER> to cancel: 1
Successfully deleted the crontab line
```

Type the number of an archiving task to delete it.

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Schedule Archiving Task

Select **4 Schedule archiving task** from the Scheduling for statistics maintenance tasks menu to schedule archiving tasks. The following screen is displayed:

```
Do you want to exclude the current year statistics data
from the archiving task? [Y/n] y
Please enter scheduling parameters
Time must be in the form HH:MM where
HH can be: 00-23 for midnight-11PM or * for every hour
MM can be: 00-59 or * for every minute
Enter the time to run [00:00]:
```

Enter a time at which to run the task. The following is displayed:

```
Would you like to schedule for a certain weekday? [Y/n]
```

If you would like to schedule for a specific day of the week, type Y. The following is displayed. (Bold text is typed by the user):

```
Please select a weekday (1-7 Sunday-Saturday respec-
tively) [1]: 2
Successfully added the refresh task to your crontab.
```

If you do not want to schedule for a specific day of the week, type **n**. The following is displayed:

```
Please enter month (1-12 for January-December
respectively or '*' for every month) [*]
```

Either type the number of the month for which you would like to schedule or type an asterisk (*) to schedule for every month. The following is displayed:

```
Please enter day of the month (1-31 or '*' for every
day) [1]:
```

Type the day of the month or type an asterisk (*) to schedule for every day. The following is displayed:

```
Successfully added the archiving task to your crontab.
```

Schedule Clearing of SFX_REQUEST Table

NOTE:
This task cannot be scheduled when Centralized Management of Maintenance Tasks is activated. If you attempt to do so, the following is

displayed:

```
Maintenance tasks can be scheduled only by the system
administrator of this SFX installation. This option is not
available for local SFX instances.
```

Select **5 Schedule clearing of SFX_REQUEST table** from the Scheduling for statistics maintenance tasks menu to schedule the clearing of the `sfx_request` table. The following screen is displayed:

```
Please enter scheduling parameters
Time must be in the form HH:MM where
HH can be: 00-23 for midnight-11PM or * for every hour
MM can be: 00-59 or * for every minute
Enter the time to run [00:00]:
```

Enter a time at which to run the task. The following is displayed:

```
Would you like to schedule for a certain weekday? [Y/n]
```

If you would like to schedule for a specific day of the week, type `Y`. The following is displayed:

```
Please select a weekday (1-7 Sunday-Saturday respec-
tively) [1]: 2
Successfully added the refresh task to your crontab.
```

If you do not want to schedule for a specific day of the week, type `n`. The following is displayed:

```
Please enter month (1-12 for January-December
respectively or '*' for every month) [*]
```

Either type the number of the month for which you would like to schedule or type an asterisk (*) to schedule for every month. The following is displayed:

```
Please enter day of the month (1-31 or '*' for every
day) [1]:
```

Type the day of the month or type an asterisk (*) to schedule for every day. The following is displayed:

```
Successfully added the refresh task to your crontab.
```


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Show Scheduled IP Clean-Up Tasks

Select `8 Show scheduled IP clean-up tasks`. One of the following is displayed, depending on if you have scheduled IP clean -up tasks:

```
There are no scheduled IP clean-up tasks
```

or:

```
IP clean-up task schedule is as follows:
[1] 00:00 of every Sunday of every month
[2] 00:00 of day 01 of every month
Would you like to remove any of these? [y/N]
```

Schedule IP Information Clean-Up Task

Select `9 Schedule IP information clean-up task`. One of the following is displayed:

- If you want to schedule for a specific weekday:

```
Please enter scheduling parameters
Time must be in the form HH:MM where
  HH can be: 00-23 for midnight-11PM or * for every hour
  MM can be: 00-59 or * for every minute
Enter the time to run [00:00]:
Would you like to schedule for a certain weekday? [Y/n] y
Please select a weekday (1-7 Sunday-Saturday respectively)
[1]: 1
Successfully added the refresh task to your crontab.
```

- If you want to schedule for a specific date:

```
Please enter scheduling parameters
Time must be in the form HH:MM where
  HH can be: 00-23 for midnight-11PM or * for every hour
  MM can be: 00-59 or * for every minute
Enter the time to run [00:00]:
Would you like to schedule for a certain weekday? [Y/n] n
Please enter month (1-12 for January-December respectively or
'*' for every month) [*]: *
Please enter day of the month (1-31 or '*' for every day) [1]:
1
Successfully added the refresh task to your crontab.
```

Clear SFX_REQUEST Table

The `SFX_REQUEST` table is used to store data required to generate each SFX menu screen. This table increases in size and needs to be cleared periodically.

To clear the SFX_REQUEST table, select **6 Clear SFX_REQUEST Table** from the Statistics menu. The following screen is displayed:

```
To look at the contents of the SFX_REQUEST table, you
may want to export the table before taking this step.
Are you sure you want to remove all sfx requests? [y/n]
```

Type y to delete all SFX requests.

Menu Options for bX

The following options are only available to customers who have purchased bX as well as SFX:

- bX Registration & Configuration
- Publish Historical Stats for bX
- Clean OAI_REPOSITORY table

For more information about these options, refer to the *bX-SFX Configuration Guide*.

For information about statistics administrative tasks, refer to the **SFX Statistics Module** section of the *SFX Advanced User's Guide*.

Remove SFX Requests as Part of IE8 Fix from Online and Offline Tables

A previously released IE8 Windows issue fix did not work for some customers and was found to affect SFX usage statistics. As part of the SFX 4.0.3 release, this fix was changed so that it no longer affects SFX statistics. Additionally, a script was included in the SFX 4.0.3 release to fix SFX usage statistics. OpenURL requests in statistics that consist only of empty base URLs are changed in the STAT_OBJECT and STAT_OBJECT_OFFLINE tables so that these requests no longer appear in statistics queries by subtracting 50 years from the date. As a result, the empty baseURL requests are no longer counted in the usage statistics.

This script is executed as part of the SFX 4.0.3 release, but can also be run from the Server Admin Utility using this option.

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Select **10 Remove SFX requests as part of IE8 fix from online and offline tables** to remove the OpenURL requests that consist only of empty base URLs. The following is displayed:

```
Cleaning STAT_OBJECT from problematic statistics

200 rows cleaned

Cleaning STAT_OBJECT_OFFLINE from problematic statistics

1000 rows cleaned

Done for /exlibris/sfx_ver/sfx_version_3/<instance>/admin/
stats/ie8_stat_fix.pl
```

Fix Statistics File to Make It OS Independent

Archived SFX Statistics had been operating system dependent. This meant that archive files created in one operating system could not be loaded back into a different operating system. This caused problems for customers who changed operating systems and could no longer access their statistic tables.

IMPORTANT:
When fixing existing archive files using this option, it is very important to fix the files in the same SFX installation from which the archive file had originally been created. This is because the operating system where the archive file was originally created has to be identical to the one where it is fixed.

Select option **11 Fix Statistics File to Make It OS Independent** to convert statistic files to an operating system independent format. The following is displayed:

```
Enter complete path and filename to extract the records from:
/exlibris/sfx_ver/sfx4_1/sfxlcl41/archive/stats.20110727-
16:31:01.saf
About to fix file:
/exlibris/sfx_ver/sfx4_1/sfxlcl41/archive/stats.20110727-
16:31:01.saf
Do you want to continue? [Y/n]
Done. File is fixed
```

A new archive file is created in the directory of the original file with the same name as the original file, but with `_fixed` added before the extension. For example:

`stats.20110727-16:31:01.saf` (This is the original file.)

`stats.20110727-16:31:01_fixed.saf` (This is the OS independent file.)

Clean IP Information from Statistics Data

This option removes all IP information from statistics data.

Select `13 Clean IP information from statistics data` from the Statistics menu. The following is displayed:

```
Clean IP information from statistics data
  1 Clean all IP information from the offline Statistics table
records
  2 Clean all IP information from Statistics archive files
  3 Show scheduled IP clean-up tasks
  4 Schedule IP information clean-up task
```

If you select **1**, the following is displayed:

```
This query will erase all the IP information in the statistics
Offline tables.
Are you sure that you want to continue? [y/n]
```

If you select **2**, the following is displayed:

```
This query will erase all the IP information from statistics
archive files specified during this option. You can either
specify a specific archive file (with complete path) or a
directory (in which case all SFX statistics archive files in
the directory will be cleaned).
Type (f) for file, or (d) for all files in a specific
directory:   [f]
    d -      Enter complete directory path to clean the
records from (all SFX statistics archive files in the
directory will be cleaned):
    f -      Enter complete path and filename to clean the
records from:
About to clean IP information from file(s):
Do you want to continue? [Y/n]
```

If you select **3**, one of the following is displayed, depending on if you have scheduled IP clean -up tasks:

```
There are no scheduled IP clean-up tasks
```

or:

```
IP clean-up task schedule is as follows:
[1] 00:00 of every Sunday of every month
[2] 00:00 of day 01 of every month
Would you like to remove any of these? [y/N]
```

If you select **4**, one of the following is displayed:

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- If you want to schedule for a specific weekday:

```
Please enter scheduling parameters
Time must be in the form HH:MM where
  HH can be: 00-23 for midnight-11PM or * for every hour
  MM can be: 00-59 or * for every minute
Enter the time to run [00:00]:
Would you like to schedule for a certain weekday? [Y/n] y
Please select a weekday (1-7 Sunday-Saturday respectively)
[1]: 1
Successfully added the refresh task to your crontab.
```

- If you want to schedule for a specific date:

```
Please enter scheduling parameters
Time must be in the form HH:MM where
  HH can be: 00-23 for midnight-11PM or * for every hour
  MM can be: 00-59 or * for every minute
Enter the time to run [00:00]:
Would you like to schedule for a certain weekday? [Y/n] n
Please enter month (1-12 for January-December respectively or
'*' for every month) [*]: *
Please enter day of the month (1-31 or '*' for every day) [1]:
1
Successfully added the refresh task to your crontab.
```

Diagnostics

To access this option, type **6 Diagnostics** from the main menu. The Diagnostics menu is displayed:

```
Diagnostics
  1 Check for email capabilities
  2 Check for secure FTP capabilities
  3 Check IP address
  4 Check external export
  5 Check Z3950 capabilities
  6 Report incomplete activations
  7 Report centralized management maintenance tasks
(only by sfxglb41)
  8 Move to CDI - Single Activation of electronic
collections (only by sfxglb41)
```

Check for e-Mail Capabilities

This option tests the e-mail module to verify that it is operating properly.

The SFX software includes an e-mail module used by the following tools:

- SFXAdmin help form
- KB Manager **E-mail Ex Libris** button
- Local document delivery and feedback targets
- Statistics module
- MARC enhancement tool

The files involved with the check are:

- `/exlibris/sfx_ver/sfx4_1/lr_4/lib/NetWrap/Email.pm`
- `/exlibris/sfx_ver/sfx4_1/<instance>/config/mail.config_`

To run the check, select **1 Check for email capabilities** from the Diagnostics menu.

Make sure that the SMTP server (such as sendmail) is running properly to allow the tools listed above to send e-mail.

The following is displayed:

```
Test Email module
From: <fill in email address>
To: <fill in email address>
Subject: <fill in subject>
Message: <fill in message>
Sending email...Sent!

This is the log:
Mail::Sendmail v. 0.78 - Fri Sep 19 12:58:39 2003
Date: Fri, 19 Sep 2003 12:58 -0500
Server: localhost Port: 25
From: <email address will be here>
Subject: <subject will be here>
To: <email address will be here>
```

If the test program reports that SMTP is not running properly, contact your server administrator.

As a workaround for this problem, it is also possible to send e-mails using the command-line mail application. However, this option is limited (no attachments can be sent) and should only be used if the SMTP server cannot be set up properly.

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To set up sending e-mails using the command-line mail application:

1 Log on as an instance user and type the following:

```
cn
vi mail.config_
```

2 Change `smtp` to `command`.

3 Change the path in which the mail command is located, if the location is different than `/bin/mail`.

We found a problem with emails from the Report broken links feature not being received for some SFX installations, where the email server has been configured to not allow emails to be sent by servers that do not have a DNS entry.

Customers encountering this problem should specify the SFX server hostname in a field called `mail_from` in the `mail.config_` file, while making sure that the hostname specified should be accessible from outside the local network. Additionally, a new parameter called `override_from_value` should be set to `1` in the `mail.config_` file. This ensures that the `mail_from` configuration value is used, instead of the server hostname (used by default).

When using the parameters, make sure the number sign (#) is at the beginning of the line (which means the line is commented out) is removed:

```
Section "general"
        mode    "smtp"
        override_from_value    "1"
        mail_from "noReply@exlibrisgroup.com"
EndSection
```

Check for Secure FTP Capabilities

Secure FTP is required for the following programs that are part of the SFX server:

- MARCit
- Export of electronic journals using the External Export program. Note that External Export is not available in MetaLib version 4 and later.

For more information on the Export, refer to **Appendix C External Export** of the *SFX Advanced User's Guide*.

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To test the secure FTP, select **2 Check for Secure FTP Capabilities** from the Diagnostics menu. The following screen is displayed. (Bold text is typed by the user):

```
Server: ftp.exlibris-usa.com
User: sfxuser
WARNING: Terminal issues in the Net::SFTP code prevent
this module from hiding the password.
DO NOT type your password if nobody else is to read it
from this screen!
Password: XXXX
Loading modules...
Instantiating...
Connecting to sfxuser@ftp.exlibris-usa.com ...
Everything seems to be OK for outgoing SFTP
connections.
```

Specify a server address, user name, and password to test the SFTP connection to a particular server.

Check IP Address

This option checks that the IP address of the server is not an IP address reserved for internal networks. This check needs to be performed when installing SFX (before requesting a license from Ex Libris).

To check the IP of the SFX server, select **3 Check IP Address** from the Diagnostics menu.

The following are examples of possible messages:

```
The hostname 'xx.xx.xx.xx.xx',
resolves to the IP address 'xx.xx.xx.xx'.
A license should not be generated.
Reason: This is an IP address reserved for internal
networks.
Please check your /etc/hosts file and/or your DNS
server.
```

```
The hostname 'xxx',
resolves to the IP address 'xxx.xx.xx.xx'.
This is seems to be a valid IP address.
A license should be generated.
```

Check External Export

Use this option to troubleshoot problems with the External Export tool. For more information on External Export, refer to **Appendix C External Export** of the *SFX Advanced User's Guide*.

To troubleshoot problems with the External Export tool:

1. Set up the `external_export.config` file on the SFX server to test an external export from the SFX server to the SFX server itself.

   The file is located at: `/exlibris/sfx_ver/sfx4_1/<instance_name>/config/external_export.config`

   a. Remove the comment marks from each line.

   b. Fill in information about the SFX server and instance where you want to perform the test.

   For example:

```
#Section "metalib.uni.edu"
#   username "metalib_ftp"
#   password "xxxxxx"
#   type     "secure"
#   export   "Y"
#EndSection
Section "sfx.uni.edu"
 username "sfxlcl41"
   password "xxxxxxx"
   type     "secure"
   export   "Y"
EndSection
```

2. Run the Check External Export tool:

   a. Log on to the SFX server as an instance user.

   b. Type `da`.

c Type `./server_admin_util` and select **6 Diagnostics** and **4 Check External Export**.

d Specify the base URL of the instance that you are testing.

The following is displayed:

```
Diagnostics
  1 Check for e-mail capabilities
  2 Check for secure FTP capabilities
  3 Check IP address
  4 Check external export
  5 Check Z3950 capabilities
Please select [1-5,q,m]: 4
Please enter the SFX Instance Base URL: http://
sfx.uni.edu:9003/sfxlcl41
Making request. This may take a few moments...
External Export succeeded! The file that was created:
e-collection.03312004135818.xml-marc.gz
Target location of output file: HOME directory of
'sfxlcl41' at 'sfx.uni.edu'
```

The following table describes possible error messages and the problems to which they correspond:

Table 9. Check External Export Error Messages

Error Message	Problem
Failed to contact the SFX Instance: Not Found (404)	■ External_export alias is missing from `local_httpd`.config. ■ Apache has not been restarted after an alias was added.
External Export failed! The error that was returned: 10.1.2.231 not authorized to use `external_export` (Check `external_export.config` for a section named '10.1.2.231')	This message occurs if no information is specified in `external_export.config`.
External Export failed! The error that was returned: Could not instantiate Net::SFTP or could not establish secure connection to '10.1.2.231' with <user>. You should check the user's credentials or that the server's signature has not changed.	■ Incorrect password in `external_export.config`. ■ Problem with SFTP (if one of the Perl libraries required for SFTP is missing)

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Table 9. Check External Export Error Messages

Error Message	Problem
The file permissions in the scratch or `scratch/e_collection_update` directory are too restricted External Export failed! The error that was returned: Cannot open `../dbs/scratch/e-collection` for writing	This message occurs in case the file permissions in the scratch or `scratch/e_collection_update` directory are too restricted.
External Export failed! The error that was returned: Could not upload`../dbs/scratch/e-collection.03252004141754.xml-marc.gz` into `e-collection.03252004141754.xml-marc.gz`.	This message occurs if the file permissions for the destination directory are too restricted.

Check Z39.50 Capabilities

This service checks whether the Z39.50 has access to a particular OPAC.

To check whether Z39.50 has access to a particular OPAC:

1. Log on to the SFX server as the instance user.
2. Type `da`.
3. Type `./server_admin_util`.
4. Select **6 Diagnostics** from the main menu of the Server Admin Utility and select **5 Check Z3950 Capabilities**.

You are prompted for the following information related to the z39.50 server for which you want to test access:

- Z39.50 server address
- Z39.50 server port
- Z39.50 base code
- Z39.50 syntax - possible values: USMARC, UNIMARC, or SUTR
- Z3950 user name and password (optional)
- Search string in prefix query notation

NOTE:
Make sure that the information you are searching for is specific to your Z39.50 server and the data contained in the OPAC you are testing, including whether the OPAC accepts dashes in ISSN or ISBN queries.

The following table lists several examples of searches that can be used for testing:

Table 10. Search Examples

Search Criteria	Description
@attr 1=7 1-57231-890-2	Searches on ISBN 1-57231-890-2
@attr 1=8 0003-0007	Searches on ISSN 0003-0007
@attr 1=4 test	Does a keyword search for the word test

If the Z39.50 search is successful, information on the number of records found is displayed. You are prompted to specify the number of records to be presented. For testing purposes, type `1` or `2` records.

For example (bold text is typed by the user):

```
Please enter Z3950 server address [required]:
opac.university.edu
Please enter Z3950 server port [required]:
210
Please enter Z3950 base code [required]:
opac_net
Please enter Z3950 syntax [required]:
USMARC
Please enter Z3950 user [optional]:
Please enter Z3950 password [optional]:
connected to opac.university.edu:210[opac_net]
Please enter search string in prefix query notation
[required]:
@attr 1=8 0003-0007
Number of records that match @attr 1=8 0003-0007 are 1.
Please enter the number of records to be presented
[required]: 1
record number 1:
```


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```
000  02990cas  2200697   4500
001  805408
005  20020415161700.0
007  cr cnu--------
008  750726c19209999maumr1p       0   a0eng d
022  0   $a0003-0007
030      $aBAMIAT
032      $a075660$bUSPS
042      $ansdp$alc
043      $an-us---
050  00  $aQC851$b.A6
082      $a551.506273
049      $aIADA
110  2   $aAmerican Meteorological Society.
245  00  $aBulletin of the American Meteorological
Society.
260      $aBoston, MA, etc.,$bAmerican Meteorological
Society.
300      $av.$bill.$c23-27 cm.
310      $aMonthly
362  0   $av. 1-   1920-
650   0  $aMeteorology$vPeriodicals.
776  1   $tBulletin of the American Meteorological
Society (Online)$x1520-0477$w(OCoLC)38983929$w(DLC)sn
98007717
776  1   $tJournals of the American Meteorological
Society$x1093-9563$w(DLC)sn 97004040$w(OCoLC)3691189
```

Report Incomplete Activations

This option produces a report that lists the following partially activated targets:

- Portfolios have been activated, but the target is not activated
- Targets that have been activated, but not any of their portfolios
- Portfolios have been activated, but no target services
- Target services have been activated, but no portfolios
- Targets have been activated, but no target services

- Target services have been activated, but no targets

The report is saved in the dbs/scratch directory of the instance. It contains information on incomplete activations for both default and institutes (if defined in the instance). In the Active object portfolios report, the number of active portfolios is included in the report output.

The following is an example of an incomplete activation report:

```
Creating report... please wait.
Get incomplete activations for default institute
Finished creating report

Contents of report file:
a) Active object portfolios
For the following target(s), at least one portfolio was found
to be active, but the target itself is not active:
3       BIOMED_CENTRAL_SUBSCRIPTION     default
1       CRKN_WILEY_ONLINE_LIBRARY       default
For the following target service(s), at least one portfolio
was found to be active, but the target service itself is not
active:
3       BIOMED_CENTRAL_SUBSCRIPTION-getFullTxt  default

b) Active targets
For the following active target(s), no active target services
were found:
ACTA_PRESS      default

c) Active target services
For the following active target service(s), no active target
was found:
CRKN_WILEY_ONLINE_LIBRARY-getFullTxt    default
For the following active target service(s), no active
portfolios were found:
AKADEMIAI_KIADO-getFullTxt      default

Report file saved in: /exlibris/sfx_ver/sfx4_3/SST05/dbs/
scratch/report_incomplete_activations.20121108160317
Report process finished successfully
```

Report Centralized Management Maintenance Tasks

This option displays statistic information on tasks run via the centralized management of maintenance tasks function.

NOTE:
This option is only available if you have configured the centralized management of maintenance tasks and is accessible only as the `sfxglb4x` user. For more information, see **Centralized Management of Maintenance Tasks** on page **45**.

When selecting this option the following is displayed:

```
Report time range
  1 Last day
  2 Last week
  3 Last month
  4 Since specific date
  5 For specific date range
Please select [1-5,q,m,u]: 2
Please enter email to send the report:
```

Select the time range for which you want to create the report, and enter an email address to which you want the report sent. The following is displayed:

```
You can find the report here: /exlibris/sfx_ver/sfx4_1/
sfxglb41/dbs/scratch/central_crons-report.20131128171659.csv
Report is sent to email: <email address>
The report is a tab delimited file that contains, for each
task run:
Name of the task<tab>instance<tab>date<tab>start time<tab>end
time
```

Move to CDI – Single Activation of Electronic Collections (only by sfxglb41)

This option will allow you to run the Move to CDI from August 2020 and onwards. The option should not be run until the full CDI documentation for SFX is available in August 2020 at: Documentation and Training.

A-Z and eBook Search Indexes

NOTE:
The A-Z index uses data from the RSI index. Therefore, you must first build the RSI index and then build the A-Z index. You can build both indexes in one action from the AZ Tool menu. For information on building the RSI index, see **Rapid Service Indicator** on page **188**.

To access this option, type **7 A-Z Index** from the main menu. The following is displayed:

```
AZ Index
 1 eJournal A-Z index tools
 2 eBook Search index tools
 3 eJournal A-Z index tools for multiple instances
(only by sfxglb41)
 4 eBook Search index tools for multiple instances
(only by sfxglb41)
Please select [1-2,q,m]:
```

eJournal A-Z Index Tools

To access the eJournal A-Z index tools, type **1 eJournal A-Z index tools**. This option allows you to rebuild the A-Z eJournal index alone or with the RSI index and schedule the A-Z eJournal index building. The AZ eJournal Tools menu is displayed:

```
AZ eJournal Tools
1 (Re)build the eJournal AZ index
2 (Re)build eJournal RSI and AZ index
3 Show scheduled eJournal AZ (and RSI) index builds
4 Schedule an eJournal AZ (and RSI) index build
Please select [1-4,q,m]:
```


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Select option **1 (Re)build the eJournal AZ index**. A screen similar to the following is displayed::

```
Running the index builder may take a long time,
possibly hours depending on the amount of active
portfolios.

Are you sure you want to continue? [y/n] y

AZ IndexBuilder initializing.

Logging to /exlibris/sfx_ver/sfx4_1/sfxlcl41/logs/
az_index_builder.20070410140334.log.

Creating AZ build tables...

Creating build tables ...

Acquiring all locally active portfolios...

Preparation done

Loading active titles...

Filling titles extra info...

- Retrieving displayers (ISSN, LCCN etc)...

- Done retrieving displayers (ISSN, LCCN etc)

- Retrieving MAIN title...

- Done retrieving MAIN title

- Retrieving ABBREV titles...

- Done retrieving ABBREV titles

- Retrieving categories...

- Done retrieving categories

- Retrieving target services...

- Done retrieving target services

- Updating records...

- Done updating records
```

```
Done filling extra into for titles
Copying data from build tables...
Reloading AZ cache...
Done reloading AZ cache
AZ Index Builder done.
AZ Profile: default
  * Active objects processed: 13987
  * Failed objects (see log for details): 0
  * AZ Titles loaded: 13987
  * AZ Letter Groups created:: 13987
  * AZ Searchable Titles created:: 32346
```

Select **2 (Re)build RSI and eJournal AZ index** to build both the RSI and eJournal AZ indexes. The following is displayed:

```
This option will first (re)build RSI index - then (re)build A-
Z index. The process may take a long time, possibly hours
depending on the amount of active portfolios.
Are you sure you want to continue? [y/n]
```

Type **y** to continue.

NOTES:

- Journals in the SFX KnowledgeBase missing required title information for display or sorting are not included in the A-Z list. They are listed in the log file generated during the A-Z index creation. This log file is located at:
  `/exlibris/sfx_ver/sfx4_1/<instance>/logs/`
- Some configuration of the A-Z list is required before the A-Z index can be built. This configuration is done from the SFXAdmin center by clicking the **A-Z List** option from the Configuration section of the Set-Up and Administration area. (More information can be found in the **A-Z List** section of the *SFX General User's Guide*.)
- The A-Z index building prints an error message and quits if there is no country defined in the default A-Z configuration.

To ensure that the A-Z index is updated daily with changes in the SFX instance, it is recommended to set up a cron job to build the A-Z index. Select option **4 Schedule an AZ (and RSI) index build** from the AZ Tools menu. Define the index you want and rebuild. You are then asked questions about what time and days you want the A-Z index build process to run. In the following example, the

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A-Z list index build is scheduled to be run in a cron job every night at 2:30 AM. (Bold text is typed by the user.)

```
AZ Tools
1 (Re)build the AZ index
2 (Re)build RSI and AZ index
3 Show scheduled AZ (and RSI) index builds
4 Schedule an AZ (and RSI) index build
Please select [1-3,q,m]: 4

Please define index to rebuild:
1 AZ index
2 RSI + A-Z index

Please select [1-2,q,m]:1
Please enter scheduling parameters
Time must be in the form HH:MM where
  HH can be: 00-23 for midnight-11PM or * for every hour
  MM can be: 00-59 or * for every minute
Enter the time to run [00:00]: 2:30
Would you like to schedule for a certain weekday? [Y/n]
n
Please enter month (1-12 for January-December
respectively or '*' for every month) [*]: *
*
Please enter day of the month (1-31 or '*' for every
day) [1]: *
*
Successfully added the refresh task to your crontab.
```

Once you have successfully added a cron job, it can be viewed and deleted.
Select option **3 Show scheduled AZ (and RSI) index builds** from the AZ Tools menu. The following screen is displayed:

```
AZ Tools
1 (Re)build the AZ index
2 (Re)build RSI and AZ index
3 Show scheduled AZ (and RSI) index builds
4 Schedule an AZ (and RSI) index build
Please select [1-3,q,m]: 3
AZ indexing schedule is as follows:
[1] AZ index only -  00:00 of every Sunday of every
month
[2] RSI + AZ index -  00:00 of every Sunday of every
month
Would you like to remove any of these? [y/N] y
Please enter the number of the task to remove or
<ENTER> to cancel:
```

Type the number of the cron job that you want to delete.

NOTE:
If SFX detects at the start of the AZ build, that the RSI_BUILD table still exists, the following error is displayed and the build stops:

```
RSI index build is currently running - RSI/AZ build process
cannot be started.
```

eBook Search Index Tools

To access the eBook Search index tools, type **2 eBook Search index tools**. The following is displayed:

```
eBook Search Tools
 1 (Re)build the eBook Search index
 2 (Re)build eBook RSI and Search index
 3 Show scheduled eBook Search (and RSI) index builds
 4 Schedule an eBook Search (and RSI) index build
Please select [1-4,q,m,u]:V
```


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Select **1 (Re)build the eBook Search index** to build the eBook Search index or select **2 (Re)build eBook RSI and Search index** to build both the eBook Search and RSI indexes. The following is displayed:

```
Running the eBook search index builder may take a long time,
depending on the amount of active portfolios.
Are you sure you want to continue? [y/n]
```

Type **y**. The following is displayed:

```
The eBook search index build can be either 'complete' or
'incremental'.
Incremental build is recommended as it will take less
resources and time.
Do you want to use incremental build - if this is available in
your instance?
Type (i) for incremental build, or (c) for complete build:
[i]
```

Type **i** for an incremental build or **c** for a complete build. The following is displayed:

```
In case incremental build of the eBook search index cannot be
performed, do you want to run complete build instead?
Note that in a live SFX environment, a complete build of the
eBook search index is recommended to be run at night or during
a server 'slow' time, because it requires a significant amount
of system resources. [y/N]
```

Type **y** or **n** to start the build.

Schedule an eBook Search (and RSI) Index Build

NOTE:
This task cannot be scheduled when Centralized Management of Maintenance Tasks is activated. If you attempt to do so, the following is displayed:

```
Maintenance tasks can be scheduled only by the system
administrator of this SFX installation. This option is not
available for local SFX instances.
```

Select **4 Schedule an eBook Search (and RSI) index build** to schedule a build. It is recommended to set up the following two scheduled builds:

- An incremental only build once a day (or on another frequent schedule). This build is fast and does not impact SFX performance.

- A build using the **incremental unless complete build is required option** once every night (or less frequently, for example, a few times a week or even weekly).

  Do not schedule this build to run during the day because a complete build is performed if the incremental build cannot be run. Running a complete build may impact SFX performance.

Alternatively, it is possible to only set up only the second scheduled task if there are few changes expected in activation information for books and if it is acceptable to not have the activation changes reflected immediately in the eBook search and RSI monographs. It is possible to build or schedule a build of the RSI and eBook Search indexes for multiple instances.

Configuration

The maximum amount of changes before a complete build is needed is defined in the `config/solr_index.config` configuration file in the `complete_build_params` section:

```
Section "complete_build_params"
# The parameters below determine the maximum amount of changes
allowed for incremental build of the monograph A-Z index.
# If the number of changes in the SFX KB exceeds the
parameters below, a complete build is required.
        max_op_changes "15000"
EndSection
```

A-Z Index Tools for Multiple Instances

Use this option to run or schedule an RSI and A-Z index build for multiple instances. This is done if the SFX installation contains more than one production instance, and the building of the indexes can be set up to be performed one after the other.

Building an RSI or A-Z index for multiple instances must be done as the `sfxglb41` user. Additionally, before using this option, sudo permissions need to be set up for the following script:

`/exlibris/sfx_ver/sfx4_1/sfxglb41/admin/aztools/az_for_all_instances/run_rsi_az_for_all_instances.pl`

Otherwise, the following error is displayed:

```
sudo permission for run_rsi_az_for_all_instances.pl is
mandatory, the script cannot run.
```

Select **3 eJournal A-Z index tools for multiple instances** to build the RSI or A-Z index for multiple instances. The following is displayed:

```
Building RSI and eJournal A-Z index for multiple instances
(only by sfxglb41)
  1 (Re)build RSI and eJournal A-Z index

 Please select [1,q,m,u]:
```

Select **1 (Re)build RSI and eJournal A-Z index**. The following is displayed:

```
Warning: This option can only be used if sudo permissions have
been set up for the file admin/aztools/
run_rsi_az_for_all_instances.pl. Otherwise, the index build
will fail.
Define instances for which index should be (re)build:
  1 all instances
  2 all except test instances
  3 use configuration file
  4 specify instances
Please select [1-4,q,m,u]:
```

For information concerning recommendations for scheduling tasks, see **15 - eBook Search** in **Appendix C: Maintenance Task Checklist** on page **221**.

Building the Index for All Instances

Select **1 all instances** to build the index for all instances. The following is displayed:

```
Running the index builder may take a long time, possibly hours
depending on the amount of active portfolios.
Are you sure you want to continue? [y/n]
```

Type **y** to continue. The following is displayed:

```
Logging activity for /exlibris/sfx_ver/sfx4_1/sfxglb41/admin/
aztools/az_for_all_instances/
run_rsi_az_for_all_instances_new.pl at '/exlibris/sfx_ver/
sfx4_1/sfxglb41/logs/run_rsi_az_for_all_instances_new.pl-
2012-05-24T13:35:11.log'.
Starting /exlibris/sfx_ver/sfx4_1/sfxglb41/admin/aztools/
az_for_all_instances/run_rsi_az_for_all_instances_new.pl
    Running journals Index build for instance: sfxlcl41 -
done.
    Running journals Index build for instance: new41 -
done.
Done for /exlibris/sfx_ver/sfx4_1/sfxglb41/admin/aztools/
az_for_all_instances/run_rsi_az_for_all_instances_new.pl
```


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Building the Index for All Local Instances Except the Test Instances

Select **2 all except test instances** to build the index for all local instances except the test instances.

Building the Index for Instances Listed in a Configuration File

Select **3 use configuration file** to build the index for instances listed in a configuration file. This option checks the following locations:

- the global instance file – `/exlibris/sfx_ver/sfx4_x/sfxglb41/config/rsi_ebook_setup.config`

  The instances should be listed in the `index_build` section. For example:

```
Section "index_build"
SST01
SST02
SST03
EndSection
```

NOTE:
Edit the file in the global instance. Do not break the symbolic links to this file in the local instances.

- the `rsi_az_index` section in the `config/rsi.config` file of the local instances:

```
Section "rsi_az_index"
    scheduled_build "Y"
  EndSection
```

  If this section exists and the value is `Y`, the instance is added to the set of instances for which the build is run. If this section does not exist or its value is `N`, the instance is not included in the build. The default value for the `scheduled_build` parameter is `N`.

Building the Index for Specific Instances

Select **4 specify instances** to build the index for specific instances. Select **4 specify instances** to build the index for specific instances. The following is displayed:

```
Please enter instances names (comma separated if multiple):
```

Enter the list of instances that you want included in the build separated by a comma (,). The following is displayed:

```
This option will first (re)build RSI index - then (re)build
eJournal A-Z index.
Running the RSI + eeJournal A-Z index builder may take a long
time, depending on the amount of active portfolios.

Are you sure you want to continue? [y/n]
```

Type **y** to continue. The following is displayed:

```
The RSI + eJournal A-Z index build can be either 'complete' or
'incremental'.
Incremental build is recommended as it will take less
resources and time.
Do you want to use incremental build - if this is available in
your instance?
Type (i) for incremental build, or (c) for complete build:
[i]
```

Type **i** for an incremental build, or **c** for a complete build. If you typed **i**, the following is displayed:

```
In case incremental build of the RSI + eJournal A-Z index
cannot be performed, do you want to run complete build
instead?
Note that in a live SFX environment, a complete build of the
RSI + eJournal A-Z index is recommended to be run at night or
during a server 'slow' time, because it requires a significant
amount of system resources. [y/N]
```

Type **y** or **n**. The following is an example of an output:

```
-------> sudo /exlibris/sfx_ver/sfx4_1/sfxglb41/admin/
aztools/az_for_all_instances/run_rsi_az_for_all_instances.pl
--object_type=m --build_type=i --list=sfxlcl41,new41 dLogging
activity for /exlibris/sfx_ver/sfx4_1/sfxglb41/admin/aztools/
az_for_all_instances/run_rsi_az_for_all_instances_new.pl at
'/exlibris/sfx_ver/sfx4_1/sfxglb41/logs/
run_rsi_az_for_all_instances_new.pl-2012-05-24T15:01:03.log'.
Starting /exlibris/sfx_ver/sfx4_1/sfxglb41/admin/aztools/
az_for_all_instances/run_rsi_az_for_all_instances_new.pl
   Running eJournal A-Z index build for instance: sfxlcl41 -
done
    Running eJournal A-Z index build for instance: new41 -
done.
Done for /exlibris/sfx_ver/sfx4_1/sfxglb41/admin/aztools/
az_for_all_instances/run_rsi_az_for_all_instances_new.pl
```

eBook Search Index Tools for Multiple Instances

Use this option to run or schedule an RSI and eBook Search build for multiple instances. This is done if the SFX installation contains more than one production instance, and the building of the indexes can be set up to be performed one after the other.

Building an RSI or eBook index for multiple instances must be done as the `sfxglb41` user. Additionally, before using this option, sudo permissions need to be set up for the following script:

`/exlibris/sfx_ver/sfx4_1/sfxglb41/admin/aztools/az_for_all_instances/run_rsi_az_for_all_instances.pl`

Otherwise, the following error is displayed:

```
sudo permission for run_rsi_az_for_all_instances.pl is
mandatory, the script cannot run.
```

Select **4 eBook Search index tools for multiple instances** to build the RSI or eBook index for multiple instances. The following is displayed:

```
Building RSI and eBook Search index for multiple instances
(only by sfxglb41)
  1 (Re)build RSI and eBook Search index

Please select [1,q,m,u]:
```

Select **1 (Re)build RSI and eBook Search index**. The following is displayed:

```
Warning: This option can only be used if sudo permissions have
been set up for the file admin/aztools/
run_rsi_az_for_all_instances.pl. Otherwise, the index build
will fail.
Define instances for which index should be (re)build:
  1 all instances
  2 all except test instances
  3 use configuration file
  4 specify instances
Please select [1-4,q,m,u]:
```

Building the Index for All Instances

Select **1 all instances** to build the index for all instances. The following is displayed:

```
Running the index builder may take a long time, possibly hours
depending on the amount of active portfolios.
Are you sure you want to continue? [y/n]
```

Type **y** to continue. The following is displayed:

```
Logging activity for /exlibris/sfx_ver/sfx4_1/sfxglb41/admin/
aztools/az_for_all_instances/
run_rsi_az_for_all_instances_new.pl at '/exlibris/sfx_ver/
sfx4_1/sfxglb41/logs/run_rsi_az_for_all_instances_new.pl-
2012-05-24T13:35:11.log'.
Starting /exlibris/sfx_ver/sfx4_1/sfxglb41/admin/aztools/
az_for_all_instances/run_rsi_az_for_all_instances_new.pl
    Running journals Index build for instance: sfxlcl41 -
done.
    Running journals Index build for instance: new41 -
done.
Done for /exlibris/sfx_ver/sfx4_1/sfxglb41/admin/aztools/
az_for_all_instances/run_rsi_az_for_all_instances_new.pl
```

Building the Index for All Local Instances Except the Test Instances

Select **2 all except test instances** to build the index for all local instances except the test instances.

Building the Index for Instances Listed in a Configuration File

Select **3 use configuration file** to build the index for instances listed in a configuration file. This option checks the following locations:

- the global instance file – `/exlibris/sfx_ver/sfx4_x/config/sfxglb41/config/rsi_ebook_setup.config`

  The instances should be listed in the `index_build` section. For example:

```
Section "index_build"
SST01
SST02
SST03
EndSection
```

NOTE:
Edit the file in the global instance. Do not break the symbolic links to this file in the local instances.

- the `rsi_az_index` section in the `config/rsi.config` file of the local instances:

```
 Section "rsi_az_index"
     scheduled_build "Y"
   EndSection
```

  If this section exists and the value is `Y`, the instance is added to the set of instances for which the build is run. If this section does not exist or its value

is `N`, the instance is not included in the build. The default value for the `scheduled_build` parameter is `N`.

Building the Index for Specific Instances

Select **4 specify instances** to build the index for specific instances. The following is displayed:

```
Please enter instances names (comma separated if multiple):
```

Enter the list of instances that you want included in the build separated by a comma (,). The following is displayed:

```
This option will first (re)build RSI index - then (re)build
eBook search index.
Running the RSI + eBook search index builder may take a long
time, depending on the amount of active portfolios.
Are you sure you want to continue? [y/n]
```

Type **y** to continue. The following is displayed:

```
The RSI + eBook search index build can be either 'complete' or
'incremental'.
Incremental build is recommended as it will take less
resources and time.
Do you want to use incremental build - if this is available in
your instance?
Type (i) for incremental build, or (c) for complete build:
[i]
```

Type **i** for an incremental build, or **c** for a complete build. If you typed **i**, the following is displayed:

```
In case incremental build of the RSI + eBook search index
cannot be performed, do you want to run complete build
instead?
Note that in a live SFX environment, a complete build of the
RSI + eBook search index is recommended to be run at night or
during a server 'slow' time, because it requires a significant
amount of system resources. [y/N]
```


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Type **y** or **n**. The following is an example of an output:

```
-------> sudo /exlibris/sfx_ver/sfx4_1/sfxglb41/admin/
aztools/az_for_all_instances/run_rsi_az_for_all_instances.pl
--object_type=m --build_type=i --list=sfxlcl41,new41 dLogging
activity for /exlibris/sfx_ver/sfx4_1/sfxglb41/admin/aztools/
az_for_all_instances/run_rsi_az_for_all_instances_new.pl at
'/exlibris/sfx_ver/sfx4_1/sfxglb41/logs/
run_rsi_az_for_all_instances_new.pl-2012-05-24T15:01:03.log'.
Starting /exlibris/sfx_ver/sfx4_1/sfxglb41/admin/aztools/
az_for_all_instances/run_rsi_az_for_all_instances_new.pl
    Running eBooks Index build for instance: sfxlcl41 -
done
    Running eBooks Index build for instance: new41 - done.
Done for /exlibris/sfx_ver/sfx4_1/sfxglb41/admin/aztools/
az_for_all_instances/run_rsi_az_for_all_instances_new.pl
```

Scheduling an A-Z eJournal List and eBook Search Index Build for Multiple Instances

You can schedule a build for the A-Z eJournal List and eBook Search Indexes for multiple instances to occur on a specific date and time.

NOTE:
This task cannot be scheduled when Centralized Management of Maintenance Tasks is activated. If you attempt to do so, the following is displayed:

```
Maintenance tasks can be scheduled only by the system
administrator of this SFX installation. This option is not
available for local SFX instances.
```

This is done by setting up a cron. For more information on cron jobs, including the structure of the scheduling time/date definition, see http://en.wikipedia.org/wiki/Cron.

To schedule a build of the RSI and A-Z index for multiple instances:

1. Log on as the `root` user.
2. Type `crontab -e`
3. Specify the scheduled build of the indexes by using the following syntax:

```
<scheduling time/date/frequency> /exlibris/sfx_ver/sfx4_1/
sfxglb41/admin/aztools/az_for_all_instances/
run_rsi_az_for_all_instances.cron <options>
```

For example:

```
16 12 * * 01 /exlibris/sfx_ver/sfx4_1/sfxglb41/admin/aztools/
az_for_all_instances/run_rsi_az_for_all_instances.cron  --
build_type=c --object_type=m --instances=all_except_test
```

The following describes the parameters used in the command:

- Build type
  - `--build_type` (required) – can be either `c` for complete build, or `i` for incremental build

  If you choose an incremental build, the following additional options are available:

  - `--no_complete` – do not do a complete build if an incremental build is not possible
  - `--email=<email>` – the e-mail address to which to send an e-mail if an incremental build cannot be performed
- Object type

  --object_type (required) – can be `m` for monographs (to build the monograph RSI and eBook Search index) or `s` for serials (to build the serials RSI and A-Z index)
- List of instances (list/instances) for which to build the indexes.

  Do one of the following:

  - Provide a list of instances by using: `--list=<instance_name>` (separate instance names with a comma (,).
  - Indicate the instances by using: `--instances=<all/ all_except_test/file>`

    The following options are available:

    - `all` – build the index for all instances.
    - `all_except_test` – build the index for all local instances except the test instances. These instance are indicated by having `tst` or `test` in the file name.
    - `file` – build the index for instances listed in a configuration file. For more information on building the index for instances listed in a configuration file, see **Building the Index for Instances Listed in a Configuration File** on page **146**

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Import/Export Tools

To access this option, type **8 Import/Export** from the main menu. The Import/Export Tools menu is displayed:

```
Import/Export Tools
 1 Export GOOGLE institutional holdings file
 2 Primo Export
 3 MARCit! Export
 4 CDI Export
 5 Elsevier ScienceDirect Autoloader
 6 Ovid Autoloader
 7 SpringerJournals Autoloader
 8 SpringerBooks Autoloader
 9 Wiley Autoloader
 10 Taylor & Francis (Books) Autoloader
Please select [1-10,q,m]:
```

Export Google Institutional Holdings File

The **Export Google institutional holdings file** option allows the exporting of active getFullTxt data from the SFX database in the export format required for the Google Scholar source. The file is harvested by Google once every week and is used by Google to indicate in the Google Scholar search results when electronic full text is available from the end user's institutional library.

The **Export Google institutional holdings file** option also allows you to schedule the creation of the holdings file. We recommend setting up a weekly schedule to ensure that an up-to-date holdings file is available for Google Scholar crawlers.

More information on the Google Scholar source can be found in the *SFX Source Configuration Guide*. More information on the Google Scholar export format and options can be found in the **Export Tool** chapter of the *SFX General User's Guide*.

To export the Google institutional holdings file:

1. Log on to the SFX server as an instance user.
2. Type `da`.
3. Type `./server_admin_util`.
4. Select **10 Export Google Institutional Holdings File** from the main menu. The Export GOOGLE institutional holdings tools menu is displayed:

```
Export GOOGLE institutional holdings Tools
  1 (Re)Export GOOGLE institutional holdings file
  2 Show scheduled export GOOGLE institutional holdings file
  3 Schedule export GOOGLE institutional holdings file
```


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NOTE:
The Google Scholar holdings file is also used for the PC institutional holdings.

(Re)Export GOOGLE Institutional Holdings File

Select **1 (Re)Export GOOGLE institutional holdings file**. The following is an example of the prompts that are displayed. (Note that the following questions are identical to the options available when exporting from the SFX Admin Center in Google Scholar format. For more information, refer to the **Google Scholar Format** section of the *SFX General User's Guide*.)

```
Please select [1-3,q,m]: 1
Chinese Titles Export include the following (if exists):
Simplified, Traditional or Both [S,T,B]:S
Please enter the institute's name (Leave empty for Default):
Please select object types: Serials, Monographs or Both
[S,M,B]:B
Use the following additional export file from scratch
directory (optional, leave empty for None):
Export active portfolios with the following services:
1 getFullTxt
2 getSelectedFullTxt
3 getHolding
4 getTOC
5 getAbstract
6 Various (Comma delimited [1,2, ..])
7 All
For default [getFullTxt] leave empty:
Please select [1-7]: 1
Use zip compression? [Y/n] y
Would you like to add author information? [Y/n] y
Running the index builder. This may take a long time,
depending on the amount of active portfolios.
Export Successful. Output file is:
/exlibris/sfx_ver/sfx4_1/sfxlcl41/export/
institutional_holding.gzip
```

Show Scheduled Export Google Institutional Holdings File

Select **2 Show scheduled export GOOGLE institutional holdings file**. The following is displayed:

```
Export GOOGLE institutional holdings schedule is as follows:
[1] 00:00 of every Sunday of every month (output compressed)
Would you like to remove any of these? [y/N] n
```


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Schedule Export GOOGLE Institutional Holdings File

Select **3 Schedule export GOOGLE institutional holdings file**. The following is an example of the prompts that are displayed:

```
Please enter scheduling parameters
Time must be in the form HH:MM where
HH can be: 00-23 for midnight-11PM or * for every hour
MM can be: 00-59 or * for every minute
Enter the time to run [00:00]:
Would you like to schedule for a certain weekday? [Y/n] y
Please select a weekday (1-7 Sunday-Saturday respectively)
[1]: 1
Please enter the institute's name:
Chinese Titles Export include the following (if exists):
Simplified, Traditional or Both [S,T,B]:S
Please select object types: Serials, Monographs or Both
[S,M,B]:B
Export active portfolios with the following services:
1 getFullTxt
2 getSelectedFullTxt
3 getHolding
4 getTOC
5 getAbstract
6 Various (Comma delimited [1,2, ..])
7 All
For default [getFullTxt] leave empty:
[1-7]: 1
Use zip compression? [Y/n]
Successfully added the refresh task to your crontab.
```

NOTES:

The following notes apply to the question `Please enter the institutes's name`:

- If no institute is specified, anything active for either Default or any of the institutes/groups is exported.
- If an institute name is specified, anything active for the institute (or active for Default or a group with which the institute is affiliated and is not explicitly inactive for the institute) is exported.
- If a group name is specified, anything active for the group is exported.
- If Default is specified, anything active for Default is exported.

Primo Export

This option allows you export a Primo file, schedule an export, and update and remove scheduled exports.

It is possible in SFX to create an XML export with active fullText journals and books for import into Primo.

The file is a compressed tar file. The first time a Primo export is performed a complete export file is created. If an export was performed previously so that there is an output file in the directory, an incremental export file is created. The Primo export file is created in the SFX Admin interface.

To create a Primo export:

1 In the SFX Admin Center, from the KB Tools section of the Data Management area, click **Export Tool**.

2 Click the **Advanced Export Profile** tab. The following window opens:

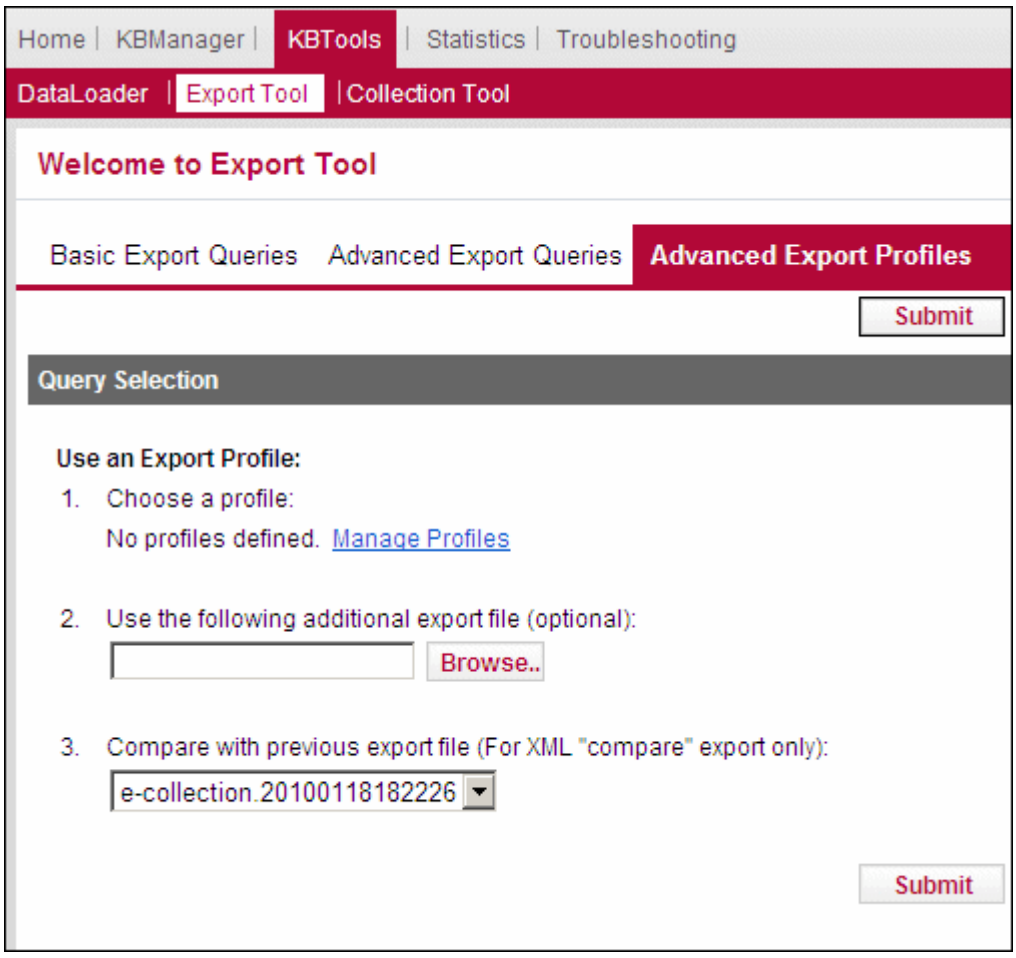

Figure 10: Advanced Export Profiles

3 Click **Manage Profiles > Add New Profile**. The following is displayed:

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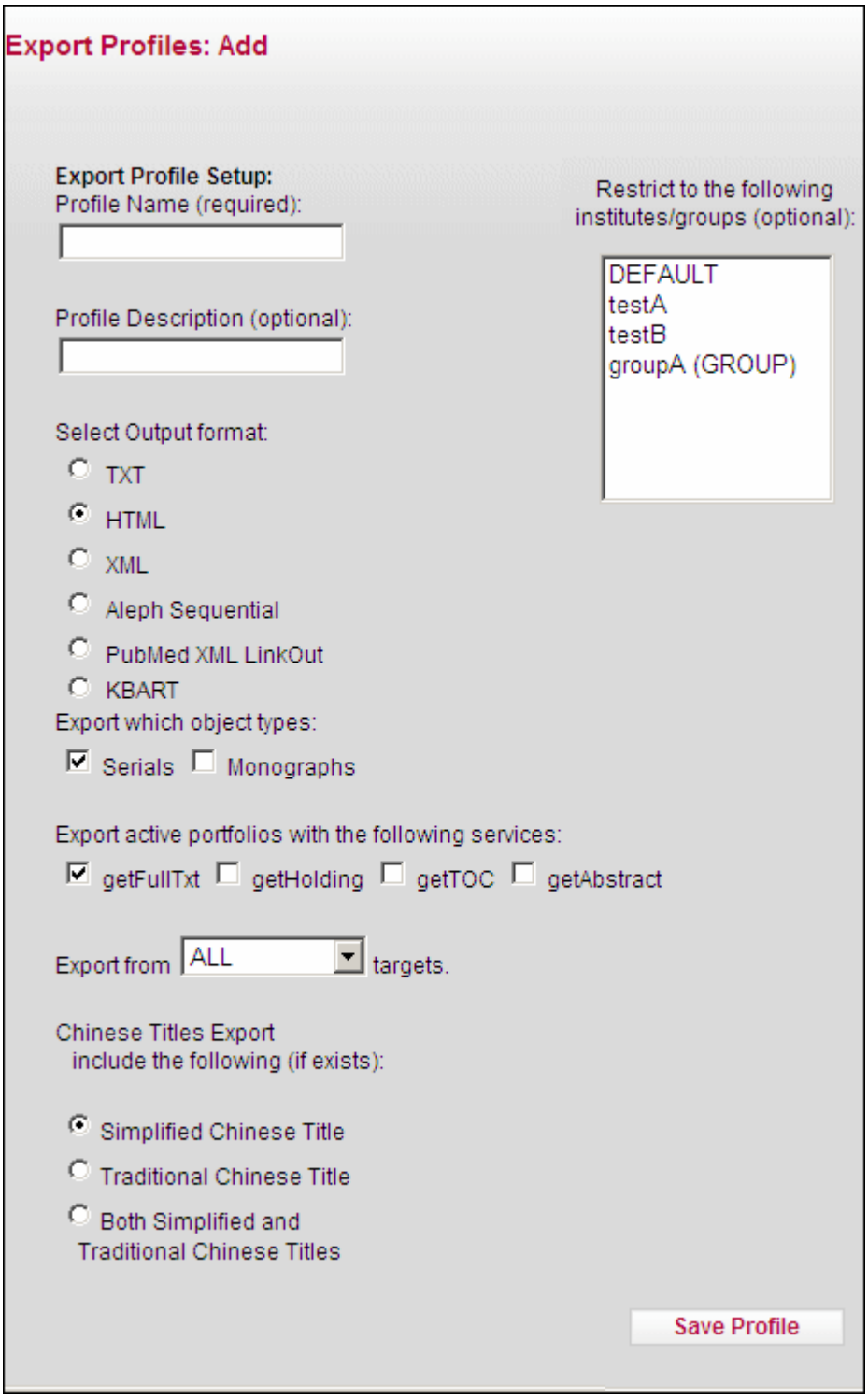

Figure 11: Add Export Profiles

4 Enter the following data:

- Profile name: **Primo** (A different name can be used but whatever name is chosen, it must be used when starting or scheduling the export.)
- Output format: **XML**
- Object types: select both **Serials** and **Monographs**
- Export active portfolios with the following services: **getFullTxt**
- Select Export **All** targets
- Select **Compare with previous export file**
- Fill in the remaining fields according to the particulars of your installation and your preferences.

NOTE:
The file used when **Compare with previous export file** is selected is always the latest export file created using this option. Other advanced export files created via the export tool (WebUI or commandline) are not used. This is accomplished in the following way:
Each advanced export created creates a TXT version of the export file in the `e_collection_update` subdir of the `exlibris/sfx_ver/sfx4_4/<instance>/dbs/scratch/e_collection_update` SFX instance scratch directory. This file is used as a basis for future comparisons. The filename is `e-collection.<timestamp>`. During the Primo export, an additional export file – `sfx_primo_export.xml-marc` – is included in this subdirectory. This is the file used as a basis for the next Primo comparison.

5 Click **Save Profile**.

To export the Primo file:

1 On the SFX server, log on as an instance user.
2 Type `da`.
3 Type `./server_admin_util`.
4 Select **10 Primo Export**. The Primo Export Tools menu is displayed:

```
Primo Export Tools
  1 (Re)Export Primo file
  2 Show scheduled Primo export file
  3 Schedule Primo export file
```

5 Select an option from the menu.

The export file is located at:

`/exlibris/sfx_ver/sfx4_1/<instance>/export/sfx4primo_export/sfx_primo_export.xml-marc.tar.gz`

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MARCit! Export

For information concerning the MARCit! export, see the **MARCit! Export with the Server Admin Utility** section of the *MARCit! Users Guide*.

CDI Export

The CDI Export option allows you to run or schedule an export in CDI format.

To run or schedule an export in CDI format:

1 Select **4 Export CDI** from the Import/Export Tools menu. The Export CDI institutional holdings Tools menu is displayed:

```
Export CDI institutional holdings Tools
  1 (Re)Export CDI institutional holdings file
  2 Show scheduled export CDI institutional holdings file
  3 Schedule export CDI institutional holdings file
```

2 Select an option:

- **1 (Re)Export CDI institutional holdings file**

  The following is an example of the prompts that are displayed. (Bold text is entered by the user):

```
Export CDI institutional holdings Tools
  1 (Re)Export CDI institutional holdings file
  2 Show scheduled export CDI institutional holdings file
  3 Schedule export CDI institutional holdings file
Please select [1-3,q,m,u]: 1
Chinese Titles Export include the following (if exists):
Simplified, Traditional or Both [S,T,B]:s
Please enter the institute's name (Leave empty to include all
activations):Demo
Please select object types: Serials, Monographs or Both
[S,M,B]:b
Use the following additional export file from scratch
directory (optional, leave empty for None):
Export active portfolios with the following services:
  1 getFullTxt
  2 getSelectedFullTxt
  3 All
  For default [ALL] leave empty:
Please select [1-3]:
Please select 'Use this file as additional holdings file in
another instance' option: [y/N]:y
Do you want to use the production full text holdings when
publishing to CDI?  [y/N]:y
Please provide the Production PC key:12345
Running the index builder. This may take a long time,
depending on the amount of active portfolios.
```


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- **2 Show scheduled export CDI institutional holdings file**

  The following is an example of the prompts that are displayed. (Bold text is entered by the user):

```
Export CDI institutional holdings Tools
  1 (Re)Export CDI institutional holdings file
  2 Show scheduled export CDI institutional holdings file
  3 Schedule export CDI institutional holdings file
Please select [1-3,q,m,u]: 2

Export CDI institutional holdings schedule is as follows:
[1] 00:00 of every day of every month
[2] 11:30 of every Monday of every month (output compressed)
Would you like to remove any of these? [y/N] y
Please enter the number of the task to remove or <ENTER> to
cancel: 1
Successfully deleted the crontab line
```

- **3 Schedule export CDI institutional holdings file**

  The following is an example of the prompts that are displayed. (Bold text is entered by the user):

```
Export CDI institutional holdings Tools
  1 (Re)Export CDI institutional holdings file
  2 Show scheduled export CDI institutional holdings file
  3 Schedule export CDI institutional holdings file
Please select [1-3,q,m,u]: 3

Please enter scheduling parameters
Time must be in the form HH:MM where
  HH can be: 00-23 for midnight-11PM or * for every hour
  MM can be: 00-59 or * for every minute
Enter the time to run [00:00]: 11:30
Would you like to schedule for a certain weekday? [Y/n] y
Please select a weekday (1-7 Sunday-Saturday respectively)
[1]: 2
Please enter the institute's name: Demo
Chinese Titles Export include the following (if exists):
Simplified, Traditional or Both [S,T,B]:s
Please select object types: Serials, Monographs or Both
[S,M,B]:b
Export active portfolios with the following services:
  1 getFullTxt
  2 getSelectedFullTxt
  3 All
  For default [ALL] leave empty:
[1-3]:
Please select 'Use this file as additional holdings file in
another instance' option: [y/N]:y
Do you want to use the production full text holdings when
publishing to CDI?  [y/N]:y
Please provide the Production PC key:12345
Successfully added the refresh task to your crontab
```


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Elsevier ScienceDirect Autoloader

Elsevier coverage is customer specific. The SFX global KnowledgeBase does not contain thresholds that apply to all or even majority of SFX customers. To make it easier to localize the SFX KB (activate and load local coverage), Elsevier provides an automated process for downloading customer holding files in KBART. The process to download and localize the SFX KB can be automated so that you can run and schedule it.

Run Elsevier ScienceDirect Autoloader

To run the Elsevier ScienceDirect Autoloader:

1 Select **5 Elsevier ScienceDirect Autoloader** from the Import/Export Tools menu. The Elsevier ScienceDirect Autoloader menu is displayed:

```
Elsevier ScienceDirect Autoloader
  1 Run Elsevier ScienceDirect Autoloader
  2 Show scheduled Elsevier ScienceDirect loads
  3 Schedule Elsevier ScienceDirect Autoloader
Please select [1-3,q,m,u]:
```

2 Select **1 Run Elsevier ScienceDirect Autoloader** to run the Elsevier ScienceDirect Autoloader. The following is displayed:

```
The Elsevier ScienceDirect Autoloader will remove previous
activation/localization of the
ELSEVIER_SD_SCIENCE_DIRECT_COMPLETE and ELSEVIER_SD_BOOKS
targets and re-localize/activate the targets using the
institutional holdings file downloaded from Elsevier Science
Direct.
Note: An authentication token from Elsevier is required to
allow automated download of your institutional holdings file.
Make sure this token has been filled in the
'elsevier_sd_autoloader.config_' configuration file of your
instance.
Do you want to continue? [Y/n]Y
```

3 Enter **Y** to continue.

```
Please select the type of objects you want to update Elsevier
ScienceDirect target(s) for: Serials, Monographs or Both
[S,M,B]: B
```

4 Enter **B**, for example.

```
Please enter the institute's name (Leave empty for Default):
Do you want automatically download the Elsevier ScienceDirect
holdings file? Alternatively, you can download the file
manually and specify file name and location. [Y,N]: n
```

If you enter n, the following is displayed:

```
Specify file name and location:
```

5 Enter the file name and location.

Show Scheduled Elsevier ScienceDirect Loads

Select **2 Show scheduled Elsevier ScienceDirect loads**. If there are no scheduled Elsevier ScienceDirect loads, the following is displayed:

```
There are no scheduled Elsevier ScienceDirect loads
```

If there are scheduled Elsevier ScienceDirect loads, the following is displayed, for example:

```
Elsevier ScienceDirect Autoloader schedule is as follows:
[1] 00:00 of every Sunday of every month
Would you like to remove any of these? [y/N]
```

Schedule Elsevier ScienceDirect Autoloader

To schedule the Elsevier ScienceDirect Autoloader:

1 Select **3 Schedule Elsevier ScienceDirect Autoloader**. The following is displayed:

```
Please note that the recommended schedule is 'monthly'.
Please enter scheduling parameters
Time must be in the form HH:MM where HH can be: 00-23 for
midnight-11PM or * for every hour
MM can be: 00-59 or * for every minute
Enter the time to run [00:00]:
```

2 Enter a time for the autoloader to run. The following is displayed:

```
Would you like to schedule for a certain weekday? [Y/n]
```

3 If you enter Y, the following is displayed:

```
Please select a weekday (1-7 Sunday-Saturday respectively)
[1]:
```

4 Enter a number. The following is displayed:

```
Successfully added the refresh task to your crontab.
```

NOTE:
You must provide a valid email address in the `config/elsevier_sd_autoloader.config_` file before scheduling. If no valid email address is provided, you will not be able to set up a scheduled task.

This task cannot be scheduled when the Centralized Management of Maintenance Tasks is activated. If you attempt to do so, the following is displayed:

```
Maintenance tasks can be scheduled only by the system
administrator of this SFX installation. This option is not
available for local SFX instances.
```

Ovid Autoloader

Ovid coverage is customer specific. The SFX global KnowledgeBase does not contain thresholds that apply to all or even majority of SFX customers. To make it easier to localize the SFX KB (activate and load local coverage), Ovid provides an automated process for downloading customer holding files in KBART. The process to download and localize the SFX KB can be automated so that you can run and schedule it.

Run Ovid Autoloader

To run the Ovid Autoloader:

1 Select **6 Ovid Autoloader** from the Import/Export Tools menu. The Ovid Autoloader menu is displayed:

```
Ovid Autoloader
  1 Run Ovid Autoloader
  2 Show scheduled Ovid loads
  3 Schedule Ovid Autoloader
Please select [1-3,q,m,u]:
```

2 Select **1 Run Ovid Autoloader** to run the Ovid Autoloader. The following is displayed:

```
The Ovid Autoloader will remove previous activation/
localization of the Ovid_COMPLETE and Ovid_BOOKS targets and
re-localize/activate the targets using the institutional
holdings file downloaded from Ovid.
Note: A user name and password are required to allow automated
download of your institutional holdings file.
Make sure this token has been filled in the
'ovid_autoloader.config_' configuration file of your
instance.
Do you want to continue? [Y/n]Y
```

3 Enter **Y** to continue.

```
Please select the type of objects you want to update Ovid
target(s) for: Serials, Monographs or Both [S,M,B]: B
```

4 Enter **B**, for example.

```
Please enter the institute's name (Leave empty for Default):
Do you want automatically download the Ovid holdings file?
Alternatively, you can download the file manually and specify
file name and location. [Y,N]: n
```

If you enter n, the following is displayed:

```
Specify file name and location:
```

5 Enter the file name and location.

Show Scheduled Ovid Loads

Select **2 Show scheduled Ovid loads**. If there are no scheduled Ovid loads, the following is displayed:

```
There are no scheduled Ovid loads
```

If there are scheduled Ovid loads, the following is displayed, for example:

```
Ovid Autoloader schedule is as follows:
[1] 00:00 of every Sunday of every month
Would you like to remove any of these? [y/N]
```

Schedule Ovid Autoloader

To schedule the Ovid Autoloader:

1 Select **3 Schedule Ovid Autoloader**. The following is displayed:

```
Please note that the recommended schedule is 'monthly'.
Please enter scheduling parameters
Time must be in the form HH:MM where HH can be: 00-23 for
midnight-11PM or * for every hour
MM can be: 00-59 or * for every minute
Enter the time to run [00:00]:
```

2 Enter a time for the autoloader to run. The following is displayed:

```
Would you like to schedule for a certain weekday? [Y/n]
```


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3 If you enter Y, the following is displayed:

```
Please select a weekday (1-7 Sunday-Saturday respectively)
[1]:
```

4 Enter a number. The following is displayed:

```
Successfully added the refresh task to your crontab.
```

NOTE:
You must provide a valid email address in the `config/ovid_autoloader.config_` file before scheduling. If no valid email address is provided, you will not be able to set up a scheduled task.

This task cannot be scheduled when the Centralized Management of Maintenance Tasks is activated. If you attempt to do so, the following is displayed:

```
Maintenance tasks can be scheduled only by the system
administrator of this SFX installation. This option is not
available for local SFX instances.
```

SpringerJournals Autoloader

SpringerJournals coverage is customer specific. The SFX global KnowledgeBase does not contain thresholds that apply to all or even majority of SFX customers. To make it easier to localize the SFX KB (activate and load local coverage), SpringerJournals provides an automated process for downloading customer holding files in KBART. The process to download and localize the SFX KB can be automated so that you can run and schedule it.

Run SpringerJournals Autoloader

To run the SpringerJournals Autoloader:

1 Select **7 SpringerJournals Autoloader** from the Import/Export Tools menu. The SpringerJournals Autoloader menu is displayed:

```
SpringerJournals Autoloader
  1 Run SpringerJournals Autoloader
  2 Show scheduled SpringerJournals loads
  3 Schedule SpringerJournals Autoloader
Please select [1-3,q,m,u]:
```

2 Select **1 Run SpringerJournals Autoloader** to run the SpringerJournals Autoloader. The following is displayed:

```
The SpringerJournals Autoloader will remove previous
activation/localization of the
SPRINGER_LINK_JOURNALS_AUTOLOAD target and re-localize/
activate the targets using the institutional holdings file
downloaded from Springer.
Note: An authentication token from Springer is required
to allow automated download of your institutional holdings
file.
Make sure this token has been filled in the
'springer_autoload.config_' configuration file of your
instance.
Do you want to continue? [Y/n]Y
```

3 Enter **Y** to continue.

```
Please enter the institute's name (Leave empty for Default):
Do you want automatically download the SpringerJournals
holdings file? Alternatively, you can download the file
manually and specify file name and location. [Y,N]: n
```

If you enter n, the following is displayed:

```
Specify file name and location:
```

4 Enter the file name and location.

Show Scheduled SpringerJournals Loads

Select **2 Show scheduled SpringerJournals loads**. If there are no scheduled SpringerJournals loads, the following is displayed:

```
There are no scheduled SpringerJournals loads
```

If there are scheduled SpringerJournals loads, the following is displayed, for example:

```
SpringerJournals Autoloader schedule is as follows:
[1] 00:00 of every Sunday of every month
Would you like to remove any of these? [y/N]
```

Schedule SpringerJournals Autoloader

To schedule the SpringerJournals Autoloader:

1 Select **3 Schedule SpringerJournals Autoloader**. The following is displayed:

```
Please note that the recommended schedule is 'monthly'.
Please enter scheduling parameters
Time must be in the form HH:MM where HH can be: 00-23 for
midnight-11PM or * for every hour
MM can be: 00-59 or * for every minute
Enter the time to run [00:00]:
```

2 Enter a time for the autoloader to run. The following is displayed:

```
Would you like to schedule for a certain weekday? [Y/n]
```

3 If you enter Y, the following is displayed:

```
Please select a weekday (1-7 Sunday-Saturday respectively)
[1]:
```

4 Enter a number. The following is displayed:

```
Successfully added the refresh task to your crontab.
```

NOTE:
You must provide a valid email address in the `config/springer_autoloader.config_` file before scheduling. If no valid email address is provided, you will not be able to set up a scheduled task.

This task cannot be scheduled when the Centralized Management of Maintenance Tasks is activated. If you attempt to do so, the following is displayed:

```
Maintenance tasks can be scheduled only by the system
administrator of this SFX installation. This option is not
available for local SFX instances.
```

SpringerBooks Autoloader

SpringerBooks coverage is customer specific. The SFX global KnowledgeBase does not contain thresholds that apply to all or even majority of SFX customers. To make it easier to localize the SFX KB (activate and load local coverage), SpringerBooks provides an automated process for downloading customer holding files in KBART. The process to download and localize the SFX KB can be automated so that you can run and schedule it.

Run SpringerBooks Autoloader

To run the SpringerBooks Autoloader:

1 Select **8 SpringerBooks Autoloader** from the Import/Export Tools menu. The SpringerBooks Autoloader menu is displayed:

```
SpringerBooks Autoloader
  1 Run SpringerBooks Autoloader
  2 Show scheduled SpringerBooks loads
  3 Schedule SpringerBooks Autoloader
Please select [1-3,q,m,u]:
```

2 Select **1 Run SpringerBooks Autoloader** to run the SpringerBooks Autoloader. The following is displayed:

```
The SpringerBooks Autoloader will remove previous activation/
localization of the SPRINGER_LINK_BOOKS_AUTOLOAD target
and re-localize/activate the targets using the institutional
holdings file downloaded from Springer.
Note: An authentication token from Springer is required
to allow automated download of your institutional holdings
file.
Make sure this token has been filled in the
'springer_autoload.config_' configuration file of your
instance.
Do you want to continue? [Y/n]Y
```

3 Enter **Y** to continue.

```
Please enter the institute's name (Leave empty for Default):
Do you want automatically download the SpringerBooks holdings
file? Alternatively, you can download the file manually and
specify file name and location. [Y,N]: n
```

If you enter n, the following is displayed:

```
Specify file name and location:
```

4 Enter the file name and location.

Show Scheduled SpringerBooks Loads

Select **2 Show scheduled SpringerBooks loads**. If there are no scheduled SpringerBooks loads, the following is displayed:

```
There are no scheduled SpringerBooks loads
```


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If there are scheduled SpringerBooks loads, the following is displayed, for example:

```
SpringerBooks Autoloader schedule is as follows:
[1] 00:00 of every Sunday of every month
Would you like to remove any of these? [y/N]
```

Schedule SpringerBooks Autoloader

To schedule the SpringerBooks Autoloader:

1 Select **3 Schedule SpringerBooks Autoloader**. The following is displayed:

```
Please note that the recommended schedule is 'monthly'.
Please enter scheduling parameters
Time must be in the form HH:MM where HH can be: 00-23 for
midnight-11PM or * for every hour
MM can be: 00-59 or * for every minute
Enter the time to run [00:00]:
```

2 Enter a time for the autoloader to run. The following is displayed:

```
Would you like to schedule for a certain weekday? [Y/n]
```

3 If you enter Y, the following is displayed:

```
Please select a weekday (1-7 Sunday-Saturday respectively)
[1]:
```

4 Enter a number. The following is displayed:

```
Successfully added the refresh task to your crontab.
```

NOTE:
You must provide a valid email address in the `config/springer_autoloader.config_` file before scheduling. If no valid email address is provided, you will not be able to set up a scheduled task.

This task cannot be scheduled when the Centralized Management of Maintenance Tasks is activated. If you attempt to do so, the following is displayed:

```
Maintenance tasks can be scheduled only by the system
administrator of this SFX installation. This option is not
available for local SFX instances.
```

Wiley AutoLoader

Wiley coverage is customer specific. The SFX global KnowledgeBase does not contain thresholds that apply to all or even majority of SFX customers. To make it easier to localize the SFX KB (activate and load local coverage), Wiley provides an automated process for downloading customer holding files in KBART. The process to download and localize the SFX KB can be automated so that you can run and schedule it.

Run Wiley Autoloader

To run the Wiley Autoloader:

1 Select **9 Wiley Autoloader** from the Import/Export Tools menu. The Wiley Autoloader menu is displayed:

```
Wiley Autoloader
  1 Run Wiley Autoloader
  2 Show scheduled Wiley loads
  3 Schedule Wiley Autoloader
Please select [1-3,q,m,u]:
```

2 Select **1 Run Wiley Autoloader** to run the Wiley Autoloader. The following is displayed:

```
The Wiley Autoloader will remove previous activation/
localization of the WILEY_LINK_BOOKS_AUTOLOAD target and
re-localize/activate the targets using the institutional
holdings file downloaded from Wiley.
Note: An authentication token from Wiley is required to
allow automated download of your institutional holdings file.
Make sure this token has been filled in the
'wiley_autoload.config_' configuration file of your instance.
Do you want to continue? [Y/n]Y
```

3 Enter **Y** to continue.

```
Please enter the institute's name (Leave empty for Default):
Do you want automatically download the Wiley holdings file?
Alternatively, you can download the file manually and specify
file name and location. [Y,N]: n
```

If you enter n, the following is displayed:

```
Specify file name and location:
```

4 Enter the file name and location.

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Show Scheduled Wiley Loads

Select **2 Show scheduled Wiley loads**. If there are no scheduled Wiley loads, the following is displayed:

```
There are no scheduled Wiley loads
```

If there are scheduled Wiley loads, the following is displayed, for example:

```
Wiley Autoloader schedule is as follows:
[1] 00:00 of every Sunday of every month
Would you like to remove any of these? [y/N]
```

Schedule Wiley Autoloader

To schedule the Wiley Autoloader:

1 Select **3 Schedule Wiley Autoloader**. The following is displayed:

```
Please note that the recommended schedule is 'monthly'.
Please enter scheduling parameters
Time must be in the form HH:MM where HH can be: 00-23 for
midnight-11PM or * for every hour
MM can be: 00-59 or * for every minute
Enter the time to run [00:00]:
```

2 Enter a time for the autoloader to run. The following is displayed:

```
Would you like to schedule for a certain weekday? [Y/n]
```

3 If you enter Y, the following is displayed:

```
Please select a weekday (1-7 Sunday-Saturday respectively)
[1]:
```

4 Enter a number. The following is displayed:

```
Successfully added the refresh task to your crontab.
```

NOTE:
You must provide a valid email address in the `config/wiley_autoloader.config_` file before scheduling. If no valid email address is provided, you will not be able to set up a scheduled task.

This task cannot be scheduled when the Centralized Management of Maintenance Tasks is activated. If you attempt to do so, the following is displayed:

```
Maintenance tasks can be scheduled only by the system
administrator of this SFX installation. This option is not
available for local SFX instances.
```

Taylor & Francis (Books) Autoloader

Taylor & Francis (Books) coverage is customer specific. The SFX global KnowledgeBase does not contain thresholds that apply to all or even majority of SFX customers. To make it easier to localize the SFX KB (activate and load local coverage), Taylor & Francis (Books) provides an automated process for downloading customer holding files in KBART. The process to download and localize the SFX KB can be automated so that you can run and schedule it.

Run Taylor & Francis (Books) Autoloader

To run the Taylor & Francis (Books) Autoloader:

1 Select **8 Taylor & Francis (Books) Autoloader** from the Import/Export Tools menu. The Taylor & Francis (Books) Autoloader menu is displayed:

```
Taylor & Francis (Books) Autoloader
  1 Run Taylor & Francis (Books) Autoloader
  2 Show scheduled Taylor & Francis (Books) loads
  3 Schedule Taylor & Francis (Books) Autoloader
Please select [1-3,q,m,u]:
```

2 Select **1 Run Taylor & Francis (Books) Autoloader** to run the Taylor & Francis (Books) Autoloader. The following is displayed:

```
The Taylor & Francis (Books) Autoloader will remove previous
activation/localization of the TAYLOR & FRANCIS
(BOOKS)_AUTOLOAD target and re-localize/activate the targets
using the institutional holdings file downloaded from Taylor
& Francis (Books).
Note: An authentication token from Taylor & Francis
(Books) is required to allow automated download of your
institutional holdings file.
Make sure this token has been filled in the
'taf_autoload.config_' configuration file of your instance.
Do you want to continue? [Y/n]Y
```

3 Enter **Y** to continue.

```
Please enter the institute's name (Leave empty for Default):
Do you want automatically download the Taylor & Francis
(Books) holdings file? Alternatively, you can download the
file manually and specify file name and location. [Y,N]: n
```

If you enter n, the following is displayed:

```
Specify file name and location:
```

4 Enter the file name and location.

Show Scheduled Taylor & Francis (Books) Loads

Select **2 Show scheduled Taylor & Francis (Books) loads**. If there are no scheduled Taylor & Francis (Books) loads, the following is displayed:

```
There are no scheduled Taylor & Francis (Books) loads
```

If there are scheduled Taylor & Francis (Books) loads, the following is displayed, for example:

```
Taylor & Francis (Books) Autoloader schedule is as follows:
[1] 00:00 of every Sunday of every month
Would you like to remove any of these? [y/N]
```

Schedule Taylor & Francis (Books) Autoloader

To schedule the Taylor & Francis (Books) Autoloader:

1 Select **3 Schedule Taylor & Francis (Books) Autoloader**. The following is displayed:

```
Please note that the recommended schedule is 'monthly'.
Please enter scheduling parameters
Time must be in the form HH:MM where HH can be: 00-23 for
midnight-11PM or * for every hour
MM can be: 00-59 or * for every minute
Enter the time to run [00:00]:
```

2 Enter a time for the autoloader to run. The following is displayed:

```
Would you like to schedule for a certain weekday? [Y/n]
```

3 If you enter Y, the following is displayed:

```
Please select a weekday (1-7 Sunday-Saturday respectively)
[1]:
```

4 Enter a number. The following is displayed:

```
Successfully added the refresh task to your crontab.
```

NOTE:
You must provide a valid email address in the `config/taf_autoloader.config_` file before scheduling. If no valid email address is provided, you will not be able to set up a scheduled task.

This task cannot be scheduled when the Centralized Management of Maintenance Tasks is activated. If you attempt to do so, the following is displayed:

```
Maintenance tasks can be scheduled only by the system
administrator of this SFX installation. This option is not
available for local SFX instances.
```

Revision Update

The **Revision Update** option allows the monitoring and cleanup of the `REPORT` tables and allows you to perform the revision backup and rollback procedure. The SFX database of each instance contains the following REPORT tables that store information about changes, additions, and deletions performed in the SFX database as part of the revision update:

- KB_AUTHORS_REPORT
- KB_CAT_ASSIGN_REPORT
- KB_CAT_REPORT
- KB_CAT_SUBCAT_REPORT
- KB_INTERFACES_REPORT
- KB_LINKING_PARAMETERS_REPORT
- KB_MULTILANGUAGE_REPORT
- KB_OBJECTS_REPORT
- KB_OBJECT_IDENTIFIERS_REPORT
- KB_OBJECT_PORTFOLIOS_REPORT
- KB_PUBLISHERS_REPORT
- KB_RELATIONS_REPORT
- KB_SORTING_ORDER_REPORT
- KB_SOURCES_REPORT
- KB_SOURCE_SERVICES_REPORT

- KB_SUBCAT_REPORT
- KB_TARGETS_REPORT
- KB_TARGET_SERVICES_REPORT
- KB_TITLE_KEYS_REPORT
- KB_TITLE_REPORT
- KB_VENDORS_REPORT
- LCL_CAT_ASSIGN_REPORT
- LCL_LINKING_PARAMETERS_REPORT
- LCL_OBJECT_IDENTIFIERS_REPORT
- LCL_OBJECT_PORTFOLIO_INVENTORY_REPORT
- LCL_OBJECT_PORTFOLIO_LINKING_INFO_REPORT
- LCL_SERVICE_INVENTORY_REPORT
- LCL_SERVICE_LINKING_INFO_REPORT
- LCL_SOURCE_SERVICE_INVENTORY_REPORT
- LCL_TARGET_INVENTORY_REPORT
- LCL_TARGET_LINKING_INFO_REPORT
- LCL_TITLE_REPORT

These tables are used when creating HTML and TXT reports in the KBUpdate section of the SFX Admin Center.

To access this option, select **9 Revision Update** from the main menu. The Revision Update menu is displayed:

```
Revision update
  1 Clean REPORT tables
  2 Show REPORT tables monitor information
  3 Revision backup/rollback
```

To schedule a cleaning of the `REPORT` tables, select **2 Schedule cleaning REPORT tables**. All reports but the ones for the last three revisions are removed.

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Clean REPORT Tables

To remove information from the REPORTS tables, select **1 Clean REPORT tables** from the Revision Update menu. The following is displayed:

```
Revision update
  1 Clean REPORT tables
  2 Schedule cleaning REPORT tables
  3 List scheduled tasks
```

To clean the REPORTS tables, select **1 Clean REPORT tables**. The following is displayed:

```
WARNING! This utility goes to delete records from GLOBAL
database and from ALL local databases.
You can run this utility as global user only!
Please enter sfxglb41 password
Password:
```

Type the password. Information on the revision reports currently stored in the tables is displayed. For example:

```
The REPORT tables contain information about the
following revisions:
[1] 20101001 - run on 09/01/2010 12:27
[2] 20101201 - run on 20/12/2009 12:29
[3] 20091101 - run on 15/11/2009 12:43
Would you like to remove any of these? [y/N] y
Please enter the report set to remove or press <ENTER>
to cancel: 2
20101201 from 20/12/2010 12:29 - Confirm deletion of
report data [y/N] y
```

Type the number of the report that you would like to remove.

Each revision has a revision number in the following format:

<YYYY><REV_NR><HOTFIX_NR>

This number consists of the year in which the revision was issued, a two digit revision number, and a two digit hotfix number (typically 00, but it can be a different number in case of hotfixes or if a revision consists of multiple packages of the same type).

Revisions can be run multiple times. Each revision run is listed separately with the run time even though they are for the same revision. The same revision can also be listed several times due to hot fixes. When cleaning the REPORT tables, only one listing of each the last twelve revisions is not deleted. Duplication

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prevention reports (which end with 99) are not considered as a revision and are deleted.

It is recommended to remove the HTML reports of all but the twelve most recent revisions to reduce database size.

Schedule Cleaning REPORT Tables

To schedule a cleaning of the REPORT tables to occur at a later time, select **2 Schedule cleaning REPORT tables**. You are asked to define the time and day for which you want to schedule the task.

When scheduling cleaning of REPORT tables, all reports except the ones for the last three months are removed.

List Scheduled Tasks

To display a list of scheduled tasks, select **3 List scheduled tasks**.

Show REPORT Tables Monitor Information

Select **2 Show REPORT tables monitor information** from the Revision Update menu to display the amount of data in each of the REPORT tables.

For example:

Table	Row count	Disk space (MB) data/index
KB_AUTHORS_REPORT	108680	4.04
KB_CAT_ASSIGN_REPORT	1	0.00
KB_CAT_REPORT	23	3.00
KB_CAT_SUBCAT_REPORT	23	2.43
KB_INTERFACES_REPORT	64	2.65
KB_LINKING_PARAMETERS_REPORT	212	3.34
KB_MULTILANGUAGE_REPORT	61	2.34
KB_OBJECTS_REPORT	45	3.12
KB_OBJECT_IDENTIFIERS_REPORT	54	3.24
KB_OBJECT_PORTFOLIOS_REPORT	78	6.45
KB_PUBLISHERS_REPORT	54	3.34
KB_RELATIONS_REPORT	86	2.67
KB_SORTING_ORDER_REPORT	73	8.45
KB_SOURCES_REPORT	63	3.56
KB_SOURCE_SERVICES_REPORT	64	6.56
KB_SUBCAT_REPORT	846	4.56
KB_TARGETS_REPORT	534	3.45
KB_TARGET_SERVICES_REPORT	45	7.45
KB_TITLE_KEYS_REPORT	38	4.45
KB_TITLE_REPORT	39	5.66
KB_VENDORS_REPORT	40	4.66
LCL_CAT_ASSIGN_REPORT	95	3.23
LCL_LINKING_PARAMETERS_REPORT	783	4.55
LCL_OBJECT_IDENTIFIERS_REPORT	45	3.33
LCL_OBJECT_PORTFOLIO_INVENTORY_REPORT	45	4.55
LCL_OBJECT_PORTFOLIO_LINKING_INFO_REPORT	35	5.87
LCL_SERVICE_INVENTORY_REPORT	936	5.44
LCL_SERVICE_LINKING_INFO_REPORT	374	5.74
LCL_SOURCE_SERVICE_INVENTORY_REPORT	56	6.43
LCL_TARGET_INVENTORY_REPORT	85	3.33
LCL_TARGET_LINKING_INFO_REPORT	34	4.66
LCL_TITLE_REPORT	35	4.47

Figure 12: Report Tables Monitor Information

NOTE:
If this option is run as the `sfxglb41` user, only the `KB_ report` tables are displayed. If this option is run as a local user, then both the `KB_` and `LCL_` report tables for that local instance are displayed.

Revision Backup/Rollback

When performing a periodic revision update, a backup is of all directories and database tables that may be affected by the update is automatically performed. This backup allows a rollback to the pre-revision state of the server in case a problem occurs during the revision update. A rollback allows for all SW, KBSW, and KBDB package changes to be rolled back in case of problems.

If multiple KBDB revisions are applied at the same time, an additional temporary backup of all databases is created before the KBDB revision update

starts. This temporary backup is removed from the server after the databases are successfully updated. The purpose of this temporary backup is to make it easier to do a rollback to the state of the database before that particular KBDB package was applied.

For more information about backups performed during the revision update, refer to the **SFX KnowledgeBase Update** section of the *SFX Advanced User's Guide*.

Contact your local Ex Libris Support Center if you encounter problems while applying an update. You will receive advice on whether a rollback is needed and whether to use a complete rollback or a one-instance rollback.

NOTE:
When choosing to perform a rollback, SFX is unavailable for two short periods of time, so schedule accordingly.

SFX is unavailable in the following situations:

- During part of the resetting of the prefix for each local instance (maximum of 5 minutes per instance)
- During the rollback of the `sfxglb41` folders (approximately 5 minutes of downtime)

All rollbacks must be performed by the `sfxglb41` UNIX user.

Complete vs. Database - Only Rollback

The complete rollback is recommended since it provides a completely automated rollback to the pre-revision state of the SFX server.

It is also possible to do a database-only rollback. However, make sure to always consult with SFX support staff before performing the database only rollback, because of the following potential issues:

- An analysis of the problem during the revision update is needed to make sure the problem does not reoccur.
- In some service packs released together with some revision updates, database changes are made via a script. Rolling back the database without the service pack scripts being rerun afterwards results in missing changes in the SFX databases

A database only rollback may be used if multiple KBDB revisions are applied on the server, and the revision fails when applying the second or later revision (not the first one). Rolling back the SFX database to a point before the problem occurred may take less time than rolling back completely to a pre-revision point. Consult with the SFX support staff before starting the database-only rollback to ensure that this is the rollback that is most appropriate for you.

Performing a Complete Rollback

The complete rollback must be performed as the `sfxglb41` user. At the end of the process, Apache must be restarted for all the instances. Ensure that you have the UNIX passwords for all SFX instances. During the complete rollback, the following takes place:

- All database tables updated during the revision update are rolled back to their pre-revision state.
- The `.sfx_history` file is restored to its pre-revision state.
- Any lock files created after an unsuccessful revision update are removed.
- At the end of the process, the `sfxglb41` Apache server is restarted.
- All files from the `sfxglb41` instance in the following directories are rolled back:
  - `admin`
  - `cgi`
  - `lib`
  - `config`
  - `kbdb-reports`
  - `dbs/sqltab`
  - `sfxadmin`
  - `templates`

NOTE:
During the complete rollback, it is important that the `sfxglb41` instance has the correct file permissions for the directories that were backed up. Also, do not edit any files in these directories during the rollback, since locked files cause the rollback to completely or partially fail. If a rollback fails, the rollback process has to be repeated.

To perform a complete rollback:

1. Log on as `sfxglb41`.
2. Type `sx`.
3. Type `./admin/server_admin_util`.
4. Select **9 Revision update** to access the revision update option.

5 Select **3 Revision backup/rollback**. The Revision Backup/Rollback menu is displayed:

```
Revision Backup/Rollback
  1 Full Backup
  2 Full Rollback
  3 Clean backup archives
  4 Rollback database (global and all local) to
    specific revision
  Please select [1-4,q,m]: 2
```

6 Select **2 Full Rollback** in order to start the revision rollback. A list of backups is displayed.

```
Revision Backup/Rollback
  1 Full Backup
  2 Full Rollback
  3 Clean backup archives
  4 Rollback database (global and all local) to
    specific revision
  Please select [1-4,q,m]: 2
1:      2008-01-05_13.30-Automatic_pre-revision_backup
2:      2008-02-10_16.53-Automatic_pre-revision_backup
```


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7 Type the archive number for the backup file you would like to use for the rollback. Usually you need to choose the backup file created the last time the revision was applied. The following is a sample output:

```
Revision Backup/Rollback
  1 Full Backup
  2 Full Rollback
  3 Clean backup archives
  4 Rollback database (global and all local) to
    specific revision
  Please select [1-4,q,m]: 2
1:      2008-01-05_13.30-Automatic_pre-revision_backup
2:      2008-02-10_16.53-Automatic_pre-revision_backup
Please enter archive number [1..2] to rollback or q for
exit: 2
Preparing restore...
    Initializing rollback...
        Checking permissions...done
        Removing .lock files...done
        Validating rollback folder...done
        Creating temporary folder for rollback...done
        Unpacking backup archive...done
Preparing done
Restoring full backup...
    Restoring KB backup...
        Getting list of instances...done
        Restoring KB of 'sfxlcl41' instance...
   Restoring Data...done
   Resetting prefixes...done
        Done
```


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```
Restoring KB of 'sfxtst41' instance...
            Restoring Data...done
            Resetting prefixes...done
        Done
        Restoring KB of 'sfxlcl41' instance...
            Restoring Data...done
            Resetting prefixes...done
        Done
    KB rollback done
    Restoring 'sfxlcl41' software...
        Restoring folder 'admin'...done
        Restoring folder 'cgi'...done
        Restoring folder 'config'...done
        Restoring folder 'lib'...done
        Restoring folder 'sfxadmin'...done
        Restoring folder 'sqltab'...done
        Restoring folder 'templates'...done
    SW rollback done
    Restoring History...done
Rollback done
Finalizing rollback...
        Removing temporary files...done
Executing 'restart' for 'sfxlcl41'.
Finalizing rollback done
```

8 After the rollback, restart the Apache of all SFX instances. Select **1 Start/Stop services** from the main menu of the Server Admin Utility and then select **11 All Apache restart**. You need the UNIX passwords for all of the SFX instances to restart Apache.

Performing a Database-Only Rollback

To perform a rollback of all databases to the state of the databases before the start of a specific KBDB revision, run the rollback as the `sfxglb41`user. Always consult with SFX support staff before performing the database-only rollback, because of the following potential issues:

- An analysis of the problem during the revision update is needed to make sure the problem does not reoccur.

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- In some service packs released together with some revision updates, database changes are made via a script. Rolling back the database without the service pack scripts being rerun afterwards results in missing changes in the SFX databases.

To perform a database-only rollback:

1. Log on as `sfxglb41`.
2. Type `sx`.
3. Type `./admin/server_admin_util`.
4. Select **9 Revision update** to access the revision update option.
5. Select **3 Revision backup/rollback**. The following screen is displayed:.

```
Revision Backup/Rollback
  1 Full Backup
  2 Full Rollback
  3 Clean backup archives
  4 Rollback database (global and all local) to
    specific revision
  Please select [1-4,q,m]: 4
```

6. Select **4 Rollback database (global and all local) to specific revision** to start the database-only rollback. The following is displayed:

```
Choose from which full backup file:
1: 2010-04-22_13.50-backup_before_revision_20100200
2: 2010-04-23_15.03-backup_before_revision_20100300
3: none
Please enter archive number [1..3] to rollback or q
for exit:
```


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7 Enter an archive number. The following is displayed:

```
Please enter archive number [1..5] to rollback or q for
exit: 1
Preparing restore...
    Initializing rollback...
        Checking permissions...done
        Removing .lock files...done
        Validating rollback folder...done
        Creating temporary folder for rollback...done
        Unpacking backup archive...done
Preparing done
Restoring full backup...
    Restoring KB backup...
        Getting list of instances...done
        Restoring KB of 'sfxglb41' instance...
            Restoring Data... done
```

The rollback program now locates the backup file to be used for the rollback. First it looks for a temporary backup file in the `/exlibris/sfx_ver/sfx4_1sfx_version_3/tmp/backup>` directory.

Performing a Backup

It is possible to perform a manual revision backup to test that the backup works properly. The backup files are created in the `/exlibris/sfx_ver/sfx4_1/tmp/backup` directory.

To perform a backup:

1 Log on as `sfxglb41`.

2 Type `sx`.

3 Type `./admin/server_admin_util`.

4 Select **9 Revision update** to display the Revision Update menu.

5 Select **3 Revision backup/rollback**. The Revision Backup/Rollback menu is displayed:

```
Revision Backup/Rollback
  1 Full Backup
  2 Full Rollback
  3 Clean backup archives
  4 Rollback database (global and all local) to
    specific revision
Please select [1-4,q,m]:
```

6 Select **1 Full Backup**.

7 Enter the backup name.

The following is a sample output:

```
Revision Backup/Rollback
  1 Full Backup
  2 Full Rollback
  3 Clean backup archives
  4 Rollback database (global and all local) to
    specific revision
  Please select [1-4,q,m]: 1
Please enter backup name or q for exit: backup-test
Creating full backup...
IMPORTANT NOTE: This backup includes limited number of
software folders and KB tables. It is not a replacement
for system backup!
Initializing backup...
        Checking permissions...done
        Validating backup folder...done
        Creating temporary folder for backup...done
Creating KB backup...
        Getting list of instances...done
        Backup KB of 'sfxlcl41' instance...done
        Backup KB of 'sfxtst41' instance...done
        Backup KB of 'sfxtst41' instance...done
KB backup done
```


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```
        Creating SW backup...
        Storing folder 'admin'...done
        Storing folder 'cgi'...done
        Storing folder 'config'...done
        Storing folder 'lib'...done
        Storing folder 'sfxadmin'...done
        Storing folder 'sqltab'...done
        Storing folder 'templates'...done
   SW backup done
    Creating History backup...done
    Finalizing backup...
Creating rollback script...done
        Creating backup archive...done
        Removing temporary files...done
Backup done
```

Cleaning the Backup Directory

It is possible to remove old backup files. It is recommended to remove complete backup files about a month after the revision update has been successfully applied, before applying the next revision update.

The complete backup files are located at: `/exlibris/sfx_ver/sfx4_1/tmp/backup`.

To clean the backup directory:

1. Log on as `sfxglb41`.
2. Type `sx`.
3. Type `./admin/server_admin_util`.

4 Select **9 Revision update** to access the Revision Update menu. The Revision Backup/Rollback menu is displayed:

```
Revision Backup/Rollback
  1 Full Backup
  2 Full Rollback
  3 Clean backup archives
  4 Rollback database (global and all local) to
    specific revision
  Please select [1-4,q,m]: 3
```

5 Select **3 Clean backup archives**. A list of the available backup files is displayed:

```
1:    2008-04-07_10.27-Automatic_pre-revision_backup
2:    2008-04-07_21.59-Automatic_pre-revision_backup
3:    2008-04-07_22.27-Automatic_pre-revision_backup
Please enter archives to remove (for example 2,3,4-8)
or q for exit:
```

6 Type the number of the backup file that you want removed.

```
1:    2008-04-07_10.27-Automatic_pre-revision_backup
2:    2008-04-07_21.59-Automatic_pre-revision_backup
3:    2008-04-07_22.27-Automatic_pre-revision_backup
Please enter archives to remove (for example 2,3,4-8)
or q for exit: 1
Removing '2008-04-07_10.27-Automatic_pre-
revision_backup' archive...done
```

Rapid Service Indicator

This option in the Server Admin Utility allows you to build the RSI index for both serials and monographs. For more information, refer to the **SFX APIs** section of the *SFX Advanced User's Guide*.

To configure the RSI:

1 Change `config/sfxctrl.config` to use the RSI index:

a Access the server as an instance user (for example, `sfxlcl41`).

b Type `cn` to move to the configuration directory.

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c Type `vi sfxctrl.config` and make sure that the extra section has the following line:

```
use_RSI                 "Y"
```

2 Build the RSI table:

a Access the server as an instance user (for example, `sfxlcl41`).

b Type `da` to move to the admin directory.

c Start the Server Admin Utility by typing `./server_admin_util`.

d Select option **11 Build RSI index**. The Build RSI index menu is displayed:

```
RSI Tools
 1 (Re)build the RSI index
 2 Show scheduled RSI index builds
 3 Schedule an RSI index build
Please select [1-3,q,m]:
```

e Select option **1 (Re)build the RSI index**. The following screen is displayed:

```
Running the index builder may take a long time,
possibly hours depending on the amount of active
portfolios.
Are you sure you want to continue? [y/n] y
Select type of RSI index to build. Select (s) for
serials, (m) for monographs or (b) for both [s/m/b]:
[b]
```

f Type the type of RSI index you want to build. If you select **m** or **b** the following is displayed:

```
RSI index build for monographs can be either 'complete'
or 'incremental' (recommended because of performance).
Type (i) for incremental build, or (c) for complete
build [i/c]:  [i]
```

g Type **i** to perform an incremental build and **c** to perform a complete build. If you type **i**, the following is displayed:

```
It is recommended to do a complete build at night or
during server 'slow' time because of significant load
on the server.

In case incremental build cannot be performed, do you
want to run complete build instead? [y/N]
```

h Type **y** or **n** to start the build.

For more information on configuring the RSI, refer to the **Configuring the Rapid Service Indicator** section of the *SFX Advanced User's Guide*.

You can also set up a cron job so that RSI runs at a scheduled time.

To set up a cron job for RSI:

1 Access the server as an instance user (for example, `sfxlcl41`).

2 Type `da` to move to the admin directory.

3 Start the Server Admin Utility by typing `./server_admin_util`.

4 Select option **11 Build RSI index**. The Build RSI index menu is displayed:

```
RSI Tools
 1 (Re)build the RSI index
 2 Show scheduled RSI index builds
 3 Schedule an RSI index build
Please select [1-3,q,m]:
```

5 Select option **3 Schedule an RSI index build**.

NOTE:
This task cannot be scheduled when Centralized Management of Maintenance Tasks is activated. If you attempt to do so, the following is displayed:

```
Maintenance tasks can be scheduled only by the system
administrator of this SFX installation. This option is not
available for local SFX instances.
```

The following screen is displayed. (Bold text is typed by the user):

```
Select type of RSI index to build. Select (s) for
serials, (m) for monographs or (b) for both [s/m/b] ->
default is both:  [b]
```


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1 Type the type of RSI index you want to build. If you select **m** or **b** the following is displayed:

```
RSI index build for monographs can be either 'complete'
or 'incremental' (recommended because of performance).

Type (i) for incremental build, or (c) for complete
build [i/c]:  [i]
```

2 Type **i** to perform an incremental build and **c** to perform a complete build. If you type **i**, the following is displayed:

```
In case incremental build cannot be performed, do you
want to run complete build instead?

It is recommended to do a complete build at night or
during server 'slow' time because of significant load
on the server. [y/N]
```

3 Type **y** or **n**. The following is displayed. (Bold text is typed by the user):

```
Please enter scheduling parameters

Time must be in the form HH:MM where

  HH can be: 00-23 for midnight-11PM or * for every hour

  MM can be: 00-59 or * for every minute

Enter the time to run [00:00]:00:00

Would you like to schedule for a certain weekday? [Y/n]
N

Please enter month (1-12 for January-December
respectively or '*' for every month) [*]: *

Please enter day of the month (1-31 or '*' for every
day) [1]: 1

Successfully added the refresh task to your crontab.
```

To remove a cron job that has been set up for RSI:

1 Access the server as an instance user (for example, `sfxlcl41`).

2 Type `da` to move to the admin directory.

3 Start the Server Admin Utility by typing `./server_admin_util`.

4 Select **11 Build RSI index**. The Build RSI index menu is displayed:

```
RSI Tools
 1 (Re)build the RSI index
 2 Show scheduled RSI index builds
 3 Schedule an RSI index build
Please select [1-3,q,m]:
```

5 Select **2 Show scheduled RSI index builds** to view scheduled RSI index builds. The following screen is displayed:

```
RSI indexing schedule is as follows:
[1] RSI Journals + Books - incremental only - 00:00 of
every Sunday of every month
[2] RSI Journals + Books - incremental only - 13:00 of
every day of every month

Would you like to remove any of these? [y/N]
```

6 Type `y` to remove an index build.

NOTE:
If your instance has been set up to use services from another instance via Consortia API, add a section for RSI in the `config/consortium.config` file of your instance.

More information can be found in **the Setting Up Model 2: Using a Shared SFX Instance** section of the *Using SFX in a Consortium Environment* document.

For more information, refer to the **SFX APIs** section of the *SFX Advanced User Guide*.

Verde Publishing

For information on Verde Publishing, refer to the *SFX-Verde Interoperability Guide*.

TRACKING Table Set-Up and Maintenance

The TRACKING table is a table in the global schema of the SFX installation that is used to keep track of changes in any of the local instance databases or the global schema. The TRACKING table is updated by triggers and stores all changes to be included in SFX-Verde publishing and in the incremental build of the RSI and eBook Search indexes.

To access this option, select **13 TRACKING table set-up and maintenance (only by sfxglb41)** from the Main menu. The following is displayed:

```
 1 Check status of TRACKING table and triggers
 2 Create table and triggers
 3 TRACKING table cleanup
```

Checking the Status of the Tracking Table and the Triggers

Select **1 Check status of TRACKING table and triggers** to check the status of the TRACKING table and the triggers. If they have been set up and do not have any problems, the following is displayed:

```
Checking use of TRACKING table:
        TRACKING table is enabled.
Checking TRACKING table:
        TRACKING table OK.
Checking size of TRACKING table:
        42 entries found in TRACKING table.
Earliest entry found:            2012-03-23
Most recent entry found:         2012-03-23
Checking triggers:
Triggers are ok.
```

If there are problems with the triggers, the following is displayed:

```
Checking triggers:
Problem detected with triggers in following instance(s):
sfxlcl41,sfxtst41.
Triggers will need to be recreated. Please run step 2.
```

Creating the Table and the Triggers

Select **2 Create table and triggers** to create the table and triggers if they do not exist or to recreate them if problems have been detected. The following is displayed:

```
Checking existence of TRACKING table:
        TRACKING table exists.
Do you wish to create / recreate triggers? [Y/n]y
```

Type **y** to create the triggers. This process does not change the TRACKING table and can be performed without causing any harm to SFX-Verde publishing.

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Cleaning the TRACKING Table

Select **3 TRACKING table cleanup** to clean up the TRACKING table. The following is displayed:

```
 1 Clean TRACKING table
 2 Schedule clean-up of TRACKING table
 3 List scheduled tasks for clean-up of TRACKING table
```

Select **1 Clean TRACKING table** to clean the TRACKING table. The following is displayed:

```
Do you want to delete entries from TRACKING table which are no
longer needed by programs using this data? [Y/n]
```

Type **y**. The following is displayed:

```
/exlibris/sfx_ver/sfx4_1/tmp/tracking_table_archive/
archive_TRACKING_TABLE_1.sql.gz created.
Entries no longer needed are now removed.
Removed 10334 entries.
```

An archive file with the old data from the TRACKING table is stored in the `/exlibris/sfx_ver/sfx4_1/tmp/tracking_table_archive/` directory, and the archived data is removed from the TRACKING table.

Data is archived if it is older than 6 months. Data not published to Verde as part of the SFX-Verde publishing process is not archived.

Solr Index

The eBook Search uses a dedicated Solr index. Within the Solr index, each instance has its own Solr core. The Solr index is build and updated using the following two sources of information:

- the SFX databases (both global and local)
- the monograph RSI (for activation information)

Before the Solr index can be used, Solr should be up and running in the SFX installation, and a Solr core should exist for the global instance and each local instance where the eBook Search will be used.

Select **14 Solr index (only by sfxglb41)** to create or remove a Solr core. The following is displayed:

```
Solr index maintenance
 1 Create a Solr core
 2 Remove a Solr core
 3 Create Solr cores for all instances
```


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NOTES:

- During the initial set-up, it is recommended to create a Solr core for all instances in the SFX installation.
- A Solr restart is required after creating or removing a Solr core if you choose to not do one automatically.

Select **1 Create a Solr core** to create a Solr core. The following is displayed:

```
This option allows to create a Solr core for an instance. In
case a core is created, the Solr service should be restarted.
Would you like the Solr service to be restarted automatically?
[y/n] y
Please enter the instance name for which you want to create a
Solr core: SST04
In case a core for the instance already exists, would you like
to recreate it or skip its creation?
Note that recreating the Solr core will remove all its data.
Type (r) for recreating the core or (s) for skipping the core
creation:  [s] r
Starting to create new core and update configuration...
Adding core to Solr...
Core added!
    Adding entry to Jetty configuration...
    File updated!
    Adding entry to Web configuration...
    File updated!
done!
```

NOTE:

If a core already exists for an instance, it is possible to either skip the core creation or recreate the core. It is recommended to skip the core creation unless there is a serious problem with the Solr core that requires it to be rebuilt. This is because recreating a Solr core for an instance removes all its data, which means the eBook Search index needs to be rebuild using a complete build. This may take a while for instances with a lot of eBook activations.

Select **2 Remove a Solr core** to remove a Solr core. The following is displayed:

```
Please enter the instance name for which you want to remove
the Solr core: sfxtst41
Starting remove core for user sfxtst41...
    Dropping Solr core for user sfxtst41...
    Core unloaded!
    Removing record from Jetty configuration for user
sfxtst41...
    Record removed!
    Removing record from Web configuration for user
sfxtst41...
    Record removed!
 done!
```

Only run this option for instances where SFX-Verde publishing is not set up, and the eBook Search interface is not in use.

Select **3 Create Solr cores for all instances** to create a Solr core for all of your SFX instances. The following is displayed:

```
This option allows to create Solr cores for all instances. In
case a core is created, the Solr service should be restarted.
Would you like the Solr service to be restarted automatically?
[y/n] y
This option will create a Solr core for each of the instances
in the SFX installation:  sfxlcl41, sfxtst41
In case a core for an instance already exists, would you like
to recreate it or skip its creation?
Note that recreating a Solr core for an instance will remove
all its data.
Type (r) for recreating the core or (s) for skipping the core
creation:  [s] s
You selected to skip a core creation in case it already
exists.
Are you sure you want to continue? [y/n] y
Working on instance: sfxlcl41
Starting to create new core and update configuration...
Adding core to Solr...
Core added!
    Adding entry to Jetty configuration...
    File updated!
    Adding entry to Web configuration...
    File updated!
done!
Working on instance: sfxtst41
Starting to create new core and update configuration...
Adding core to Solr...
Core with name sfxtst41 already exists!
Skipping core creation
Restarting solr...
Stopping solr...
Done!
Starting solr...
Done!
```


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7

Task Manager

This section describes the SFX Task Manager feature that allows you to schedule maintenance tasks in SFX.

NOTES:

- Before you can use Task Manager for the first time, you must migrate your existing cron jobs. for more information, see **Migrating Existing Cron Jobs to Task Manager** on page **207**.
- Customers using the Task Manager are recommended to not use the ServerAdmin Utility for setting up or looking at a list of scheduled tasks. It is still possible to use the ServerAdmin Utility, but some features, such as enabling/disabling scheduled tasks, are not supported via the ServerAdmin Utility. Disabled tasks do not appear in the list of scheduled tasks in the ServerAdminUtility.

This section includes:

- **Working with Task Manager** on page **198**
- **Adding Scheduled Tasks** on page **200**
- **Enabling/Disabling Scheduled Tasks** on page **201**
- **Viewing and Editing Scheduled Tasks** on page **202**
- **Viewing Executed Tasks** on page **202**
- **Calendar of Upcoming Tasks** on page **204**
- **Additional Recommended Tasks** on page **204**
- **Unsupported Tasks** on page **205**
- **Centralized Management of Maintenance Tasks** on page **206**
- **Migrating Existing Cron Jobs to Task Manager** on page **207**

Working with Task Manager

You access Task Manager from the SFX Admin Center main menu (**Setup & Administration > Administration > Task Manager**). The List of Scheduled Tasks is displayed:

NOTES:

- Access to the Task Manager is by default enabled for the default Administrator user only. For more information on user permissions in SFXAdmin, refer to the **User Administration** section of the *SFX Advanced User Guide*.
- If you see jobs without names in the Task Manager, verify that the crontab of the corresponding job does not have a double slash (//) in the command.

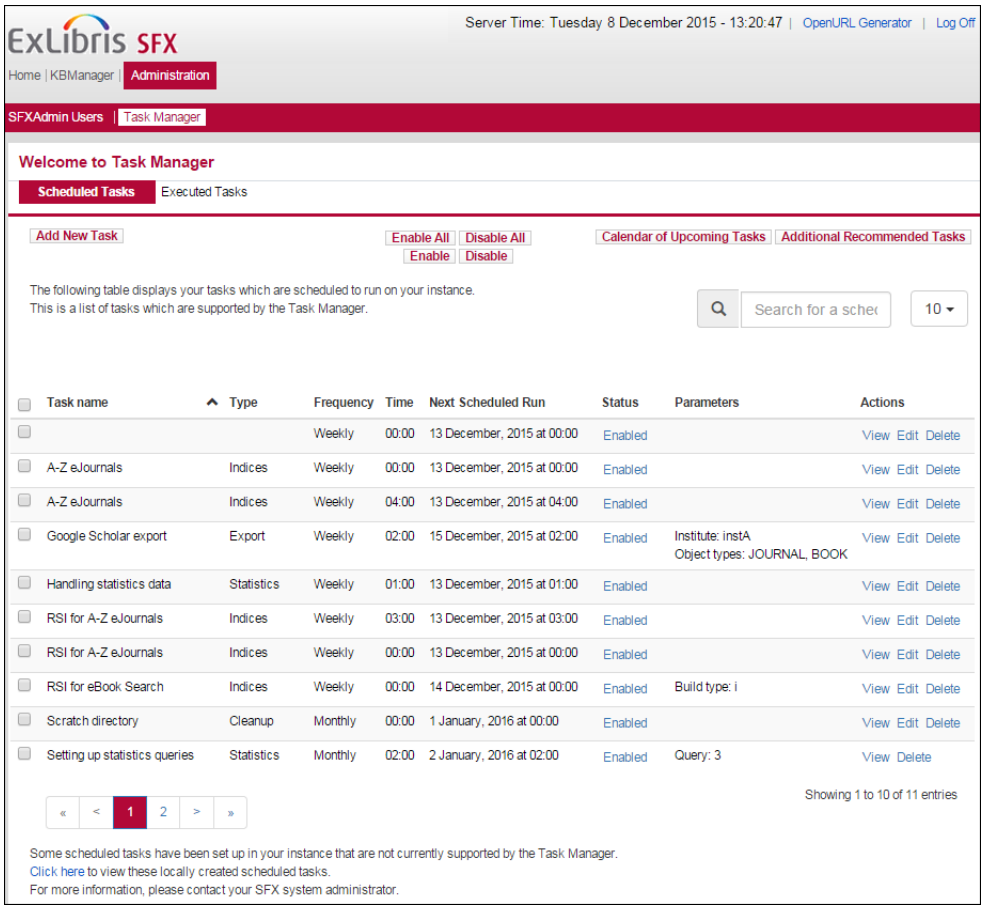

Figure 13: List of Scheduled Tasks

The List of Scheduled Tasks displays a list of tasks with information, such as the type of task, the scheduling parameters of the task, and whether it is enabled or disabled. Some additional parameters are displayed in the Parameters column.

The list is sorted by default according to the Type column – descending. You can change the sorting by clicking the column once for descending and a second time for ascending. Sort is possible on all columns except for Actions, Time, and Parameters.

NOTE:
Statistic query tasks cannot be edited, enabled, or disabled from the List of Scheduled Tasks, but can be deleted.

The following tasks can be scheduled with the Task manager:

Table 11. Supported Tasks

Type	Task
STATISTICS	Setting up statistics Queries
STATISTICS	Handling statistics data > Moving data from Online to Offline tables (online2offline
STATISTICS	Handling statistics data > Archiving Statistics (Offline2file)
CLEAN-UP	SFX log files
CLEAN-UP	SFX export directory
CLEAN-UP	scratch directory
CLEAN-UP	SFX request table
CLEAN-UP	IP information from statistics data
INDICES	RSI index – complete build
INDICES	RSI index – incremental build
INDICES	A-Z eJournals
INDICES	eBook Search – complete build
INDICES	eBook Search – incremental build
IMPORT	Elsevier Science Direct autoloader
IMPORT	Ovid autoloader
IMPORT	SpringerJournals autoloader
IMPORT	SpringerBooks autoloader
IMPORT	Taylor & Francis autoloader

Table 11. Supported Tasks

Type	Task
EXPORT	Google Scholar export
EXPORT	Primo export
EXPORT	MarcIt! export
EXPORT	CDI Export

Adding Scheduled Tasks

You can add scheduled tasks to the List of Scheduled Tasks.

To add scheduled tasks to the List of Scheduled Tasks:

1 Click the **Add New Task** button. The following is displayed:

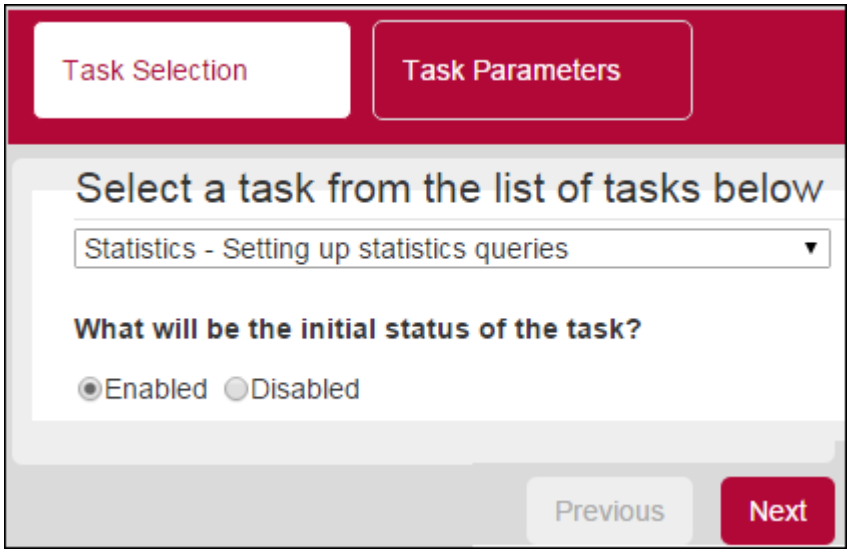

Figure 14: Task Selection

2 Select the task that you want to schedule from the drop-down list.

3 Indicate whether you want the scheduled task to be initially enabled or disabled.

4 Click **Next**. The next page displays the task parameters for the task you selected, for example:

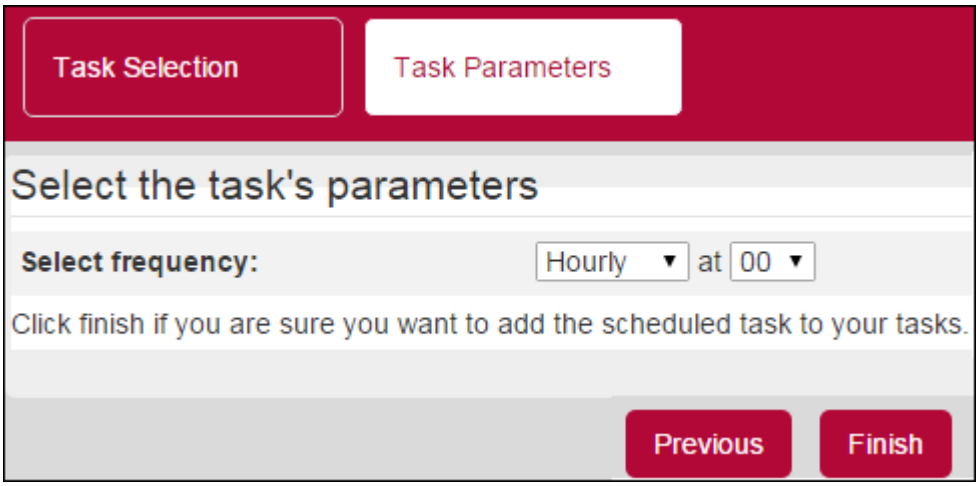

Figure 15: Task Parameters

5 Select the task parameters and click **Finish**.

The task is added to the List of Scheduled Tasks.

NOTE:
If you select a statistic query task, a new SFXAdmin page is opened, redirecting you to the Statistics Scheduling page. For information on this page, see **Table 27 Statistic Queries** in the *SFX General User's Guide*. After a Statistics task is scheduled, it is displayed in the List of Scheduled Tasks.

Enabling/Disabling Scheduled Tasks

You can enable/disable scheduled tasks from the List of Scheduled Tasks. When a task is enabled, it runs at the scheduled day and time. When a task is disabled, it does not run, but remains on the List of Scheduled Tasks.

There are several methods for enabling/disabling a scheduled task from the List of Scheduled Tasks:

- Select the link in the Status column of the scheduled task (either **Enabled** or **Disabled**). The link changes to indicate the new status.
- Select the check box of the scheduled tasks that you want to enable/disable and click the **Enable** or **Disable** button. The status of the selected scheduled tasks changes to indicate the new status.
- Click the **Enable All** or **Disable All** button to enable/disable all of the scheduled tasks in the list.

Viewing and Editing Scheduled Tasks

You can view and edit scheduled tasks.

To view and edit scheduled tasks:

1 For a scheduled task, click **View** or **Edit**. The following, for example, is displayed when clicking edit:

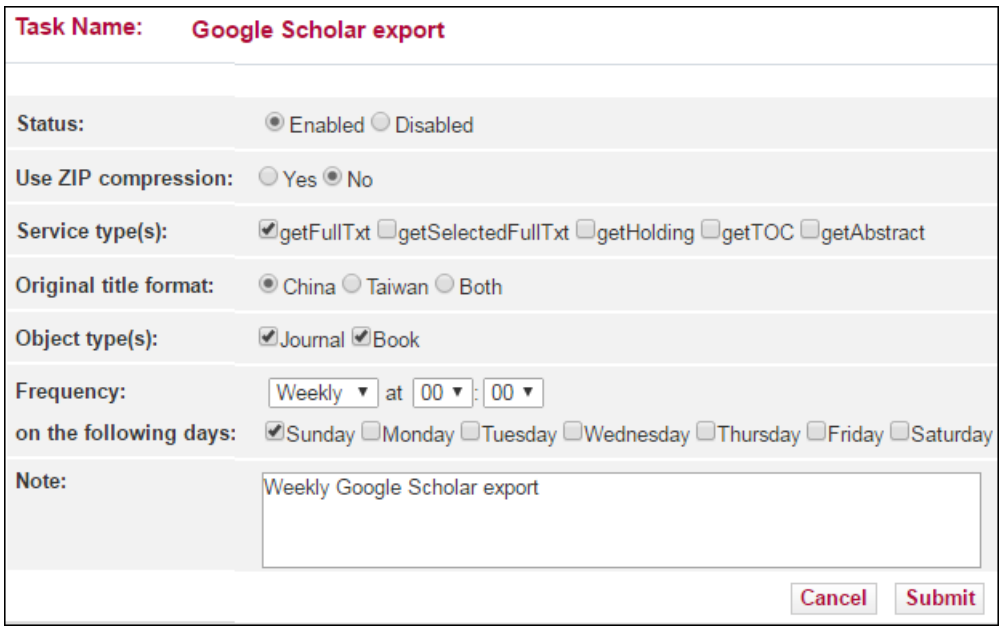

Figure 16: Editing Scheduled Tasks

2 Edit the fields and click **Submit**.

The scheduled task with the new parameters are displayed in the List of Scheduled Tasks.

Viewing Executed Tasks

To view a history of executed tasks, click the **Executed Tasks** tab. The following, for example, is displayed:

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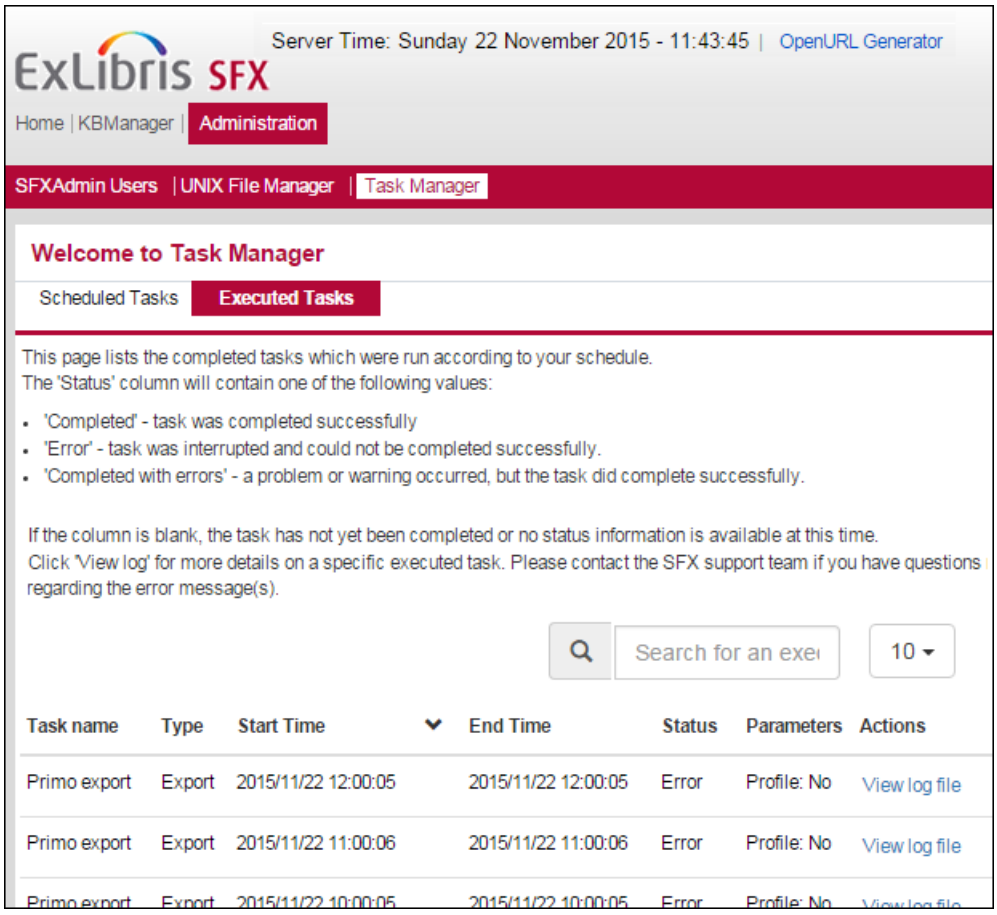

Figure 17: Executed Tasks

NOTE:

Only tasks executed after being scheduled are displayed in the list. If a task is run manually from the ServerAdminUtil (not scheduled), it is not displayed in the list.

The following statuses are displayed:

- Completed – the task was completed successfully
- Error – the task was interrupted and could not be completed successfully
- Completed with errors – a problem or warning occurred, but the task did complete successfully

Click the **View Log File** link to view the log of the task for more information. Contact the SFX support team if you have questions regarding the error messages.

Calendar of Upcoming Tasks

To view a list of tasks scheduled in your instance for the next 7 days, click the **Calendar of Upcoming Tasks** button. The following, for example, is displayed:

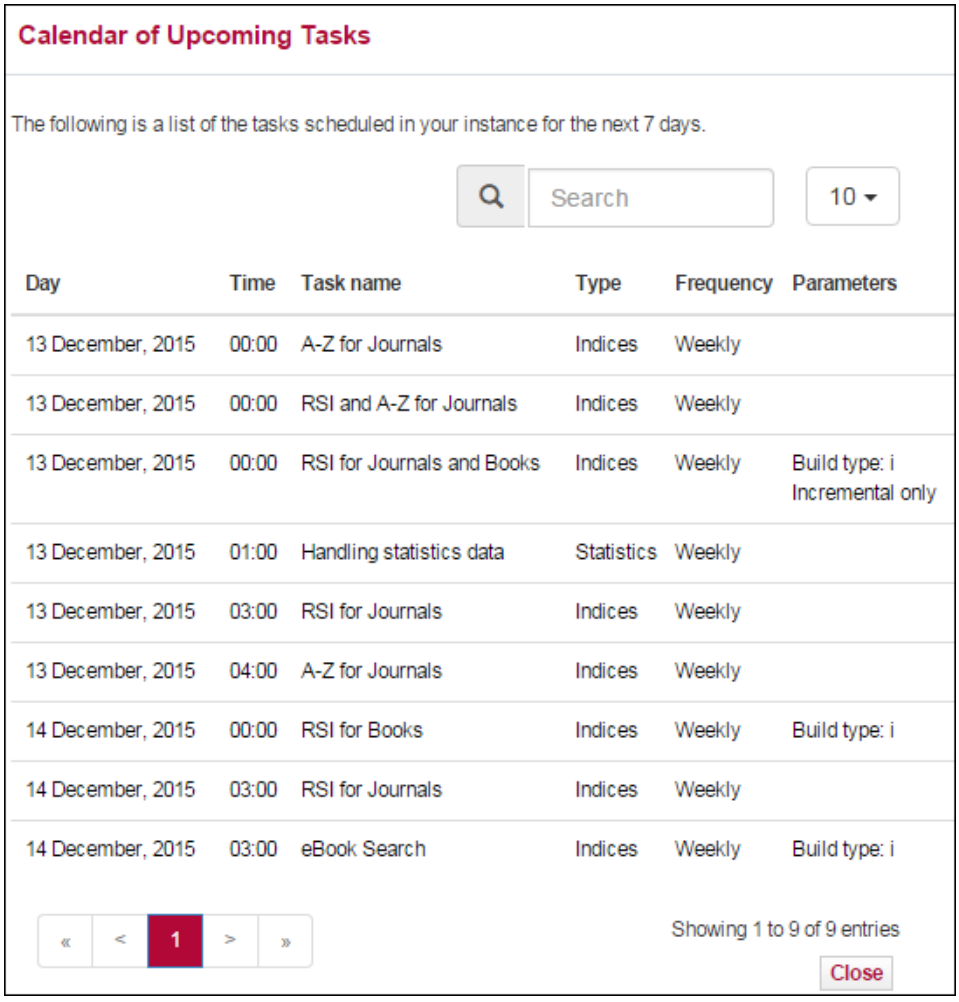

Figure 18: Calendar of Upcoming Tasks

Additional Recommended Tasks

If you have not scheduled all recommended tasks, the Additional Recommended Tasks button is displayed. To display the Additional Recommended Tasks, click the **Additional Recommended Tasks** button. The following, for example, is displayed:

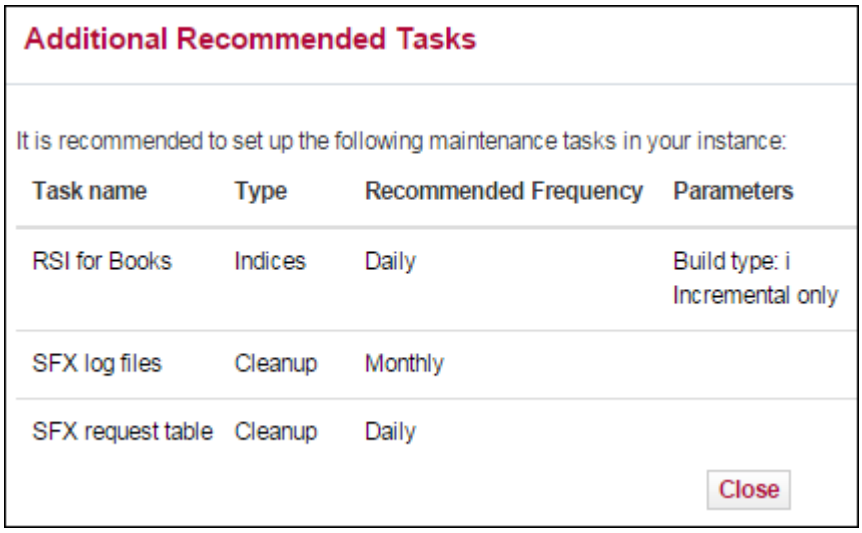

Figure 19: Additional Recommended Tasks

Unsupported Tasks

Locally created scheduled tasks are not supported by Task Manager. If you have locally created scheduled tasks, the following note is displayed at the bottom of the List of Scheduled Tasks:

```
Some scheduled tasks have been set up in your instance that
are not currently supported by the Task Manager.
Click here to view these locally created scheduled tasks.
For more information, please contact your SFX system
administrator.
```

Click the link to display a list of locally created scheduled tasks, for example:

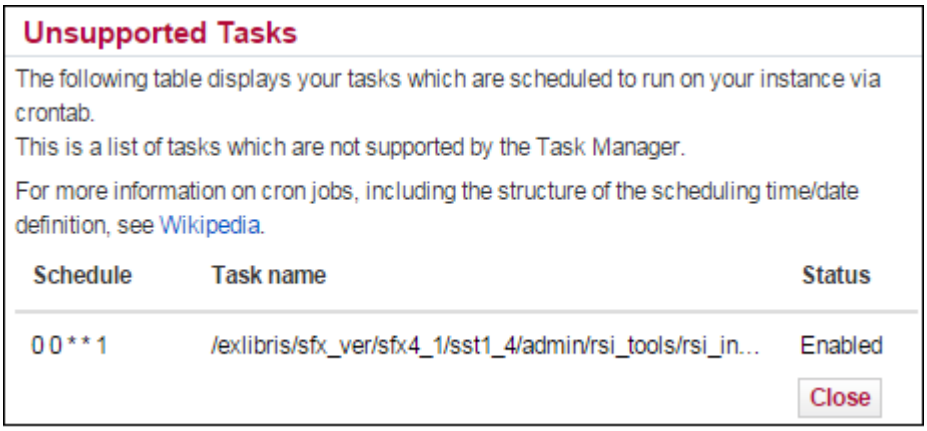

Figure 20: Unsupported Tasks

Centralized Management of Maintenance Tasks

If you have tasks that are managed by the centralized management of maintenance tasks functionality, a lock icon is displayed for the task instead of a check box. The task is read-only and cannot be edited, deleted, enabled, or disabled. Additionally, the time the task is run is not displayed, since this is configured by the central management and the task is not displayed in the Add New Task drop-down list.

To determine if centralized management of maintenance tasks (or the RSI/A-Z index build for multiple instances) is in use, SFX uses the following settings in the sfxglb41 instance:

```
configuration file config/central_management.config__ :
Section "centralized_management"
        active  "1"
EndSection

config/rsi_ebook_setup.config_
Section "index_build"
  <instance>
  <instance>
EndSection
```

NOTE:

In the centralized management of maintenance task configuration, it is possible to configure the same task to be run multiple times, for a different set of instances, by renaming the tasks in the `all_jobs` section. At this time, renamed tasks are not supported in Task Manager. They are not

displayed in the List of Scheduled Tasks, but instead are displayed in the Unsupported Tasks list.

Migrating Existing Cron Jobs to Task Manager

Before you can use Task Manager for the first time, you must migrate your existing cron jobs. Before you perform the migration, the following page is displayed:

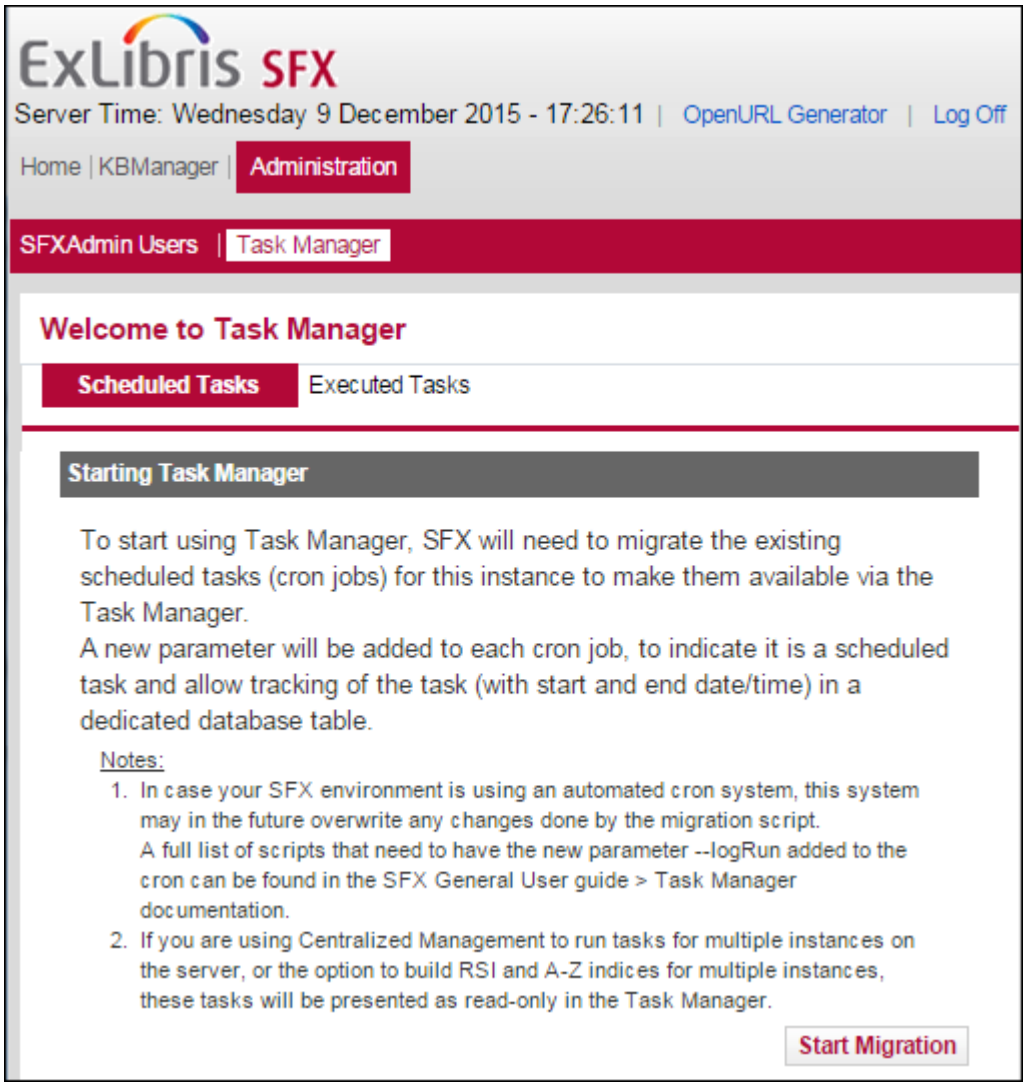

Figure 21: Migrating to Task Manager

To perform the migration, click **Start Migration**.

If no read-only tasks from Centralized Management of Maintenance task feature are displayed after migration, this may be due to file permission settings in the `config/central_management.config__` file.

To fix this, log on as the `sfxglb41` instance user and type the following:

```
cn
chmod 0640 central_management.config__
```

The following cron jobs are added to the new parameter (--logRun) as part of the migration:

- admin/kbtools/primo_export.cron
- admin/kbtools/marc_enhancement.cron
- admin/kbtools/export.cron
- admin/kbtools/elsevier_sd_autoloader.cron
- admin/rsi_tools/rsi_index_builder.cron
- admin/aztools/az_index_builder.cron
- admin/aztools/solr_index_builder.cron
- admin/stats/online2offline.cron
- admin/stats/offline2file.cron
- admin/stats/clear_sfx_request.cron
- admin/aztools/run_az_and_rsi.cron
- admin/aztools/run_rsi_az_for_all_instances.cron
- admin/database/clean_tracking/clean_tracking_table.cron
- admin/database/oai_repository/clear_oai_repository.cron

Appendixes

This guide contains the following appendixes:

- **Appendix A: Enabling Binary Logging and Recovering Binary Logs** on page **211**
- **Configuring SSL - Deprecated** on page **213**
- **Appendix C: Maintenance Task Checklist** on page **221**
- **Appendix D: eBook Search Set-Up Instructions** on page **229**

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A

Enabling Binary Logging and Recovering Binary Logs

This section includes:

- Enabling Binary Logging on page 211
- Recovering Binary Logs on page 212
- MySQL Privileges When Using Binary Logging on page 212

Enabling Binary Logging

This section describes how to enable binary logging:

To enable MySQL binary logging:

1 Edit the `my.cnf` file located at:

`/exlibris/sfx_ver/sfx4_1/data/my.cnf`

Change the line that contains the option:

```
log-bin
```

to

```
log-bin = /exlibris/sfx_ver/sfx4_1/data/log-bin
```

By default, the binary logs are created in the MySQL data directory and their file name is in the format `bin-log.00000x`. If you want to store them elsewhere, supply a path name or file name to the log-bin option, such as `log-bin = /path/to/elsewhere/filename`.

2 Restart MySQL.

To confirm that binary logs are being created, look in the MySQL data directory for a binary log file named with the .001 extension in the MySQL data directory (or whatever path you specified in `my.cnf`). A new binary log file with an

incremental extension (for example, .002, .003) is created each time you stop or start MySQL, each time a `FLUSH LOGS` command is issued, and each time the size of the current binary log reaches the value of the MySQL setting `max_binlog_size`.

Recovering Binary Logs

The recovery from binary logs procedure assumes that you have also been performing a regular backup of the MySQL database. First restore the database to its state at the time of the last backup by importing the backup. Use the data stored in the binary logs to restore the database to the exact moment of failure (or whatever event is prompting the recovery).

Identify the binary log files that contain all of the updates issued to the server since your last backup. To load the binary log data, you must use the `mysqlbinlog` program to read the binary data. Send the output from `mysqlbinlog` to the MySQL command-line program:

```
mh
cd bin
../mysqlbinlog --database=<database>  /exlibris/sfx_ver/
sfx4_1/data/bin-log.00000x | mysql -uroot -p<mysql_root_pwd>
--database=<database>
```

It is recommended to reset the binary logs prior to a recovery by issuing a `RESET MASTER` command to the server.

MySQL Privileges When Using Binary Logging

To prevent errors when applying revision updates when using binary logging, set up MySQL with SUPER privileges.

To configure SUPER privileges:

1 Log on to MySQL as the `sfxglb41` user:

```
mysql -uroot -p<root_mysql_pwd> mysql
```

2 Type the following:

```
GRANT SUPER on *.* to sfxglb41@localhost;
```

Without these permissions, the following error occurs when applying revisions:

```
DBD::mysql::db do failed: You do not have the SUPER privilege
and binary logging is enabled (you *might* want to use the
less safe log_bin_trust_function_creators variable)
```

B

Configuring SSL - Deprecated

NOTE:
This appendix is only relevant for customers using the old method of configuring SSL. Customers configuring SSL for the first time should use the new method described in **Support for SSL** on page **63**.

This section includes:

- **Configuring All SFX Instances** on page **213**
- **Configuring the Virtual Host for HTTPS** on page **214**
- **Configuring the Reverse Proxy Server** on page **216**

Configuring All SFX Instances

In order to configure an SFX instance so that SFX and SFXAdmin are accessible using HTTPS, Apache+SSL for SFX version 4 must be configured with Apache 2.0.52.

To configure all SFX instances:

1. Log on as an instance user.
2. Configure the virtual host for the HTTP server by editing the following file:
   `/exlibris/sfx_ver/sfx4_1/<instance>/config/httpd.conf`
3. Load the SSL module by removing the comment sign (#) from the following lines:

```
#<IfModule mod_ssl.c>
   #Include /exlibris/sfx_ver/sfx4_1/<instance>/config/
ssl.config
#</IfModule>
```

4 Before this section, add the following line:

```
LoadModule ssl_module /exlibris/sfx_ver/sfx4_1/app/apache/
modules/mod_ssl.so
```

NOTE:
You must list the full path of `ssl.config`.

5 HTTPS and HTTP should have different log files. To create different log files, create a virtual host configuration. Locate the following text:

```
Include /exlibris/sfx_ver/sfx4_1/<instance>/config/
local_httpd.conf
```

Add the following lines before it:

```
<VirtualHost _default_:INSTANCE_PORT_NUMBER>
#ServerAdmin webmaster@dummy-host.example.com
#DocumentRoot /www/docs/dummy-host.example.com

ServerName _default_:INSTANCE_PORT_NUMBER
ErrorLog  /exlibris/sfx_ver/sfx4_1/<instance>/logs/
apache/error_log
  CustomLog      /exlibris/sfx_ver/sfx4_1/<instance>/
logs/apache/access_log common
</VirtualHost>
```

NOTE:
`INSTANCE_PORT_NUMBER` is the same port that you already have for this instance. (If you do not remember the port number, use the listen port number from the configuration file.)

6 Verify that there are no additional VirtualHost sections in the file.

Configuring the Virtual Host for HTTPS

To set up an HTTPS virtual host, an SSL certificate and key is required. There are two possible ways to obtain the certificate and key:

- A site certificate can be obtained through a UW/IST Certificate Authority. This is recommended for a production environment.
- You can generate your own certificate for testing purposes.

To generate the SSL certificate and key:

1 Create a subdirectory for the certificate and key:

```
cd /exlibris/sfx_ver/sfx4_1/<instance>/config
mkdir keys
cd keys
```

2 Create an RSA private key:

```
openssl genrsa -des3 -rand
file1:file2:file3:file4:file5 -out server.key 1024
```

NOTE:
Remember your pass-phrase for future use.

3 Remove the pass-phrase from the key:

```
openssl rsa -in server.key -out server.pem
```

4 Generate the CSR:

```
openssl req -new -key server.key -out server.csr
```

5 Enter the server host name in the Common Name field.

6 Generate a self-signed certificate:

```
openssl x509 -req -days 60 -in server.csr -signkey
server.key -out server.crt -set_serial XX
```

7 Replace the XX in the command with any random two-digit number. This is the certificate serial number and it should be unique among your instances.

NOTE:
For more information on how to generate a key and CSR, see http://slacksite.com/apache/certificate.html.

8 For security reasons (not obligatory), the owner of the directory keys and the files located inside should be the `root` user:

```
su -
cd  /exlibris/sfx_ver/sfx4_1/<instance>/config/keys
chown root:root *
chmod 775 *
cd ..
chown root:root keys
```

NOTES:

- HTTP and HTTPS cannot share the same port.
- Each instance should have its own certificate and key.

After you have obtained an SSL certificate and key, you can configure the virtual host for SSL.

To configure the virtual host for SSL:

1 Copy the sample file listed in the `config` directory of your instance:

```
sx
cp config/ssl.config.sample config/ssl.config
cn
```

2 Edit the file `/ssl.config` content by replacing the following placeholders with their actual values:

- `INSTANCE_SSL_PORT_NUMBER` – Replace this placeholder with the desired port number for SSL communication for the instance. (Note the default port number for SSL is 443, which can be used only by the `root` user.)
- `SERVER_HOST_NAME` – Replace this placeholder with the server host name. The value is the same for all instances.
- `INSTANCE` – Replace this placeholder with the instance name.

Configuring the Reverse Proxy Server

Before you can configure the reverse proxy server to support SSL, you must:

- Create the configuration file `reverse_proxy_ssl.config`

- Generate an SSL certificate and key

To create reverse_proxy_ssl.config:

1 Log on as the `sfxglb41` user and type the following:

```
cn
cp reverse_proxy_httpd.config__
reverse_proxy_httpd_ssl.config__
```

NOTES:

- All the instances use the same reverse proxy configuration file.
- Use a text editor to edit `reverse_proxy_httpd_ssl.config_`.

2 Before the following line:

```
ProxyPass /sfxadmin/sfxglb41 http://localhost:3101/
sfxadmin/sfxglb41
```

add:

```
SSLProxyEngine on
```

3 For instances that works with SSL, there is a section with 13 lines with the name of the instance in the line. Change each line as follows:

- Replace `http` with `https`.
- Change the port to the SSL port of the instance.

The following is an example of the text before the changes:

```
ProxyPassReverse /sfxadmin/sfxlcl41
http://localhost:80/sfxadmin/sfxlcl41
```

The following is an example of the line after the changes – `http` has been changed to `https`, and port 80 has been changed to 90:

```
ProxyPassReverse /sfxadmin/sfxlcl41
https://localhost:90/sfxadmin/sfxlcl41
```

To generate an SSL certificate and key:

1 Log on as the `sfxglb41` user.

2 Create a subdirectory for the certificate and key:

```
cd /exlibris/sfx_ver/sfx4_1/app/apache/conf
mkdir keys
cd keys
```

3 Create an RSA private key:

```
openssl genrsa -des3 -rand
file1:file2:file3:file4:file5 -out server.key 1024
```

NOTE:
Be sure to remember your pass-phrase for future use.

4 Remove the pass-phrase from the key:

```
openssl rsa -in server.key -out server.pem
```

5 Generate the CSR.

```
openssl req -new -key server.key -out server.csr
```

NOTE:
Enter the server host name in the Common Name field.

6 Generate a self-signed certificate.

```
openssl x509 -req -days 60 -in server.csr -signkey
server.key -out server.crt -set_serial XX
```

7 Replace the XX in the command with any random serial number made of two digits. This is the certificate serial number and it should be unique among your instances.

8 For security reasons (not obligatory), the owner of the directory keys and the files located inside should be the root user:

```
su -
cd /exlibris/sfx_ver/sfx4_1/app/apache/conf/keys
chown root:root *
chmod 775 *
cd ..
chown root:root keys
```

After you have created `reverse_proxy_ssl.config` and obtained an SSL certificate and key, you can configure the reverse proxy server.

To configure the reverse proxy server:

1 Configure the virtual host for HTTP by adding the following lines at the end of `/exlibris/sfx_ver/sfx4_1/proxy/conf/httpd.conf`:

```
<VirtualHost default:PROXY_HTTP_PORT >
ServerAdmin webmaster@dummy-host.example.com
DocumentRoot /www/docs/dummy-host.example.com
ServerName default:PROXY_HTTP_PORT
ErrorLog /exlibris/sfx_ver/sfx4_1/proxy/logs/
error_log
CustomLog /exlibris/sfx_ver/sfx4_1/proxy/logs/
access_log common
ProxyRequests Off
<Proxy *>
Order deny,allow
Allow from all
</Proxy>
RewriteEngine on
Include /exlibris/sfx_ver/sfx4_1/sfxglb41/config/
reverse_proxy_httpd.config__
</VirtualHost>
```

In the previous example, `PROXY_HTTP_PORT` is the port number for accessing the HTTP proxy server (for example, 3020).

NOTE:
The include line for the `reverse_proxy_httpd.config` file has to go inside the VirtualHost section.

2 Add SSL support by adding the following lines at the end of `/exlibris/sfx_ver/sfx4_1/proxy/conf/httpd.conf`:

```
<IfModule mod_ssl.c>
   Include /exlibris/sfx_ver/sfx4_1/app/apache/conf/
ssl.config
</IfModule>
```

3 Configure SSL Enabled Virtual Hosts.

4 Copy the sample file located in the `config` directory of the `sfxglb41` instance:

```
cp /exlibris/sfx_ver/sfx4_1/sfxglb41/config/
proxy_ssl.config.sample /exlibris/sfx_ver/sfx4_1/app/
apache/conf/ssl.config
```

5 Edit the new file content by replacing the following placeholders with their proper values:

- `PROXY_HTTPS_PORT` – Replace this placeholder with the desired port value (for example, 3050).
- `SERVER_HOST_NAME` – Replace this placeholder with the server host name. This value is the same for all instances.

For a sample `ssl.conf` file, see **Configuring SSL - Deprecated** on page **213**.

C

Maintenance Task Checklist

This checklist does not replace the full SFX documentation. It can be used to set up and maintain your SFX installation. See the associated documentation as listed in the table for further details on each task. Further tasks may need to be performed after the use of specific functions. Follow the documentation as appropriate.

You can schedule the maintenance tasks listed in this appendix to be run as cron jobs. For more information, see **Scheduling File System Maintenance Tasks** on page **94**.

Note that cronjobs for jobs set via the Server Admin Utility can be viewed using the utility. You can also view your cronjobs by typing the following from the command line:

```
crontab -l
```

This command displays a list of the content of the UNIX user's crontab. Note that each UNIX user has a unique crontab.

IMPORTANT:

Instance-specific maintenance tasks such as building the A-Z list or clearing the `SFX_REQUEST` table must be run with the instance user. Make sure that you always run scripts with the correct user.

Table 12. Maintenance Tasks Checklist

Task #, Name	Notes	Cloud Environment	Recommended Frequency	Documentation References

1 - File system clean file system regularly	KBTool files (dataloader, export tool, etc.):
	`exlibris/sfx_ver/sfx_version_4/<instance>/dbs/scratch`
	NOTE:
	Do not delete `sessions` directory
	Do not delete latest files in the `e_collection` directory
	Revision update reports and downloads:
	`/exlibris/sfx_ver/sfx4_1/tmp`
	Logs for Server Admin Utility tasks and instance apache logs:
	`/exlibris/sfx_ver/sfx4_1/<instance>/logs/apache`
	`/exlibris/sfx_ver/sfx4_1/proxy/logs`
		Cloud customer is responsible for all cleaning under their `<instance>` directory; Ex Libris administrators clean everything under `sfxglb41`, `tmp` and `app` directories.	At least monthly	**File System Maintenance** on page **88**

2 - File system clean Apache logs	Cleanup of all Apache error and access logs. Proxy Apache can be performed via the Server Admin Utility. The instance Apache logs need to be deleted from the command line. For example: `>>cat /dev/null > access_log.`	All Apache log files are cleaned by ExLibris administrators.	Monthly	**Clean Apache and MySQL Logs** on page **90**

Table 12. Maintenance Tasks Checklist

Task #, Name	Notes	Cloud Environment	Recommended Frequency	Documentation References
3 -Maintaining local files	Keep track of your local files and broken symbolic links to ensure that changes in SFX over time do not affect their functioning. (Use the Server Admin Utility to check for broken symbolic links and local files).	Cloud customer responsibility.	Ongoing	**UNIX Symbolic Links** on page **17**, **Check for Broken Symbolic Links** on page **92**, and **Check for Local Files** on page **93**
4 - Database - MySQL® check tables	Use the Server Admin Utility to run table checks on `sfxglb41` and all local instance databases.	Ex Libris administrators do this periodically.	At least monthly	**Database Maintenance** on page **100**.
5 - Database - MySQL® repair tables	Use the Server Admin Utility to run table repairs.	Ex Libris administrators repair on a need-to basis.	When problems are found with the `check` command	**Database Maintenance** on page **100**
6 - Clear SFX_REQUEST table via cron regularly	This table needs to be cleared every night. This can be added to the crontab via the Server Admin Utility. This job is crucial, as the system might crash if it is not done on a regular basis.	Scheduled during Cloud customer implementation.	Daily	**Clear SFX_REQUEST Table** on page **123**
7 - Statistics - move online to offline via cron regularly	Use the Server Admin Utility to set up a scheduled cronjob to move online stats data to offline tables.	Scheduled during Cloud customer implementation.	Depends on the usage load of the server and reporting needs	**Guidelines for SFX Statistics Maintenance** section of the *SFX Advanced User's Guide*

Table 12. Maintenance Tasks Checklist

Task #, Name	Notes	Cloud Environment	Recommended Frequency	Documentation References
8 - Statistics - move offline to archive via cron regularly	Use the Server Admin Utility to archive offline table data once statistics queries have been run. We recommend archiving every 200,000 requests to keep the number of items contained in the offline table as manageable as possible. Use the SFX Admin interface to schedule statistical queries and have the results delivered via e-mail.	Cloud customer responsibility. All SFX usage statistics older than 1 year is automatically moved to an archive file for Cloud customers.	Depends on the usage of the load of the server and reporting needs	**Guidelines for SFX Statistics Maintenance** section of the *SFX Advanced User's Guide*
9 - KB updates	SFX revision updates contain software updates and database updates. Database updates are released at the beginning of each week. Software updates are released about every three months. Notifications are sent to the `sfx_supp email` list serv.	Ex Libris administrators apply the revision, but Cloud customers must check the KB reports.	Weekly	**SFX KnowledgeBase Update** section of the *SFX General User's Guide*
10- RSI Index	This is used by SFX the multi-object window and MetaLib to display an appropriate FullText indicator for each record. The index needs to be created regularly. Use the Server Admin Utility to set up a cron job. Note that this index needs to be up to date before creating the A-Z list index (see next maintenance task).	Scheduled during Cloud customer implementation.	As you determine	**Rapid Service Indicator** on page **188**

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Table 12. Maintenance Tasks Checklist

Task #, Name	Notes	Cloud Environment	Recommended Frequency	Documentation References
11 - A-Z List	If you are using the A-Z List, set up a regular cronjob to index the list. Use the Server Admin Utility to create the job. Note that the RSI index needs to be up-to-date before creating the A-Z list index. When setting up cron jobs for both indexes, schedule the RSI index and the A-Z index to be built at the same time.	Cloud customer responsibility. If it is known at installation that customers are using A-Z, this is set up during implementation.	As you determine	**A-Z and eBook Search Indexes** on page 137 and the **A-Z List** section of the *SFX Advanced User's Guide*
12 - SFX Backups	With downtime and with no downtime options.	Ex Libris administrators perform everything relating to backups.	Daily with no downtime and once a week with downtime	**SFX Backup and Recovery** on page 53
13 - Additional optional tasks (depending on whether these features are being used)	Google export Pubmed Export MARCit! export	Cloud customers.	As you determine	**Export Google Institutional Holdings File** on page 153, the **Google Scholar Format** section of the *SFX General User's Guide*, the **PubMed XML LinkOut** section of the *SFX General User's Guide*, and MARCit! documentation
14 - Cleanup of the old revision update reports stored in the SFX DB.	To perform this task, use **ServerAdminUtil > 9 Revision update > 1 Clean REPORT tables**. The option allows you to delete specific revision reports or delete all but the last three reports. Run this task as the `sfxglb41` user.	Ex Libris administrators perform this task.	Once a month.	**Clean REPORT Tables** on page 176.

Table 12. Maintenance Tasks Checklist

Task #, Name	Notes	Cloud Environment	Recommended Frequency	Documentation References
15 - eBook Search	If you are using the eBook Search, set up the cronjobs to index the list. Note that the monograph RSI index needs to be up-to-date before creating the eBook Search index. When setting up cron jobs for both indexes, schedule the monograph RSI index and the eBook Search index to be built at the same time. It is possible to build or schedule a build of the RSI and eBook Search indexes for multiple instances. Use the Server Admin Utility to create the jobs.	Cloud customer responsibility. If it is known at installation that customers are using eBook Search , this is set up during implementation.	■ An incremental only build once a day (or on another frequent schedule). This build is fast and will not impact SFX performance. ■ A build using the **incremental unless complete build is required** option once every night (or less frequently, for example, a few times a week or even weekly). Do not schedule this build to run during the day because a complete build is performed if the incremental build cannot be run. Running a complete build may impact SFX performance. Alternatively, it is possible to only set up only the second scheduled task if there are few changes expected in activation information for books and if it is acceptable to not have the activation changes reflected immediately in the eBook search and RSI monographs.	**A-Z and eBook Search Indexes** on page 137 and the **A-Z eJournal List and eBook Search** section of the *SFX Advanced User's Guide*.

Table 12. Maintenance Tasks Checklist

Task #, Name	Notes	Cloud Environment	Recommended Frequency	Documentation References
16 - Automated localization of the Elsevier ScienceDirect targets	Optional task (depending on whether Elsevier ScienceDirect is part of the library collection and the autoload option is in use)	Cloud customer responsibility. (Provide ExLibris support with their institutional token from Elsevier.) Ex Libris administrators schedule this task.	Once a month	For more information, see the **Elsevier ScienceDirect Autoloader** section of the *SFX System Administration Guide* and the **ELSEVIER_SD/ Elsevier SD** section of the *SFX Target Configuration Guide*.
16 - Automated localization of the Ovid targets	Optional task (depending on whether Ovid is part of the library collection and the autoload option is in use)	Cloud customer responsibility. (Provide ExLibris support with their institutional token from Ovid.) Ex Libris administrators schedule this task.	Once a month	For more information, see the **Ovid** section of the *SFX System Administration Guide* and the **Ovid** section of the *SFX Target Configuration Guide*.
16 - Automated localization of the Springer Journal target	Optional task (depending on whether Springer is part of the library collection and the autoload option is in use)	Cloud customer responsibility. (Provide ExLibris support with their institutional token from Springer.) Ex Libris administrators schedule this task.	Once a month	For more information, see the **Springer Journal** section of the *SFX System Administration Guide* and the **Springer Journal** section of the *SFX Target Configuration Guide*.
16 - Automated localization of the SpringerBook target	Optional task (depending on whether Springer is part of the library collection and the autoload option is in use)	Cloud customer responsibility. (Provide ExLibris support with their institutional token from Springer.) Ex Libris administrators schedule this task.	Once a month	For more information, see the **SpringerBook** section of the *SFX System Administration* Guide and the **SpringerBook** section of the *SFX Target Configuration Guide*.

Table 12. Maintenance Tasks Checklist

Task #, Name	Notes	Cloud Environment	Recommended Frequency	Documentation References
17 - CDI Export	If you are using the Primo discovery system and CDI, set up the cronjob to create a daily CDI export from the Server Admin Utility or schedule the task from Task Manager.	Ex Libris administrators perform this task.	Daily	**CDI Export** section of the *SFX General User's Guide*, the **ServerAdmin Utility** and **Task Manager** sections of the *SFX System Administration Guide*.
17 - Automated localization of the Taylor & Francis eBook target	Optional task (depending on whether Taylor & Francis eBooks is part of the library collection and the autoload option is in use)	Cloud customer responsibility. (Customers provide Ex Libris Support with their institutional token from Taylor & Francis.) Ex Libris administrators schedule this task.	Once a week (Saturday is the recommended day)	For more information, see the **Taylor & Francis eBook** section of the *SFX System Administration Guide* and Using the Taylor & Francis AutoLoader for SFX

D

eBook Search Set-Up Instructions

This appendix describes how to set up the eBook Search feature.

This section includes:

- **Prerequisites** on page **229**
- **Solr Sizing Requirements** on page **229**
- **Setting up the eBook Search** on page **231**
- **eBook Search Set-Up Scripts for SFX Installations with Multiple SFX Instances** on page **234**

Prerequisites

The 4.3.0 Service Pack (including both the software and extra packages) needs to be applied on the SFX server.

NOTE:
If you want to implement the instructions below without first logging out after applying the 4.3.0 SP, do the following: as the `sfxglb41` user, go to the home directory of the `sfxglb41` instance and type `source .cshrc`

Solr Sizing Requirements

Before setting-up the eBook Search, it is important to ensure the SFX server can handle the additional disk space and memory usage to support this new tool.

The following tables provide some statistics and requirements that need to be met before you can set up the eBook Search.

Disk Space

For about 350,000 active book objects (in an SFX instance without institutes defined) about 500MB additional disk space is requiredin addition to the current SFX disk space requirements. For each institute defined in the instance, another 60-70MB disk space is required.

It is strongly recommended to take into account future growth of the eBook collection when considering disk space requirements.

For example:.

Table 13. Disk Space

Number of Active Book Objects	Number of Institutes	Size (MB)
350.000	No institutes (only default)	500
350.000	2 (default + 1 institute)	550
350.000	3 (default + 2 institutes)	600
900.000	No institutes (only default)	1200
900.000	4 (default + 3 institutes)	2100

Memory Usage

The Solr index requires the following additional memory in addition to the current SFX memory requirements, depending on the number of active book objects for each instance using the eBook Search:

Table 14. Heap and Cache Size

Number of Active Book Objects	Number of Indexes (Solr Cores)	Number of institutes	Heap Size Required (MB)	Total Memory (MB)
300,000 - 400,000	1	No institutes (only default)	500	750
350,000	1	6 (default +5 institutes)	500	750
350,000	1	11 (default +10 institutes)	500	750
900,000	1	No institutes (only default)	500	750
300,000 - 400,000	3	No institutes (only default)	700	1050
300,000 - 400,000	10	No institutes (only default)	1200	1800
300,000 - 400,000	20	No institutes (only default)	2000	3000

NOTES:

- Configure the heap size in the `max_memory_size` parameter in the `solr_startup_params` section in the `/config/solr_index.config_` file as described in **Setting up the eBook Search** on page **231**.

  Heap size depends on the number of instances using Solr and on the number of active book records.

- Total memory is calculated as: required heap size + 50% of the required heap. This should be either free memory or cached memory.

  It is recommended to have additional 1GB of free/cached memory regardless to the new component for other processes run on the machine.

- Take into account future growth of the eBook collection when considering memory usage requirements of your SFX installation, as well as additional instances that may use the eBook Search in the future.

Setting up the eBook Search

Perform the following procedure as the `sfxglb41` user. Part of the procedure uses the Server Admin Utility. (For complete details on the options in the Server Admin Utility, see **Server Admin Utility** on page **85**).

Cloud customers should not perform any steps that involve using the `sfxglb41` user. These are handled by the hosting team.

1 In the global instance, in the `solr_startup_params` section of the `/exlibris/sfx_ver/sfx4_1/sfxglb41/config/solr_index.config_` configuration file, perform the following configuration changes:

```
Section "solr_startup_params"
        active  "N"
        max_memory_size 500
        port    8079
        check_memory "Y"
        timeout "300"
EndSection
```

- Set the `active` parameter to `Y`.
- For the `max_memory_size` parameter – Specify a value (in MB) using the Heap Size Required column of the Memory Usage table (detailed in the Solr Sizing requirements section). Make sure that the Heap Size corresponds to the number of active book objects in the SFX installation (taking into account activation in all instances using the eBook Search). The default defined in the configuration file is 500.
- The default for the `timeout` parameter is 300 (5 minutes), but you can increase the value if Solr is known to need more time than that to start up.

2 Start Solr.

a From the main menu, select **1 Start services**.

b Select **12 Start Solr**.

3 Create a Solr core for all local instances.

a Select **14 Solr index**.

b Select **3 Create Solr cores for all instances**.

4 (optional) Change the Solr password to something other than the default. (The default password is `sfx2012`.)

a Select **3 Change passwords**.

b Select **4 Change Solr password (only by sfxglb41)**

5 Create the TRACKING_TABLE and triggers.

a Select **13 TRACKING table set-up and maintenance**.

b Select **2 Create table and triggers**.

NOTE:
This step is required only for non-Verde customers. Verde customers already have triggers in place before 4.3.0 for SFX-Verde publishing. These triggers are automatically adapted to work with the tracking table when applying the 4.3.0 SP.

Perform the following steps as a local instance user of each instance where A-Z eBooks will be used:

NOTE:
Steps 1 and 4 can be done for multiple instances in the SFX installation. For more information, see **eBook Search Set-Up Scripts for SFX Installations with Multiple SFX Instances** on page **234**.

1 (optional) Review and make changes as desired to the default eBook Search profile provided with the 4.3.0 SP. To do this, from the Set-up and Administration section of the SFX Admin Center, click **Configuration** and then click **eBook Search**.

NOTE:
It is possible to define additional eBook profiles - either manually or by copying the profiles defined for the A-Z eJournals list by using a wizard in the eBook configuration section. For more information, refer to the **Copying eJournals Configuration** section of the *SFX General User's Guide*.

Perform the following steps using the Server Admin Utility:

2 Build RSI eBooks and A-Z eBooks indexes:

a Select **7 AZ Index**.

b Select **2 eBook Search index tools**.

c Select **2 (Re)build eBook RSI and Search index**.

3 Set up RSI and A-Z eBooks scheduled tasks.

a Select **7 AZ Index**.

b Select **2 eBook Search index tools**.

c Select **4 Schedule an eBook Search (and RSI) index build**.

NOTE:

It is recommended to set up the following two scheduled tasks:

- an incremental only build once a day (or on another frequent schedule)
- a build using the **incremental unless complete build is required** option once every night (or on another less frequent schedule - for example, a few times a week or even weekly). Do not schedule this build to run during the day because a complete build is performed if the incremental build cannot be run. Running a complete build may impact SFX performance.

Alternatively, it is possible to only set up only the second scheduled task if there are few changes expected in activation information for books and if it is acceptable to not have the activation changes reflected immediately in the eBook search and RSI monographs.

It is possible to build or schedule a build of the RSI and eBook Search indexes for multiple instances. For more information, see **Monograph RSI and eBook Search Index Build for Multiple SFX Instances** on page **237**.

4 Change `config/rsi.config` for each local instance to use a separate RSI index for eBooks and eJournals. Set the parameter to `Y` to ensure eBook data is stored in a dedicated RSI index.

```
Section "monograph_parameters"
        Separate_RSI_for_Books "Y"
EndSection
```

NOTE:

You can change `config/rsi.config` for for multiple instances in one go by using a script. For more information, see **Script to Change config/rsi.config** on page **234**.

5 For customers with Consortia model 2 - consortia API only, see **Appendix B eBook Search Set-Up for Consortium Model 2** in the *Using SFX in a Consortium Environment* document to complete the consortia-specific set-up.

6 Edit the `local_httpd.config` file:

NOTE:
Perform the following only if the instance name in apache is not identical to the instance name in the SFX installation. For example, perform this step if the instance name on the server is `sfxlcl41` - but the SFX `base_url` is `<server>:<port>/sfxlcl3`. In this case, `sfxlcl3` is the instance aliased name.

a Log on as the instance user and type `cn`

b Type `vi local_httpd.config`

c If the following lines already exist in the `local_httpd.config` file:

```
RewriteEngine on

RewriteRule ^/<instance_aliased_name>-([^/]+)/azlist$ /
<instance_aliased_name>/azlist/$1 [PT,E=__INST_URL_PART:-$1]
RewriteRule ^/<instance_aliased_name>-([^/]+)/(.*)$ /
<instance_aliased_name>/$2 [PT,E=__INST_URL_PART:-$1]
```

add the following on the line after `RewriteEngine on`:

```
# For the azlist script redirect
RewriteRule ^/<instance_aliased_name>(-[^/]+)?/azbook(.*) /
<instance_aliased_name>/az$2?param_perform_value=ebook
[QSA,PT,E=__INST_URL_PART:$1]
```

NOTE:
Make sure to replace `<instance_aliased_name>` (in two places) with the instance aliased name.

d Type `:wq` to save the file.

e Restart the local instance apache:

```
apachectl stop
apachectl start
```

eBook Search Set-Up Scripts for SFX Installations with Multiple SFX Instances

This section describes the eBook search set-up scripts for SFX installations with multiple SFX instances.

Script to Change config/rsi.config

It is possible to use a script to change the `config/rsi.config` file for each local instance (or list of local instances) so that a separate RSI index is created for eBooks and eJournals.

Run the script as the `root` or `sfxglb41` user (in which case you are prompted for each instance UNIX password). It takes as input one of the following parameters:

- `--all_instances` (all local instances on the server)
- `--all_except_test_instances` (all local instances on the server, except for those with either `test` or `tst` in their name)
- `--file` (the list of instances is taken from a configuration file)

Location and name of the script:

`/exlibris/sfx_ver/sfx4_x/config/sfxglb41/admin/rsi_tools/update_all_rsi_books.pl`

Location and name of the configuration file:

`/exlibris/sfx_ver/sfx4_x/config/sfxglb41/config/rsi_ebook_setup.config_`

In the following section:

```
Section "configuration"
<instance_name1>
<instance_name2>
EndSection
```

Instructions when using the `--all_instances` option:

1. Log on to the server as the `sfxglb41` user.
2. Type `da`.
3. Type `./rsi_tools/update_all_rsi_books.pl --all_instances`.

The following is displayed:

```
Begin applying changes to RSI configuration file process.
Switching to instance: sfxlcl41.
Password:
Instance: sfxlcl41 - Configuration file changed (config/
rsi.config).
Switching to instance: new41.
Password:
Instance: new41 - Configuration file changed (config/
rsi.config).Configuration file(s) changed. Check /exlibris/
sfx_ver/sfx4_1/sfxglb41/logs/
rsi_ebook_setup.20120525174037.log for details.
```

Script to Copy all A-Z eJournal Profiles for Each Local Instance

This section describes the script to copy all A-Z eJournal profiles for each local instance (or a list of local instances) and create corresponding eBook Search profiles.

The script copies the profiles from A-Z ejournals to ebook Search for multiple instances. Run it as the `sxglb41` user and use as input one of the following parameters and the location and name of the configuration file, and the instance names:

- `--all_instances`
- `--all_except_test_instances`
- `--file`

The script can be used instead of having to use the copy profile wizard from the SFX Admin Center > eBook Search configuration interface for each instance.

The Script uses all A-Z eJournal profiles defined in a local instance to create corresponding eBook Search profiles (but only if they do not yet exist as an eBook Search).

For settings that do not exist in the A-Z eJournal list configuration, the following default settings are used:

- **Enable book thumbnails**: off
- **Enable link between A-Z eJournal and eBook search**: off

Location and name of the script:

`/exlibris/sfx_ver/sfx4_x/config/sfxglb41/admin/aztools/copy_AZ_profiles.pl`

Location and name of the configuration file:

`/exlibris/sfx_ver/sfx4_x/config/sfxglb41/config/AZ_ebook_profiles.config_`

```
Section "Instances"
<instance_name1>
<instance_name2>
EndSection
```

Instructions when using the `--all_instances` option:

1. Log on to the server as the `sfxglb41` user.
2. Type `da`.
3. Type `./aztools/copy_AZ_profiles.pl --all_instances`

The following is displayed:

```
Starting to work on instance sfxlcl41...
    Copying profile arts...
    finished.
Done for instance sfxlcl41.
Starting to work on instance new41...
Done for instance new41.
Done for ./aztools/copy_AZ_profiles.pl
```


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Monograph RSI and eBook Search Index Build for Multiple SFX Instances

It is possible to run and schedule the RSI and eBook Search index for multiple instances. Use **Server Admin Utility > 7 A-Z index > 4 AZ Index**. The following is displayed:

```
 1 eJournal A-Z index tools
 2 eBook Search index tools
 3 eJournal A-Z index tools for multiple instances (only by
sfxglb41)
 4 eBook Search index tools for multiple instances (only by
sfxglb41)
```

Select **4 eBook Search index tools for multiple instances** to create the RSI and eBook Search index for multiple instances.

For more information about this option, see **eBook Search Index Tools for Multiple Instances** on page **148**.

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