



How to Copy Aleph

Version 20

CONFIDENTIAL INFORMATION

The information herein is the property of Ex Libris Ltd. or its affiliates and any misuse or abuse will result in economic loss. DO NOT COPY UNLESS YOU HAVE BEEN GIVEN SPECIFIC WRITTEN AUTHORIZATION FROM EX LIBRIS LTD.

This document is provided for limited and restricted purposes in accordance with a binding contract with Ex Libris Ltd. or an affiliate. The information herein includes trade secrets and is confidential.

DISCLAIMER

The information in this document will be subject to periodic change and updating. Please confirm that you have the most current documentation. There are no warranties of any kind, express or implied, provided in this documentation, other than those expressly agreed upon in the applicable Ex Libris contract. This information is provided AS IS. Unless otherwise agreed, Ex Libris shall not be liable for any damages for use of this document, including, without limitation, consequential, punitive, indirect or direct damages.

Any references in this document to third-party material (including third-party Web sites) are provided for convenience only and do not in any manner serve as an endorsement of that third-party material or those Web sites. The third-party materials are not part of the materials for this Ex Libris product and Ex Libris has no liability for such materials.

TRADEMARKS

"Ex Libris," the Ex Libris bridge, Primo, Aleph, Alephino, Voyager, SFX, MetaLib, Verde, DigiTool, Preservation, URM, Voyager, ENCompass, Endeavor eZConnect, WebVoyage, Citation Server, LinkFinder and LinkFinder Plus, and other marks are trademarks or registered trademarks of Ex Libris Ltd. or its affiliates.

The absence of a name or logo in this list does not constitute a waiver of any and all intellectual property rights that Ex Libris Ltd. or its affiliates have established in any of its products, features, or service names or logos.

Trademarks of various third-party products, which may include the following, are referenced in this documentation. Ex Libris does not claim any rights in these trademarks. Use of these marks does not imply endorsement by Ex Libris of these third-party products, or endorsement by these third parties of Ex Libris products.

Oracle is a registered trademark of Oracle Corporation.

UNIX is a registered trademark in the United States and other countries, licensed exclusively through X/Open Company Ltd.

Microsoft, the Microsoft logo, MS, MS-DOS, Microsoft PowerPoint, Visual Basic, Visual C++, Win32,

Microsoft Windows, the Windows logo, Microsoft Notepad, Microsoft Windows Explorer, Microsoft Internet Explorer, and Windows NT are registered trademarks and ActiveX is a trademark of the Microsoft Corporation in the United States and/or other countries.

Unicode and the Unicode logo are registered trademarks of Unicode, Inc.

Google is a registered trademark of Google, Inc.

Copyright Ex Libris Limited, 2012. All rights reserved.

Document released: September 27, 2012

Web address: <http://www.exlibrisgroup.com>

Table of Contents

1	INTRODUCTION	4
2	PREPARING TO COPY ALEPH	5
2.1	Checking System Requirements on the Target Server	5
2.2	Installing Aleph 20 on the Target Server	5
2.3	Determining the Source Database Size	5
2.4	Exporting Aleph Libraries	5
2.5	Backing Up the Aleph Source Instance	6
2.6	Preparing the Target Server	6
3	COPYING THE ALEPH INSTANCE	7
3.1	Checking the Aleph Parameters and Modifying the Configuration Files	7
3.2	Fixing the Configuration Files	8
3.3	Fixing the PDS Configuration	8
3.3.1	Activating Configuration Changes	9
3.3.2	Updating the Aleph Prompt Menu File (optional)	9
3.3.3	COBOL Installation	10
4	INSTALLING THE ALEPH LICENSES	10
5	PREPARING THE ORACLE DATABASE FOR ALEPH	10
5.1	Increasing the Target Database Size	10
6	IMPORTING ALEPH DEMO LIBRARIES	11
7	POST-INSTALLATION TASKS	11
7.1	Post-Installation Checks	11
8	APPENDIX A - ORACLE DATA BASE AND LISTENER CONFIGURATION CHANGES	13

1 Introduction

Note:

Copying Aleph should be performed by a local System Administrator. The copy process might take a few hours depending on the server and on the copy method.

Ex Libris offers copying services for a fee to interested customers. Contact your local office to obtain a quote.

This document provides instructions for two methods for copying Aleph:

- Using the export/import routine and manual data copy.
- Using the image/snapshot copy routine. This option is much faster than the first one.

For the Aleph 20.0.x copy process using the export/import routine, perform the initial installation with the Aleph Installation Kit (AIK) and only then proceed with the data copy.

Limitations:

- Aleph copy must be done between servers with the same OS including OS level.
- If Aleph 20 is already installed on the target server (data/setup replace only), both the source and target Aleph versions must be at the same service pack level.
- Aleph copy procedure using export/import is appropriate only for installations with a DB size up to 250GB.

For all other cases, copying Aleph must be performed by Ex Libris Installation Team only.

For more details and mandatory requirements, refer to *Requirements for Aleph Installation* and *Aleph Installation Kit*.

The Aleph installation is performed in the following standard directories:

- Aleph software under the directory: `/exlibris/aleph/a20_<slot>`
- Oracle software under the directory: `/exlibris/app/oracle/product/11`

Note:

Install additional copies of Aleph 20.0.x on a different slot than other Aleph instances existing on the same server.

For all questions about non-standard installations, contact your local Ex Libris Support representative via CRM.

Note:

To receive a license for Aleph, contact your local Ex Libris representative.

2 Preparing to Copy Aleph

2.1 Checking System Requirements on the Target Server

Before installing Aleph, verify that all operating system components comply with the Aleph requirements as outlined in *Requirements for Aleph Installation*.

2.2 Installing Aleph 20 on the Target Server

For copying using the image/snapshot copy routine, besides copying the application and DB files, place the following system files on /exlibris:

- /etc/shadow
- /etc/nsswitch.conf
- /etc/group
- /etc/passwd
- /etc/crontab
- /etc/services

Place the following startup scripts on /exlibris:

- /etc/init.d/exlibris
- /etc/rc*.d

Perform the image/snapshot copying when both the application and database are down.

The rest of this chapter is relevant only for copying Aleph using export/import routines. Skip this section if you copy Aleph using the image/snapshot copy routine and continue with [Chapter 3](#).

Perform the Aleph 20 installation and the run post-installation checks on the target server using the *Aleph Installation Kit* document.

2.3 Determining the Source Database Size

On the source server, check available space and the total space of the main Aleph DB tablespaces (TS0, TS1, TS1D, TS1X, TS2D, TS2X, TS3D, TS3X, etc.)

As aleph user, type the following:

```
dlib usm01
util o - 14 - 8 (sequential menus)
```

If the dataset size is insufficient, increase the size of the database. For more information, see [Increasing Target DB size](#) on page [10](#).

2.4 Exporting Aleph Libraries

To export the Aleph libraries, perform the following as an aleph user:

1. Type the following:

```
cd /exlibris/ftp_from_exlibris
mkdir export
chown oracle:dba export
```

2. Create the directory in the database (or replace it if it already exists) and give it the necessary grants:

```
sqlplus aleph_dba/aleph_dba as sysdba
CREATE OR REPLACE DIRECTORY dumpdir AS '/exlibris/ftp_from_exlibris/export';
GRANT SELECT ANY TABLE TO ALEPH_ADMIN;
GRANT READ,WRITE ON DIRECTORY dumpdir TO ALEPH_ADMIN;
exit
```

3. Export the libraries (Type the following on one command line.):

```
expdp $ALEPH_ADMIN dumpfile=aleph20_exp.dmp directory=dumpdir
logfile=exp20.log schemas=`echo $aleph_libs | sed 's/ /,/g'`
```

Note that the actual export is running as an Oracle job so it will keep running even if the terminal is closed or the connection is lost.

4. Check the log file:

```
tail -f /exlibris/ftp_from_exlibris/exp20.log
```

Transfer the export to the target server. If possible, copy it to a different partition than where the database is located in order to have better hardware performance and save time. Remember this location for the import process (at the end of the copy and install procedures), for example:

```
scp /exlibris/ftp_from_exlibris/aleph20_exp.dmp <user>@<machine>:<path>
```

2.5 Backing Up the Aleph Source Instance

In order to backup /exlibris/aleph/a20_<source_slot>, prepare tar files of the sub-directories on the source server. On Solaris/AIX system, use gnu tar to create tar files. Using /exlibris/product/bin/tar is recommended.

```
cd /exlibris/aleph

/exlibris/product/bin/tar cvf a20_<source_slot>.tar
a20_<source_slot>
gzip a20_<source_slot>.tar

/exlibris/product/bin/tar cvf u20_<source_slot>.tar
u20_<source_slot>
gzip u20_<source_slot>.tar
```

Note:

The UTREE (u20_<slot>) might be spread among several different mount points.

2.6 Preparing the Target Server

To prepare the target server:

1. Copy this Aleph package to the target server, and extract it.

2. If there is another Aleph version on the target server, extract it under `/exlibris/ftp_from_exlibris`, then rename it with the appropriate slot number and move it to `/exlibris/aleph`.
3. Transfer this Aleph package to the target server (with FTP `scp`, for example) and extract manually the tar file under the `/exlibris/aleph` directory.

Note:

On a Solaris system, use `gnu_tar` instead of the standard `tar` command. It is available in the AIK installation in `/exlibris/ftp_from_exlibris/aik/bin/`

4. Remove the tar file on the source server.

3 Copying the Aleph Instance

3.1 Checking the Aleph Parameters and Modifying the Configuration Files

The steps described below are relevant for both copy scenarios.

1. Log on to target server as an `aleph` user.

Note:

The following steps replace the source server details with the target server details in the relevant files:

- long (fully qualified) hostname including the domain name
- short hostname
- external IP address
- internal IP address
- `HTTP_PORT`

Caution:

- Sometimes several hostnames are defined and used for the same server (see for example `/etc/hosts` definitions)
- Perform the following steps to check for the presence of an old hostname value. Do not automatically replace this value before checking that every change is relevant.
- In the following modification steps, proceed first with full hostname replacement and then with short hostname replacement.

Note that all the required changes in the configuration must be done on both `ATREE` and `UTREE`.

```
UTREE:
    cd /exlibris/aleph/u20_<target_slot>
ATREE:
    cd /exlibris/aleph/a20_<target_slot>
```

2. Check for necessary `tml` files:

```
find . -name "*.tml" -print -name "*.tml" | sed 's/\.tml//g'

set DD=`date +%Y%m%d`
```

or

```
set DD=`date +%Y%m%d.%H%M`  
echo $DD
```

3. Change the full hostname of <source_server_name> to <target_server_name>.
4. Check the configuration files to be modified. (Type this command on one command line.)

```
find . -name "*.tml" -print -o -name ".*.tml" -print | sed  
's/\.tml//g' | xargs grep <source_server_name>
```

5. Change the necessary files. (Type this command on one command line.)

```
find . -name "*.tml" -print -o -name ".*.tml" -print | sed  
's/\.tml//g' | xargs perl -pi.$DD -e  
's/<source_server_name>/<target_server_name>/g'
```

6. Type the same command again to replace the following:
 - Other potential long hostnames of the source server
 - The short hostname of the source server
 - The internal IP of the source server (if required)
 - The external IP of the source server (if required)
 - The HTTPD_PORT number of the source server (if required)
7. For each case, use the appropriate value instead of <source_server_name> and <target_server_name>.

Note:

The two following two steps (are relevant **ONLY** for version copying between different slots.

3.2 Fixing the Configuration Files

1. Type the following to check which files need to be changed. (Type this command on one command line.)

```
find . -name "*.tml" -print -o -name ".*.tml" -print | sed 's/\.tml//g'  
| xargs grep a20_<source_slot>
```

2. Type the following to change the necessary files. (Type this command on one command line.)

```
find . -name "*.tml" -print -o -name ".*.tml" -print | sed 's/\.tml//g'  
| xargs perl -pi.$DD -e 's/a20_<source_slot>/ a20_<target_slot>/g'
```

3. Check ALEPH_COPY and ALEPH_SUB_PORT in ./alephe_root/aleph_start

Check the ServerPort in ./apache/conf/httpd.conf. The default value is
499<target_slot>.

3.3 Fixing the PDS Configuration

Type the following to fix the PDS configuration:

```
pdsroot
```

```

find . -name "*.pm" -print -o -name "*.pl" | xargs grep
20_<source_slot>

find . -name "*.pm" -print -o -name "*.pl" | xargs perl -pi.$DD -e
's/20_<source_slot>/20_<target_slot>/g'

```

3.3.1 Activating Configuration Changes

To activate the configuration changes:

1. Log out and log in again as the aleph user.
2. Start the post installation script.

```

cd $aleph_dev/install
csh -f change_post.csh

```

3.3.2 Updating the Aleph Prompt Menu File (optional)

To update the Aleph prompt menu file:

1. Connect as the aleph user:

```
>> su - aleph
```

2. Edit the /exlibris/aleph/def_aleph.dat file.

```

set def=1
set list="1"
setenv TERM vt220
## -----
#
## # # # #
#
# 1 a20_1 3 10 8331
#
set login1="/exlibris/aleph/a20_1"

```

3. In order to add version 20 to the prompt menu, (in the example below, the directory path is /exlibris/aleph/a20_2 and the port is 8332), update the variable list to add the description line to the menu and add a login2 variable. All changes are marked in red:

```

set def=1
set list="1 2"
setenv TERM vt220
## -----
#
## # # # #
#
# 1 a20_1 3 10 8331
#
# 2 a20_2 4 15 8332
#
set login1="/exlibris/aleph/a20_1"
set login2="/exlibris/aleph/a20_2"

```

4. Save the file and log on again as the aleph user.

5. Correct the file `~aleph/.cshrc` according to the existing content of this file on the source server (if it is not standard).

3.3.3 COBOL Installation

This step is relevant only for copying done using the image/snapshot copy routine.

1. Download the COBOL package from Ex Libris FTP server:

```
cd /exlibris/ftp_from_exlibris/  
ftp ftp.exlibrisgroup.com  
user: produser password: //get password from Ex Libris Support  
cd cobol/cobol5  
bin  
get install_cobol5.tar  
quit
```

2. Install COBOL (root permissions required):

```
su - root  
cd /exlibris/ftp_from_exlibris/  
tar xvf install_cobol5.tar  
cat cobol5.tar.gz_a* | tar xzf -  
./install_cobol.sh aleph
```

4 Installing the Aleph Licenses

Before checking Aleph, make sure you have received the Web license from the Ex Libris office.

To install the license:

1. Type the following:

```
cd $alephe_tab  
vi license  
vi license.www_x
```

2. Erase all the existing licenses and enter the new licenses displayed.

5 Preparing the Oracle Database for Aleph

Note:

This step is relevant only for copying Aleph using export/import routines. Skip this section if you copy Aleph using image/snapshot copy routine and perform steps described in [Appendix A](#)

5.1 Increasing the Target Database Size

If the newly created database size is insufficient to contain all data exported from the source server, increase its size in order to fit the original database on the source server.

Increase the size of the main Aleph DB tablespaces (TS0, TS1, TS1D, TS1X, TS2D, TS2X, TS3D, TS3X, etc. according to used or total space of the source DB, or to the size expected to be necessary in the future. See [Determination of the Source Database size](#) on page [5](#).

You can perform this as the `oracle` user (ask your DB administrator) or as the `aleph` user.

In order to increase tablespaces TS0 and TS1, type the following commands as the `aleph` user:

```
dlib usm01
util o - 13 - 2 (sequential menus)
```

6 Importing Aleph Demo Libraries

Note:

This step is relevant only when copying Aleph using the export/import routines. Skip this section if you are copying Aleph using the image/snapshot routines and performing post-installation checks.

Run the following script for importing and indexing Aleph Demo Libraries as the `aleph` user:

1. Create the directory in the database. Be careful to create it in the location where the exported data has been transferred to and give it the necessary grants:

```
sqlplus aleph_dba/aleph_dba as sysdba
CREATE OR REPLACE DIRECTORY dumpdir AS
'/exlibris/ftp_from_exlibris';
GRANT SELECT ANY TABLE TO ALEPH_ADMIN;
GRANT READ,WRITE ON DIRECTORY dumpdir TO ALEPH_ADMIN;
```

2. Fix Aleph ora users (Pre-creation):

```
dlib usm01
ap
foreach lib ($aleph_libs)
  csh -f create_ora_user_b $lib
end
```

3. Import the libraries. (Type this command on one command line.)

```
impdp $ALEPH_ADMIN dumpfile=aleph20_exp.dmp directory=dumpdir
logfile=imp20log
```

Note that the actual export is running as an Oracle job so it will keep running even if the terminal is closed or the connection is lost.

You can always check the log file:

```
tail -f /exlibris/ftp_from_exlibris/imp20.log
```

7 Post-Installation Tasks

7.1 Post-Installation Checks

1. Log on as the `aleph` user.

2. Activate all Aleph services using following command:

```
cd $alephe_root  
aleph_startup
```

3. Connect to OPAC and GUI and perform the short Aleph functionality tests.

8 Appendix A - Oracle Data Base and Listener Configuration Changes

The DB global name contains the server name and should be changed by transferring the DB between the source and production servers.

To change the DB global name:

1. Make sure all relevant scripts are the same on the source and the target servers:

```
/etc/shadow
/etc/nsswitch.conf
/etc/group
/etc/passwd
/etc/crontab
/etc/services

startup scripts:
/etc/init.d/exlibris
/etc/rc*.d
```

2. Type the following:

```
>> ALTER DATABASE RENAME GLOBAL_NAME TO database.domain;
For exemple:
>> SELECT * FROM GLOBAL_NAME;
>> ALTER DATABASE RENAME GLOBAL_NAME TO "ALEPH.IL-
INST01.CORP.EXLIBRISGROUP.COM";
>> SELECT * FROM GLOBAL_NAME;
```

To change listener definitions

1. Log on to target server as an `oracle` user
2. Save existing listener configuration files:

```
cd $ORACLE_HOME/network/admin
cp -p tnsnames.ora tnsnames.ora.<date>
cp -p listener.ora listener.ora.<date>
```
3. Edit `tnsnames.ora` and `listener.ora`: replace hostname of `<source_server_name>` to `<target_server_name>`
4. Restart the listener:

```
lsnrctl stop
lsnrctl start
```
5. Log on to target server as an `aleph` user and verify listener configuration:

```
su - aleph
sqlplus aleph/aleph@$aleph_db
```
6. If the connection fails, verify that the `service_name` section in the `$ORACLE_HOME/network/admin/tnsnames.ora` file and the `global_dbname` section in the `$ORACLE_HOME/network/admin/listener.ora` file are **identical**.

If, for example, the `tnsnames.ora` file looks like the following (see the highlighted text in red):

```
il-aleph01.aleph21=(description=
    (address=
        (protocol=ipc)
        (key=aleph21))
    (address=
        (protocol=tcp)
        (host=il-aleph01)
        (port=1521))

(connect_data=(service_name=aleph21) (server=DEDICATED)))
```

And the `listener.ora` file looks like the following:

```
LISTENER =
  (DESCRIPTION_LIST =
    (DESCRIPTION =
      (ADDRESS = (PROTOCOL = TCP) (HOST = il-
aleph01.corp.exlibrisgroup.com) (PORT = 1521))
      (ADDRESS = (PROTOCOL = IPC) (KEY = REGISTER))
    )
  )
sid_list_listener=(sid_list=

    (sid_desc=
        (global_dbname=aleph21.il-
aleph01.corp.exlibrisgroup.com)
        (sid_name=prm4)

    (oracle_home=/exlibris/app/oracle/product/11r2)
    )
    (sid_desc=
        (global_dbname=aleph20.il-
aleph01.corp.exlibrisgroup.com)
        (sid_name=aleph20)

    (oracle_home=/exlibris/app/oracle/product/112)
    )
  )
startup_wait_time_listener=0
connect_timeout_listener=20
trace_level_listener=off
SECURE_REGISTER_LISTENER = (IPC)
```

Append the full `service_name` in the `tnsnames.ora` file. For example:

```
il-aleph01.aleph21=(description=
    (address=
        (protocol=ipc)
        (key=aleph21))
    (address=
        (protocol=tcp)
        (host=il-aleph01)
        (port=1521))
```

```
(connect_data=(service_name= aleph21.il-  
aleph01.corp.exlibrisgroup.com) (server=DEDICATED) )
```

If problem still occurs, contact Ex Libris support.

Document versions

Date	Version	Author	Notes
13 Feb 2011	1.0	Maria H	Document created