Requirements for ALEPH 500
Installation

Version 15 and later
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REQUEST FOR ALEPH 500 INSTALLATION .....................................15
This document describes the requisites for ALEPH 500 installation and use.

Before purchasing and installing the hardware and operating system, the customer must get re-confirmation from Ex Libris regarding the hardware and operating system requirements. In addition, the customer must also consult the specific Operating System Requirements document for the selected hardware, in order to verify that all the operating system components comply with ALEPH requirements.

These requirements may change as a result of Ex Libris development demands.

Attached is the Request for ALEPH 500 Installation form, which must be filled out by the customer and returned to Ex Libris prior to installation.

1. Server Hardware and Software Requirements

1.1 Server

ALEPH 500 and the Oracle database should be installed on a dedicated server.

Note: Other Ex Libris products can be installed on a server running an ALEPH installation, provided due care and attention are taken to ensure adequate performance of all applications. Please consult with your Ex Libris representative. If other Ex Libris products are going to be installed on the same server, you must take into account the requirements detailed in their Requirements for Installation documents, and confirm that your system answers the requirements of all systems. Please note that many of the software and hardware resources will be shared by ALEPH and other Ex Libris products. However, disk space requirements are accumulative. See section 1.2 Filesystem and Disk Space.

Operating System/Platform for ALEPH 500:

- Sun Solaris 9 and Solaris 8
- IBM RS/6000 AIX 5.1 and AIX 4.3.3
- HP/Alpha TRU64 V5.1 and V4.0.F
- Linux Red Hat Enterprise Linux AS version 2.1

For an exact model, including the required number of CPUs and required RAM, as a function of the database size and the number of concurrent users, contact your Ex Libris representative.

It is recommended to install a second instance of the ALEPH 500 system on a separate test server. For details contact your Ex Libris representative.
1.2 Filesystem and Disk Space

Each physical disk that will be used by Ex Libris should be mounted on a separate filesystem. The names of the filesystems should be /exlibris, /exlibris1, /exlibris2, and so on.

A filesystem named /exlibris with minimal size of 10GB is mandatory. It will be used exclusively for all software and configuration tables and files that will be installed by Ex Libris.

The ALEPH 500 database and ALEPH 500 scratch files will be installed on separate filesystems: /exlibris1, /exlibris2, and so on. Each of the filesystems should be at least 36 GB.

Disk space should not be composed of many “small” disks. There should be at least two filesystems of 3.5GB per 100 KB BIB records.

Following are the minimal disk space requirements for running and maintaining ALEPH 500 software and data:

<table>
<thead>
<tr>
<th>Usage</th>
<th>Size</th>
<th>Filesystem</th>
</tr>
</thead>
<tbody>
<tr>
<td>ALEPH 500 and Oracle software; and other add-on</td>
<td>7 GB on one dedicated disk</td>
<td>/exlibris</td>
</tr>
<tr>
<td>required software products</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Configuration tables and files</td>
<td>3 GB</td>
<td>/exlibris</td>
</tr>
<tr>
<td>ALEPH 500 Database</td>
<td>On a separate dedicated disk - 5GB + 7GB</td>
<td>/exlibris1,</td>
</tr>
<tr>
<td></td>
<td>per 100 KB</td>
<td>/exlibris2,</td>
</tr>
<tr>
<td></td>
<td>Bibliographic records.</td>
<td>....</td>
</tr>
<tr>
<td></td>
<td>At least 36 GB (except for</td>
<td></td>
</tr>
<tr>
<td></td>
<td>projects of up to 500 KB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bibliographic records)</td>
<td></td>
</tr>
<tr>
<td>Scratch files</td>
<td>On a separate dedicated disk - 5GB + 7GB</td>
<td>/exlibris1,</td>
</tr>
<tr>
<td></td>
<td>per 100 KB</td>
<td>/exlibris2,</td>
</tr>
<tr>
<td></td>
<td>Bibliographic records.</td>
<td>....</td>
</tr>
<tr>
<td></td>
<td>At least 36 GB (except for</td>
<td></td>
</tr>
<tr>
<td></td>
<td>projects of up to 500 KB</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Bibliographic records)</td>
<td></td>
</tr>
<tr>
<td>Swap space</td>
<td>Twice the amount of RAM or at</td>
<td></td>
</tr>
<tr>
<td></td>
<td>least 1GB, whichever is greater</td>
<td></td>
</tr>
<tr>
<td>/tmp</td>
<td>1 GB</td>
<td></td>
</tr>
</tbody>
</table>
The above rules are general outlines for determining the minimal disk space requirements. The exact amount will be determined in conjunction with the Ex Libris representative. Any deviation from these rules must be confirmed by Ex Libris.

If there is also a MetaLib/SFX installation on the same server, an additional 10 GB are required on the /exlibris disk for a basic SFX installation (software and database); and an additional 1 GB is required on the same disk for each additional SFX instance. The MetaLib software is installed on /exlibris and does not need additional space. The MetaLib database will be installed on /exlibris1, /exlibris2 and so on. An additional 10 GB are required for the database, and an additional 3 GB are required for each additional MetaLib instance.

The disk requirements include the ability to support the following activities:

1. Full conversion
2. Reorganization of the database (as part of the periodical maintenance of the database) with minimal downtime
3. Full re-indexing of the database with minimal downtime.
4. Upgrade to a new ALEPH 500 version or revision with minimal downtime.
   
   Note that in special cases an upgrade might require temporary additional disk space.
5. ALEPH 500 standard backup for small sites (see section 1.5 Backup and Recovery Media and Procedures)

The disk requirements do NOT include:

1. System disk requirements
2. Disk space needed for running Oracle in Archive-Log mode (see section 1.5 Backup and Recovery Media and Procedures.)
3. Disk space requirements for backup in large sites (see section 1.5 Backup and Recovery Media and Procedures.)
4. All types of data redundancy, such as RAID 1,5 or 0/1 solutions

1.3 Native C Compiler

Operating systems other than Linux require an installed native C compiler with ANSI support.
Purchase and installation of the native C compiler is the customer’s responsibility. The native C compiler is supplied by the hardware and operating system vendor.

This compiler is in addition to gcc, which is required as well, and will be installed by Ex Libris (see section 1.6 Additional Server Software).

1.4 Media for Data Exchange

FTP and Internet connection are prerequisites for ALEPH 500 implementation (see section 3. Communication Requirements). The customer should also have a CD-ROM drive for data and software exchange with Ex Libris in case FTP is not available temporarily, or if Ex Libris has approved work without an Internet connection.

1.5 Backup and Recovery Media and Procedures

Backup and recovery procedures and their selected media are the customer’s responsibility.

ALEPH 500 includes a backup procedure, that is mainly used by small sites. It is recommended that large sites should use third party backup and recovery tools.

Please note that:

1. Backup and recovery may require additional disk space.

2. Disk space required for Oracle Archive-Log mode depends on the backup strategy and procedure.

1.6 Additional Server Software

Following are add-on software products required for ALEPH 500. Ex Libris will install all this additional software in order to ensure full compatibility with ALEPH 500.

- Oracle
- MF Cobol
- gcc (on non Linux platform)
- gsort (on non Linux platform)
- gzip
- Perl
- Apache Server
• OpenSSL (if required by the customer)
• tcsh (on non-Linux platform)
• GNU tar (on Solaris platform)
• GNU Make

1.7 Optional Server Software

top (on non-Linux platform)

An installation of top (system performance monitoring tool) by the customer is highly recommended. top must be installed by the customer’s system administrator. (top is part of the standard Linux operating system.)
2. Client Hardware and Software Requirements

2.1 Staff PC Configuration

2.1.1 Minimum Recommended Configuration

Windows 2000/XP

<table>
<thead>
<tr>
<th>CPU</th>
<th>Pentium III</th>
</tr>
</thead>
<tbody>
<tr>
<td>Memory</td>
<td>128MB (Preferred: 256MB)</td>
</tr>
<tr>
<td>Disk</td>
<td>10 GB</td>
</tr>
</tbody>
</table>

Notes:

1. The system drive (C:) must have at least 250MB free space.

2. Windows ME is not supported.


2.1.2 Display

The physical dimension of the monitor is not relevant for the actual operation of the GUI clients (within reason).

The critical parameter is resolution:

Minimum Recommended Configuration:

800x600 Version 15
1024x768 Version 16

Preferred Configuration: 1024x768 or higher

2.1.3 Miscellaneous

- Network Interface Card with Internet/LAN connection
- TCP/IP installed and connection to server tested
- telnet or terminal emulator client
- Ftp
- Mouse (not all GUI functionality is supported by hotkeys)
2.2 OPAC Client Configuration

An OPAC workstation should be able to run the minimum supported version of an approved browser. Hardware requirements are minimal and are based only on the need to run the browsers below in a given operating system.

2.3 Browsers

Internet Explorer version 5.0 or higher, installed and tested, or Netscape version 6.2 , installed and tested

2.4 Unicode Font

ALEPH 500 versions 14 and higher work in Unicode. It is recommended to install on the PC and in the browser an appropriate Unicode font including all characters used by the customer.

Note: If you use CJK, fonts are not free and the load time of pages may be slow. Therefore, if you use only Latin, choose a Latin Unicode font for better performance.

2.5 CJK Support / IME

ALEPH 500 releases 14.2 and higher support CJK (Chinese, Japanese, Korean). An IME (Input Method Editor) is required in order to type CJK characters. IME is an integral part of Windows 2000 and CJK versions of Windows 98 and NT.

In non-CJK Windows 2000 installations IME needs to be implemented using Control Panel / Regional Options / General and Input Locales.

- Web OPAC PCs: Download and install the Microsoft Global IME.
- GUI PCs: Please consult your Ex Libris representative.
2.6 Java Virtual Machine

In ALEPH 500 version 16.02 and later, there are two options for printing from the ALEPH GUI:

- Using the Saxon.exe utility (requires Microsoft Java Virtual Machine)
- Using the Saxon7.jar utility (requires Sun Java Virtual Machine version 1.4 or later)

The customer must install either Microsoft Java Virtual Machine or Sun Microsystems, Inc. Java Virtual Machine. See How to Install a Java Virtual Machine on a PC on the Ex Libris Documentation Center under Ex Libris Offices and Distributors / Installation Documentation / Java for complete details.

Note: Microsoft is discontinuing support for Microsoft Java Virtual Machine on September 30, 2004. See the article Transitioning from the Microsoft Java Virtual Machine for additional information.
3. Communication Requirements

Access to the system for Ex Libris via the Internet, with a minimum bandwidth of 64K is required.

The access for Ex Libris staff is for installation of ALEPH 500 software, setup, support and troubleshooting during the implementation and maintenance phase.

If a firewall is installed, access should be enabled for Ex Libris support and implementation staff for the following IP addresses: 192.115.76.*, 12.45.228.* and 216.229.137.*. In addition, where relevant, access should be enabled also for IP addresses of the local Ex Libris office or distributor (for details refer to your local Ex Libris representative or distributor).

Ports and Activity Type:

ALEPH Version 15
- telnet or ssh standard port
- FTP or sftp standard port
- HTTP port 8080 for the main ALEPH 500 installation and 8081 for the test installation for the implementation period. It is recommended to switch to port 80 for the main ALEPH 500 installation close to STP (Switch To Production). If port 80 is not available, port 81 will be used. Note that root permissions are required in order to run Apache on ports 80 and 81.
- HTTP ports 4111, 4222, 4505 and 4515 for direct access to the ALEPH 500 web server
- TCP/IP ports 9907 and 9917 for running ALEPH 500 Z39.50 gate
- TCP/IP ports 9909 and 9919 for running ALEPH 500 Z39.50 server
- TCP/IP ports 6111, 6222, 6505 and 6515 for running ALEPH 500 PC server

ALEPH Version 16
- telnet or ssh standard port
- FTP or sftp standard port
- HTTP port 8991 for the main ALEPH 500 installation and 8992 for the test installation for the implementation period. It is recommended to switch to port 80 for the main ALEPH 500 installation close to STP (Switch To Production). If port 80 is not available, port 81 will be used.
- HTTP ports 4111, 4222, 4505 and 4515 for direct access to the ALEPH 500 web server
- TCP/IP ports 7991 and 7992 for running ALEPH 500 Z39.50 gate
- TCP/IP ports 9991 and 9992 for running ALEPH 500 Z39.50 server
- TCP/IP ports 6991, 6992 and 6993 for running ALEPH 500 PC server
Notes:

1. Use of other ports must be coordinated with Ex Libris.

2. If SSL installation is required, then HTTPS port 443 must also be open. It is the customer’s responsibility to purchase an SSL certificate before ALEPH 500 is installed.

3. The settings for all ports, except the HTTP and Z39 ports, must be defined so that they can only be accessed from outside the firewall by valid Ex Libris IPs.


4. Installation Requirements

In order to login to the server an initial user by the name of exlibris with permission to "su" or "sudo" is required. This user can be deleted after the installation. Ex Libris staff need the root password in order to:

1. Create the following users:

   • **ALEPH Version 15**
     “aleph” and “m505”, both with the same user ID “aleph” and the same group ID “aleph”.

   • **ALEPH Version 16**
     “aleph” with the user ID “aleph” and the group ID “aleph”.

   • “oracle” (user ID “oracle”), with the group ID “dba”.

2. Enable the users listed above to create directories and files under the filesystems /exlibris, /exlibris1, /exlibris2 and so on.

3. Install ALEPH 500 and the additional software listed in section 1.6: Additional Server Software.

4. Add automatic activation of ALEPH 500 servers, Oracle and Apache to the machine’s boot process.

5. Reboot the machine to make effective the new values of system parameters that were modified during the installation process, and to test the automatic activation of ALEPH 500, Oracle and Apache. The reboot will be coordinated with the customer.

   csh must be available. Ex Libris products and the users listed above work under csh.

   The system manager must be available throughout the installation. If Oracle is already installed, then the DBA must also be present during installation.

   The system manager must define an alias for the hostname in /etc/hosts.
## 5. Responsibilities Checklist

<table>
<thead>
<tr>
<th>Details</th>
<th>Purchase and Installation Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>1 Server Hardware &amp; Software</strong></td>
<td></td>
</tr>
<tr>
<td>1.1 Server &amp; OS</td>
<td>Customer</td>
</tr>
<tr>
<td>1.2 Disk space</td>
<td>Customer</td>
</tr>
<tr>
<td>1.3 Native C compiler (on non Linux platform)</td>
<td>Customer</td>
</tr>
<tr>
<td>1.4 Media for data exchange</td>
<td>Customer</td>
</tr>
<tr>
<td>1.5 Backup media</td>
<td>Customer</td>
</tr>
<tr>
<td>1.6 Additional SW</td>
<td></td>
</tr>
<tr>
<td>Oracle</td>
<td>Ex Libris</td>
</tr>
<tr>
<td>MF Cobol</td>
<td>Ex Libris</td>
</tr>
<tr>
<td>gcc (on non Linux platform)</td>
<td>Ex Libris</td>
</tr>
<tr>
<td>gsort (on non Linux platform)</td>
<td>Ex Libris</td>
</tr>
<tr>
<td>gzip</td>
<td>Ex Libris</td>
</tr>
<tr>
<td>Perl</td>
<td>Ex Libris</td>
</tr>
<tr>
<td>Apache server</td>
<td>Ex Libris</td>
</tr>
<tr>
<td>OpenSSL (if required)</td>
<td>Ex Libris</td>
</tr>
<tr>
<td>GNU tar (on Solaris platform)</td>
<td>Ex Libris</td>
</tr>
<tr>
<td>tcsh (on non Linux platform)</td>
<td>Ex Libris</td>
</tr>
<tr>
<td>top (on non Linux platform)</td>
<td>Customer</td>
</tr>
<tr>
<td>GNU Make</td>
<td>Ex Libris</td>
</tr>
<tr>
<td><strong>2 Client Hardware &amp; Software</strong></td>
<td></td>
</tr>
<tr>
<td>2.1 Staff PC &amp; OS</td>
<td>Customer</td>
</tr>
<tr>
<td>2.2 OPAC PC &amp; OS</td>
<td>Customer</td>
</tr>
<tr>
<td>2.3 Browsers</td>
<td>Customer</td>
</tr>
<tr>
<td>2.4 Unicode Fonts</td>
<td>Customer</td>
</tr>
<tr>
<td>2.5 IME (for CJK input)</td>
<td>Customer</td>
</tr>
<tr>
<td>2.6 Java Virtual Machine</td>
<td>Customer</td>
</tr>
<tr>
<td><strong>3 Communication Requirements</strong></td>
<td></td>
</tr>
<tr>
<td>Open ports</td>
<td>Customer</td>
</tr>
<tr>
<td>SSL certificate (if required)</td>
<td>Customer</td>
</tr>
</tbody>
</table>

Ex Libris will install the additional software listed above (see section 1.6 Additional Server Software) in order to ensure full compatibility with ALEPH 500.
Request for ALEPH 500 Installation

Please confirm that you have completed the required steps as outlined in the *Requirements for ALEPH 500 Installation* document, and provide the details requested below.

1) Customer name: __________________________________________

2) Login information
   - Server IP address: ________________  Server host name: ________________
   - Password of the user "exlibris": ________________
   - Confirm that an exlibris user has been created for remote login, with permission to "su" or “sudo”.
   - Root password: __________________________

3) Server specification:
   - Machine model: ________________  Number of CPUs: ________________
   - Operating system (including version): __________________________
   - RAM size: ________________  Swap area: ______ GB
   - Disk space (by filesystems):
     - /exlibris ___GB; /exlibris1 ___GB; /exlibris2 ___GB;
     - /exlibris3 ___GB; /exlibris4 ___GB; /exlibris5 ___GB;

4) Estimated number of records that will be stored in the database:
   - BIBliographic: ____________  Items (books, etc.): ____________
   - Holdings: ____________  Authorities: ____________
5) Please confirm that telnet/ssh, ftp/sftp, TCP/IP and HTTP access for the Ex Libris IP numbers is provided:

- 192.115.76.*
- 12.45.228.*
- 216.229.137.*
- Local Ex Libris office or distributor if applicable IPs

Communication via:
- telnet
- ssh
- ftp
- sftp

Confirm that the following ports are open and can be used by ALEPH:

**ALEPH Version 15**

- TCP/IP ports 9907 and 9917 for running ALEPH 500 Z39.50 gate
- TCP/IP ports 9909 and 9919 for running ALEPH 500 Z39.50 server
- TCP/IP ports 6111, 6222, 6505 and 6515 to run ALEPH 500 PC server
- HTTP port 8080 and 80 for the main ALEPH 500 installation
- HTTP ports 4111, 4222, 4505 and 4515 for direct access to ALEPH 500

**ALEPH Version 16**

- TCP/IP ports 7991 and 7992 for running ALEPH 500 Z39.50 gate
- TCP/IP ports 9991 and 9992 for running ALEPH 500 Z39.50 server
- TCP/IP ports 6111, 6222, 6505 and 6515 to run ALEPH 500 PC server
- HTTP port 8991 and 80 for the main ALEPH 500 installation
- HTTP ports 4111, 4222, 4505 and 4515 for direct access to ALEPH 500

If you wish that other ports be used, please specify alternative port numbers:

---

6) Installation of SSL is required: ☐ Yes ☐ No

If Yes, confirm that HTTPS port 443 is open and can be used by SSL: ☐

If Yes, enter the location of the certification files: ____________________________
7) Confirm installation of native C compiler (on operating systems other than Linux).
   □ Yes □ No

8) Is machine dedicated to ALEPH 500? □ Yes □ No
   □ Existing ALEPH 500 installation:
   Version ______ User name _______ Password _______
   If no, what other applications are running on this machine?
   □ MetaLib: Version ______ User name _______ Password _______
   □ SFX: Version ______ User name _______ Password _______
   □ DigiTool: Version ______ User name _______ Password _______
   □ Other: ____________________________________________

10) Is there confirmation to reboot the server by Ex Libris at any time during the installation? □ Yes □ No
    If no, what is the procedure for reboot? ________________________________

11) Is there confirmation for the creation of users by Ex Libris as listed in section 4. Installation Requirements? □ Yes □ No

12) Contact person for installation:
    Name and position: ________________________________
    E-mail: ________________________________
    Tel.: Work: ___________ Mobile: ___________
    Other: ________________________________

    ____________________________________________
    Confirmed and accepted by customer:
    Name: ________________________________
    Signature: ________________________________
    Date: ________________________________
To be filled in by Ex Libris

13) Customer three-letter prefix: __________
14) Customer code: __________
15) Ex Libris contact person: _______________________
16) Expected installation completion date: __________
17) Product Source (what / from where / when)
   Version: ______  Platform: ______  Date: ______
18) What name should be used for the version if more than one version is, or will be, installed __________
19) License approved? (Please attach license) ☐ Yes  ☐ No
20) Confirmed Activity Report: ☐ Yes  ☐ No
21) Installation of UTIL_CONV is required: ☐ Yes  ☐ No