



Requirements for ARC Installation

Version 4.5

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Overview

This document describes the prerequisites for ARC installation and operation. Before purchasing and installing the hardware and operating system, you must receive confirmation from Ex Libris regarding the hardware and operating system requirements.

Note that the Request for ARC Installation Form must be filled out by the customer and returned to Ex Libris prior to installation.

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Server Hardware and Software Requirements

This section includes:

- **Server Requirements** on page 7
- **File System and Disk Space** on page 8
- **CPU and Memory** on page 10
- **Media for Data Exchange** on page 10
- **Backup and Recovery Media and Procedures** on page 11
- **Aleph Server Software** on page 11
- **Additional Server Software** on page 11
- **Optional Server Software** on page 12

Server Requirements

ARC involves two major processes:

- The ETL process - Extracts data from the Aleph database and loads it into the ARC database in a periodic night batch process defined by the library (for example, daily, weekly, and so on). This process mainly utilizes the Aleph database and ARC Oracle database resources.
- The report generation process - Data retrieval as per online staff user request. This process mainly utilizes ARC Oracle database and ARC ReportNet server resources.

This document relates to two different ARC configurations:

- ARC on a dedicated server (ETL process runs between Aleph and ARC servers)
- ARC on a shared Aleph server

IMPORTANT:

ARC 4.5 can only work with Aleph 23 and cannot be installed for previous versions.

Operating System/Platform for ARC

CAUTION:

Refer first to *Operating System Requirements for Red Hat Enterprise Linux* and *Operating System Requirements for the Sun Platform* for basic and detailed requirements, and then refer to the additional specific ARC requirements below.

For each of the following operating system versions, Ex Libris recommends that you install the latest OS update level:

- Sun — Solaris 10 OS update 6 or later, based on SPARC processors
- Linux — Red Hat Enterprise Linux AS/ES versions 6 and 7 (Update 2 or later) 64-bit, based on Intel or AMD 64-bit processors.

GNU make and GCC 2.95 and later must be installed in the system path (`/bin`, `/usr/bin`, or `/usr/local/bin`).

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. The minimum required RAM size is 6 GB.

File System and Disk Space

Each physical disk that will be used by Ex Libris should be mounted on a separate file system. The names of the file systems should be `/exlibris`, `/exlibris1`, `/exlibris2`, and so forth.

A file system named `/exlibris` with a minimum size of 50 GB is mandatory. It is used exclusively for all software as well as configuration tables and files installed by Ex Libris.

Table 1 lists the minimal disk space requirements for running and maintaining ARC software and data.

Table 1. Disk Space Requirements

Usage	Size	File System
ARC and Oracle software; and other add-on required software products	10 GB on one dedicated disk	/exlibris
ARC Database	Consult Sizing Manager	/exlibris1, /exlibris2, ...
ETL Scratch Files	Consult Sizing Manager	/exlibris1, /exlibris2, ...
Swap Space	Twice the amount of RAM or at least 8 GB, whichever is greater	
Temporary Files	1 GB	/tmp
Sun ONE (IPlanet) installation	250 MB	/usr

The disk throughput is dependent on the installation type (dedicated/shared) and the Aleph site category (Small, Medium, Large):

Table 2. Disk Throughput

Site Category	Shared Server	Dedicated Server	
		ARC Server	Aleph Server
Small	100-200	50-200	50-200
Medium	200-400	200-400	100-400
Large	500 and above	400 and above	500 and above

The above information is meant to provide general guidelines for determining the minimal disk space requirements. The exact disk space required will be determined in conjunction with your Ex Libris representative. Any deviation from the above guidelines must be confirmed by Ex Libris.

The above disk space requirements do not include:

- System disk requirements
- Disk space needed for running Oracle in archive-log mode (see **Backup and Recovery Media and Procedures** on page 11)
- Disk space requirements for backup on large sites (see **Backup and Recovery Media and Procedures** on page 11)

- Any type of data redundancy, such as RAID 1, RAID 5 or RAID 0/1 solutions

CPU and Memory

CPU and memory requirements calculations are based on the same Aleph site categories as disk requirements.

CPU requirements are as follows:

Table 3. CPU Requirements

Site Category	Shared Server	Dedicated Server	
		ARC Server	Aleph Server
Small	0.5-2 Free Processors	1 X 1.0 GHz or above	0.25-1.5 Free Processors
Medium	1-3 Free Processors	2 X 1.0 GHz or above	0.5-2.5 Free Processors
Large	2-4 Free Processors	4 X 1.0 GHz or above	1-4 Free Processors

Memory requirements are as follows:

Table 4. Memory Requirements

Site Category	Shared Server	Dedicated Server	
		ARC Server	Aleph Server
Small	4 GB	4 GB	No additional requirement
Medium	4 GB	4 GB	No additional requirement
Large	8 GB	8 GB	No additional requirement

Media for Data Exchange

FTP and an Internet connection are prerequisites for ARC implementation (see [Communication Requirements](#) on page 15). You should also have a CD-ROM drive for data and software exchange with Ex Libris in case FTP is temporarily unavailable, or if Ex Libris has approved work without an Internet connection.

Outgoing Mail Server (SMTP)

Sending reports requires an SMTP server. The mail server name has to be fully qualified (with a known domain name).

This server may be installed on the current ARC server or on another machine (mail relay).

Backup and Recovery Media and Procedures

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

NOTES:

- Backup and recovery may require additional disk space.
 - Disk space required for Oracle archive-log mode depends on the backup strategy and procedure.
-

Aleph Server Software

The latest Service Pack containing Aleph with ARC support must be installed. Contact Ex Libris for the matrix of Aleph versions that support ARC.

Additional Server Software

The following are add-on software products required for ARC. Ex Libris will install all this additional software in order to ensure full compatibility with ARC.

- Oracle
- Apache Server
- Sun ONE Directory Server (iPlanet)

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

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Client Hardware and Software Requirements

This section includes:

- [Staff PC Configuration on page 13](#)

Staff PC Configuration

Table 5. Minimum System Requirements

Operating System/ Browser	Requirement
Windows XP/Vista/7	CPU: Pentium III Memory:128MB (256MB for Report Studio and Query Studio) Disk: 10 GB
Browser	Internet Explorer 7.x and 8.x

NOTES:

- Administrative rights are required in order to install or update the Aleph client.
- The system drive (C:) must have at least 250 MB of free space.

Internet Explorer version 7.x or 8.x must be installed and tested with following options enabled:

- Cookies
- JavaScript
- Run ActiveX controls and plug-ins
- Script ActiveX controls marked safe for scripting

- Active scripting

Miscellaneous

The ARC client also requires the following:

- Network Interface Card with Internet/LAN connection
- TCP/IP installed and connection to server tested
- Telnet or terminal emulator client
- FTP
- Mouse

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Communication Requirements

This section includes:

- **Network Configuration** on page 15
- **Server Access** on page 16
- **Ports and Activity Type** on page 17

Network Configuration

The server must have a fully qualified hostname (include short hostname and domain name) that is registered in the DNS.

When performing a distributed installation, all application servers must have DNS entries.

The server name must be defined in `/etc/hosts` as follows:

- Both the fully qualified name and the short hostname must be linked to a physical IP address (internal). In order to make sure the correct name is defined, use the following commands:

```
grep `eval hostname` /etc/hosts
```

This command must return a valid entry with a physical IP address.

- For SunOS, enter the following commands to find the internal IP address:

```
/usr/sbin/ifconfig -a | grep inet | grep -v 127.0.0.1 | awk  
'{print $2}'
```

- For Linux, enter the following commands to find the internal IP address:

```
/sbin/ifconfig -a | grep addr: | grep -v 127.0.0.1 | awk  
'{print $2}'
```

See the following example for `/etc/hosts`:

```
# Do not remove the following line, or various programs
# that require network functionality will fail.

127.0.0.1    localhost.localdomain    localhost
10.1.222.22  ml-inst.corp.metalib.com   ml-inst
```

The first active line should be configured exactly as shown in the example.

The second line should contain the internal IP address, followed by the fully qualified name (hostname + domain name), the short name, and any possible aliases.

Server Access

Ex Libris access to the system via the Internet is required, with a minimum bandwidth of 64 KBp.

Ex Libris staff will require access to the following:

- The Aleph server – for the installation of the ARC software, setup, support, and troubleshooting during the implementation and maintenance phases
- If a firewall is installed, ssh access must be enabled for Ex Libris Support and Implementation staff for the following IP addresses:
 - HQ Jerusalem Israel:
 - 212.179.71.70
 - 212.179.71.34
 - Local Ex Libris office – USA:
 - Des Plaines 207.56.64.194
 - Boston 12.21.149.130
 - Local Ex Libris office – Germany:
 - Seefeld 217.91.56.60
 - Hamburg 195.37.97.145
 - Cologne 194.8.220.178
 - Local Ex Libris office – France:
 - 195.5.253.245
 - Local Ex Libris office – UK:
 - 88.96.11.121

- Local Ex Libris office - Australia:
 - 203.87.118.110
- Where relevant, access must be enabled for IP addresses of the local Ex Libris office or distributor (for details, refer to your local Ex Libris representative or distributor).
- Outgoing FTP access must be enabled for the following FTP servers:
 - ftp.exlibris.co.il
 - ftp.exlibrisgroup.com
 - ftp.exlibris-usa.com

Ports and Activity Type

The following ports are required:

- Telnet or SSH standard port
- FTP or SFTP standard port
- HTTP port 808<COPY_NUMBER> Standard Port number: 8081
- Oracle Listener port 1521 must open on the Aleph application server to allow remote access between it and the ARC database server.

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Requirements for Ex Libris Installation

This section includes:

- [Server Access](#) on page 19
- [Root Access](#) on page 19
- [List of Operations that Should Be Available for sudo](#) on page 20
- [Additional Requirements](#) on page 20

Server Access

In order to log on to the server, an initial `exlibris` user with permission to `su` or `sudo` is required. This user can be deleted after the installation is complete.

Root Access

Ex Libris staff require a root password to:

- Create the following users:
 - `crn` with the user ID `crn` and a group ID of `exlibris`
 - `oracle` with user ID `oracle` a group ID of `dba`
- Enable the users listed above to create directories and files under the file systems `/exlibris`, `/exlibris1`, `/exlibris2`, and so forth
- Install ARC and the additional software listed in [Additional Server Software](#) on page 11
- Add the automatic activation of ARC servers, Oracle, and Apache to the machine's boot process
- Reboot the server to activate new values of system parameters that were modified during the installation process, and to test the automatic activation of ARC, Oracle, and Apache. The reboot is coordinated with you.

List of Operations that Should Be Available for sudo

- 1 Create the following users and groups:
 - useradd
 - groupadd
 - vipw
- 2 Change the following system parameters:
 - For Sun Solaris servers – `/etc/system` file
 - For Linux – `/etc/rc.d/rc.local` and `/etc/security/limits.conf` files
- 3 Create directories and change permissions using the following:
 - `mkdir`
 - `chown`
- 4 In the `/etc` directory, create files necessary for the autostartup mechanism.

Additional Requirements

- `csch` must be available. Ex Libris products and the users listed in the previous sections work under `csch`.
- The system manager must be available throughout the installation. If Oracle is already installed, the DBA must also be present during installation.
- The system manager must define an alias for the hostname in `/etc/hosts`.

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Responsibilities Checklist

The following table summarizes the requirements described in this document.

Table 6. Responsibilities Checklist

Details	Purchase and Installation Responsibility	Page
Server Hardware and Software		page 7
Server and OS	Customer	page 7
Disk space	Customer	page 8
Media for data exchange	Customer	page 10
Backup media	Customer	page 11
Additional software	Ex Libris	page 11
Oracle	Ex Libris	page 11
Apache server	Ex Libris	page 11
top (on non-Linux platform)	Ex Libris	page 12
Client Hardware and Software		
Staff PC and OS	Customer	page 13
Browsers	Customer	page 13
Communication Requirements		
Open ports	Customer	page 17

Ex Libris will install the additional software listed above (see [Additional Server Software](#) on page 11) in order to ensure full compatibility with Aleph.

