



AARLIN Portal - Technical Overview

AARLIN system architecture uses a grid type model to support the principal software applications MetaLib and SFX. The AARLIN Consortium Metalib / SFX installation is licenced for 170,000 end users.

MetaLib and SFX each run on dedicated servers. The model provides for redundancy of the MetaLib and SFX servers, disk storage, applications and operating system.

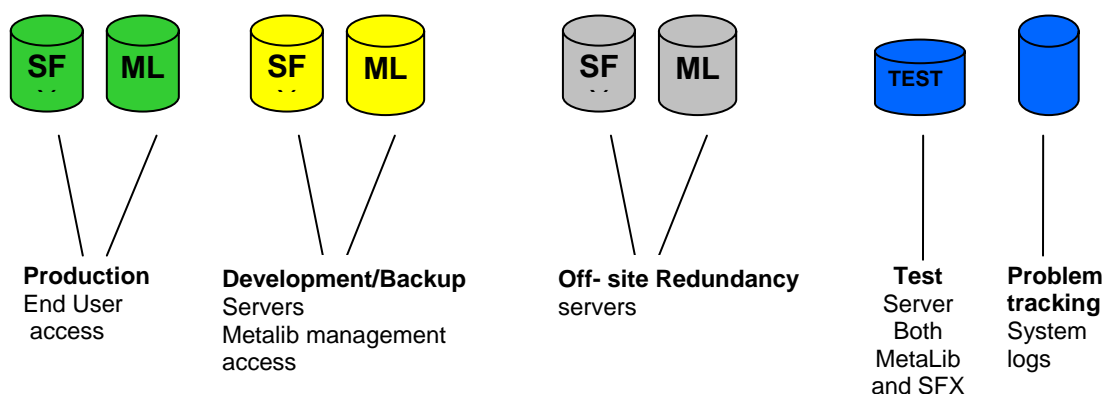
The AARLIN DBMS structure has a separate instance in both MetaLib and SFX for each AARLIN consortium member institution, an instance for the creation and storage of AARLIN created resource IRDs and configurations, and a demo/training instance.

The infrastructure to mount the AARLIN Portal is housed within La Trobe University. La Trobe University Library was the 'lead' institution for the original pilot and provides the administrative base for the AARLIN Consortium. The central "AARLIN Office" is staffed by 4.2 FTE being composed of 4 staff plus up to 1 FTE being spread amongst some member institutions for payment of staff time spent creating IRDs and resource configurations to be shared across the consortium

The La Trobe University IT department provides day-to-day management and backup of the DBMS and data on all servers as well as systems expertise in the implementation, support and management of hardware.

1. Computing Infrastructure

The AARLIN computing infrastructure includes 8 IBM X series multi-processor servers using the Red Hat AS Linux platform and supported by over 8Tb of internal and external raw storage and 76Gb RAM.



This configuration enables the "production" servers to be dedicated for use by end users and management and configuration of e-resources to be performed upon the "development" servers.

Equity and integrity of data is achieved by, on a nightly basis, synchronization of changed data between the production, development, redundancy and test servers for each of MetaLib and SFX, providing additional risk management strategy as well as speed and ease of restoration in the event of an outage on one of the production servers.

1.1. Redundancy Strategy

AARLIN has multiple processes to limit the risk to service provision by machine or environment failure.

As described above, the "development" servers provide mirrored application and data sources for the MetaLib and SFX applications to the "production" servers, enabling the switching of end user access from either of the MetaLib or SFX "production" servers in the event of hardware or application failure on a server. A further level of redundancy is provided by the availability of a server off-site for each of MetaLib and SFX; these offsite servers are in fact out of warranty servers no longer suitable for use as the production or backup servers.

The hard disk storage for the 6 dedicated MetaLib & SFX servers is managed by RAID 10 and hot swap, hard disk arrays.

All hard disk storage is backed up to tape, with weekly full backups and daily incrementals using a DLT tape library with 2 drives and an autochanger.

1.2. Authentication model

User Authentication is via the Ex Libris PDS enhanced by locally scripted routines to enable secure communications with backend LDAP or other member institution user databases. When revisions in the Ex Libris applications are applied, these local routines are modified to integrate with the expanding authentication capabilities of MetaLib/SFX. Limited user data is stored on the AARLIN servers, ie user login name, general user type and email address if provided by the user; no password data is stored for end users and all user data is encrypted during transfer between the users workstation and the servers.

Customised scripting for each institution permits members to move closer to providing a single-signon to all services for end-users of that institution.

Authentication with e-resource suppliers is via a mix of customer login and password and IP address. Historically the shared computing infrastructure and thus IP addresses caused difficulties for IP address only authentication with e-resource database suppliers. AARLIN has worked extensively with resource suppliers and successfully negotiated for "consortial" accounts which enable authentication individually by member institution even though the IP address for the server is shared.

2. Portal Governance and Organisation.

AARLIN has 12 Australian University library members in the Consortium. The Consortium is formally structured under a Memorandum of Understanding and each institution contributes an annual membership fee to support the operation of the AARLIN computing infrastructure and the AARLIN Office. Since the beginning of 2005, the consortium has operated on a self-supporting basis with no additional fund from government.

2.1. Ability of Members to customise

Each member library has its own instance of both MetaLib and SFX and thus is able to customise the user interface to suit that university's branding, web-design and end-user access policies. This permits huge flexibility for member institutions but can make the re-application of customised html an issue during major application software upgrades.

The member libraries have chosen a wide variety of names for their instance of the AARLIN portal such as 'Cross-search', 'Metaquest' and LibXplore.

2.2. Centralised Tasks

The AARLIN Office team duties include:

- Co-ordinating the project.
- Running the administration and implementation of MetaLib / SFX.
- Supporting the authentication process with member universities.
- Creation, and maintenance of resource configurations and parsers in MetaLib/SFX.
- Application of software updates, patches and Knowledge Base updates.
- Export of e-journals from MetaLib to SFX and html-files to the libraries.
- Running AARLIN website and a discussion forum via a technical list serve.
- Providing members with workshops and training on MetaLib/SFX.
- A web accessible problem tracking system to support and resolve issues reported by members.
- Reporting any unresolved problems to Ex Libris.
- System administration of AARLIN computing infrastructure.

2.3. Local Tasks for each Participating Member Library

- End user interface customisation.
- Maintain local thresholds when they differ from the central ones, such as backfiles in SFX
- Map their own resources to the category structure (may change with MetaLib 3.13)
- Updating and description of the locally desired/subscribed MetaLib resources
- Set up and maintain their own QuickSets structure
- Assist in configuring local resources

Find out more about AARLIN on the web site:

<http://www.aarlin.edu.au>