



System Configuration and Administration Guide

Version 4.x

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Updates to This Guide

This update contains the following change:

- Updated the Base and Availability URL fields in section **Configuring Your Link Resolver** on page 97.

Part I

Overview of MetaLib

Part I contains the following:

- **Section 1: System Overview** on page 19
- **Section 2: MetaLib System Architecture and Environment** on page 27

1

System Overview

This section includes:

- **Introduction** on page 19
- **Library Portal** on page 20
- **Central KnowledgeBase (CKB) /Local KnowledgeBase** on page 20
- **Installation Version** on page 20
- **License (Util Y)** on page 21
- **Institution** on page 24
- **Group** on page 24
- **Portal** on page 25
- **Single-Institution and Consortium Installations** on page 25

Introduction

This guide provides an overview of the MetaLib system, which is intended for System Librarians who need to configure their local system. The guide covers a wide range of topics, from setting up the MetaLib system and determining default settings, to regular maintenance activities, such as defining cron jobs and making sure the system is configured to operate optimally.

The structure of this document is such that sections can be consulted independently, so that you can look up any section on its own. However, it is highly recommended to first read the Overview section in order to grasp the underlying terminology and building blocks of the MetaLib system.

This manual is not intended to be used completely by itself. It is part of a collection of documents covering different aspects of the MetaLib system. An important resource is the *Patron Directory Services* document, which describes the key topics of authentication and delivery of user attributes. Other documents, such as the *MetaLib System Configuration and Administration Guide*, the *MetaLib Resource Management Guide*, and the *MetaLib User Interface Guide* also

serve as additional resources in the day to day work of the MetaLib System Librarian.

Library Portal

MetaLib is a library portal that enables users to access their institution's e-collections, obtain relevant services, and work in a personalized environment.

With MetaLib, an institution can manage today's hybrid information resources (local and remote) under one umbrella. Such resources include, for example, catalogs, reference databases, digital repositories, and subject-based Web gateways. Using the MetaLib portal, library patrons can conduct a MetaSearch across heterogeneous resources or link to the resources' native interfaces.

MetaLib is powered by the Universal Gateway, which enables the user to search in resources with different search and communication protocols as well as diverse data formats. Search results retrieved from remote resources are then displayed to users in a uniform way. Resources that cannot be searched via the Universal Gateway can be linked to directly. Some resources are searched via MetaLib's search interface but the search results are displayed in the native interface.

Central KnowledgeBase (CKB) /Local KnowledgeBase

Ex Libris maintains a Central KnowledgeBase (CKB) of resources (databases, library OPACs, Web sites, subject gateways, etc.). Every MetaLib installation includes a copy of the CKB that serves as the basis for creating a Local KnowledgeBase. Sites that subscribe to the "KnowledgeBase Service" can download regular CKB updates from a Central CKB Server that includes new and updated resources.

Installation Version

When a MetaLib version is packaged, it includes all software components required for running MetaLib and a copy of the Central KnowledgeBase.

The software that is installed as part of the MetaLib installation includes the Oracle 10g software and database, and all other third-party products required for running MetaLib such as Apache; Perl, Java, and Cobol and the MetaLib software itself.

Resources from the Central KnowledgeBase belong to the METALIB institution and serve as a basis for the creation of the Local KnowledgeBase.

The package also includes all of the files, PNG and GIF images and tables required for the creation of user interface instances. Each installation comes with a template directory called `ins00`, which serves as the basis for the creation of other user interface instances, as required in each installation. The first interface instance created in an installation is typically called `ins01`, the second `ins02`, and so forth, but any five character/digit combination can be used to refer to a user interface instance.

NOTE:

MetaLib is installed under the path `exlibris/metalib` on the server. This path is referred to as the "root" of the version/installation. Throughout this document, paths are given from the root of the version, excluding the `/exlibris/metalib/m4_<N>` directories. Thus, the directory `dat01`, which resides under `/exlibris/metalib/m4_1`, would be referred to as `./dat01`.

License (Util Y)

The MetaLib Version 4 license is contained in the `license` file, which resides under the `./metalib_conf` directory. All of the parameters and associated values in this file are viewable to users who have access to the server.

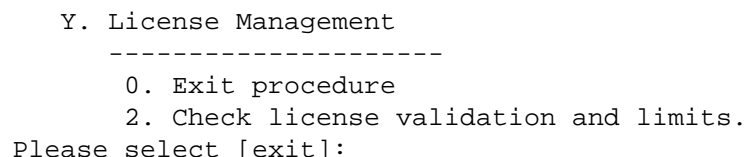
The license parameters are checked by the system as described below. Any change in this file will cause an error in the verification procedure.

A license can be validated using the License Management utility (Util Y-2). When using this utility, the license file displays the invalid parameters.

To validate the license:

- 1 Enter the following commands on the server to display the License Management menu (see [Figure 1](#)):

```
dlib dat01
util y
```



```
Y. License Management
-----
  0. Exit procedure
  2. Check license validation and limits.
Please select [exit]:
```

Figure 1: License Management Menu

2 Select option 2 to perform the license validation check.

Table 1 lists the parameters and their valid values in the MetaLib Version 4 license.

Table 1. MetaLib License Parameters

Parameter Name	Valid Values	Action
CKB-UPDATE	Y/N	Checked when running a CKB update. In case of a violation, an error log message is generated.
METALIB-X	Y/N	Checked upon an attempt to use the X-Server. In case of a violation, an error log message is generated and the X-Server request fails.
METAINDEX	Number of metaindexes purchased by customer	Checked upon login to the Management interface and upon attempt to create a new MetaIndex. In case of a violation, an error log message is generated, and an e-mail is sent to the address specified in the <code>setenv support_email_address</code> parameter in the <code>./metalib_conf/www_server.conf</code> file.
CONCURRENT-USERS	Number/ Blank	Used only for those customers who have purchased MetaLib to stipulate the number of concurrent users. Those sites, for which this parameter is irrelevant, should leave it blank. Checked upon login to the Management interface or the MetaLib User Interface application. In case of a violation, an error log message is generated and an e-mail is sent to the address specified in the <code>setenv support_email_address</code> parameter in the <code>./metalib_conf/www_server.conf</code> file.

Table 1. MetaLib License Parameters

Parameter Name	Valid Values	Action
INSTITUTIONS	Number of institutions purchased by the customer	<p>Checked upon login to the Management interface and upon attempt to create a new Institution.</p> <p>In case of a violation, an error log message is generated, and an e-mail is sent to the address specified in the <code>setenv support_email_address</code> parameter in the <code>./metalib_conf/www_server.conf</code> file. The option to create a new institution is blocked.</p>
PORTALS-PER-INST	Number of portals purchased by the customer	<p>This parameter is checked upon login to the Management interface and upon attempts to create a new portal.</p> <p>In case of a violation, an error log message is generated, an e-mail is sent, and the option to create a new portal is blocked.</p>
IP-ADDRESS	999.999.999.999	<p>This parameter is checked upon login to the User or Management interface.</p> <p>In case of a violation, an error log message is generated and the access to the MetaLib interfaces are blocked.</p>
EXPIRATION-DATE	YYYYMM	<p>In case of date expiration, an error log message is generated, an e-mail is sent, and the Management interface is blocked to staff users.</p>
EXPIRATION-DATE (less than 10 days)	YYYYMM	<p>This parameter is checked upon login to the Management interface, the MetaLib User Interface, and Unix.</p> <p>Within 10 days before the date expiration, an error log message is generated and an e-mail is sent.</p>
PRODUCTION-TEST	P/S/T	<p>This parameter is checked upon creation of a new portal or institution. If it is set to S, the site can use the maximum number of portal and institutions. The possible values are as follows:</p> <ul style="list-style-type: none"> ■ P - Production. ■ S - Site. ■ T - Test.

Table 1. MetaLib License Parameters

Parameter Name	Valid Values	Action
COPY-CATALOGING	Y/N	Determines whether the Copy Cataloging tab in the Management interface is visible.
ISSUE-DATE	YYYYMM	

IMPORTANT:

The license file should not be edited by customers. In case of any change in the license file, an error log message will be generated, an e-mail message will be sent and the Management interface will be blocked to staff users.

Institution

The institution is the basic administrative unit in MetaLib and both resources and users are always linked to a specific institution.

There are two types of institutions:

- Independent institutions can be independent in all aspects of system setup.
- Associated institutions are not independent and do not have their own administrator, although they do have their own resources.

An institution in a single site is always defined as an independent institution. In a consortium, some institutions may be independent and some may be associated.

Group

The group is an administrative concept used to control access to the Management Interface (/M) and key MetaLib system functionality.

The administration of the institution in terms of the system setup is on the group level. Even sites with a single institution and independent institutions within a consortium must belong to a group. An associated institution belongs to a group that includes several institutions. Since an associated institution does not have its own administrator, it is administered by a central group administrator.

Portal

Sites can define portals to present different views of MetaLib to end-users. A portal may represent a particular subject area, cater to specific needs of a group of end-users, or be used to present a language translation. A portal can be differentiated by different QuickSets, different categories displayed in the user interface, and optionally an entirely different user interface instance. Different portals can be created for the institution, with one portal designated as the default portal. In the case of a consortium, different portals can be created for each institution.

Single-Institution and Consortium Installations

There are two types of MetaLib installations:

- A single-institution installation serving a single organization, such as a university or company.
- A consortium installation, which serves multiple universities or organizations, called institutions. Consortium installations consist of the following types: enterprise, centralized, and decentralized.

Enterprise/Consortium

MetaLib Enterprise was created for a consortium environment, where several institutions (such as universities) share the same MetaLib installation. The goal is to achieve one system of administration for all consortium members and yet enable institutional autonomy as needed.

In this framework, there may be a number of requirements:

- Separate user authentication and authorization systems for each institution
- Separate resource authentication vis-à-vis vendors (server addresses, passwords)
- Separate user interfaces, including both design and categorization of resources

In the Consortium model, there is one shared Oracle database and a shared Management interface. However, each institution can have its own user interface based on HTML files and a set of display tables.

In the Consortium model, the KnowledgeBase is shared. However, each institution has its own Information Resources Database (IRD), the repository of local resource information. Resource configurations, which are technical, can be shared by all consortium members.

Centralized/De-Centralized Consortium Installations

There are three types of Consortium models:

- A Centralized Consortium installation comprising 'Associated' institutions. These associated institutions may belong to one or more Groups, but typically have a Central Group administering them.
- A De-centralized Consortium model in which all institutions are independent, each administering their own interface, resources, categories, and so forth. In this model, there is no central management.
- A Federated or Hybrid Consortium in which all or some institutions are independent institutions. However, they do have some level of central administration.

2

MetaLib System Architecture and Environment

This section includes:

- **Introduction** on page 27
- **MetaLib Server Architecture** on page 28
- **MetaLib Library Structure** on page 30
- **MetaLib Directory Structure** on page 31
- **MetaLib Unix Logins** on page 36
- **Management Interface** on page 36
- **MetaLib Utilities** on page 39
- **Key Server Tables and Settings** on page 39
- **Oracle Overview** on page 51
- **Server Configuration Guidelines** on page 57
- **Exporting MetaLib E-Shelf Records for Primo** on page 58

Introduction

MetaLib provides the optimal infrastructure for both single institutions and consortia, and handles authentication and authorization requirements accordingly. Web-based administration tools permit the effective localization, configuration, and maintenance of an institution's full range of information resources.

MetaLib provides application services to clients via its APIs (Application Program Interfaces). MetaLib's architecture is based on a multi-tier, client/server model. Client/Server communication is based on a stateless (self-contained) transaction model. Nonetheless, MetaLib Application Servers keep continuous connections (with time-out) to the database to ensure high performance.

MetaLib can be installed on the following platforms:

- SUN SOLARIS
- LINUX REDHAT

MetaLib Server Architecture

The MetaLib server is composed of the following layers (see [Figure 2](#)):
Presentation, Application, and Database.

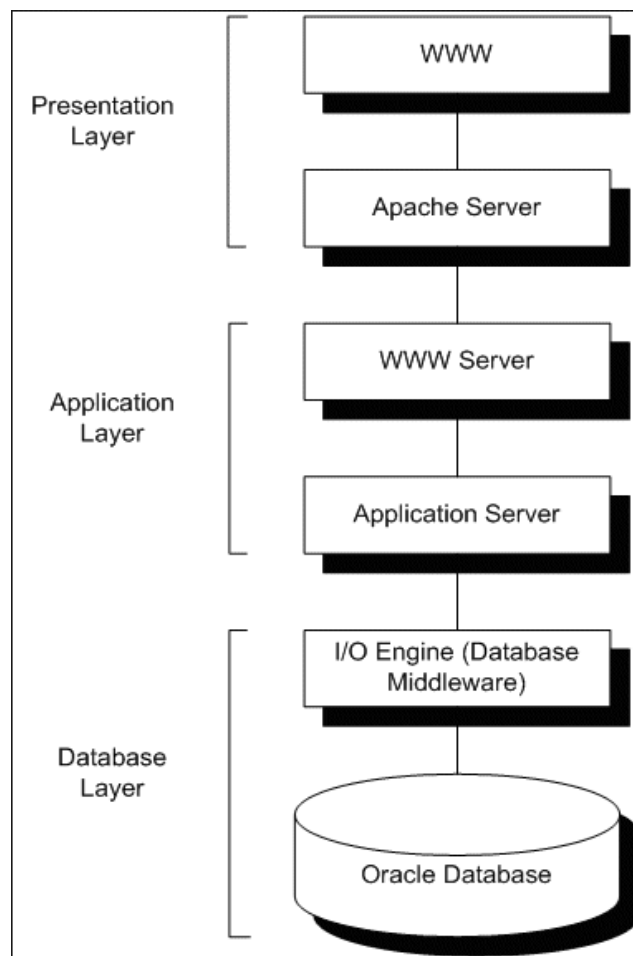


Figure 2: MetaLib Server Architecture

Presentation Services and Logic

Provides the interface with which the user interacts.

Application Logic

The application logic consists of the following layers:

- Presentation layer — This layer controls the user interface of the application. It takes care of the input/requests from the end user and displays the relevant output/results. The layer consists of both programs and HTML pages.
- Application layer — This layer processes the input/requests from the presentation layer as well as from the X- Services. It communicates with the database layer for both input and output.

Data Services and Logic

The data services logic contains the following layers:

- MetaLib database middleware (or I/O engine) — This is a high level database management layer. A logical server provides data services to the application service objects. It contains a group of objects that intermediate between the application and the database. The I/O engine translates an application request to a sequence of database commands. In addition, the I/O engine provides SQL enhancement which is required because of the textual, non-formatted nature of library catalog data.

MetaLib's I/O engine also exploits the knowledge that the system has about the DBMS's special characteristics in order to optimize data updating and retrieval. It is in this logical layer that MetaLib incorporates its experience and know-how of libraries' special data structures and formats.

Having an intermediate level of the I/O engine between the application and the DBMS ensures maximum flexibility of DBMS logical and physical design.

- MetaLib database — The MetaLib database runs under Oracle RDBMS.

Other Characteristics of MetaLib's Architecture

The MetaLib architecture supports the following characteristics:

- Network orientation — MetaLib's distributed logic is designed to fit into scalable network configurations. With its Application Servers tier and Database Middleware tier (the I/O engine), MetaLib is suitable for intra-networking and inter-networking. MetaLib not only supports a range of clients' access (www, Z39.50 and Telnet clients) but also accommodates access to heterogeneous database resources.
- Scalability — MetaLib's multi-tier, distributed architecture provides a wide range of scalability possibilities: distribution of data across disks/servers, distribution of services across servers, or even a multi-server configuration with shared data.

MetaLib Library Structure

The MetaLib library is an organizational unit within the MetaLib application that contains special environment parameters, a set of configuration files and tables, and special server-based utilities. It is defined as an Oracle user with its own data segments within the Oracle database. The Oracle database in MetaLib Version 4 is called `meta4`.

Every MetaLib installation has the following basic libraries:

Table 2. MetaLib Libraries

Library	Description
DAT0	Library containing the KnowledgeBase (resource information).
VIR00	Stores data relating to MetaLib users, including user records, profiles, statistical data, history and e-shelf information.
VIR01	Temporary library where MetaLib temporarily stores session data, including records retrieved by the Universal Gateway from MetaLib targets and other session-based information.
INS00	The library that contains the files that are used for customizing the MetaLib user interface (/V).

IMPORTANT:

The VIR01 database must be cleaned up periodically because it expands quickly and may fill up the space allocated for it and, as a result, create performance errors.

Refer to **Maintenance Procedures** on page 211 for more information regarding cleanup maintenance.

The Root directory for each library (such as `vir01`) contains standard files and directories. **Table 3** lists the standard files and directories.

Table 3. Library Directory Structure

File/Directory	Description
<code>file_list</code>	This file configures Oracle tables, indexes, and objects. Refer to Oracle Tables Management - file_list on page 54 for more details.
<code>prof_library</code>	The file contains the Library logical assignments.

Table 3. Library Directory Structure

File/Directory	Description
files/	This directory contains the following files: <ul style="list-style-type: none">■ Export files (xxx01.exportSEQ.tar.Z)■ Dump files (znn.seqaa)■ Batch queue management (alias is df1).
tab/	This directory contains the parameter and configuration tables (alias is dt).
scratch/	This directory is used for intermediate storage and some of the internal log files (alias is ds).
print/	This directory contains the print files (alias is dp).
import/	This directory is used for the Export-Import procedures. For further information, refer to the <i>MetaLib Resource Management Guide</i> .
export/	This directory is used for the Export-Import procedures. For further information, refer to the <i>MetaLib Resource Management Guide</i> .

The libraries are accessed on the server with the `dlib` command, which is entered on the command line as follows:

```
dlib dat01
```

When you enter the `dlib` command, several environment parameters are set.

In addition to the libraries, a MetaLib installation has one or more user interface directories. Each directory contains HTML files, PNG and GIF files, forms, and display tables. Directories are named `ins<nn>`, such as `ins01`, `ins02` or any other combination of five digits or characters.

An optional, licensed-based component called MetaIndex allows the creation of local databases populated with records harvested from OAI compliant repositories. Sites that have local MetaIndexes have additional libraries beyond the three standard libraries described in [Table 2](#) on page 30. For further details regarding the MetaIndex, refer to the *MetaIndex Users Guide*.

MetaLib Directory Structure

MetaLib customers can install more than one version of MetaLib Version 4 on a server. Each version is stored under the `/exlibris/metallib` directory and is called the MetaLib Root directory `/exlibris/metallib/m4_<ins>`, where `<ins>` indicates the installation number.

Figure 3 shows the standard directory structure of the first MetaLib Version 4 installation (`/exlibris/metalib/m4_1`). Subsequent installations of MetaLib Version 4 create the following MetaLib Root directories with the same structure:

```

/exlibris/metalib/m4_2
/exlibris/metalib/m4_3
.
/exlibris/metalib/m4_n
    
```

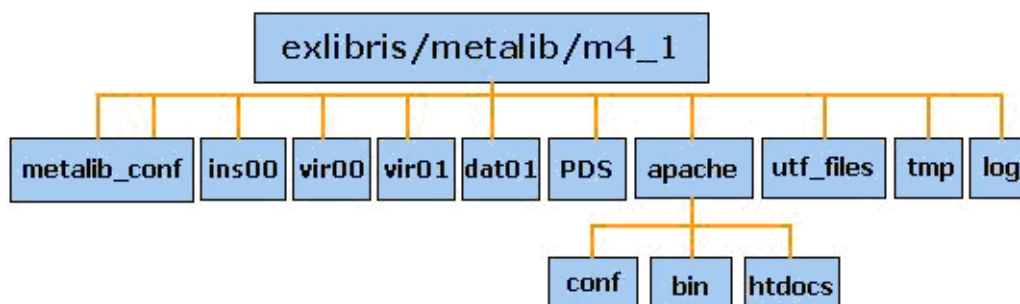


Figure 3: Standard MetaLib Root Directory

The MetaLib Root directory contains the standard MetaLib libraries (`vir00`, `vir01`, `dat01`, and `ins00`), user interface instances (`ins<NN>`, where `<NN>` indicates the user interface instance), the `pds` directory, the `metalib_conf` directory, and the key MetaLib configuration tables can be found there as well.

Using MetaLib Aliases

You can move to key directories by using alias names, which are shortcuts for moving to specific directories. See **Table 4** for a list of aliases.

For example, to use an alias to move to the Root directory of the `vir00` library, enter the following commands:

```

dlib vir00
dr
    
```

Table 4. MetaLib Aliases

Full Path	Alias	Destination
<code>/exlibris/metalib/m4_1/vir00</code>	<code>dlib vir00; dr</code>	The Root directory of the library or instance.
<code>/exlibris/metalib/m4_1/vir01</code>	<code>dlib vir01; dr</code>	
<code>/exlibris/metalib/m4_1/dat01</code>	<code>dlib dat01; dr</code>	
<code>/exlibris/metalib/m4_1/ins00</code>	<code>dlib ins00; dr</code>	
<code>/exlibris/metalib/m4_1/ins01</code>	<code>dlib ins01; dr</code>	

Table 4. MetaLib Aliases

Full Path	Alias	Destination
/exlibris/metalib/m4_1/vir00/tab /exlibris/metalib/m4_1/vir01/tab /exlibris/metalib/m4_1/dat01/tab /exlibris/metalib/m4_1/ins00/tab /exlibris/metalib/m4_1/ins01/tab	dlib vir00; dt dlib vir01; dt dlib dat01; dt dlib ins00; dt dlib ins01; dt	The Library tables of the library or directory.
/exlibris/metalib/m4_1/dat01/ tab_conversion		The tables for converting records returned from a user's search into MetaLib's standard format; edited via the Management interface.
/exlibris/metalib/m4_1/ metalib_conf	\$metalib_conf	The MetaLib system setup tables.
/exlibris/metalib/m4_1/dat01/ z39_gate	\$z39_gate	The z39 gate configuration files; edited via the Management interface.
/exlibris/metalib/m4_1/ins00/ www_v_eng	wv0	The MetaLib user interface HTML files per instance. <ul style="list-style-type: none"> ■ The files in ins00 must not be modified since this is a template user interface. ■ The site should modify the local instances (ins01, ins02, etc.). For more information, refer to the <i>MetaLib User Interface Guide</i>. ■ The alias wv<N> works only if your instance code uses the standard convention of ins<NN>.
/exlibris/metalib/m4_1/dat01/ www_m_eng	wm	The MetaLib Management interface HTML files.
/exlibris/metalib/m4_1/ tab_unicode		The character conversion files.
/exlibris/metalib/m4_1/apache/ logs	apcl	The Apache log files.
/exlibris/metalib/m4_1/apache/ conf	apcc	The Apache configuration files.

Table 4. MetaLib Aliases

Full Path	Alias	Destination
/exlibris/metallib/m4_1/apache/htdocs	apch	The Apache htdocs files.
/exlibris/metallib/m4_1/pds	pdsroot	The Root directory of the PDS authentication module.

The Main Configuration File - metallib_start

`metallib_start` is MetaLib's main configuration file. It contains definitions of MetaLib libraries (`dat01`, `vir00`, etc.) and environment variables. It also contains logical assignments (the only place with physical references to MetaLib directories). `metallib_start` is located in the `./metallib_conf` directory (`cd $metallib_conf`).

In order for changes in `metallib_start` to take effect, you must exit MetaLib, log into MetaLib, and then restart the daemons and servers. Running `metallib_shutdown` stops all daemons and servers. Running `metallib_startup` restarts daemons and servers depending on the definitions in `metallib_start`.

Table 5 lists the configuration settings, which are defined in the `metallib_start` file, by definition type.

Table 5. Main Configuration File - metallib_start

Version Information:		
setenv	ML_VERSION	4
setenv	ML_COPY	1
setenv	ML_REVISION	00
setenv	ML_SERVICE_PACK	00
Port Definitions:		
setenv	ML_SUB_PORT	1
setenv	WWW_SERVER_M_PORT	433\${ML_SUB_PORT}
setenv	PC_SERVER_PORT	633\${ML_SUB_PORT}
setenv	Z39_GATE_PORT	733\${ML_SUB_PORT}
setenv	Z39_SERVER_PORT	933\${ML_SUB_PORT}
setenv	PDS_PORT	8331
setenv	PDS_PORT_IN	8331
setenv	HTTPD_PORT	8331

Table 5. Main Configuration File - metalib_start

Library Definitions:		
setenv	dat01_dev	\${ML_MOUNT}/m\${ML_VERSION}_\${ML_COPY}
setenv	vir00_dev	\${ML_MOUNT}/m\${ML_VERSION}_\${ML_COPY}
setenv	vir01_dev	\${ML_MOUNT}/m\${ML_VERSION}_\${ML_COPY}
setenv	ins00_dev	\${ML_MOUNT}/m\${ML_VERSION}_\${ML_COPY}
setenv METALIB_LIBRARY_LIST "dat01 vir00 vir01"		
Server Start Up Definitions:		
setenv	Z39_SERVER_STARTUP	Y
setenv	Z39_GATE_STARTUP	Y
Oracle Definitions:		
setenv	ORACLE_SID	meta4
setenv	ORACLE_OWNER	oracle
setenv	ORACLE_VERSION	10
setenv	ORACLE_CONF	\${ML_MOUNT}/ora_metalib
setenv	NLS_LANG	American_America.UTF8
setenv	ORACLE_HOME	/exlibris/app/oracle/product/102
setenv metalib_db \${ORA_HOST}.\${ORACLE_SID}		
MetaLib Environment:		
setenv	aleph_dev	\${ML_MOUNT}/m\${ML_VERSION}_\${ML_COPY}
setenv	alephm_dev	\${ML_MOUNT}/m\${ML_VERSION}_\${ML_COPY}
setenv	product	\${ML_MOUNT}/m\${ML_VERSION}_\${ML_COPY}/product
setenv	TMPDIR	\${ML_MOUNT}/m\${ML_VERSION}_\${ML_COPY}/tmp
setenv	LOGDIR	\${ML_MOUNT}/a\${ML_VERSION}_\${ML_COPY}/log
Apache Definitions:		
setenv	apache_dir	\${product}/local/apache
setenv	httpd_bin	\${product}/local/apache/bin
setenv	httpd_root	\${ML_MOUNT}/m\${ML_VERSION}_\${ML_COPY}/apache

For more details on configuring system parameters in the `./metalib_conf/metalib_start` file, refer to **The Main Configuration File - metalib_start** on page 34.

MetaLib Unix Logins

Table 6 lists the Unix logins that are created on the MetaLib server to provide administrative control.

Table 6. MetaLib Unix Logins

Login	Description
metalib	<p>The MetaLib administrator login provides System Administrators and/or System Librarians access to various online utilities and command-line activities.</p> <p>Since the metalib login has access and control over all the libraries in the system, administrators can modify parameters and data for all of the libraries.</p> <p>When logged in as the metalib user, the Home directory is <code>/exlibris/metalib</code>.</p>
oracle	<p>The oracle DBA login provides access to DBA activities outside of the scope of the following online utilities: <code>util_o</code> (Oracle Management) and <code>util_a</code> (File Administration and Building).</p> <p>When logged in as the oracle user, the Home directory is <code>/exlibris/app/oracle/product/102</code>.</p>

Management Interface

The Management Interface (/M) is a Web-based administrative interface for managing the MetaLib system. Depending on the status of your site, the Main menu displays one of the following Main menus:

- Initial Main menu (see **Figure 4**) — Displays all of the functions that are necessary for the initial set up of MetaLib, such as creating institutions, portals, and users.
- Ongoing Main menu (see **Figure 5**) — Displays most of the functions provided on the Initial Main menu, but also includes functions that are necessary to maintain your site, such as Reports and Statistics and MetaIndex management.

Some administrative functions need to be set up and configured on the server as documented in this and other user documents, while other functions can be set up using the Management Interface.

NOTE:

Depending on the role that is provided to the staff user, some of the functions may not be available for use. For more information on staff users, see **Managing Staff Users** on page 120.

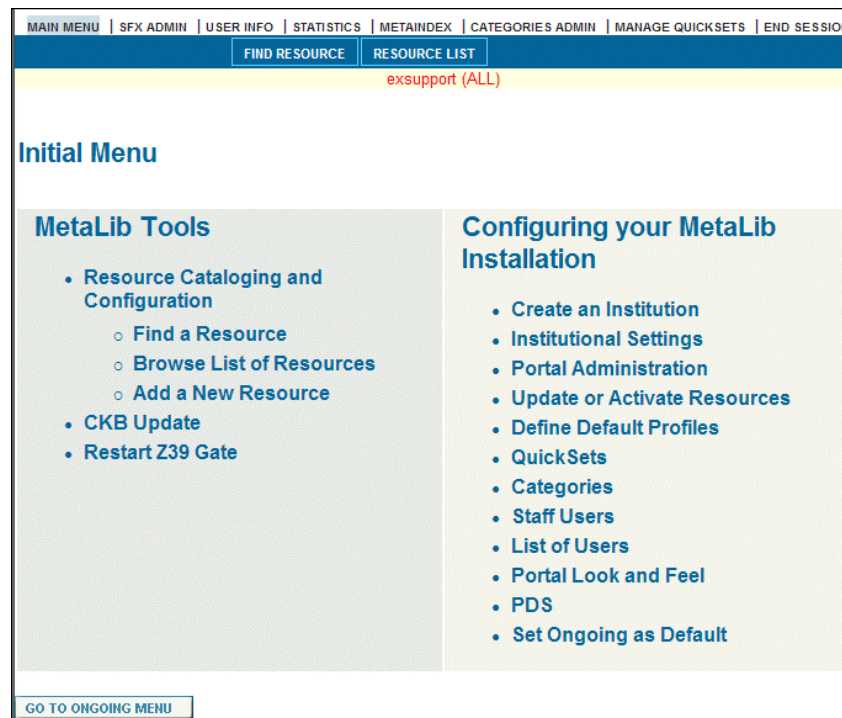


Figure 4: Main Menu (Initial)

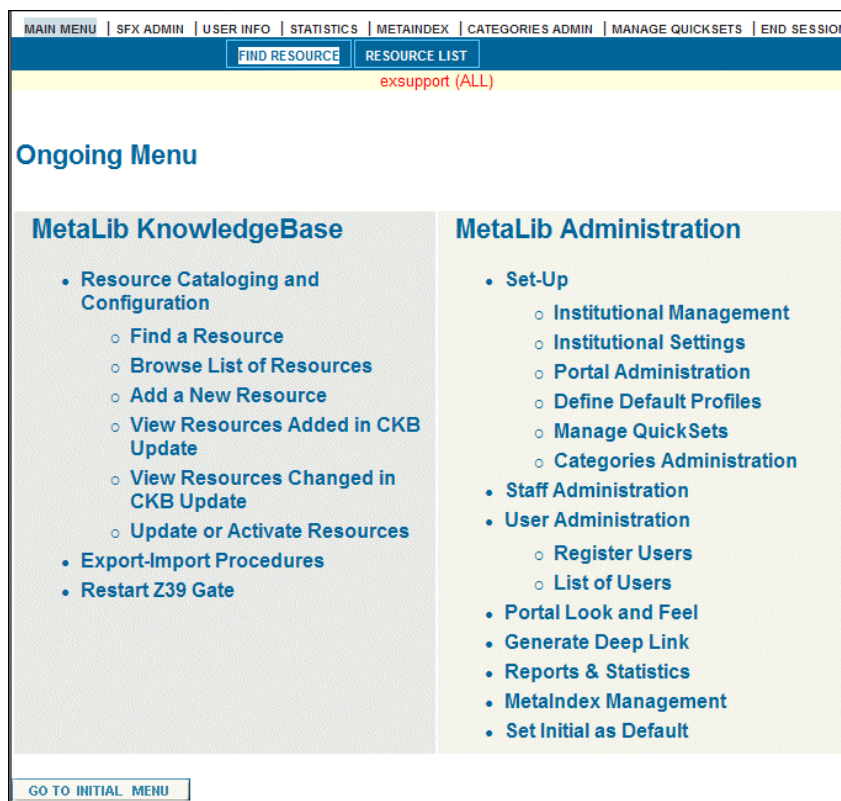


Figure 5: Main Menu (Ongoing)

Accessing the MetaLib Management Interface

To access the MetaLib Management interface:

- 1 In a Web browser, enter the MetaLib URL followed by a /M, as follows:

`http://<IP or hostname of MetaLib server>:<port>/M`

For example:

`http://www.metalib.com:8331/M`

IMPORTANT:

The letter M must be capitalized.

- 2 Enter your user ID and password and click **Submit**.

NOTE:

Refer to **Managing Staff Users** on page 120 for information regarding Management Interface authorizations.

MetaLib Utilities

MetaLib provides server-based utilities (such as user administration, Oracle administration, and server management) for system maintenance. These utilities are accessed via the Library Utilities menu (see [Figure 6](#)) on your MetaLib server. For more information on MetaLib Library Utilities, see [Overview of MetaLib Library Utilities](#) on page 227.

```
Library Utilities
=====
A. File administration and building
F. View procedures and files
G. Tables for defining database structure
K. MetaLib Users Management
O. ORACLE Management
S. System Utility
T. MetaLib Setup
W. Server Management (Monitor, Stop, Start, Log files)
X. Clean up
Y. License Management
Please select [exit]:
```

Figure 6: Library Utilities Main Menu

Key Server Tables and Settings

MetaLib is a flexible system facilitating the configuration of a large number of system parameters and the selection of default settings. This is largely possible through MetaLib key tables described in [Consortium Setup \(tab_groups\)](#) on page 40 and [System Parameters \(www_server.conf\)](#) on page 41.

On the server, each table has a pre-defined number of columns with each column defining a specific data element used as input to an underlying program or programs using it.

NOTE:

It is very important to understand and maintain the structure of each table on the server and make sure each column is aligned with the other columns so that MetaLib can read the table correctly.

The main global system-based MetaLib configuration files, `www_server.conf` and `metalist_start`, reside under the `./metalist_conf` directory. Other tables reside in the `tab` directory under the relevant library or directory depending on the function of the table.

For instance, tables determining user interface aspects typically reside in the `tab` directory of the appropriate instance. Tables determining access to the

Management Interface can be found in the `tab` directory under the `dat01` directory. Some of the system configuration parameters are defined in the Management interface itself.

IMPORTANT:

Whenever a change is made to a key MetaLib table, it is necessary to restart MetaLib's Web servers, as the information being cached in these servers needs to be updated. This can be done by using the Util W-3-1 menu or from the command line by issuing the following command:

```
start_w
```

Re-running the Web servers momentarily stops all user and search requests until the Web servers are back up and can handle user requests again.

Consortium Setup (`tab_groups`)

The `tab_groups` table, which is stored under the `./dat01/tab` directory, defines the groups and their associated institutions. This table allows you to define the following permissions/rights:

- Rights to edit/change resources
- Copying rights to allow the administrator to copy resources into the institution
- Creating default/local institutional users
- Rights to manage categories, portals, proxy settings, SFX settings, and so forth.

The `tab_groups` file contains two columns as described in [Table 7](#).

Table 7. Table Column Definitions

Column	Description
Column 1	Group name.
Column 2	Institutions belonging to the Group. The values in the second column are separated by commas only. There should be no spaces between the comma and the following string value.

NOTE:

The name of a group and the name of the institution can be the same, which is the recommended practice for independent institutions.

To access the `tab_groups` table, enter the following commands on the server:

```
dlib dat01
dt
vi tab_groups
```

For example, **Table 8** defines two groups: `CENTER` and `BUSINESS` (in addition to the `METALIB` group).

The `CENTER` group administers the following institutions: itself, `SCIENCE`, and `ARTS`.

In some cases, the `CENTER` institution is not a real institution but instead created to enable the `CENTER` institution to configure and catalog resources and replicate or push them to other institutions.

The `BUSINESS` group is independent and has administration rights for itself. `BUSINESS` administrators can view `CENTER`, `SCIENCE`, and `ARTS` resources, but cannot edit them. In addition, they can copy resources from the `CENTER`, `SCIENCE`, and `ARTS` institutions into their own KnowledgeBase, but cannot copy resources into other institutions. They do not have permission to do so.

NOTE:

The `SCIENCE` and `ARTS` institutions cannot access the Management Interface, and only the `CENTER` institution can administer them.

Table 8. `tab_groups` Table Example

Column 1	Column 2
METALIB	METALIB
CENTER	CENTER,SCIENCE,ARTS
BUSINESS	BUSINESS

System Parameters (`www_server.conf`)

Global system settings for the MetaLib institution and user interface are defined in this table. The settings apply to all institutions sharing the same installation.

To edit this table, enter the following commands:

```
cd $metalib_conf
vi www_server.conf
```

The file is divided into a number of sections. Each section contains a number of lines that define system parameters. Each line defines a system flag or system function with the input parameter entered as a number, a string, or as a `Y` or `N`

flag. Some of the settings in the file should not be amended. These system parameters are preceded with a warning line.

NOTE:

A # sign at the beginning of a line in this file means that the definition in this line is currently inactive.

The following list highlights selected system parameters from the table that enable users to customize their local installation:

- `setenv show_comments_in_html N`

Determines if the HTML files have the comments of the file displayed or not when viewing the page source in the Internet browsers. In production mode, this flag is expected to be set to N.

- `setenv log_level INFO`

This parameter defines the level of the error messages that are displayed in the `www_m` and Search server logs. The valid values available for this parameter are as follows:

- STAT - level 1
- FATAL - level 2
- ERROR - level 3
- WARN - level 4
- INFO - level 5

The message displays in the log file only if the `log_level` flag is set to the level equal or higher than the level of the message itself. For example, to get all messages of level WARN (level 4) or lower, set the log level in the `www_server.conf` file to WARN.

The value supplied with the initial MetaLib installation is ERROR. For more information on the structure of the messages reported by the system in the `www_server.log` file, see [Web and Search Logs](#) on page 190.

- `setenv self_reg N`

This flag defines whether the Self-Registration option for end-users is enabled or disabled.

Refer to the *MetaLib User Interface Guide* for further information.

- `setenv self_reg_secondary_affiliation GUEST`

This is used to determine the secondary affiliation of self-registered end users. The valid values are listed in the `/dat01/www_m_eng/user-user-group-include` file. If this parameter is missing, the default GUEST value is used. The value supplied for this flag with the initial MetaLib installation is GUEST. BLANK represents no value and bestows full rights to those who self-register.

- `setenv www_v_force_login N`

This flag allows you to force users to log in to access MetaLib. The default value is `N`.

To disable guest access to MetaLib, add this variable definition (if it does not exist) in the `# PDS definitions` section of the `./metalib_conf/www_server.conf` file. If the variable already exists in the file, ensure that its value is set to `Y`. When set to `Y`, guest users are automatically redirected to the login page.

To re-enable guest access to MetaLib, change this value to `N`.

- `setenv WWW_X_SESSION_TIMEOUT 3600`

This is the defined time out for MetaLib's add-on X-Server component measured in seconds.

- `setenv default_character_conversion "8859_1_TO_UTF"`

This determines the default character conversion from the local character set to UTF-8 for all HTML files.

- `setenv www_quick_threshold "0.8"`

This parameter determines the lock threshold for QuickSets, defined in percentages.

The lock icon is shown if the percentage of free resources does not reach the threshold. For example, a threshold of 0.8 indicates that at least 80% of the databases must be freely accessible before a QuickSet can be used for user searches. The default value for an initial MetaLib installation is **0.8**. The range of valid values is **0.1 - 0.9**.

Example:

The Science QuickSet as shown in [Figure 7](#) is not accessible because only two of its five resources (40%) are freely accessible which is less than the default threshold of 80%.

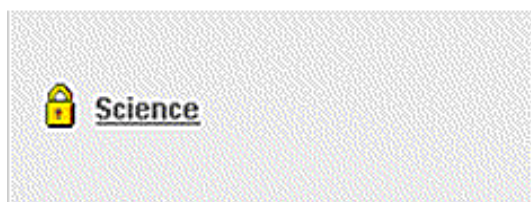
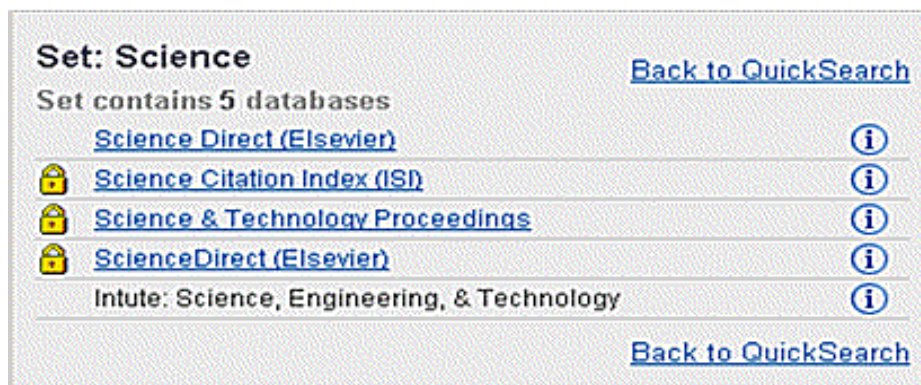


Figure 7: QuickSet Threshold Example

- `setenv www_show_restricted Y`

This parameter determines whether to display restricted resources in all modules to users who are not authorized to search or access them. By default, MetaLib displays all resources, restricted and unrestricted (**Y**). However, if a site wants to show users only resources they are authorized to search or access, this flag must be changed to **N**.

- `setenv www_v_combine_first N`

This parameter determines whether in the MetaSearch module, MetaLib displays the results of the first resource in the list or the combined/merged results from all searched resources. Both modes are available when either using the View Results link in the summary screen or automatically jumping to the results, depending on the definition of `M_JUMP_TO_RESULTS` parameter.

- `setenv enable_dedupe Y`

This parameter indicates whether the duplicate detection algorithm is enabled in the QuickSearch or MetaSearch modules.

Refer to the *MetaLib User Interface Guide* for further details.

- `setenv compress_data Y`

This parameter indicates whether data in responses to Primo is compressed in the ZIP format. The valid values are **Y** or **N**.

IMPORTANT:

By default, this parameter is not included in the file. To send compressed data, you will need to add this variable to the file.

Compressed responses to Primo can improve performance in cases where MetaLib and Primo are not on the same network (LAN). The amount of this improvement may vary depending on the searched resources.

NOTE:

If this parameter is set to **Y**, Primo must be using version 3.1.2 or later and must be configured to support compressed responses. For more information, see the *Primo Back Office Guide*.

- `setenv compress_dedup Y`

This parameter indicates whether duplicate search results display only once. The default value supplied with the initial MetaLib installation is **Y**.

- `setenv direction_support N`

This parameter indicates whether support for Right to Left direction in the page layouts is enabled. For sites making extensive use of the Hebrew and Arabic languages, this parameter should be set to **Y**. The default value supplied with the initial MetaLib installation is **N**.

- `setenv find_db_default_tab title`

This flag determines the default tab in the Find Database module that users see when they access this module.

Refer to the *MetaLib User Interface Guide* for further details.

- `setenv find_db_title_search_type contains`

This flag determines the default radio button pre-selected in the Title tab of the Find Database module. The valid values are **contains**, **starts with**, and **exact**.

Refer to the *MetaLib User Interface Guide* for further details.

- `setenv meta_identify_default MySets`

This flag determines the default option presented to users under the Identify Databases section of the MetaSearch module. The default is set to display users' personal sets if available. If not available, the library-defined QuickSets are displayed. The valid values are **QuickSets**, **MySets**, **Locate**, **Category**, and **New**. The default value for initial MetaLib installations is **MySets**.

Refer to the *MetaLib User Interface Guide* for further information.

- `setenv default_search simple`

This defines the default search mode presented to end-users when they access the search module. The valid values are **simple** and **advanced**.

- `setenv www_metalib_search_limit 10`

This defines the maximum number of databases that may be concurrently searched in the QuickSearch and MetaSearch modules.

- `setenv www_metalib_merge_limit 150`

This parameter is used by the MetaLib X-server. Merge records are retrieved during the search process up to the point defined in this parameter. The default is **150** and the maximum is **900**.

- `setenv check_full_text_avail ALL`

This determines whether the Full Text icon appears in the Full, Table, and Brief views of records when full text is available. This parameter uses the SFX API to query SFX if a full text service is available for a given record. The following values are valid for this parameter:

- **ALL** (default value) - Full Text button displays in all view formats (Table/Brief/Full).
- **Full only** - Full Text button displays in Full view only.
- **Table-Brief** - Full Text button displays in Table/Brief formats.
- **None** - Full Text button does not display at all in the MetaLib user interface.

Refer to the *MetaLib User Interface Guide* for further details.

- `setenv ird_minimal_view 9999`

This parameter indicates the results threshold for Find Resource queries. The valid values are **1** to **9999**.

The default value is **9999**, which indicates that there is no threshold. Note that queries with very large result sets may time out.

If a value from **1** to **9998** is specified and the number of results exceeds this value, the system will display a minimal results page, which contains less information (such as icons used to display specific tabs for the resource).

- `setenv www_v_ird_browse_limit 10`

This sets the number of resources displayed on a page when browsing within the list of resources in the Find Database and MetaSearch modules.

- `setenv www_v_ird_selected_limit 10`

This identifies the number of preselected databases in MetaSearch. The maximum setting for this parameter is the number set in `metalib_search_limit` parameter. The databases appear as selected only if the number of databases in the set is equal to this parameter or less. (If you

set this parameter to 6 selected databases and the set consists of 8 databases, no databases are pre-selected).

- `setenv www_v_sort_results "06---D03---A"`

This parameter defines the primary and secondary methods of sorting the results of searches done in the QuickSearch or MetaSearch/Combined results pages. By default, the searches are sorted by rank (06) and title (03). **D** indicates descending order and **A** indicates ascending order. The values behind the numeric codes are **01** (Year), **02** (Author), **03** (Title), **05** (Database), and **06** (Rank).

The value of this parameter should match one of the re-sort options defined in the `./ins<NN>/www_v_<lng>/sort-include` files. For initial MetaLib installations, the following values are defined:

- "06---D03---A"
 - "03---A"
 - "02---A"
 - "01---D"
 - "05---A"
- `setenv www_v_my_sets_order 1`

This parameter enables each customer to determine whether a user sees his user defined sets in the QuickSearch module, and if displayed, whether they display above or below the library's QuickSets.

Refer to the *MetaLib User Interface Guide* for further details.

- `setenv metalib_home_page "quick-1"`

The default home page MetaLib users see after logging in or changing portals is quick-1 or the initial QuickSearch module page. You can modify the default page users access using this flag. The valid values are:

- **home** - The default MetaLib home page.
 - **quick-1** - Quick Search
 - **find-db-1** - Find Database
 - **meta-1** - MetaSearch
 - **my-space-1** - My Space
- `setenv metalib_entry_page home`

This determines which module displays to the end-users when entering the `/v` interface. The valid values are:

- **home** (default value) - The default MetaLib home page.
- **quick-1** - Quick Search.
- **find-db-1** - Find Database.

- **meta-1** - MetaSearch.
- **my-space-1** - My Space.
- `setenv Q_JUMP_TO_RESULTS Y`

This defines whether the system jumps to the results page immediately after retrieving all results in the QuickSearch module. The default value supplied with the initial MetaLib installation is `Y`.
- `setenv M_JUMP_TO_RESULTS Y`

This defines whether the system jumps to the results page immediately after retrieving all results in the MetaSearch module. The default value supplied with the initial MetaLib installation is `Y`.
- `setenv categories_display_flag Y`

When adding new categories to the Master list of categories, this flag determines whether the display name of the new category displays automatically to end users. This flag should be turned off – for example, when the display name needs to be translated – so that end users see only the translated display names. The default is `N` if the parameter is not defined.

Refer to the *MetaLib QuickSet and Category Administration Guide* for additional information about managing resource categories in MetaLib.
- `setenv CLUSTER_FACET Y`

This defines whether the Cluster and Facets functionality is enabled or disabled. The valid values are `Y` and `N`. The default supplied with the initial MetaLib installation is `Y`. In addition to this global system parameter, each institution can determine whether to display cluster facets via the Institutional Settings in the Management interface.
- `setenv max_search_processes 150`

This parameter determines the threshold of queued searches which, when reached, signal a system busy message indicating no further searches are processed at this stage. The acceptable values for this parameter range from **150** on a relatively weak 2 CPU server to **450** on a strong 8 CPU server. See [Server Configuration Guidelines](#) on page 57 for further information.

NOTE:

Ex Libris strongly recommends that you consult your local support office before changing this parameter.

- `setenv apply_param_validation Y`

MetaLib has improved protection against cross-site scripting (XSS) attacks. This protection validates all the input parameters to MetaLib forms such as

QuickSearch/MetaSearch/Find Database Search, Self Registration, Alerts, and so on.

If the implementation of this immediately results in 0223 Invalid input error messages, disable the protection and contact your local support office for further assistance.

The following error message is included in the `./ins<NN>/tab/www_heading.<lng>` files for all instances and languages, where `<lng>` indicates the language and `<NN>` indicates the instance:

0223 Invalid input

- `setenv KNOWLEDGEBASE_REPORT_MAIL Y`

Since the KnowledgeBase Report can be run in the background, this flag, when set to `Y`, will send an e-mail confirmation when the report has finished running.

- `setenv EXT_USER_INSTITUTE <insitution>`

This parameter specifies the default institution (such as `METALIB`) that is used for unsigned users that do not access your MetaLib site within the defined IP ranges. For more information about defining IP ranges, see [Configuring IP Ranges](#) on page 83.

- `setenv EXT_USER_DEFAULT_PROFILE <default_profile>`

This parameter specifies the default profile (such as `METALIB-ENG`) that is used for unsigned users that do not access your MetaLib site within the defined IP ranges. For more information about defining IP ranges, see [Configuring IP Ranges](#) on page 83.

- `setenv SFX_conf JSI`

This parameter indicates which type of API is used for SFX. The valid values are **RSI** (Rapid Service Indicator) and **JSI** (Journal Subscription Information). The default value is **JSI**.

Using Multiple PDS Servers in MetaLib (per Institution)

If you need to use a different PDS server for a specific institution instead of the one used for your local MetaLib server, define the following system variables in the `www_server.conf` file for the institution:

- `setenv server_pds_<institution> "<pds_server>:<pds_port>/pds"`
- `setenv server_pds_in_<institution> "<pds_server>:<pds_port>/pds"`

For example, to use a different PDS server for the DEMO1 institution:

- 1 Log on to the MetaLib server.
- 2 Enter the following commands to edit the `www_server.conf` file:

```
cd $metalib_conf  
vi www_server.conf
```
- 3 Add the following lines to the file:
 - `setenv server_pds_DEMO1 "http://www.aleph.exlibrisgroup.com:8991/pds"`
 - `setenv server_pds_in_DEMO1 "http://www.aleph.exlibrisgroup.com:8991/pds"`
- 4 Exit and save your changes to the file.
- 5 Enter the following command to restart the Web servers:

```
start_w
```

Session Timeout

MetaLib times out if the user does not use the system for a specified period of time. The timeout parameters in MetaLib are as follows:

- An internal server timeout
- An HTML page timeout

Internal Server Timeout

MetaLib applies an internal server timeout if the interval between a user's requests exceeds the time period defined by the following parameter:

```
setenv WWW_V_SESSION_TIMEOUT 900
```

The default value is 15 minutes measured in seconds (**900** seconds). The minimum session timeout is 5 minutes (**300** seconds). Sites can change the default server timeout. This parameter is defined in the `./metalib_conf/www_server.conf` file.

When a user makes a request after the server timeout period has elapsed, MetaLib terminates the user's current session and starts a new guest session for that user.

To update the session timeout:

- 1 Enter the following commands to edit the `www_server.conf` file:

```
cd $metalib_conf  
vi www_server.conf
```

- 2 Search for the `WWW_V_SESSION_TIMEOUT` parameter and change the default value of 900 to the required number of seconds.
- 3 Enter the following command to restart the Web servers:

```
start_w
```

Timeout for HTML Pages

The global timeout defined for all HTML pages is set in the include file `meta-tags`.

Once a page is left idle in a user's browser for the time period defined in `meta-tags`, the user is logged out automatically and is redirected to a log out page using the following syntax for a link:

<http://www.metalib.com/V/?func=logout>

NOTE:

The change in the `meta-tags` file activates the new timeout in all HTML files within the same instance and language.

To update the timeout value for HTML Pages:

- 1 Enter the following commands to edit the `meta-tags` file:

```
cd ./ins<NN>/www_v_<lng>
vi meta-tags
```

- 2 Search for the following text and update the value shown in bold:

```
<META HTTP_EQUIV="REFRESH" CONTENT="2000" ;
URL=&server_vir?func?=logout ">
```

The default value is 2000 seconds, which is equal to approximately 34 minutes.

Oracle Overview

MetaLib is based on the Oracle 10g RDBMS (Relational Database Management System).

A MetaLib library is an organizational unit within the MetaLib application comprised of special environmental parameters, a set of configuration files and tables, and special server based utilities. It is defined as an Oracle user with its own data segments within the Oracle database (the Oracle database in MetaLib Version 4 is usually called `meta4`).

Every MetaLib installation has three basic libraries, DAT01, VIR00, and VIR01. For more information, see [Table 2](#) on page 30.

Structure

Each MetaLib library consists of:

- A separate Oracle user (schema); each Oracle user owns a set of tables which contain the MetaLib library's data.
- A separate directory tree beginning from a root directory for the MetaLib library, which contains configuration tables, scratch files, print files, and so on.

SQL Access to the Oracle Tables

In MetaLib, SQL *Plus can be used to access MetaLib's Oracle tables.

```
il-mldev03.exlibris-int.il-m4_1 >>sqlplus vir01

SQL*Plus: Release 10.2.0.1.0 - Production on Mon Feb 20 12:32:26 2006

Copyright (c) 1982, 2005, Oracle. All rights reserved.

Enter password:

Connected to:
Oracle Database 10g Enterprise Edition Release 10.2.0.1.0 - Production
With the Partitioning, OLAP and Data Mining Scoring Engine options

m41_vir01@META4> desc z52
Name                                                    Null?    Type
-----
Z52_REC_KEY                                             NOT NULL CHAR(20)
Z52_PREFIX                                             VARCHAR2(20)
Z52_SEQUENCE                                           NUMBER(9)
Z52_SUPPRESS                                           CHAR(1)
Z52_FORMAT                                             VARCHAR2(30)
Z52_TYPE                                               CHAR(1)
```

Figure 8: SQL Access to Oracle Tables

Oracle Users in MetaLib

Each MetaLib library is owned by a specific Oracle user (schema). In addition, there are several Oracle users used by the MetaLib application that are not related to a specific library.

- METALIB — The MetaLib server connects to the Oracle database via a designated Oracle user named METALIB (default password: METALIB). The

METALIB user can select, insert, update and delete data from the tables of all Oracle users (for example, DAT01, VIR00, VIR01, etc.), but is not the owner of any table.

- METALIB_ADMIN — The administrative user METALIB_ADMIN has additional privileges to those of the METALIB user and can also create, drop and alter Oracle tables, indexes, users, triggers, etc. The METALIB_ADMIN Oracle user is used for these actions in all MetaLib procedures.
- METALIB_DBA — The third and last administrative Oracle user for MetaLib is METALIB_DBA. This is the most privileged Oracle administrative user. It is used by MetaLib utilities to start up, shut down, and perform other DBA operations.

The connection between MetaLib servers and procedures and these Oracle users is transparent to the MetaLib end user via the Web functionality and the Util facilities.

Oracle Concepts

Storage

An Oracle database consists of several logical units named tablespaces. Each tablespace consists of one or more physical data files which can be stored on one or more disks. For example:

Table 9. Tablespaces Used in MetaLib

Tablespace Name	Usage	Physical File
system	Oracle system tables	/exlibris/oradata/meta4/meta4_system01.dbf
temp	Temporary space (for sorting, index creation, etc...)	/exlibris/oradata/meta4/meta4_temp01.dbf
ts0	MetaLib tables	/exlibris/oradata/meta4/meta4_ts0_0.dbf
ts1	MetaLib indexes	/exlibris/oradata/meta4/meta4_ts1_0.dbf

Each Oracle table and index is mapped to a tablespace. In MetaLib, this mapping is done via a configuration file named `file_list`. For more information, see [Oracle Tables Management - file_list](#) on page 54.

Users

In an Oracle database, users can be defined and identified by user names. A user has the following tablespaces:

- Default tablespace — Specifies where objects (tables and indexes) are built by default (unless otherwise specified).
- Temporary tablespace — Provides storage for SQL statements that require disk space to sort or summarize data.

Tables

A table is an Oracle object that contains rows of data. A row is composed of columns. Each table is mapped to a tablespace. For each table, Oracle allocates initial space and extended space, according to the specifications in the Create Table command. Table mapping to a tablespace, and its initial space allocation are controlled by `file_list`. The size of additional extent allocation also appears in the `file_list` for reasons of backward compatibility. For more information, see [Oracle Tables Management - file_list](#) on page 54.

Indexes

An Oracle index is an Oracle object (B-tree) that contains pointers (rowid) to a specific row in a table. Each index is mapped to a tablespace. Index mapping to a tablespace and its initial space allocation are controlled by `file_list`. The size of additional extent allocation also appears in the `file_list` for reasons of backward compatibility. For more information, see [Oracle Tables Management - file_list](#) on page 54.

Oracle Tables Management - file_list

Introduction to Locally Managed Tablespaces

The database for MetaLib 4.00 has locally-managed tablespaces.

There are two types of extent allocation when using locally-managed tablespaces.

- Auto Allocate - Oracle takes full control, automatically allocating extents as needed and taking into account the initial allocation of the table/index as supplied in the Create Table/Index command.

Example: Initial allocation of the table/index as defined in the `file_list` is 1 GB. Oracle might split the 1 GB to 50 extents, 1 extent, or any other combination.
- Uniform - When creating the tablespace, the DBA determines the uniform extent size for all the extents in the tablespace. Each extent is that size. The DBA determines which table is assigned to which tablespace depending on the table (Znn) size. All the extents of a table created in a Locally Managed Tablespace with uniform size have the same size. This size is the uniform size defined for the tablespace, with no regard for the extents definition that

may have been given in the Create Table command. In this way, there is no fragmentation and the utilization is optimal.

Example: When creating a tablespace with a uniform extent size of 10 MB and a table that is 50 MB, 5 extents are used.

In a standard MetaLib installation, TS0 and TS1 are created as Locally Managed Tablespaces with the auto allocate allocation type. Additional tablespaces, such as TEMP, TSLOB, and USERS are created as Locally Managed Tablespaces with the uniform size allocation type.

When working with Locally Managed Tablespaces, the word LOCAL appears in the EXT-MGMT (extent management) column in Util O-17-4. For example:

TS_NAME	EXT_MGMT	ALLOC_TYP	INIT_EXT	NEXT_EXT	TYPE	STAT
LOG	LOCAL	SYSTEM	65536		PERM	ONL
SYSAUX	LOCAL	SYSTEM	65536		PERM	ONL
SYSTEM	LOCAL	SYSTEM	65536		PERM	ONL
TEMP	LOCAL	UNIFORM	1048576	1048576	TEMP	ONL
TS0	LOCAL	SYSTEM	65536		PERM	ONL
TS1	LOCAL	SYSTEM	65536		PERM	ONL
TSLOB	LOCAL	UNIFORM	8388608	8388608	PERM	ONL
UNDOTBS1	LOCAL	SYSTEM	65536		UNDO	ONL
USERS	LOCAL	UNIFORM	40960	40960	PERM	ONL

In the ALLOC_TYP column, you may see these values:

- SYSTEM = auto allocate
- UNIFORM = uniform

The Role of file_list When Working with Locally Managed Tablespaces

This is the mechanism for defining which table sits in which tablespace. If a table has too many extents (Util A-11 Space Utilization), this means that the table was created with the wrong Initial Extent Allocation size. In this case, you should reorganize the table. This entails performing a sequential dump, dropping the table, changing file_list, loading the table's sequential file, and recreating the table's indexes.

In the file_list file, each table is mapped to a tablespace. When a table is created, several extents are allocated in order to match the initial allocation size specified in the file_list. The number of extents vary.

- Auto Allocate - Oracle determines the extents' size and number.
- Uniform - Each extent is the size defined for the tablespace as the default extent size. Initially, the number of extents is the number needed in order to satisfy the initial allocation size specified in the file_list for that table/index.

MetaLib comes with the built-in `file_list` templates for each type of library. It consists of parameters used to manage all Oracle objects (table, index, synonym, and so on) of the particular library.

To override values from the template with your own values, you need to edit the `file_list` located in the root of each library. Use Util A-10-1 for this purpose. To view the template `file_list` and/or to view the merged `file_list`, use Util A-10-2. The definitions that determine the library type and size can be found in the `prof_library` file in the root of the library.

The first column is the type of object being defined. The content of the other columns depends on the type in column one.

Table 10. `file_list` Structure

Col. 1	Col. 2	Col. 3	Col. 4	Col. 5
TAB	table name	initial allocation	next allocation ¹	tablespace name
IND	index_name	initial allocation	next allocation ¹	tablespace name
LS	table name	library name (to link to)		
NA	table name (not applicable in current library)			
SEQ	sequence name			
RS	table name	library name	alias name ²	
INX	index name	initial allocation	next allocation ¹	tablespace name

1. For locally managed tablespaces this column is not taken into account and can be defined as 0 KB. It appears for backward compatibility reasons only.
2. The alias name that appears in the `tnsnames.ora` file. See [Oracle Tables Management - file_list](#) on page 54 for more details.

Following is an example of the different objects listed in `file_list`:

```
TAB z05          4M          4M          ts0
IND z05_id      1M          1M          ts1
IND z05_id1     1M          1M          ts1
IND z05_id2     1M          1M          ts1
IND z05_id3     1M          1M          ts1
IND z05_id4     1M          1M          ts1
.
.
.
SEQlast_result_set
```

Server Configuration Guidelines

This section contains the following MetaLib configuration guidelines:

- Servers dedicated to MetaLib
- Servers hosting MetaLib and SFX

Servers Dedicated to MetaLib

Table 11. Dedicated MetaLib Server Guidelines

MetaLib Configuration Guidelines - Initial Estimation						
	Sun Solaris 9/10 Platform			Linux Red Hat AS 3.0/4 Platform		
RAM (G)	6	8-10	10-16	6	8-10	16
Number of CPU Cores	2	4	8	2	4	8
Number of Web servers	4-8	8-16	16-20	4-8	8-12	16-20
Number of Search servers	20	40-60	60-80	40	60-80	100-130

Servers Hosting MetaLib and SFX Installations

Table 12. MetaLib and SFX Host Guidelines

MetaLib+SFX Configuration Guidelines - Initial Estimation						
	Sun Solaris 9/10 Platform			Linux Red Hat AS 3.0/4 Platform		
RAM (G)	6	8-10	12-16	6	8-10	10-16
Number of CPU Cores	2	4	8	2	4	8
Number of Web servers	4-6	8-10	16-22	4-8	8-12	16-20
Number of Search servers	20	30-45	60-85	25	40-70	80-120

Exporting MetaLib E-Shelf Records for Primo

The `export_eshelf_2_primo.csh` script allows you to export all records or a specific institution's records from the MetaLib e-Shelf to a tar file so that they can be imported into Primo's e-Shelf.

This script creates the following files in the `vir00` directory:

- An XML file for each e-Shelf record. If the records for a specific institution are requested, they are stored per institution in the `vir00/<institution_code_in_lowercase>` directory. Otherwise, all of the institutions' e-Shelf records are stored in the `vir00/eshelf_export` directory.
- A mapping file called `ret_eshelf_primo_#DATE#`
- A gzipped tar file that contains the e-shelf records and mapping file and uses the following naming conventions:
 - `eshelf_export_<institution_code_in_lowercase>.tar.gz` (specific institution)
 - `eshelf_export.tar.gz` (all institutions)

NOTE:

To import the e-Shelf into Primo, you must be running Primo v3.1.4 or later release.

To export all e-Shelf records from MetaLib:

- 1 Log on to the MetaLib server.
- 2 Enter the following command to export the records:

```
csch -f $metalib_dev/alephm/proc/export_eshelf_2_primo.csh  
<institution_code_in_lowercase>
```

NOTE:

The institution code is optional. If one is not specified, the script will export all institutions to the `vir00/eshelf_export` directory.

- 3 FTP the tar file in the `vir00` directory to the Primo server.
- 4 Run the `import_eshelf_metalib.sh` script on the Primo server. For more information, see the *Primo Interoperability Guide*.

NOTES:

- The export script is not incremental and will extract all of the records from MetaLib's e-Shelf.
 - To import the e-Shelf into Primo, you must be running Primo v3.1.2 or later.
 - The import script should only be run once on Primo to prevent duplicate records from being created in Primo's e-Shelf.
-

Part II

Institutional Settings in the Management Interface

Part II contains the following:

- **Section 3: Portal and Language Administration** on page 63
- **Section 4: Configuring IP Ranges** on page 83
- **Section 5: Managing Proxy Servers** on page 91
- **Section 6: Configuring Your Link Resolver** on page 97
- **Section 7: Customizing Cluster/Facets** on page 101
- **Section 8: Using the PDS Wizard** on page 103

3

Portal and Language Administration

This section includes:

- [The Portal Administration Page](#) on page 63
- [The Create Portal Process](#) on page 65
- [Creating a New Portal](#) on page 67
- [The Portal Deletion Process](#) on page 70
- [Deleting a Portal](#) on page 73
- [Deleting a Portal Example](#) on page 73
- [Troubleshooting Portal Deletions](#) on page 76
- [The Create Language Process](#) on page 78
- [Adding a New Language to a Portal](#) on page 78

The Portal Administration Page

The Portal Administration page (see [Figure 9](#)) displays the list of portals that are assigned to your institution. From this page, you can perform the following operations:

- Add a new portal — See [The Create Portal Process](#) on page 65 for details on how to create portals.
- Add a new language — See [The Create Language Process](#) on page 78 for details on adding languages to portals.
- View a portal's default profiles — See [Default Profiles Page](#) on page 140 for details on managing default profiles. When accessed from this page, the Default Profiles page lists the default profiles for this portal at the top of the list.
- View a portal's QuickSets and Categories — See the *MetaLib QuickSet and Category Administration Guide* for details on using the Manage QuickSets and Categories Administration pages.

- Customize a portal via the Look and Feel wizard – See the *MetaLib User Interface Guide* for details on how to use the Look and Feel wizard.

NOTE:

The **Change To** field indicates whether end users can access this page. This is useful if you don't want users accessing this portal while you are updating it. To allow access to the portal, select the **Change To** field.

ExLibris MetaLib
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MAIN MENU | SFX ADMIN | USER INFO | STATISTICS | METAINDEX | CATEGORIES ADMIN | PORTAL ADMIN | MANAGE QUICKSETS | END SESSION

GENERAL | PROXY | LINK RESOLVER | CLUSTER-FACET | IP ADDRESSES

exsupport (ALL)

Portal Administration

Institution Code: Institution Name: HUJI

Portal Administration

#	Code	Instance	Default Profile	Portal Options	Change To
1	HUJI	INS01	HUJI-ENG-GUEST	Default Profiles Quick Sets Categories Look and Feel	<input checked="" type="checkbox"/>

Figure 9: Portal Administration Page

To access the Portal Administration page:

- 1 Log in to the Management Interface to display the main menu (see [Figure 10](#)).



Figure 10: MetaLib Main Menu

- 2 From the main menu of the /M interface, click **Portal Administration** to display the Portal Administration page (see [Figure 9](#)).
- 3 Select an institution from the drop-down list to display the list of portals.

The Create Portal Process

Sites can define portals to present different views of MetaLib to users. A portal may represent a particular subject area, cater to the specific needs of a group of users, or be used to present a language translation of MetaLib or any defined portal. A portal can be differentiated by various QuickSets, different categories displayed in the user interface, and optionally an entirely different user interface instance. Different portals can be created for the institution, with one portal designated as the default portal. In the case of a consortium, dedicated portals can be created for each institution.

The following steps are necessary to add a new portal to an existing institution. A detailed description of each step is included in the following sections of the document.

To add a new portal to an existing institution:

- 1 Create a New Portal - Create the Portal using the Portal Administration option of the Management Interface (/M). Three default users are automatically created for the portal.
- 2 Create QuickSets for Portal - Create appropriate QuickSets using the default users for the new portal via the user interface. For further information, refer to *MetaLib User Interface Guide* and the *MetaLib QuickSet and Category Administration Guide*.
- 3 Create an Appropriate List of Categories - Create an appropriate list of categories using the Category Display option of the Categories Administration page in the Management Interface. Within Category Display, administrators can select which categories are displayed in the portal, change the display name of a category, and determine the sort order.
- 4 Implement Change Portal Functionality - Implement Change Portal functionality for both guest and affiliated users.
- 5 Change the Look and Feel of the Portal - You have the option of changing the look and feel of the portal if a new instance is created for the portal. Note that creating additional user interface instances demands maintenance work apart from the initial work involved.
- 6 Adding a New Portal to the User's Preferences - Implement portal functionality for affiliated users from My Space > Preferences.
- 7 Adding a New Language - For a multi-language portal, add a display in a new language.

Creating a New Portal

This sections describes how to create a new portal for a given institution on the basis of an existing portal in the same institution and linked to the same interface.

To add a new portal (Classical) to an existing institution (Music Academy):

- 1 From the Portal Administration page (see [Figure 9](#)), click **Add Portal** to display the following page:

Figure 11: Add Portal Page

- 2 Fill in the fields in both the New Portal Details section and the Copy from section.

Table 13. Add Portal Field Descriptions

Field	Description
New Portal Details Section	
Institution Name	From the drop-down list, select the name of the institution to which to add the portal. Example: Music Academy

Table 13. Add Portal Field Descriptions

Field	Description
Portal Name	Type the name of the new portal. A maximum of 30 characters can be entered (letters from A-Z, numbers from 1-9). Do not use special characters or spaces in the portal name. You can use a hyphen as a separator. Example: Classical
Existing Portals	Displays for reference the portal names already created for the institution selected. You can view the list by clicking on the drop-down arrow. Example: MUSIC
Instance	From the drop-down list, select an existing instance to which to add the portal. Example: INS03
Default Profile	From the drop-down list, select the default profile for the portal: Guest, Affiliated, or General. Example: Guest
Enable Change To	This field indicates whether users can access this portal from the User Interface (/V). By default, this field is checked to allow access to the portal.
Existing Portals	This field lists the existing portals for the current institution.
Copy From Section:	
Institution Name	From the drop-down list, select the Institution Name which contains the portal to be copied. Example: Music Academy
Portal Name	From the drop-down list, select the Portal Name from which to copy the new portal. The category display list and QuickSets of this portal are copied to the three default new users of the new portal. If the portal you are copying belongs to the same institution as the source institution, then the resources assigned to the categories and QuickSets are also copied. If you are copying a portal from a different institution, Category Display is created but no resources are assigned. QuickSets are created with no resources. Example: MUSIC
Instance	Not relevant unless Other is specified in the Instance drop-down list of the New Portal Details section.

- 3 Click **Submit** to create the new portal.

Initially, the following message displays at the top of the page:

Copy Portal in progress...

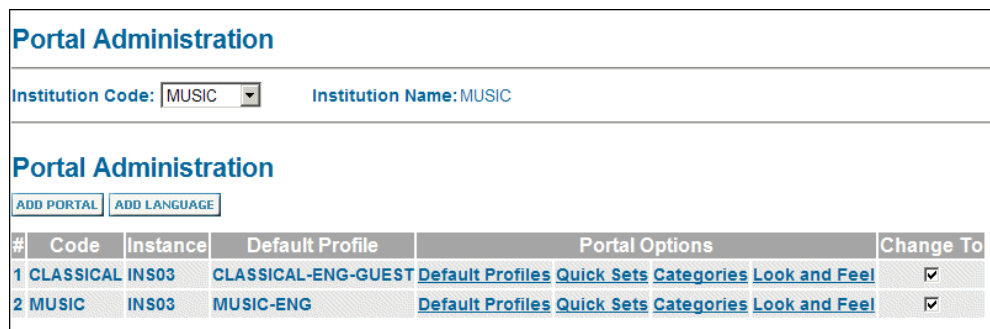
Upon a successful completion, the following message displays:

Portal successfully created.

NOTE:

Do not click **Submit** while portal creation is in progress.

- 4 From the Management Main menu, click **Portal Administration** to see if the new portal has been added to Music Academy (see **Figure 12**).



The screenshot shows the 'Portal Administration' interface. At the top, there is a title 'Portal Administration' and a form with 'Institution Code: MUSIC' and 'Institution Name: MUSIC'. Below this, there are two buttons: 'ADD PORTAL' and 'ADD LANGUAGE'. The main part of the interface is a table with the following data:

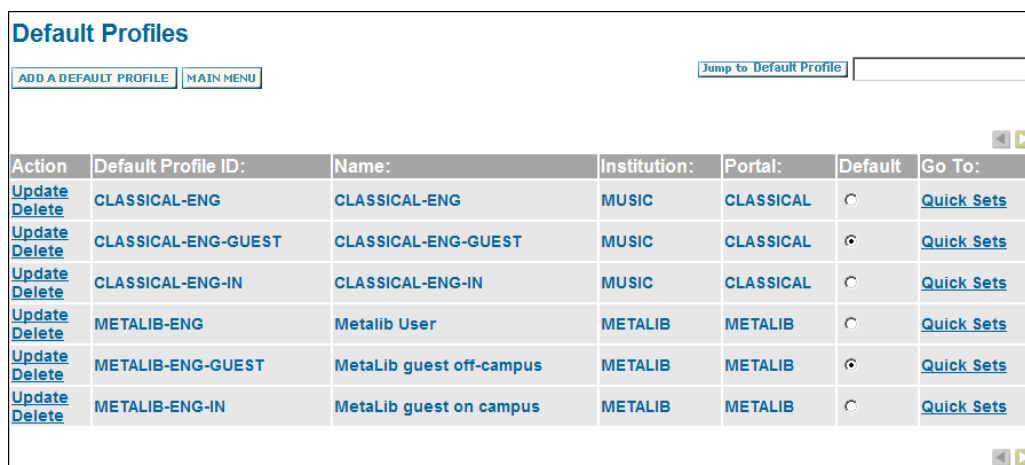
#	Code	Instance	Default Profile	Portal Options	Change To
1	CLASSICAL	INS03	CLASSICAL-ENG-GUEST	Default Profiles Quick Sets Categories Look and Feel	<input type="checkbox"/>
2	MUSIC	INS03	MUSIC-ENG	Default Profiles Quick Sets Categories Look and Feel	<input checked="" type="checkbox"/>

Figure 12: New Portal - CLASSICAL

NOTE:

The Portal Administration window only displays the default profile for each portal.

- 5 From the row containing the new portal, click the **Default Profiles** link to see if all of the profiles have been created for the new portal (see **Figure 13**).



The screenshot shows a web interface titled "Default Profiles". At the top left are buttons for "ADD A DEFAULT PROFILE" and "MAIN MENU". At the top right is a "Jump to Default Profile" search box. Below is a table with the following data:

Action	Default Profile ID:	Name:	Institution:	Portal:	Default	Go To:
Update Delete	CLASSICAL-ENG	CLASSICAL-ENG	MUSIC	CLASSICAL	<input type="radio"/>	Quick Sets
Update Delete	CLASSICAL-ENG-GUEST	CLASSICAL-ENG-GUEST	MUSIC	CLASSICAL	<input checked="" type="radio"/>	Quick Sets
Update Delete	CLASSICAL-ENG-IN	CLASSICAL-ENG-IN	MUSIC	CLASSICAL	<input type="radio"/>	Quick Sets
Update Delete	METALIB-ENG	Metilib User	METALIB	METALIB	<input type="radio"/>	Quick Sets
Update Delete	METALIB-ENG-GUEST	MetaLib guest off-campus	METALIB	METALIB	<input checked="" type="radio"/>	Quick Sets
Update Delete	METALIB-ENG-IN	MetaLib guest on campus	METALIB	METALIB	<input type="radio"/>	Quick Sets

Figure 13: List of Default Profiles for New Portal

NOTE:

You may have to click the left and right arrows to view the previous or next pages, respectively.

The Portal Deletion Process

The Delete Portal command utility allows you to delete a portal that was inadvertently or incorrectly created, or is no longer in use. This section describes the portal-related components and limitations.

For more information on the Delete Portal command, see [Deleting a Portal](#) on page 73.

Portal-Related Components

This section describes the portal-related components in a MetaLib instance that are removed by the Delete Portal process.

Institutional Settings

When creating a new institution or adding a new portal to a given institution, a record is created in the portal table (`./vir00/PORTAL`).

When deleting a portal, the record is removed from this table.

Portal Default Profiles

When creating a new institution or adding a new portal to a given institution, three default profiles are automatically created for the portal in the user table (`./vir00/z312`).

Similarly, when adding a new language to an existing portal, three more default users are added to the same table.

The users are defined in the following formats:

- `<PORTAL>--<LNG>`
- `<PORTAL>--<LNG>-GUEST`
- `<PORTAL>--<LNG>-IN`

When deleting a portal, all the default users for all the languages are removed.

QuickSets

Library-defined QuickSets for the default users (see [Portal Default Profiles](#) on page 71) are created in the MySets table (`./vir00/z122`) via `/V interface - My Space > My Databases`.

When deleting a portal, MetaLib removes the QuickSets for all the default users for all languages.

Category Display

The list of categories using the Category Display option of the Categories Administration page in the Management Interface is created in the Category Display table (`./dat01/z125`).

When deleting a portal, MetaLib removes the records from the Category Display table for all languages.

Look and Feel

A portal is always associated with a user interface (`ins<NN>`).

Portals may share a common interface, or point to their own interface.

When deleting a portal, if the portal does not share the interface with any other portals, MetaLib removes the `ins<NN>` directory tree from the Unix directory structure.

IP Ranges/Portal Definitions

When deleting a portal, MetaLib only deletes the portal lines for the Change Portal functionality.

End Users

End user (patrons) records contain a field that defines the default portal for the user. This field is populated when a user record is created. Users may change their preference via the following option on the MetaLib User Interface (/V):

My Space > Preferences.

When deleting a portal, the procedure checks for the existence of end users who have the given portal as their default. If records are found, the procedure prompts for changing the preference.

Similarly, the procedure also checks for the existence of the given portal in the `./ins<NN>/www_v_<lng>/portal-include` file. If it exists, the entry in the `portal-include` file is removed for the relevant instance.

Personalized Lists

End users may have created the following personalized lists when using MetaLib:

- My Databases — (`./vir00/Z122`)
- e-Shelf folders — (`./vir00/Z119`)
- History/Alerts — (`./vir00/Z325`)
- My e-Journals — (`./vir00/MY_E_JOURNAL`)

When deleting a portal, MetaLib removes all the associated records from the personalized lists, with the exception of end users that you choose to retain in the table (see [End Users](#) on page 72).

Change Portal Menu

Sites can customize the `./ins<NN>/www_v_<lng>/menu-portal` files, which configure the Change Portal functionality for both guest and affiliated users.

When deleting a portal, MetaLib removes the portal definition from the `menu-portal` file only in the `./ins<NN>` directory with which the portal is associated.

Limitations

When deleting a portal, the following limitations are implemented:

- If there is only one portal for a given institution, it cannot be deleted.
- If the user interface for the given portal is shared with other portals, the `./ins<NN>` directory tree is not deleted from the Unix tree structure.
- If the given portal is referenced in the Change Portal menu/s of the associated instance, the portal code is changed to `METALIB`. If referenced in other instances, no changes are made since the portal code is not unique

across institutions (the same portal code can exist in more than one institution).

- If there are end users whose default portal references the deleted portal, the procedure prompts you to select one of the following options:
 - Update the default port for associated users individually.
 - Update the default ports for associated users globally.
 - Delete all of the associated users.

For more information, see [Deleting a Portal](#) on page 73.

Deleting a Portal

The Delete Portal functionality is only available from the command line.

To delete a portal, log in to the Unix server as the `metalib` user and enter the following command:

```
csh -f $aleph_proc/p_delete_portal.csh
```

- This script may be run several times on the same portal if necessary.
 - If there are end users whose default portal references the deleted portal, this script prompts you to select one of the following options:
 - Update the default port for associated users individually. For each end user on the list, enter the new default portal code.
 - Update the default ports for associated users globally. This option prompts you to enter a default portal code, which is applied globally to all of the end users on the list.
 - Delete all of the associated users. This option removes all of the end users that default to the deleted portal.
 - This script prompts you for an institution code, followed by a portal code. The codes are not case-sensitive.
-

Deleting a Portal Example

To delete a portal and set the default parameter for the associated end users individually:

- 1 Log in to the Unix server as the `metalib` user.
- 2 Enter the following command to run the `p_delete_portal.csh` script:

```
csh -f $aleph_proc/p_delete_portal.csh
```

- 3 At the following prompt, enter **Y** to continue. Otherwise, enter **N** to exit the procedure.

```
=====
* Explanation: The following script will delete a specified *
* portal from a given institution *
=====

Continue running the script? [Y]:
```

- 4 At the following prompt, enter the institution code:

```
METALIB/SUN_OS_2, Copyright Ex Libris.
version 4 copy 7, 13-Jan-2008

=====
* Enter the institution code: *
=====
-->?
```

- 5 At the following prompt, enter a valid portal code for the specified institution (for example, history):

```
* Enter the portal code to delete: *
=====
-->?
```

If the portal code is valid, the following message displays:

```
Start Deleting the specified Portal
```

- 6 If the script detects end users who have specified this portal as their default, enter option 1 (see [Figure 14](#)) to update each end user individually. Otherwise, skip to the end of the procedure.

```
The Following users (not default portal users) need to be updated
since they were defined under the deleted Portal:
=====
=====
m47_vir00@META4>

**** Hit return to continue ****
Z312_SOURCE_ID          Z312_INSTITUTE
-----
--
TESTCITY                CITY

1 row selected.

m47_vir00@META4>

Please choose from the options below:
-----
1. Update the listed users default portal one by one
2. Update the listed users default portal globally
3. Delete all of the listed users
Enter your choice? [1]:
```

Figure 14: List of End Users Defaulting to Deleted Portal

- 7 At the following prompt, enter a user name from the list (for example, enter TESTCITY):

```
Enter the user's source-id (username), or type 0 when you're done [0]:
```

- 8 At the following prompt, enter a valid portal code (for example, enter ECOLOGY):

```
Enter the new portal-code[HISTORY]:
```

- 9 If the list is not empty, repeat Steps 7 and 8 for the remaining end users on the list. Otherwise, enter 0, to complete the procedure.

Before this script completes, it checks for the existence of personalized lists for both the deleted end users and all of the default users. Personalized lists

are left intact for the end users that are not deleted by this script. When the script completes, an output message displays (see [Figure 15](#)).

```
Deleting records from Z119 (e-Shelf):
0 rows deleted.

Deleting records from z325 (SDI):
0 rows deleted.

Deleting records from z122 (sets):
8 rows deleted.

Deleting records from MY_E_JOURNAL:
0 rows deleted.

Checking for remaining users under Z312:
6 rows deleted.

METALIB/SUN_OS_2, Copyright Ex Libris.
version 4 copy 7, 13-Jan-2008

Deleting HISTORY from Z125:
0 rows deleted.

METALIB/SUN_OS_2, Copyright Ex Libris.
version 4 copy 7, 13-Jan-2008

Deleting Instance - if not used by any other Portal/Institution:

Changing entries to METALIB in menu-portal and portal-include:
/exlibris/metalib/m4_7/ins03/www_v_eng//menu-portal was changed
1 menu-portal files changed
0 portal-include files changed

Deleting HISTORY from PORTAL:
1 row deleted.

*****
* The script ended successfully *
*****
```

Figure 15: Sample Script Successful Message

Troubleshooting Portal Deletions

This section lists the possible error messages that may occur while using the `p_delete_portal.csh` script.

Invalid Institution Code

If an invalid institution code is specified, the following message displays:

```
Invalid institution code
```

Invalid Portal Code

If an invalid portal code is specified, the following message displays:

```
There is no such Portal for the Institution
```

Deleting Last Portal Code

If you attempt to delete the only portal for a given institution, the following message displays:

```
The specified Portal is the only one defined for the <INST> institution  
Delete request failed
```

Nonexistent Default Portals

If there are end users with the deleted portal as the default, the following submenu displays:

```
Please choose from the options below:  
-----  
1. Update the listed users default portal one by one  
2. Update the listed users default portal globally  
3. Delete all of the listed users  
Enter your choice? [1]:
```

If you enter **1** to update the users one by one, the following message displays:

```
Enter the user's source-id (username), or type 0 when you're done [0]:
```

If you exit the script before updating all of the users, the remaining end users that default to the deleted portal will reference a nonexistent default portal. In this case, use the /M - Update User functionality to change the default to an existing portal for the given institution.

The Create Language Process

Each local institution has a default portal. A local institution may decide to create additional portals that provide views for multiple languages.

End-users are assigned a default interface language, which they can change during a session by clicking the Change Language button or by updating their preferences.

To add a new language to an existing portal within a local institution, perform the following tasks:

- 1 Add a new language to the portal. Refer to [Adding a New Language to a Portal](#) on page 78.
- 2 Update language-selection forms and menus. Refer to the *MetaLib User Interface Guide* for more information.
- 3 Translate language files and tables. Refer to the *MetaLib User Interface Guide* for more information.

Adding a New Language to a Portal

While adding a new language to the portal, MetaLib creates new directories and tables for the new language under the relevant instance. After these files are created, many of them require translations to complete the process. Refer to the following sections for more information.

In addition to creating the new directories and files, this process scans the HTML files in the new language directory and updates the links that point to the English language files. For example, the links in the `meta-tags` file under the `./ins<NN>/www_v_eng` directory that reference the style sheets under the `www_v_eng` directory are updated to reference the associated style sheets in the new `www_v_<lng>` directory.

Also, this process creates soft links for Apache under `./apache/htdocs` for the `metalib.css` file and the `icon_<lng>` directory.

Default users named `<portal>-<lng>`, `<portal>-<lng>-in`, and

`<portal>-<lng>-guest` are created, where `<portal>` indicates the name of the portal in which the new language is created and `<lng>` stands for the three letter code of the newly created language.

To add a new language to a portal, perform the following steps:

- 1 Log in to the Management Interface as the institutional or group administrator.
- 2 From the main menu of the /M interface, click the **Portal Administration** link (see [Figure 16](#)).

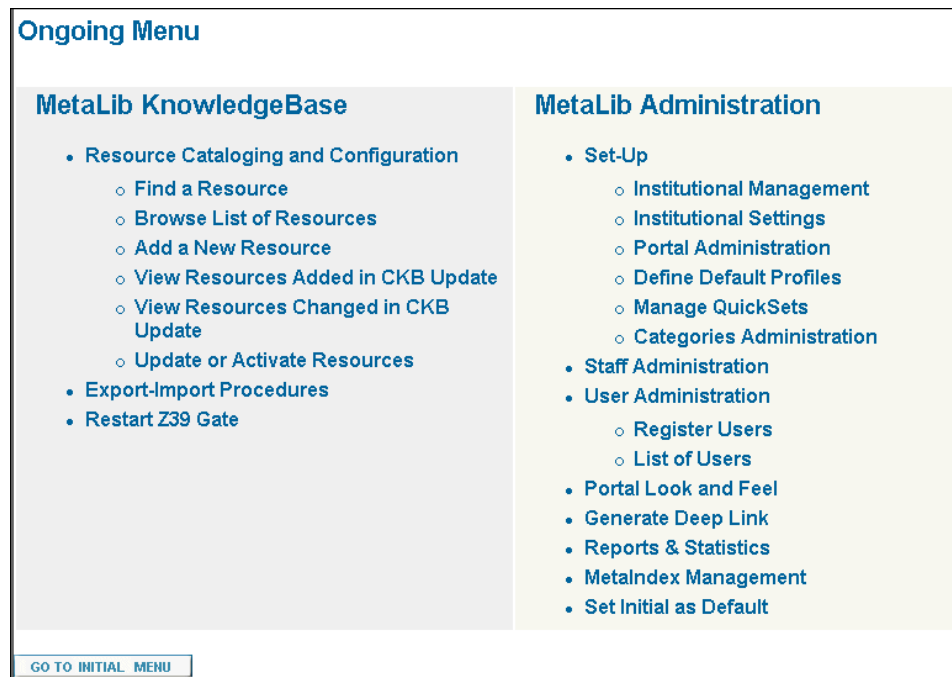


Figure 16: MetaLib Main Menu

- 3 Select an institution from the Institution Code drop-down list and then click **Add Language** (see [Figure 17](#)).

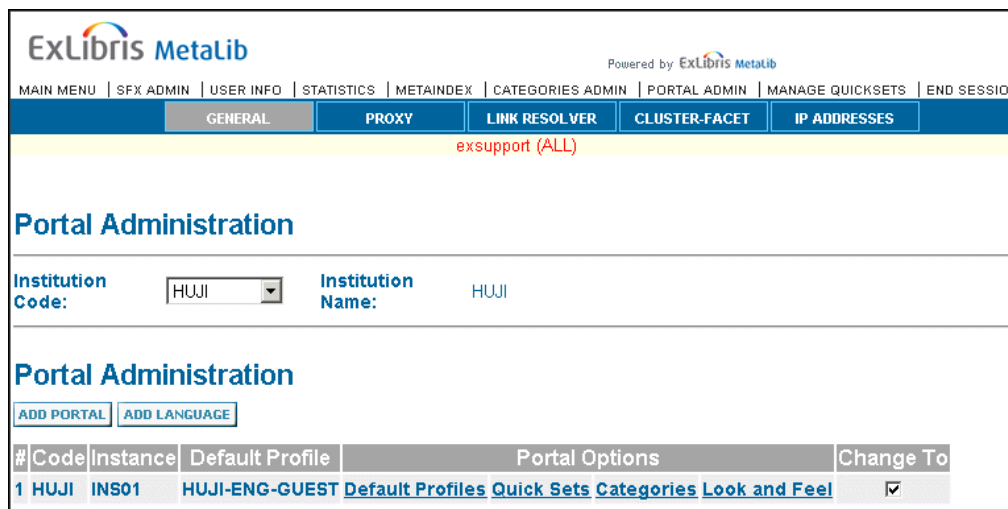


Figure 17: Portal Administration Page

- 4 Fill in the fields under the following sections of the Add Language page (see [Figure 18](#)):

New Language Details:

- **Institution Name** — Select the institution to which the new language is to be added.
- **Portal Name** — Select the portal name to which the new language is to be added.
- **Language** — Choose the new language from the drop-down list.

Copy from:

- **Institution Name** — Select the institution from which the new language for the portal is to be copied.
- **Portal Name** — Select the portal name from which the new language is to be copied.
- **Language** — Select the language from which the new language is to be copied.

NOTE:

The values in the Language drop-down lists are controlled by a table that complies with the standardized language codes. See the [ISO 639-2](#) link for details.

Add Language

New Language Details

Institution Name: Open University ▾

Portal Name: OPENU ▾

Language: ▾

Copy from:

Institution Name: Metalib ▾

Portal Name: METALIB ▾

Language: ENG ▾

Figure 18: Add Language Page

- 5 Click **SUBMIT** to add the new language. On completion, the following message displays:

Copy Language was successfully finished

4

Configuring IP Ranges

This section includes:

- [Introduction](#) on page 83
- [Creating an IP Range](#) on page 84
- [Modifying an IP Range](#) on page 85
- [Deleting an IP Range](#) on page 86
- [Using the IP Loader \(Util K-5\)](#) on page 86

Introduction

The IP Addresses page (see [Figure 19](#)) allows administrators to assign default profiles to unsigned users that access the MetaLib User Interface (/V). For example, users that access the UI from within the campus network receive a default profile of `<Portal>-<LNG>-IN`, while others receive the profile `<Portal>-<LNG>-GUEST`.

NOTE:

In addition, you can use the IP Loader utility to configure IP addresses via Util K on the server. For more information, see [Using the IP Loader \(Util K-5\)](#) on page 86.

If you would like to set the default institution and default profile for unsigned users that access your MetaLib site via an undefined IP address, set the following parameters in the `metalib_conf/www_server.conf` file:

- `setenv EXT_USER_EXT_USER_INSTITUTE <insitution>`
- `setenv EXT_USER_DEFAULT_PROFILE <default_profile>`

For more information, see [System Parameters \(www_server.conf\)](#) on page 41.

ExLibris MetaLib
Powered by ExLibris MetaLib

MAIN MENU | SFX ADMIN | USER INFO | STATISTICS | METAINDEX | CATEGORIES ADMIN | PORTAL ADMIN | MANAGE QUICKSETS | END SESSION

GENERAL | PROXY | LINK RESOLVER | CLUSTER-FACET | IP ADDRESSES

exsupport (ALL)

Institutional Settings

Institution Code: HUJI Institution Name: HUJI

Create New IP Range

IP Range	Default Profile	Proxy	Notes	Action
<input type="text"/> To <input type="text"/>	HUJI	<input checked="" type="radio"/> No need for proxy <input type="radio"/> Use proxy server	<input type="text"/>	SUBMIT CANCEL

List of Defined IP Ranges

#	Action	IP Range	Default Profile	Proxy	Notes
1	E D	From: 010.001.234.020 To: 010.001.234.100	HUJI	<input checked="" type="radio"/> No need for proxy <input type="radio"/> Use proxy server	

Figure 19: IP Addresses Page

This page contains the following sections:

- **Create a New IP Range** — allows you to add a new IP range for the specified institution. For more information, see [Creating an IP Range](#) on page 84.
- **List of Defined IPs** — displays the list of IP ranges that are defined for the specified institution. In addition, you can perform the following actions on each IP range:
 - [<E>](#) — see [Modifying an IP Range](#) on page 85.
 - [<D>](#) — see [Deleting an IP Range](#) on page 86.

Creating an IP Range

The Create a New IP Range section (see [Figure 20](#)) allows you to assign default profiles to IP ranges.

Create New IP Range

IP Range	Default Profile	Proxy	Notes	Action
<input type="text"/> To <input type="text"/>	HUJI	<input checked="" type="radio"/> No need for proxy <input type="radio"/> Use proxy server	<input type="text"/>	SUBMIT CANCEL

Figure 20: The Create a New IP Range Section

To create an IP range:

- 1 Select an **Institution** from the drop-down list on the IP Addresses page.
- 2 In the Create a New IP Range section, use **Table 14** to enter the fields.

Table 14. Create a New IP Range Section Field Descriptions

Role	Description
IP Range	This field defines the start and end IP address of the IP range. The following rules apply to IP ranges. <ul style="list-style-type: none"> ■ Each IP address must be of the following format, where <nnn> is 0 to 255: <nnn>-<nnn>-<nnn>-<nnn> ■ An IP range cannot overlap an address of another IP range.
Default Profile	This field assigns the default profile to the IP range.
Proxy	This field indicates whether a proxy server is used for the range of IP addresses. Select one of the following options: <ul style="list-style-type: none"> ■ No Need for Proxy ■ Use Proxy Server
Notes	This field contains an optional text description for the IP range.

- 3 Click **SUBMIT** to create the IP range.
The new IP range displays in the List of Defined IPs section.

Modifying an IP Range

The Edit IP page (see **Figure 21**) allows you to update an IP range.

The screenshot shows the ExLibris Metalib interface. At the top, there's a navigation menu with options: MAIN MENU, SFX ADMIN, USER INFO, STATISTICS, METAINDEX, CATEGORIES ADMIN, PORTAL ADMIN, MANAGE QUICKSETS, and END SESSION. Below this, there's a sub-menu with GENERAL, PROXY, LINK RESOLVER, CLUSTER-FACET, and IP ADDRESSES (which is highlighted). A red text 'exsupport (ALL)' is visible below the sub-menu. The main content area is titled 'Edit IP'. It contains a form with the following fields:

- IP Range:** 010.001.234.020 To 010.001.234.100
- Default Profile:** HUJI (dropdown menu)
- Proxy:** No need for proxy Use proxy server
- Notes:** (text area)

At the bottom of the form are two buttons: SUBMIT and CANCEL.

Figure 21: Edit IP Range Page

To edit an IP range:

- 1 Select an institution from the drop-down list on the IP Addresses page.
- 2 From the List of Defined IPs section, click the <E> action that displays next to the range that you want to edit.

The Edit IP page displays (see [Figure 21](#)).

- 3 Use [Table 14](#) to update the fields as needed.
- 4 Click **SUBMIT** to save your updates. Otherwise, click **CANCEL** to return to the IP Addresses page.

Deleting an IP Range

The Delete IP Range dialog box (see [Figure 22](#)) allows you to delete an IP range.

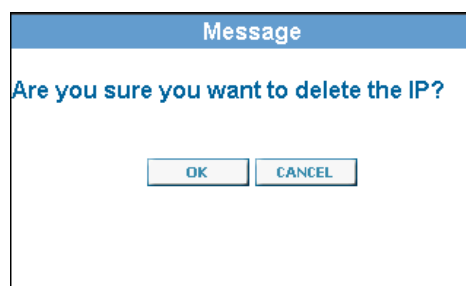


Figure 22: The Delete IP Range Dialog Box

To delete an IP range:

- 1 Select an institution from the drop-down list on the IP Addresses page.
- 2 From the List of Defined IPs section, click the <D> action that displays next to the range that you want to delete.

The Delete IP Range dialog box displays (see [Figure 22](#)).

- 3 Click **OK** to delete the selected IP range.

Using the IP Loader (Util K-5)

Util K-5 is designed for sites that need to maintain a large number of definitions for IP ranges in the `IP_RANGES` Oracle table. The utility allows you to upload the IP ranges into the `IP_RANGES` Oracle table.

NOTE:

The IP loader utility sets the Proxy field to No in the Oracle table for each IP range. If a proxy is required for an IP range, use the IP Addresses page to select the **Use Proxy Server** field for this range. For details, see **Modifying an IP Range** on page 85.

Since the IP ranges and Proxy configuration flat files were merged, the IP loader will now load all the IPs to the Oracle table with the PROXY value "No", meaning – no proxy needed. If the customer wants to change it he could go to the interface and check the proxy flag in the IP addresses page.

Util K-5 can be accessed by doing the following:

- 1 Enter the following commands to display the MetaLib Users Management menu (see **Figure 23**).

```
dlib vir00
util k
```

```
K.  MetaLib Users Management
-----
0.  Exit procedure
1.  Run MetaLib Alerts Report
2.  Run MetaLib Users Loader
3.  Delete Expired Users
4.  Copy QuickSets
5.  IP Loader for IP_RANGES table
6.  Convert User to Default Profile
Please select [exit]:
```

Figure 23: MetaLib Users Management Menu

- 2 Enter option 5 to begin loading the IP_RANGES table.

The following options display:

```
IP-Loader for the IP_RANGES table:

T - Test validity of input file
U - Upload valid input file to the IP_RANGES table
D - Delete all values in the file for the given institution

Please select mode[exit]:
```

Figure 24: Util K-5 example

3 Select one of the modes described in **Table 15**.

Table 15. Modes

Mode	Description
D	Used to delete all of the values in the file for the given institution.
U	<p>Used to update IP table.</p> <p>Data is loaded only if the entire institution's data is valid. If there are multiple institutions, there can be a partial load for some of the institutions, and there can be a partial load for deletions.</p> <p>When updating the IP table, all existing IPs for each of the institutions in the file are deleted before the new IPs are loaded. Thus, there is no need to run the deletion prior to loading.</p>
T	<p>Used to verify whether the file is valid.</p> <p>The validity checks performed in this mode are as follows:</p> <ul style="list-style-type: none"> ■ Existence of all of the mandatory values. ■ IP format is dotted-decimal n.n.n.n with explicit values or with wildcards. Values range from 0 - 255. ■ IP-to fields contain values greater or equal to the values within the IP-from fields. ■ Number of entries must not exceed 3000. ■ Duplicate IP ranges. ■ Institution max length is 30. ■ Default user-id maximum length is 40. ■ Default user ID existence in Z312 Oracle table (vir00). ■ Default user institution existence in the institute Oracle table (vir00). ■ IP overlaps between a number (2 or more) of different lines. In case of the overlap, the utility accepts only the first line. <p>No data is loaded. Invalid data is reported.</p>

NOTE:

There is no mode for selective updates of specific records. The load utility always deletes all of the records for the given institution/s and writes the new records into the IP table using the input file.

Once the mode is chosen, the system prompts for the name of the input file.

The input file should be a text file that contains comma-delimited fields. This file is created easily by exporting an Excel file (.xls) to a csv format using one of the following formats:

- *<IP from>*, *<IP to>*, *<default_user>*, *<institution>*

For example:

```
10.1.234.0,10.1.235.255,DEFAULT-USER,INSTITUTE1
```

- *<IP range>*,, *<default_user>*, *<institution>*

In the following example, 10.1.234.40-50 is normalized to a range 10.1.234.40 through 10.1.234.50.:

```
10.1.234.40-50,, DEFAULT-USER,INSTITUTE1
```

- *<IP with a wildcard>*,, *<default_user>*, *<institution>*

In the following example, 10.1.234.* is normalized to a range 10.1.234.0 through 10.1.234.255:

```
10.1.234.*,,DEFAULT-USER,INSTITUTE1
```

The input file should be placed under ./vir00/import.

NOTE:

The IP, DEFAULT-USER, INSTITUTION parameters are mandatory.

When using an IP range or wildcard, enter an additional comma as displayed above.

Error or warning messages encountered during the load are accumulated in a log file. The log files reside under the ./tmp directory. The name of each load log is created as follows:

```
IP-Load-yyyymmddhhss.log
```

The log file also contains a summary per institution code and a grand total of the processed records in the following format:

```
<Institution code>:
  Number of records read
  Number of records written
  Number of rejected records
Total:
  Number of records read
  Number of records written
  Number of rejected records
```


5

Managing Proxy Servers

This section includes:

- [Overview](#) on page 91
- [Configuring Proxy Servers](#) on page 92
- [Configuring EZproxy Ticket Authentication](#) on page 94

Overview

Institutions with proxy servers can configure their proxy servers to work with MetaLib via the Management Interface. Proxy servers are used in the following ways:

- To link to the native interface of resources using HTTP access
- For MetaLib searches in remote resources

From the Proxy Management screen (see [Figure 25](#)), you can perform the following actions:

- Add a new proxy by clicking the **ADD PROXY** button, which displays the Proxy Details page. For more details, see [Configuring Proxy Servers](#) on page 92.
- Edit an existing proxy by clicking the **E** button next to the proxy that you want to modify. For more details, see [Configuring Proxy Servers](#) on page 92.
- Delete a proxy by clicking the **D** button next to the proxy that you want to delete.

Action	Status	Used for	Type	Selective Filter	Hostname:Port	Username	Notes
E D	<input checked="" type="radio"/> A <input type="radio"/> C <input type="radio"/> I	Link to Native	EZPROXY	<input checked="" type="checkbox"/> IRD-SELECTIVE <input type="checkbox"/> IP-SELECTIVE <input type="checkbox"/> LOCK	http://www.proxy-address.com		
E D	<input type="radio"/> A <input checked="" type="radio"/> C <input type="radio"/> I	Search	EZPROXY	<input checked="" type="checkbox"/> IRD-SELECTIVE <input type="checkbox"/> IP-SELECTIVE <input type="checkbox"/> LOCK	http://ezproxy.beitberl.ac.il:2048/login?	try.try	

Figure 25: Institutional Settings - Proxy Management

To access this page, click the **Proxy** tab on the Institutional Settings page to view the institution's proxy settings.

Configuring Proxy Servers

MetaLib supports the use of proxy servers for the following purposes.

- To allow users to link from MetaLib to the native interface of resources via the institutional proxy server. This means that MetaLib forwards URLs to the site's proxy server so the proxy server can redirect them to the target resource.
- For performing MetaLib searches via a local proxy server. This is especially important in a consortia environment, where the MetaLib server is located in one of the institutions of the consortia. In such cases, searches can be channeled via the relevant local institutional proxy server, enabling vendors to identify the institution from which searches are performed.

Use of a proxy server for the link-to-native interface purpose can be controlled at the resource level by setting the proxy server flag in the IRD record and also by IP ranges. The use of a proxy server for search purposes can be controlled only at the resource level.

NOTES:

- The use of the search proxy server in MetaLib is supported for HTTP-based resources only.

MetaLib supports search-via-proxy using Innovative's WAM proxy, in addition to support for EZproxy and Web-based proxies such as Squid.

- MetaLib supports the use of the Squid proxy only for search purposes.
- To link to the EZproxy server, MetaLib requires the text **login?** to be added to the URL of the EZproxy hostname. For example:

<http://www.ezproxy-address.com/login?>

The Proxy Details page (see **Figure 26**) allows you to configure proxy servers.

Institutional Settings

Institution Code: SCIENCE Institution Name: SCIENCE

Proxy Details
* Mandatory fields

Status: * A I

Used for : * Link to Native

Type: * WAM

Filters:
 IRD-SELECTIVE
AND IP-SELECTIVE
AND LOCK

Hostname:Port: * http://www.proxy-address.com

Username:

Password:

Verification:

Notes:

SUBMIT CANCEL

Figure 26: Institutional Settings - Proxy Details

To access this page, click the **ADD PROXY** button or the **E** button next to a specific proxy on the Proxy Management page to add or modify a proxy configuration, respectively.

For each proxy, add the following parameters if they apply to your configuration:

- Status - A/I (Active / Inactive).
- Used for - Link to Native or Search.

- **Type** - EZPROXY, EZPROXY-SSO, EZPROXY-TICKET, WAM, and Squid.
 To implement EZPROXY-SSO (Single Sign On), the `./pds/conf_table/
 tab_service.<institute>` table must be configured to include the
 BOR_VERIFICATION service.
 See the *Patron Directory Services* document for information on EZPROXY-
 SSO.
- **Filters** - IRD_SELECTIVE, IP_SELECTIVE, and LOCK. See **Table 16**.

Table 16. Filters

Filter	Description
IRD_SELECTIVE	The proxy server should be used selectively. In this case, the system checks the flag in each IRD record to determine if the proxy should be used. The proxy server is used only if the Proxy Server Flag is set to Y in the resource's IRD record for link to native interface using the proxy server, or if the Search Proxy Server Flag is set to Y in the resource's IRD record for search using the proxy server.
IP_SELECTIVE (used only for Link to Native proxies)	This indicates that the proxy server is used selectively. The system checks the IP of the user. The proxy server is used only if the user is outside the IP ranges defined in /M under the Institutional Settings > IP Addresses page.
LOCK (used only for Link to Native proxies)	This indicates that the users should be directed to the proxy server for the resources they are authorized to use.

All other combinations of the three are available as well.

- **Hostname:Port** – Maximum length 200 characters.
- **Username** – Used for EZproxy.
- **Password** – Used for EZproxy.
- **Verification** – Verification of the password parameter.
- **Notes** – Maximum length 200 characters.

Configuring EZproxy Ticket Authentication

EZproxy ticket authentication allows customers to use EZproxy only for authorized users by means of an encoded ticket.

To implement this functionality:

- 1** Select **EZPROXY-TICKET** as the proxy type.
- 2** In order to define the key/ticket for the encryption:
 - a** Define a `proxy_ticket_secret` environment parameter in the `./metalib_conf/www_server.conf` file. For example:

```
cd $metalib_conf
vi www_server.conf
```

- b** Add the following parameter to the file:

```
setenv proxy_ticket_secret "rainman"
```
 - c** Exit and save the file.
 - d** Restart the Web servers using the following command or Util W:

```
start_w
```

- 3** In order for EZproxy to be configured with ticket authentication:
 - a** Update the `ezproxy.usr` file. For example:

```
cd /usr/local/ezproxy
vi ezproxy.usr
```

- b** Add the following lines to the file where `MD5` is the encoding algorithm used by MetaLib, `secret` is the key used to encode the ticket, and `TimeValid` is the number of minutes until the ticket becomes invalid (in this case one minute).

```
::Ticket
TimeValid 1
MD5 secret
Expired; Deny expired.html
/Ticket
```

- c** Exit and save the file.

6

Configuring Your Link Resolver

The Link Resolver tab (see **Figure 27**) on the Institutional Settings page configures MetaLib to work with an institution's link resolver server (either SFX or Alma) for the following purposes:

- To display the appropriate link resolver menus and generated links to MetaLib users
- To allow MetaLib to link to the appropriate SFX or Alma A-Z list
- To allow MetaLib to use either the SFX or Alma link resolver API to check if full text is available for a particular citation/record

ExLibris MetaLib
Powered by ExLibris MetaLib

MAIN MENU | SFX ADMIN | USER INFO | STATISTICS | METAINDEX | CATEGORIES ADMIN | PORTAL ADMIN | MANAGE QUICKSETS | END SESSION

GENERAL | PROXY | **LINK RESOLVER** | CLUSTER-FACET | IP ADDRESSES

exsupport (ALL)

Institutional Settings

Institution Code: HUJI Institution Name: HUJI

Link Resolver

Action	Status	Type	Open URL	Base URL	Availability URL	A-Z List	Notes
E	A C I	ALMA 1.0		http://my-primo.exlibrisgroup.com:1702/openurl/01MY_INST/services_page	http://alma.exlibrisgroup.com/view/rsi/01MY_INST	http://my-primo.exlibrisgroup.com:1701/primo_library/libweb/action/search.do?fn=almaAzSearch&vid=myVIEW	

Figure 27: Institutional Settings - Link Resolver Tab

To update a link resolver's definitions:

- 1 Click **Institutional Settings** from the MetaLib Main menu:
- 2 Click the **Link Resolver** tab on the Institutional Settings page to view the institution's link resolver definitions. The Link Resolver tab of the Institutional Setting page opens (see **Figure 27**).
- 3 Click the **E** button next to the link resolver definition that you want to modify. The Link Resolver page (see **Figure 28**) opens.

Institutional Settings

Institution Code: **Institution Name:** HUJI

Link Resolver

* Mandatory fields

Type: *

OpenURL: *

Base URL: *

Availability URL:

A-Z List:

Primo vid:

Notes:

Opens in: Same window New window

Figure 28: Institutional Settings - Link Resolver Definitions

4 Update the fields in the following table:

Table 17. Link Resolver Fields

Field	Description
Type	Indicates the type of link resolver: Alma or SFX .
OpenUrl	Select the OpenURL format that is supported by the link resolver. For Alma and SFX, select 1.0 .

Table 17. Link Resolver Fields

Field	Description
Base URL	<p>Enter the base URL for your link resolver. For SFX, this field is used for both linking and full text availability indication using the SFX Rapid Service Indicator (RSI). For information about SFX setup, refer to the <i>MetaLib User Interface Guide</i>.</p> <p>For SFX, use the following format:</p> <pre><SFX_BASE_URL>:port/instance</pre> <p>For example:</p> <pre>http://mysfx:3210/library</pre> <p>For Alma, use the following format:</p> <pre>http://<PRM_SERVER_URL>/openurl/ <PRIMO_INSTITUTION_CODE>/ <PRIMO_INSTITUTION_SERVICES_PAGE></pre> <p>For example:</p> <pre>http://my-primo.exlibrisgroup.com:1702/openurl/ 01MY_INST/01MY_INST_services_page</pre>
Availability URL	<p>For Alma only, enter the URL that provides full text indication using the Alma RSI:</p> <pre>http://<ALMA_BASE_URL>/view/rsi/ <ALMA_INSTITUTION_CODE></pre> <p>For example:</p> <pre>http://alma.exlibrisgroup.com/view/rsi/01MY_INST</pre>
A-Z List	<p>Enter the URL for your link resolver's A-Z list. For information about SFX setup, refer to the <i>MetaLib User Interface Guide</i>.</p> <p>For SFX, use the following format:</p> <pre><SFX_BASE_URL>:port/instance/az</pre> <p>For example:</p> <pre>http://mysfx:3210/library/az</pre> <p>For Alma, use the following format:</p> <pre>http://<PRM_SERVER_URL>/primo_library/libweb/ action/search.do?fn=almaAzSearch</pre> <p>For example:</p> <pre>http://my-primo.exlibrisgroup.com:1701/ primo_library/libweb/action/ search.do?fn=almaAzSearch</pre>

Table 17. Link Resolver Fields

Field	Description
Primo vid	<p>For Alma only, enter the ID of the Primo view that links to the journal A-Z list. This is the vid parameter from your Primo view URL.</p> <hr/> <p>NOTE: This value is appended to the URL provided in the A-Z List field.</p> <hr/>
Opens in	<p>Indicates where the A-Z list will open:</p> <ul style="list-style-type: none">■ Same window – Embeds the A-Z list in the same browser window as MetaLib.■ New window – Opens the A-Z list in a new browser window. <p>For Alma, select New window.</p>

5 Click **SUBMIT**.

7

Customizing Cluster/Facets

The Cluster Facet Customization page (see **Figure 29**) allows customization of the Cluster/Facets functionality.

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MAIN MENU | SFX ADMIN | USER INFO | STATISTICS | METAINDEX | CATEGORIES ADMIN | PORTAL ADMIN | MANAGE QUICKSETS | END SESSION

GENERAL | PROXY | LINK RESOLVER | CLUSTER-FACET | IP ADDRESSES

exsupport (ALL)

Institutional Settings

Institution Code: Institution Name: HUJI

Cluster Facet Customization

Activate Cluster-Facet

Collapse - Number of Nodes to Display (02-99):

C/F	Status	Cluster/Facet Display Threshold	Node Display Threshold	Sort Options	Grouping
TOPICS	<input checked="" type="radio"/> A <input type="radio"/> I	Minimum Number Of Nodes : <input type="text" value="1"/> Minimum Number Of Documents : <input type="text" value="2"/>	<input type="text" value="2"/>	<input type="radio"/> Alphabetical <input checked="" type="radio"/> Number of Documents (desc)	
DATES	<input checked="" type="radio"/> A <input type="radio"/> I	Minimum Number Of Nodes : <input type="text" value="1"/> Minimum Number Of Documents : <input type="text" value="2"/>	<input type="text" value="2"/>	<input checked="" type="radio"/> By Year <input type="radio"/> Number of Documents (desc)	<input type="radio"/> A <input checked="" type="radio"/> I <input type="radio"/> After 2000 <input type="radio"/> 1990 - 2000 <input type="radio"/> Before 1990
AUTHORS	<input checked="" type="radio"/> A <input type="radio"/> I	Minimum Number Of Nodes : <input type="text" value="1"/> Minimum Number Of Documents : <input type="text" value="2"/>	<input type="text" value="2"/>	<input type="radio"/> Alphabetical <input checked="" type="radio"/> Number of Documents (desc)	
JOURNAL TITLES	<input checked="" type="radio"/> A <input type="radio"/> I	Minimum Number Of Nodes : <input type="text" value="1"/> Minimum Number Of Documents : <input type="text" value="2"/>	<input type="text" value="2"/>	<input type="radio"/> Alphabetical <input checked="" type="radio"/> Number of Documents (desc)	
DATABASES	<input type="radio"/> A <input checked="" type="radio"/> I	Minimum Number Of Nodes : <input type="text" value="1"/> Minimum Number Of Documents : <input type="text" value="2"/>	<input type="text" value="2"/>	<input type="radio"/> Alphabetical <input checked="" type="radio"/> Number of Documents (desc)	
SUBJECTS	<input type="radio"/> A <input checked="" type="radio"/> I	Minimum Number Of Nodes : <input type="text" value="1"/> Minimum Number Of Documents : <input type="text" value="2"/>	<input type="text" value="2"/>	<input type="radio"/> Alphabetical <input checked="" type="radio"/> Number of Documents (desc)	

Figure 29: Institutional Settings - Cluster Facet Customization

To access this page, click the **CLUSTER-FACET** tab.

To customize clusters/facets:

- 1 Click the **Activate Cluster-Facet** radio button to activate clusters/facets for the institution chosen in the drop-down list.
- 2 Enter how many nodes (entries) display under each cluster or facet. The valid range for this parameter is from 02 to 99. The default is 05.

NOTE:

End users must click the Plus button to view additional nodes beyond the default.

- 3 Click **Submit** to apply the changes to the default definitions.

Other customizable options for the Cluster/Facet functionality are described in detail in the *MetaLib User Interface Guide*.

8

Using the PDS Wizard

This section includes:

- **Introduction** on page 103
- **Accessing the PDS Configuration Wizard** on page 104

Introduction

Authentication of the MetaLib user interface (/V) local users in MetaLib is handled via the Patron Directory Service (PDS) module. The PDS is a back-end web application that provides a site with shared user authentication and Single-Sign-On capabilities for the Ex Libris suite of products. PDS is configured to work with the institution's local authentication server and user database.

In many cases, PDS is already installed and configured for other Ex Libris products being used, such as Aleph. If this is the case, you should define the PDS_HOST and PDS_PORT parameters to link the system to the existing PDS installation, and the PDS_URL parameter to link the system to the PDS interface. Each of these parameters is defined in a specific file according to the product for which the PDS is configured. Access the appropriate file for your system from the MetaLib System directory to determine your necessary PDS settings. If PDS is configured for:

- Aleph — Access the `aleph_start` file for the PDS details.
- DigiTool — Access the `dt1_start` file for the PDS details.

If the PDS is not installed in another application, you can configure PDS for MetaLib using the PDS Configuration wizard.

In addition, you need to specify the authentication method or user attribute repository used for each institution. These could be Aleph, DigiTool, LDAP, CGI-Hook, iChain, or Shibboleth.

NOTE:

PDS is used with various Ex Libris products, including applications such as Aleph, which may be installed on your system. In this case, PDS is already configured on your system.

You can manage the PDS settings during the initial and ongoing configuration, but you must access the PDS Configuration wizard via the Initial Menu page of the Management interface (/M). For more advanced PDS configuration information, refer to the *Patron Directory Services Guide*.

Accessing the PDS Configuration Wizard

The PDS - SSO Configuration page (see [Figure 31](#)) is the starting point for configuring your PDS institutions.

To access the PDS Configuration wizard:

- 1 From the Ongoing Menu of the Management interface (/M), click the **Go to Initial Menu** button at the bottom of the page.

The Initial Menu page displays (see [Figure 30](#)).

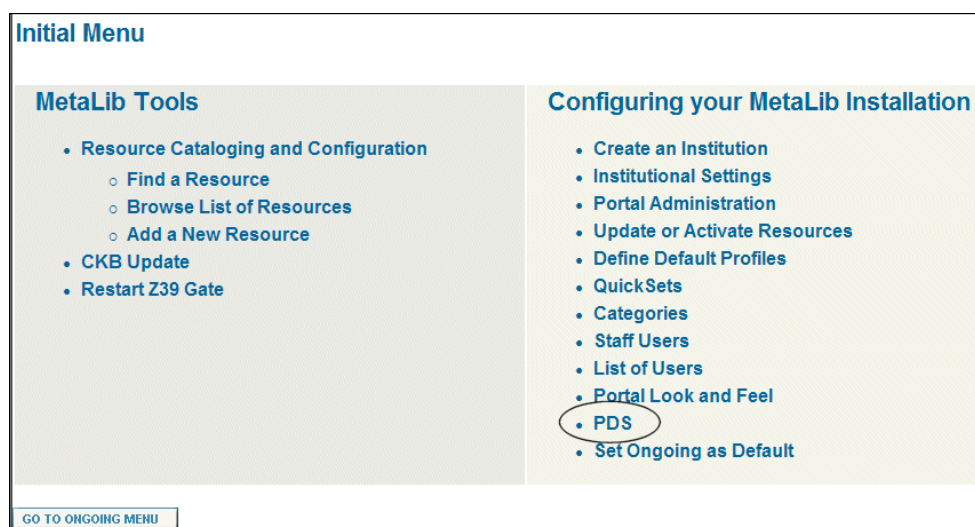


Figure 30: The Initial Menu Page

- 2 Click **PDS** from the Configuring Your MetaLib Installation section.
The PDS - SSO Configuration page displays (see **Figure 31**).

The screenshot shows the 'Ex Libris PDS Configuration' page. At the top right is a 'Help' link. Below the title is a section for 'PDS - SSO Configuration' which contains a table with columns for 'Enabled', 'Calling Application', and 'Default Institution'. The table lists MetaLib, ALEPH, DigiTool, Primo, DPS, and Shibboleth. Below this is a 'Persistent Cookie Configuration' section with 'Remember Me' and 'Persistent Cookie Duration' (set to 30). At the bottom are 'Cancel & Go back' and 'Save & Continue' buttons.

Enabled	Calling Application	Default Institution
<input checked="" type="checkbox"/>	MetaLib	<input type="text"/>
<input checked="" type="checkbox"/>	ALEPH	<input type="text"/>
<input checked="" type="checkbox"/>	DigiTool	<input type="text"/>
<input checked="" type="checkbox"/>	Primo	<input type="text"/>
<input type="checkbox"/>	DPS	<input type="text"/>
<input type="checkbox"/>	Shibboleth	<input type="text"/>

Persistent Cookie Configuration

Remember Me	Persistent Cookie Duration
<input type="checkbox"/>	<input type="text" value="30"/>

Cancel & Go back To Base **Save & Continue** To Institutions list

Figure 31: The PDS - SSO Configuration Page

For more information on using the PDS Configuration Wizard, refer to the *Patron Directory Services Guide*.

9

The Primo Central Service

This section includes:

- **Introduction** on page 107
- **Accessing the Primo Central Registration Wizard** on page 107

Introduction

Primo Central (PC) is a centralized Primo index that encompasses tens of millions of records of global or regional significance that are harvested from primary and secondary publishers and aggregators.

To use the service, you must register each institution and configure the Primo Central resource.

For more information on setting up Primo Central, refer to the *Primo Central Configuration Guide*.

Accessing the Primo Central Registration Wizard

The Primo Central Registration system requires each institution to register for the service to perform authorization and to provide each institution access.

NOTE:

After the registration of the first institution, you can use the My Profile page of the Primo Central Back Office to register additional institutions. For more information, see the *Primo Central Configuration Guide*.

To access the Primo Central Registration wizard:

- 1 From the Ongoing Menu of the Management interface (/M), click the **Institutional Settings** link.

The Institutional Settings page opens (see **Figure 32**).

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MAIN MENU | SFX ADMIN | USER INFO | STATISTICS | METAINDEX | CATEGORIES ADMIN | PORTAL ADMIN | MANAGE QUICKSETS | END SESSION

GENERAL | PROXY | LINK RESOLVER | CLUSTER-FACET | IP ADDRESSES

exsupport (ALL)

Institutional Settings

Institution Code: HUJI Institution Name: HUJI

Copy new IRDs to this institution during the CKB Update

[Go to Portal Administration](#)

[Register for Primo Central](#) Customer ID PC Key

Figure 32: The Institutional Settings Page

- 2 Select the **General** tab if it is not open.
- 3 In the **Institution Code** field, select the institution that you want to register from the drop-down list.
- 4 Click the **Register for Primo Central** link.

The Welcome page of the Primo Central Registration wizard opens (see **Figure 33**).

ExLibris Primo Central Language: English | PC Overview | Contact Us | Help

Registration > Welcome 1 2 3 4 5 6 7 8

Welcome

Welcome to the registration wizard for the Primo Central Index from Ex Libris. If you are not yet familiar with Primo Central and would like to learn more about it before registering for the service, please click [here](#) for an overview of Primo Central.

If you have any questions, or would like to discuss Primo Central, please [contact us](#).

Before you start, please make sure you have prepared the following items, in order to finish the registration successfully:

- Please note that Primo Central is designed for Primo version 4.4.0 or above.
 - Please ensure that you have created an SFX holdings file for Google Scholar and that it is up to date.
 - Please add the Primo Central IP address(174.129.215.175) to your SFX configuration: config/get_file_restriction.config.
 - Please make sure the Primo Central IP address is not blocked by your firewall.
- Please add the Ex Libris Registration IP address(66.77.99.99) to your firewall settings, if applicable, so that the activation wizard can pull your active institutional resources from MetaLib (e.g. it should be set on your current MetaLib port)

If you have previously registered for an Ex Libris service, and you have a customer ID or license key from that registration, please enter it below to skip some stages of the wizard.

In order for MetaLib to present the Availability Status of your records in Primo Central:

Customer id: [What is this?](#)

License key: [What is this?](#)

I have read the prerequisites and approve the steps.

Begin registration

Figure 33: Primo Central Registration Wizard - Welcome Page

- 5 Refer to the *Primo Central Configuration Guide* to perform the following tasks:
 - Register the institution.
 - Configure the Primo Central resource.

Part III

User Administration

Part III contains the following:

- **Section 10: Overview of User Administration** on page 113
- **Section 11: Creating, Updating, and Deleting Users** on page 115
- **Section 12: User Authorization and Default Profiles** on page 137
- **Section 13: User Self-Registration** on page 151
- **Section 14: Additional User-Related Activities** on page 159

10

Overview of User Administration

Users can access MetaLib as guest users or with an individual login, which enables them to save records in an e-shelf and create their own user profiles with saved searches and database sets.

The MetaLib user record includes the following fields:

- User ID
- Password (encrypted and stored only for MetaLib created users, not for those authenticated via remote authentication systems)
- Name
- Title
- Address/Zip/E-mail/Telephone
- Academic Status
- Expiry Date

There are several important fields that determine the affiliation of the user as follows:

- Institution

The Institution field affiliates a user with a specific institution. The institution plays a role in authentication of users, authorization of resources, and display of an appropriate user interface.

Every institution has a default portal defined for it and may have additional portals defined. Each institution, via its default portal, can have its own user interface or share an interface with another institution's portal.

Every institution has its own user authentication setup. The institution and optionally, the user group form the basis for the authorization of resources.

- Portal

The Portal field affiliates a user with a specific portal defined for the user's institution – either the default portal for the institution or an additional portal defined for the institution. Each portal presents a view of MetaLib's user interface to target a distinct audience/community with tailor-made QuickSets and a category list to cater to the specific needs of that audience.

A portal may have its own user interface instance (*ins<NN>*) or may share a user interface instance with another portal defined in the same or a different institution. A user's portal affiliation determines which user interface instance is seen when logging into MetaLib.

Each portal may have different language interfaces. The portal default language in MetaLib is English unless a different language is defined as the default language.

Refer to **Table 21** on page **126** for additional information about the portal field.

- User group (secondary affiliation)

The User Group or Secondary Affiliation field affiliates a user with a specific user group within the institution. The User Group plays a role in the authorization of resources. Examples of user groups are undergraduate, graduate, staff, medical, and law.

Users that access MetaLib as guests do not have a user record. However, they must be affiliated with an institution and a portal and, optionally, with a user group. In the case of guests, the affiliation is based on the IP from which the guest accessed MetaLib.

In summary, the institution, portal, and user group (secondary affiliation) fields play a central role in the following aspects of the system:

- Authentication of users
- Authorization of resources
- Display of appropriate user interface

11

Creating, Updating, and Deleting Users

This section includes:

- **Introduction** on page 115
- **Creating New Users** on page 115
- **Managing Staff Users** on page 120
- **User Loader Utility (Util K-2)** on page 124
- **Delete Expired Users (Util K-3)** on page 132
- **Convert User to Default Profile (Util K-6)** on page 134
- **Reset MetaLib Administrator Password (Util T-4)** on page 135
- **Reset Ex Libris Support Password (Util T-5)** on page 136

Introduction

The Management Interface (/M) allows you to create the following types of users:

- End users — Provided search access to the MetaLib user interface (/V). For more information, see **Creating New Users** on page 115.
- Staff users — Depending on the role that is assigned to the user, the user may have full, partial, or no access to the MetaLib Management Interface (/M). For more information, see **Managing Staff Users** on page 120.

Creating New Users

Users in MetaLib can be created in the following ways:

- Locally through MetaLib's User Administration module or self-registration option

- Through the remote delivery of user attributes as configured in the Patron Directory Services (PDS). See the *Patron Directory Services* document for more information.

The User Administration section of the Management interface (/M) contains the following links:

- Register Users — displays the Create User page, which is used to register new users. For more information, see [Adding a New User](#) on page 116.
- List of Users — displays the List of Users page, which is used to administer and view user information. For more information, see [List of Users](#) on page 119.

Adding a New User

Users are added via the Create User page (see [Figure 34](#)), which contains the fields described in [Table 18](#) on page 117.

ExLibris Metalib
Powered by ExLibris Metalib

MAIN MENU | SFX ADMIN | USER INFO | STATISTICS | METAINDEX | CATEGORIES ADMIN | PORTAL ADMIN | MANAGE QUICKSETS | END SESSION

FIND RESOURCE | RESOURCE LIST

exsupport (ALL)

* Mandatory fields

Institution: * Metalib

User ID: *

Password: *

Verify Password: *

Secondary affiliation: *

Portal name: * METALIB

Interface language: ENG

Status of resources the user can search: Active resources only

Name: Title:

Address: City:

State: Zip code:

Country:

Telephone (1): Telephone (2):

Email address: Send mail?

Academic Status:

Authentication method: Local

Expiry Date: (YYYYMMDD)

SUBMIT CANCEL

Figure 34: Create User Page

Table 18. New User Fields

Field (* indicates mandatory)	Description
*Institution	This is the user's institution. Maximum length is 30 characters.
*User ID	This is the user ID which is used to sign in to MetaLib. Maximum length is 40 characters.
*Password	This is the user password used to sign in to MetaLib. Maximum length is 20 characters. The password is encrypted.
*Verify Password	The password is re-entered for verification.
Secondary affiliation	This is the user's user group. Maximum length is 30 characters.
*Portal Name	This is the user's default portal. Maximum length is 30 characters.
Interface Language	Preferred language interface. Length is three characters. Users can change their preferred language in the Preferences section of the User Interface.
Status of resources the user can search	A user may search either Active Resources or Active and Testing Resources. The latter option is typically given to MetaLib administrative (staff) users for testing resources.
Authentication Method	<p>This field appears at the bottom of the form. This field has the following possible values:</p> <ul style="list-style-type: none"> ■ Local - users are authenticated against the MetaLib users file. ■ Remote - user details updated through remote user directories or authentication servers. <p>While you can manually update users who are remotely authenticated to MetaLib via remote systems, any changes made are overwritten the next time the user logs in to MetaLib. All remote authentication methods dynamically update the user's record each time they log in to MetaLib when their user attributes are passed from the remote authentication system to MetaLib via the PDS.</p>
Expiry Date	The user's expiration date. Expired users may be deleted from MetaLib by running Util K-3. See Delete Expired Users (Util K-3) on page 132.

Table 18. New User Fields

Field (* indicates mandatory)	Description
	<p>The additional fields in the user record are text fields as follows:</p> <ul style="list-style-type: none"> ■ Name — 200 characters maximum. ■ Title — 10 characters maximum. ■ Address — 50 characters maximum. ■ City — 50 characters maximum. ■ State — 50 characters maximum. ■ Country — 50 characters maximum. ■ ZIP code — 9 characters maximum. ■ Telephone 1 — 30 characters maximum. ■ Telephone 2 — 30 characters maximum. ■ E-mail address — 60 characters maximum.
Send Mail?	<p>Select the Send mail? check box to send an e-mail message to the user, informing them of the registration and their user name/password.</p> <p>Refer to the section on forms in the <i>MetaLib User Interface Guide</i> for an explanation of the form used for this e-mail notification.</p>
Academic Status	This field is for informational purposes only.

Table 18. New User Fields

Field (* indicates mandatory)	Description
Drop-down lists in the user record	<p>The values of the drop-down lists in the registration form are in include files that are separate files defining a list of values that can be called upon from different forms and html files. The idea is to define such values only in one place. They are as follows:</p> <ul style="list-style-type: none">■ institution-include — for the institution.■ user-user-group-include — for the secondary affiliation (user group).■ language-include — for the interface language.■ status-include — for status of resources the user can search.■ bor-new-country-include — for country.■ academic-status-include — for academic status.■ auth-method-include — for authentication method. <p>To change the values of the drop-down lists in the registration form, access the include file as follows:</p> <pre>wm [alias command - path is ./dat01/ www_m_eng] vi <filename></pre>

List of Users

The List option displays a list of all MetaLib users, including those that have been authenticated and created via remote user directories such as LDAP. From the list, there are the following options:

- Update - to update user information.
- Delete - to delete the user.

The list displays the user ID, display name, and institution of the user.

Managing Staff Users

During the installation of MetaLib, the system creates the following staff users:

- `mladmin` and `exsupport` — These users are provided with the following capabilities:
 - access to all modules on the Management Interface (/M)
 - access to all institutions on the Management Interface (/M)
 - the ability to administer all types of user roles for all institutions/groups, as defined in the `tab_groups` file. For more information on groups, see [Consortium Setup \(tab_groups\)](#) on page 40
 - the ability to use MetaIndex if licensed

NOTE:

In addition, `exsupport` has the ability to create new institutions.

- `pds` — This user does not have access to the Management Interface (/M), but it provides authorization for local users via PDS.

You can create additional staff users via the Manage Staff Users page.

The Manage Staff Users Page

The Manage Staff Users page (see [Figure 35](#)) allows you to edit and delete existing staff users and to create additional staff users. To perform these functions, this page contains the following sections:

- **Create a New Staff Member** — allows you to add a new staff user to the specified institution/group. For more information, see [Creating a Staff User](#) on page 121.
- **View Staff Members** — displays the list of staff users that you can manage. In addition, you can perform the following actions (if permitted by Role) on each user:
 - <E> — see [Modifying a Staff User](#) on page 123.
 - <D> — see [Deleting a Staff User](#) on page 123.

Manage Staff Users

Institution/Group: Role:

Create a New Staff Member

Institution/Group: Role:

Login Name: Display Name:

Password: Confirm Password:

View Staff Members

#	Action	Display Name	Login Name	Role	Group
1	<input type="button" value="E"/>	exsupport	exsupport	MetaLib Administrator	METALIB
2	<input type="button" value="E D"/>	pds	pds	X-Server User	METALIB
3		mladmin	mladmin	MetaLib Administrator	METALIB
4	<input type="button" value="E D"/>	general	general	General Administrator	METALIB

Figure 35: Manage Staff Users Page

To access the Manage Staff Users page, click either **Staff Users** or **Staff Administration** from the Initial menu or the Ongoing menu, respectively.

Creating a Staff User

The Create New Staff Member section (see **Figure 35**) allows staff users who have Super User or MetaLib Administrator permissions to create new staff users. Different levels of access are defined by the Role field (see **Table 19**).

NOTE:

The scope of each role is limited to the user's institution/group. Only mladmin and exsupport have access to all institutions/groups.

Table 19. Role Descriptions

Role	Description
Super User	<p>This role allows users to perform all functions on the MetaLib Interface (/M), including staff user creation, institutional settings updates, default profile management, and MetaIndex management (if licensed).</p> <p>In addition, these users can update their user information, which is limited to their user ID, display name, and password.</p>

Table 19. Role Descriptions

Role	Description
General Admin User	<p>This role is similar to the Super User role, but users who are assigned this role cannot perform the following functions:</p> <ul style="list-style-type: none"> ■ create staff users ■ create, update, or delete default profile ■ update institutional settings <p>In addition, these users can update their user information, which is limited to their user ID, display name, and password.</p>
General Admin Consortia User	<p>This role is similar to the General Admin User role, but users who are assigned this role cannot perform the following functions:</p> <ul style="list-style-type: none"> ■ Initiate CKB update ■ access CKB update cron job <p>In addition, these users can update their user information, which is limited to their user ID, display name, and password.</p>
View Only User	<p>This role provides users with view-only access to the Management Interface (/M), allowing users to view resources, staff users, and reports and statistics.</p> <p>In addition, these users can update their user information, which is limited to their user ID, display name, and password.</p>
Statistics and Reports User	<p>This role allows users to access the Management Interface (/M) to view reports and statistics only.</p> <p>In addition, these users can update their user information, which is limited to their user ID, display name, and password.</p>
X-Server User	<p>This role provides users with access to X-server functions, but it does not provide them with access to the Management Interface (/M).</p>

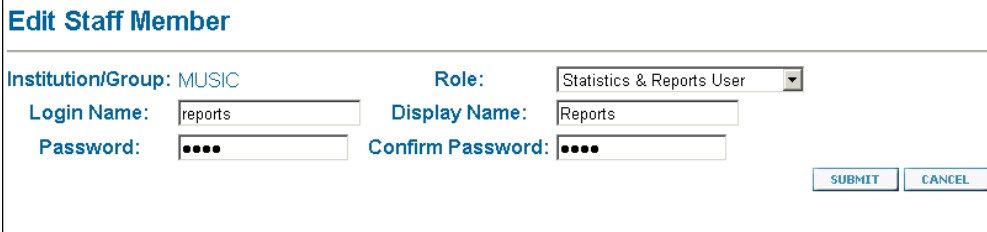
To create a staff user:

- 1 Select an institution/group from the drop-down list on the Manage Staff Users page.
- 2 Select a role from the drop-down list (see [Table 19](#)).
- 3 From the Create a New Staff Member section, enter the following fields: **Login Name**, **Display Name**, **Password**, and **Confirm Password**.
- 4 Click **SUBMIT** to create the user.

The new user displays in the View Staff Members section.

Modifying a Staff User

The Edit Staff Member page (see [Figure 36](#)) allows staff users to update user information, such as the user ID, display name, and password.



Edit Staff Member

Institution/Group: MUSIC Role: Statistics & Reports User

Login Name: reports Display Name: Reports

Password: Confirm Password:

Figure 36: Edit Staff Member Page

NOTE:

Access and level of permissions is determined by the role that is assigned to staff user. For more information on roles, see [Table 19](#) on page [121](#).

To edit a staff user:

- 1 Select an institution/group from the drop-down list on the Manage Staff Users page.
- 2 Select the **ALL** role from the drop-down list to display all of the users.
- 3 From the View Staff Members section, click the <E> action that displays next to the user that you want to edit.
The Edit Staff Member page displays (see [Figure 36](#)).
- 4 Update the following fields as needed: **Display Name**, **Password**, and **Confirm Password**.
- 5 Click **SUBMIT** to save your updates. Otherwise, click **CANCEL** to return to the Manage Staff Users page.

Deleting a Staff User

The Delete Staff User dialog box (see [Figure 37](#)) allows you to delete a staff user.

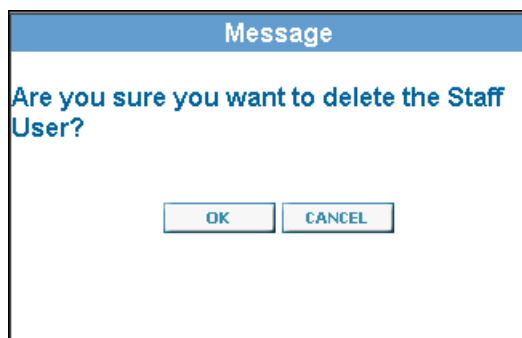


Figure 37: The Delete Staff User Dialog Box

To delete a staff user:

- 1 Select an institution/group from the drop-down list on the Manage Staff Users page.
- 2 Select the **ALL** role from the drop-down list to display all of the users.
- 3 From the View Staff Members section, click the <D> action that displays next to the user that you want to delete.

The Delete Staff User dialog box displays (see [Figure 37](#)).

- 4 Click **OK** to delete the selected user.

User Loader Utility (Util K-2)

The MetaLib User Loader utility enables adding, updating, and deleting users. Users of type 0 (local authentication) or type 1 (remote authentication) may be added, updated, or deleted using this utility.

NOTE:

While you can manually add users who are remotely authenticated to MetaLib via remote systems, a user record is automatically created for a remotely authenticated user the first time the user logs in to MetaLib. Similarly, while you can manually update users who are remotely authenticated to MetaLib via remote systems, any changes made are overwritten the next time the user logs in to MetaLib. All remote authentication methods dynamically update the user's record each time the user logs in to MetaLib when the user's attributes are passed from the remote authentication system to MetaLib via the PDS.

To run the User Loader utility, a file of users in XML format needs to be generated. The format is described below. To load the file, run Util K-2. The

procedure creates a log file that can be run without updating the users file for testing purposes.

Users from the input file and the database are matched by using the User ID and the User Institution fields.

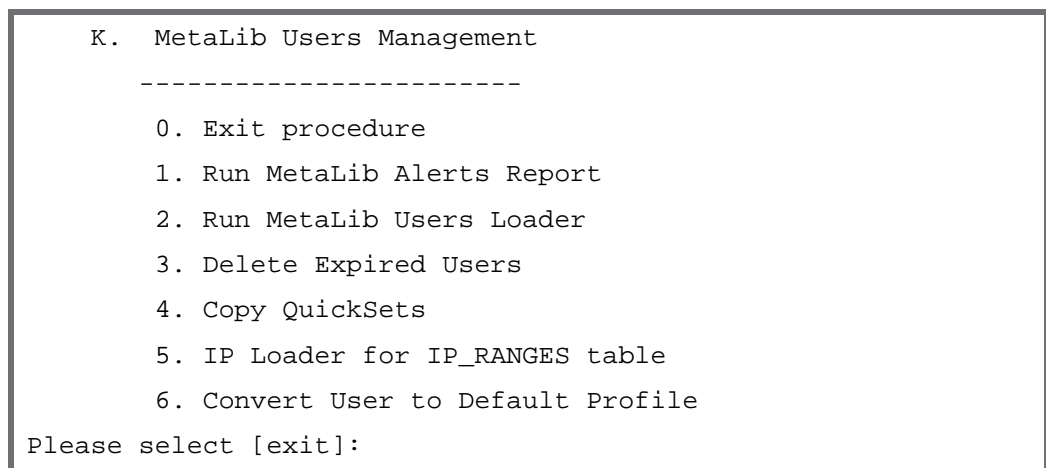
This utility creates a log file in the scratch directory of `vir00`, using the following format:

```
yyyymmdd_<filename>
```

To run the User Loader utility:

- 1 Enter the following commands to display the MetaLib Users Management menu (see [Figure 38](#)).

```
dlib vir00
util k
```



```
K.  MetaLib Users Management
-----
0.  Exit procedure
1.  Run MetaLib Alerts Report
2.  Run MetaLib Users Loader
3.  Delete Expired Users
4.  Copy QuickSets
5.  IP Loader for IP_RANGES table
6.  Convert User to Default Profile
Please select [exit]:
```

Figure 38: MetaLib Users Management Menu

- 2 Enter option 2 to begin loading users.
- 3 At the following prompt, enter the name of the input file:

```
Enter input file name:
```

NOTE:

The file must be placed in the scratch directory of `vir00`. For example, `/exlibris/metilib/m4_1/vir00/scratch/<filename>`. If no extension is specified, the program looks for a file with a `.xml` extension.

- 4 At the following prompt, enter the update mode:

```
Enter update mode (new/update/append/delete)
```

Table 20 describes the valid modes.

Table 20. Modes

Mode	Description
New	The input file includes new users only.
Update	The input file includes only existing users.
Append	The file includes both new and existing users.
Delete	The file includes users that should be deleted.

- 5 At the following prompt, enter the update flag (Y to update the database or N to create a report only):

```
Enter update flag (Y/N)
```

User Input File Format

The user input file should start with the following header:

```
<?xml version="1.0" ?>
```

For validity, the XML file must contain the following tag pairs:

- `<user_records></user_records>` - All the user records must be placed between the tags.
- `<z312></z312>` - Each user is entered between the tags.

Table 21 lists the mandatory (M) and optional (O) fields that you can assign to users.

Table 21. User Input File Fields

Field	XML Element	Mandatory or Optional	Max. Length	Description
User ID	<code><z312_source_id> </z312_source_id></code>	M	40	User ID as entered in login. The user ID should be in upper-case letters.
Password	<code><z312_verification> </z312_verification></code>	M/O	20	The user password as entered during login. The password should be in upper-case letters. A password is required for local authentication.

Table 21. User Input File Fields

Field	XML Element	Mandatory or Optional	Max. Length	Description
Institution	<z312_institute> </z312_institute>	M	30	The user's institution. The institution should be in upper-case letters.
Portal	<z312_portal_name> </z312_portal_name>	M	30	The user's portal. The portal should be in upper-case letters. The value for the Portal field is taken from the first portal of the relevant institution as viewed in the Management Interface if no parameter is found in the XML file for loading.
Secondary Affiliation (User Group)	<z312_group> </z312_group>	O	30	User's secondary affiliation (user group) The secondary affiliation (User Group) should be in upper-case letters.
Name	<z312_name> </z312_name>	M	200	The user's name (surname and first name)
Title	<z312_title> </z312_title>	O	10	Form of address, such as Ms. or Professor. Enter blank or relevant text.
Academic Status	< z312_academic_status> </z312_academic_status>	O	30	Enter undergraduate, staff, graduate, and so on, or blank. This field has no functional significance.
Address (Name)	<z312_address_1> </z312_address_1>	O	50	Address of the user. The address consists of 5 lines of 50 characters each. The first line should be the name of the user.
Address (Address)	<z312_address_2> </z312_address_2>	O	50	In the user form, this line displays as Address.

Table 21. User Input File Fields

Field	XML Element	Mandatory or Optional	Max. Length	Description
Address (City)	<z312_address_3> </z312_address_3>	O	50	In the user form, this line displays as City.
Address (State)	<z312_address_4> </z312_address_4>	O	50	In the user form, this line displays as State.
Address (Country)	<z312_address_5> </z312_address_5>	O	50	In the user form, this line displays as Country.
Zip Code	<z312_zip> </z312_zip>	O	9	Zip code.
E-mail Address	<z312_email_address> </z312_email_address>	O	60	E-mail address.
Telephone 1	<z312_telephone_1> </z312_telephone_1>	O	30	One of the two telephone numbers that may be entered.
Telephone 2	<z312_telephone_2> </z312_telephone_2>	O	30	One of the two telephone numbers that may be entered.
User Interface Language	<z312_con_lng> </z312_con_lng>	O	3	You may have user interfaces in several languages. This field defines the user's default language. Th default value is ENG if this field left blank.

Table 21. User Input File Fields

Field	XML Element	Mandatory or Optional	Max. Length	Description
Resource Status	<z312_resource_status> </z312_resource_status>	O	1	<p>This field defines which resources the user is allowed to access. The following values are valid:</p> <ul style="list-style-type: none"> ■ A— active ■ T— active & testing. This value is typically given to MetaLib administrative staff for testing resources. <p>The default value is A if this field is left blank.</p> <p>Users who can see both active and testing resources see the original Z39 error messages.</p> <p>Users who can see only active resources, see a general error message.</p>
Authentication Method	<z312_auth_method> </z312_auth_method>	O	1	<p>Enter the authentication method:</p> <ul style="list-style-type: none"> ■ 0=local ■ 1=remote <p>The default value is 0 if this field is left blank.</p>
Expiry	<z312_expiry_date> </z312_expiry_date>	O	8	<p>Enter the date the user's record expires, using the format: YYYYMMDD.</p> <p>Send blank or relevant date.</p>

Figure 39 shows a sample user input file, which uses the XML parameters described in **User Input File Format** on page 126.

```
<?xml version="1.0" ?>
  <user_records>
    <z312>
      <z312_source_id>LIOR</z312_source_id>
      <z312_institute>CITYUNIV</z312_institute>
      <z312_verification>RIOR</z312_verification>
      <z312_portal_name>CITYUNIV</z312_portal_name>
      <z312_name>Smith, John</z312_name>
      <z312_address_1>Smith, John</z312_address_1>
      <z312_address_2>St Germain 51</z312_address_2>
      <z312_address_3>New York</z312_address_3>
      <z312_address_4>United States</z312_address_4>
      <z312_auth_method>0</z312_auth_method>
      <z312_expiry_date></z312_expiry_date>
    </z312>
    <z312>
      <z312_source_id>341891</z312_source_id>
      <z312_institute>CITYUNIV</z312_institute>
      <z312_verification>tate2</z312_verification>
      <z312_portal_name>CITYUNIV</z312_portal_name>
      <z312_name>Johnson, Mark</z312_name>
      <z312_address_1>Johnson, Mark</z312_address_1>
      <z312_address_2>Cathy St. 12/1</z312_address_2>
      <z312_address_3>New York</z312_address_3>
      <z312_address_4>United States</z312_address_4>
      <z312_auth_method>0</z312_auth_method>
      <z312_expiry></z312_expiry_date>
    </z312>
  </user_records>
```

Figure 39: Sample User Input File

NOTE:

If the portal parameter (<z312_portal_name> </z312_portal_name>) is not included in the input file, the value is the first portal listed for the relevant institution in the /M interface.

User Loader Cron Job

The User Loader utility can be set up to run automatically as a cron job. The cron job script (util_k_02.cron) is located under the following directory:

```
./aleph/proc/
```

This cron job creates the util_k_02.cron.log.nnnnn log file under the ./logs directory.

To add this cron job to your cron jobs list:

- 1 Log in to the server as the `metalib` user.
- 2 Enter the following commands to edit the `crontab` file:

```
setenv EDITOR vi  
crontab -e
```
- 3 Add the `util_k_02.cron` entry to the file, using the following format:
<minute> <hour> <day of month> <month> <day of week> <command>
For example, the following entry runs the job every day at 4am:

```
# Run util_k_02.cron every day at 4 am:  
0 4 * * * /exlibris/metalib/m4_1/aleph/proc/util_k_02.cron
```

Figure 40: Util K-2 Cron Job

- 4 Exit and save the changes to the file.

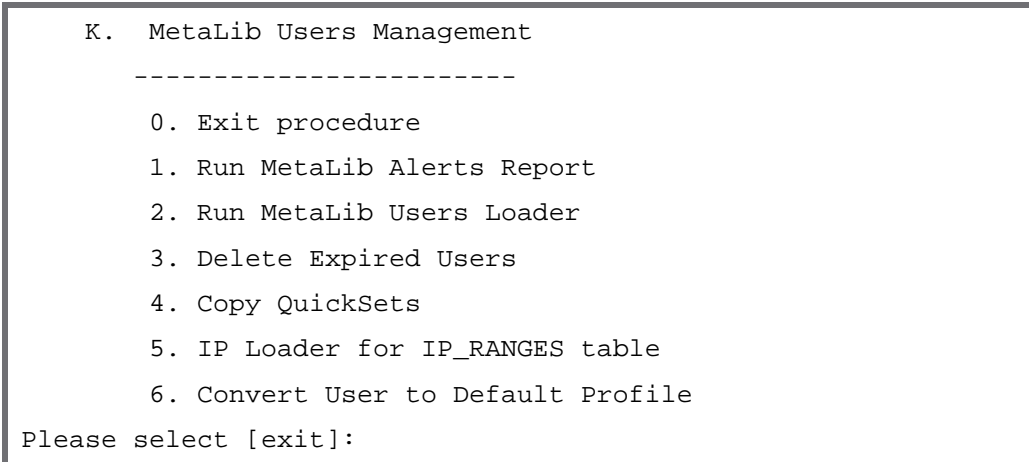
Delete Expired Users (Util K-3)

Util K-3 deletes expired users – that is, any user whose expiration date is earlier than the date on which the procedure is run.

To run the procedure, do the following:

- 1 Enter the following commands to display the MetaLib Users Management menu (see [Figure 38](#)).

```
dlib vir00
util k
```



```
K.  MetaLib Users Management
-----
0.  Exit procedure
1.  Run MetaLib Alerts Report
2.  Run MetaLib Users Loader
3.  Delete Expired Users
4.  Copy QuickSets
5.  IP Loader for IP_RANGES table
6.  Convert User to Default Profile
Please select [exit]:
```

Figure 41: MetaLib Users Management Menu

- 2 Enter option 3 to delete expired users.
- 3 To view the log file that is created in the scratch directory of `vir00`, enter the following commands doing the following:

```
dlib vir00
ds
vi clear_expired_patrons.log.<nnnn>
```

Delete Expired Users Cron Job

The Delete Expired Users utility can be set up to run automatically as a cron job. The cron job script (`util_k_03.cron`) is located under the following directory:

```
./aleph/proc/
```

This cron job creates the `util_k_03.cron.log.nnnnn` log file under the `./logs/` directory.

To add this cron job to your cron jobs list:

- 1 Log in to the server as the `metalib` user.
- 2 Enter the following commands to edit the `crontab` file:

```
setenv EDITOR vi  
crontab -e
```
- 3 Add the `util_k_03.cron` entry to the file, using the following format:
<minute> <hour> <day of month> <month> <day of week> <command>
For example, the following entry runs the job every day at 3am:

```
# Run util_k_03.cron every day at 3 am:  
0 3 * * * /exlibris/metalib/m3_1/aleph/proc/util_k_03.cron
```

Figure 42: Util K-3 Cron Job

- 4 Exit and save the changes to the file.

Convert User to Default Profile (Util K-6)

/V users can manage their QuickSets only from the /V interface. If you have defined a /V user and you need to manage its QuickSets also from the /M interface, you can use Util K-6 to convert the user group to a default profile and copy its QuickSets to the default profile.

To convert a /V user to a default profile:

- 1 Enter the following commands to display the MetaLib Users Management menu (see **Figure 43**).

```
dlib vir00
util k
```

```
K.  MetaLib Users Management
-----
0.  Exit procedure
1.  Run MetaLib Alerts Report
2.  Run MetaLib Users Loader
3.  Delete Expired Users
4.  Copy QuickSets
5.  IP Loader for IP_RANGES table
6.  Convert User to Default Profile

Please select [exit]:
```

Figure 43: MetaLib Users Management Menu

- 2 Enter option 6.

The following prompt displays:

```
Convert User to Default Profile
Enter Institution name:
```

- 3 At the prompt, enter the name of the institution to which the /V user belongs:

The following prompt displays:

```
Enter User ID:
```

- 4 At the prompt, enter the name of the /V user that you want to convert to a default profile.

The following prompt displays:

```
The User was successfully updated
Enter CR to continue...
```

- 5 Type ENTER to return to the MetaLib Users Management menu.

Reset MetaLib Administrator Password (Util T-4)

Util T-4 resets the password for the mladmin user if the password has been forgotten. In addition, this utility re-creates this user if it has been deleted.

To run this utility:

- 1 Enter the following commands to display the MetaLib Setup Procedures menu (see [Figure 38](#)).

```
dlib dat01
util t
```

```
T. MetaLib Setup Procedures
-----
0. Exit procedure
2. Re-Index Database
3. Force Unlock DAT01
4. Reset MetaLib Administrator Password
5. Reset Exlibris Support Password
6. Force Unlock "ALL" Categories
Please select [exit]:
```

Figure 44: MetaLib Setup Procedures Menu

- 2 Enter option 4.
- 3 At the following prompt, enter **Y** to confirm this operation:

```
Note - By resetting the MetaLib Administrator password, you will re-
create a MetaLib Administrator user if does not exist.
```

```
Are you sure you want to reset the MetaLib Administrator password (Y/
[N]) ?
```

Reset Ex Libris Support Password (Util T-5)

Util T-5 resets the password for the `exsupport` user if the password has been forgotten. In addition, this utility re-creates the `mladmin` user if it has been deleted.

To run this utility:

- 1 Enter the following commands to display the MetaLib Setup Procedures menu (see [Figure 38](#)).

```
dlib dat01
util t
```

```
T. MetaLib Setup Procedures
-----
0. Exit procedure
2. Re-Index Database
3. Force Unlock DAT01
4. Reset MetaLib Administrator Password
5. Reset Exlibris Support Password
6. Force Unlock "ALL" Categories
Please select [exit]:
```

Figure 45: MetaLib Setup Procedures Menu

- 2 Enter option 5.
- 3 At the following prompt, enter **Y** to confirm this operation:

Note - By resetting the Exlibris Support password, you will re-create a MetaLib Administrator user if does not exist.

```
Are you sure you want to reset the Exlibris Support password (Y/[N]) ?
```

12

User Authorization and Default Profiles

This section includes:

- **Levels of User Authorization** on page 137
- **Overview of Default Profiles** on page 138
- **Managing Default Profiles** on page 140
- **Patron Directory Services** on page 148

Levels of User Authorization

The following levels of authorization exist in MetaLib:

- Institution.
- User Group.

Both users and resources are affiliated with an institution and optionally with a user group, while users additionally have a portal affiliation. The system determines whether to present a resource to users based on their affiliation and the resource's affiliation.

Resources can be affiliated with a single institution and with multiple user groups. If the user group field is left empty in the IRD record, the resource is available to all user groups within the institution. If a resource is affiliated with a specific user group, users are able to access the resource only if they belong to the same user group or they are assigned to a special user group called ALL. A user affiliated with the ALL user group is able to access all resources regardless of any specific user groups affiliated with the resources.

In addition to the special user group ALL, there is another user group that behaves in a special way. This is the user group GUEST, which is intended for external guest users that access MetaLib from outside the IP ranges of the institutions. Users affiliated with the user group GUEST are able to access only resources that are affiliated with the GUEST user group. If a resource is affiliated with the user group GUEST, all users whose institutional affiliation matches the

institutional affiliation of the resource are able to access that resource even though they do not belong to the `GUEST` user group.

NOTE:

The `ALL` and `GUEST` user groups are hard coded statuses defined in the system and cannot be renamed.

To summarize institution and user group affiliations, see [Table 22](#).

Table 22. Summary of Institution and User Group Affiliations

Type	Description
Institution	Since both a user and a resource must be affiliated with an institution, there must be a match between the institution of the resource and the institution of the user so that the user can access it.
User Group	If the user group in the resource is blank, users with any user group can access the resource unless the user is affiliated with the group <code>GUEST</code> , in which case access is denied.

Overview of Default Profiles

Three default profiles are created automatically in the following cases:

- During the initial setup of an institution
- When adding a portal to an existing institution
- When adding a language to an existing portal

The three default profiles are:

- `<PORTAL>-<LNG>-IN` — The default guest user that is used for guests within the IP range of the institution's portal (such as affiliated guests). This user defines the generic QuickSets for signed in users and default preferences for newly created users.
- `<PORTAL>-<LNG>-GUEST` — The default profile that is used for guests outside the IP range.

Assignment of IP ranges for the institution's portal is managed via the Define IPs page of the Management Interface (/M).

This profile defines the generic QuickSets for guests and default preferences for guest users.

- `<PORTAL>-<LNG>` — The default profile that is used if a portal wishes to allocate the same QuickSets to both guest and logged in users.

- Guests logging in from outside the network (using the default `<PORTAL>-<LNG>-GUEST` user) can see, by default, all resources, but can only search free resources via MetaLib. Sites can set up MetaLib so that guest users see only free resources in QuickSearch (see the section, “Disabling Restricted Resources,” in the *MetaLib User Interface Guide*).
 - When setting up the default profile `<PORTAL>-<LNG>-GUEST`, the user's secondary affiliation must be set to `GUEST` in the user record. If it is not, guest users are able to access licensed resources.
-

Default Profiles for Specific User Groups

The `<PORTAL>-<LNG>-<group>` default profile is an affiliated user that belongs to a specific user group. Each user record contains the name of the user group to which the user belongs. This group can be named `faculty`, `undergraduate`, `medical`, `law`, `graduate student`, and so forth. (as determined by the MetaLib site). Users see QuickSets set up for their specific affiliation when there is a match between their user group (assigned when a user is registered in the MetaLib users list) and the one defined in the default profile group.

Defining a default profile for each secondary affiliation allows the creation of default QuickSets (for usage of the specific secondary affiliation or user group).

For information on creating user groups, see [Configuring User Groups](#) on page 146.

Guest Profiles Within an Institution's IP Range

Normally, guest users within the IP range of the institution are allowed access to all resources, including restricted databases. Such users are affiliated with an institution/portal and, optionally, a user group, based on their IP.

In addition to the IP ranges, MetaLib enables users to change portals in the UI and inherit the settings of the default profile for the new portal. For example, if guest users switch to the `Medical` portal from the `Law` portal, they will inherit default settings created for the default profile for this portal, `MEDICAL-ENG-GUEST`. Similarly, guest users switching to the `Law` portal will inherit default settings created for the default profile for this portal, `LAW-ENG-GUEST`.

External Guests

An external guest is an unsigned user that accesses MetaLib from an IP address that is outside of the IP ranges defined for the institutions. For more information on defining IP ranges, see [Configuring IP Ranges](#) on page 83.

External guests are affiliated with the institution that is specified in the `EXT_USER_INSTITUTE` parameter and inherit the default settings created by the default profile specified in the `EXT_USER_DEFAULT_PROFILE` parameter. For

more information on setting these parameters, see [System Parameters \(www_server.conf\)](#) on page 41.

External guests have access only to resources that have been authorized for access by the GUEST user group. Therefore, the IRD record for each resource that the site wants to make available to external guests should be affiliated with the user group GUEST.

NOTE:

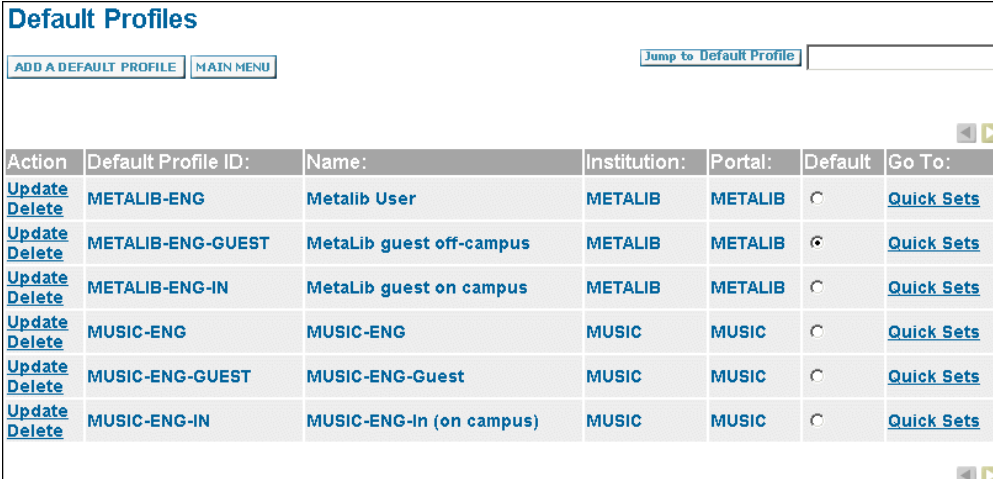
All affiliated users are able to access resources that are affiliated with the GUEST user group (even though they themselves are not guests).

In MetaLib's consortium model that has several institutions, external guests can be defined in the following ways:

- They can be affiliated with one of the institutions in the consortium, inheriting the default settings created by the corresponding default profile that is defined for this institution. This default profile is typically `<PORTAL>-<LNG>-GUEST`.
- With an institution created specifically for external guests. In this case, IRD records that the site wants to make available to external guests must be created for the special guest institution.

Managing Default Profiles

The Default Profiles page (see [Figure 46](#)) displays the list of default profiles that are defined for each portal. To access this page, click **Define Default Profiles** from the Management Main menu (/M).



Action	Default Profile ID:	Name:	Institution:	Portal:	Default	Go To:
Update Delete	METALIB-ENG	Metalib User	METALIB	METALIB	<input type="radio"/>	Quick Sets
Update Delete	METALIB-ENG-GUEST	MetaLib guest off-campus	METALIB	METALIB	<input checked="" type="radio"/>	Quick Sets
Update Delete	METALIB-ENG-IN	MetaLib guest on campus	METALIB	METALIB	<input type="radio"/>	Quick Sets
Update Delete	MUSIC-ENG	MUSIC-ENG	MUSIC	MUSIC	<input type="radio"/>	Quick Sets
Update Delete	MUSIC-ENG-GUEST	MUSIC-ENG-Guest	MUSIC	MUSIC	<input type="radio"/>	Quick Sets
Update Delete	MUSIC-ENG-IN	MUSIC-ENG-In (on campus)	MUSIC	MUSIC	<input type="radio"/>	Quick Sets

Figure 46: Default Profiles Page

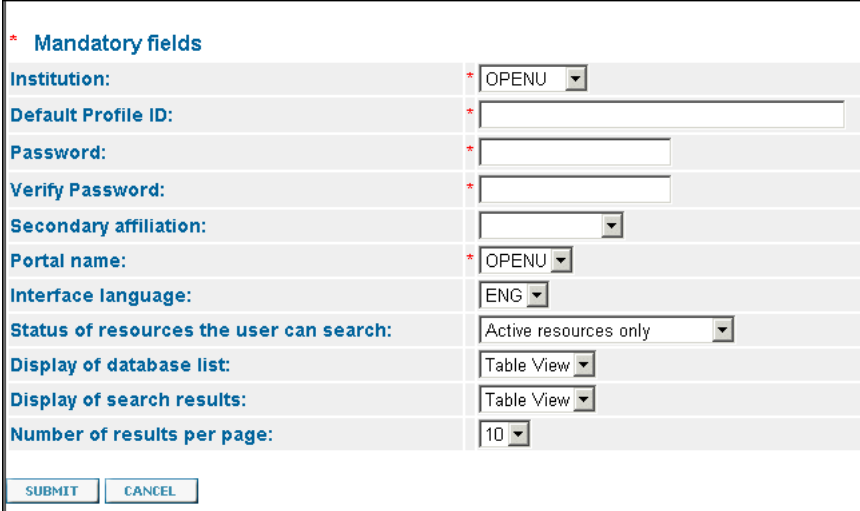
From this page you can perform the following operations on default profiles:

- Adding a default profile.
 - Updating a default profile.
 - Deleting a default profile.
 - Changing a Portal's default profile.
 - Access the list of QuickSets page by clicking a **QuickSets** link that appears next to each default profile in the list.

 - If the list of default profiles is large, you may need to click the right and left arrows to move to the next and previous pages, respectively.
 - If you would like to locate a default profile quickly in the list, enter a search string in the text box and then click **Jump to Default Profile**.
-

Adding a Default Profile

The Add Default Profile page (see [Figure 47](#)) allows you to define a new default profile.



The screenshot shows a web form titled "Add Default Profile" with a section for "Mandatory fields". The form contains the following fields:

Institution:	* OPENU
Default Profile ID:	*
Password:	*
Verify Password:	*
Secondary affiliation:	
Portal name:	* OPENU
Interface language:	ENG
Status of resources the user can search:	Active resources only
Display of database list:	Table View
Display of search results:	Table View
Number of results per page:	10

At the bottom of the form are two buttons: "SUBMIT" and "CANCEL".

Figure 47: The Add Default Profile Page

To add a default profile:

- 1 On the Default Profiles page, click **Add a Default Profile** to display the Add Default Profile page (see [Figure 47](#)).
- 2 Select an institution from the drop-down list.
- 3 Select a portal from the drop-down list.

- 4 Use **Table 23** to enter the remaining fields. Fields that are marked with an asterisk are required.

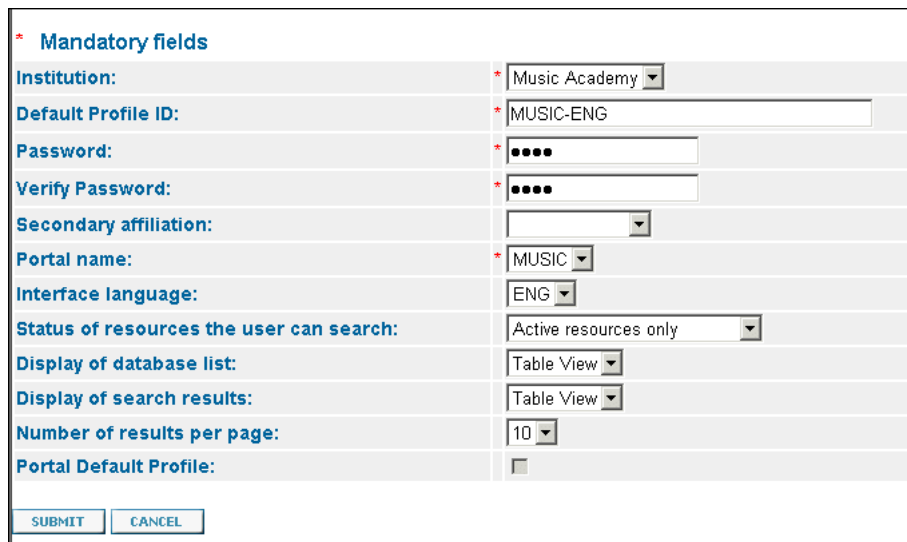
Table 23. Add Default Profile Field Descriptions

Role	Description
Default Profile ID*	Enter the name of the new default profile for the specified institution and portal.
Password*	Enter the password of the new default profile.
Verify Password*	Re-enter the password of the new default profile.
Secondary Affiliation	Select one of the following secondary affiliation from the drop-down list: <ul style="list-style-type: none"> ■ Undergraduate ■ Graduate ■ Staff ■ Guest ■ All Groups
Interface Language	Select a language from the drop-down list.
Status of Resources the User Can Search	From the drop-down list, select the status of the resources that the user can search: <ul style="list-style-type: none"> ■ Active resources only ■ Active and testing resources
Display of Database List	From the drop-down list, select one of the following display options for the list of databases: <ul style="list-style-type: none"> ■ Table View ■ Brief View ■ Full View
Display of Search Results	From the drop-down list, select one of the following display options for the search results: <ul style="list-style-type: none"> ■ Table View ■ Brief View ■ Full View
Number of Results Per Page	From the drop-down list, select the number of search results that will appear per page.

- 5 Click **SUBMIT** to create the new default profile.

Updating a Default Profile

The Update Default Profile page (see [Figure 48](#)) allows you to update an IP range.



The screenshot shows a web form titled "Update Default Profile" with a section for "Mandatory fields". The fields are as follows:

* Mandatory fields	
Institution:	* Music Academy ▼
Default Profile ID:	* MUSIC-ENG
Password:	* ●●●●
Verify Password:	* ●●●●
Secondary affiliation:	▼
Portal name:	* MUSIC ▼
Interface language:	ENG ▼
Status of resources the user can search:	Active resources only ▼
Display of database list:	Table View ▼
Display of search results:	Table View ▼
Number of results per page:	10 ▼
Portal Default Profile:	<input type="checkbox"/>

At the bottom of the form are two buttons: **SUBMIT** and **CANCEL**.

Figure 48: The Update Default Profile Page

To update a default profile:

- 1 On the Default Profiles page, click **Update** next to the default profile in the list that you want to update.
- 2 Select an institution from the drop-down list.
- 3 Select a portal from the drop-down list.
- 4 Use [Table 23](#) on page [142](#) to enter the remaining fields. Fields that are marked with an asterisk are required.

NOTE:

The Portal Default Profile field is a view-only field that indicates if this default profile is used as the default for the specified institution.

- 5 Click **SUBMIT** to update the default profile.

Deleting a Default Profile

The Delete Default Profile dialog box (see [Figure 49](#)) allows you to delete a default profile.

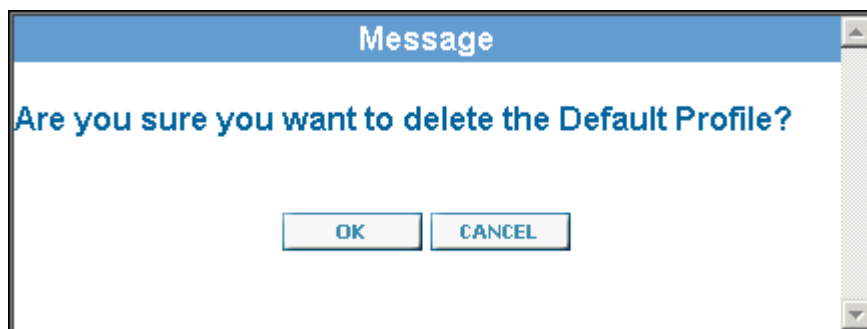


Figure 49: The Delete Default Profile Dialog Box

To delete a default profile:

- 1 On the Default Profiles page, click **Delete** next to the default profile in the list that you want to delete.
The Delete Default Profile dialog box displays (see [Figure 49](#)).
- 2 Click **OK** to delete the selected default profile.

Changing a Portal's Default Profile

The Change Default Profile dialog box (see [Figure 50](#)) allows you to change a portal's default profile.

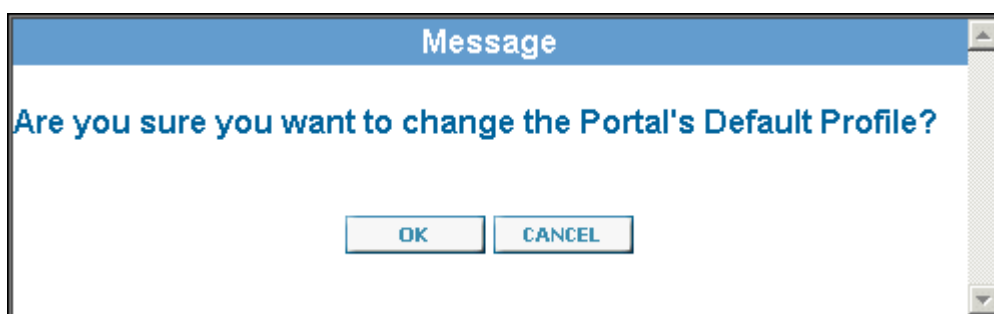


Figure 50: The Change Default Profile Dialog Box

To change a portal's default profile:

- 1 On the Default Profiles page, click the **Default** radio button next to the default profile in the list that you want to make the default profile.

The Change Default Profile dialog box displays (see **Figure 50**).

NOTE:

You can only mark one default profile per portal as the default.

- 2 Click **OK** to change the default profile.

Creating Default Profiles for Primo

In order for Primo to display the correct QuickSets from MetaLib, a default profile should be created in the MetaLib Management interface (/M).

There are two possible scenarios for creating such a default profile:

- You want to create a new default profile to manage QuickSets
- You want to convert an existing /V user to a default profile so that you can manage its QuickSets from /M.

Creating a Default Profile to Manage QuickSets for Primo

For more information on creating default profiles, see [Adding a Default Profile](#) on page 141.

To create a new default profile:

- 1 Click **Define Default Profiles** from the Management Main menu (/M).
The Define Default Profiles page displays.
- 2 Click **Add a Default Profile** to display the Add Default Profile page.
- 3 Select the institution that is being used by Primo from the drop-down list.
- 4 Select a portal from the drop-down list. Note that is usually the same name as the institution name.
- 5 Fill in the required fields, which are marked with an asterisk. These fields are **Default Profile ID**, **Password**, and **Verify Password**.
- 6 Make sure that the ID (=name) and password are the same as the institution's code. For example—if the institution code of the College of Bahamas is **COB**, the ID and Password should both be set to COB.
- 7 Click **SUBMIT** to create the new default profile.

NOTE:

From the [Define Default Profiles](#) page, you can also manage the default profile's QuickSets and edit the default profile.

Converting an Existing /V User to Default Profile

Note that Primo will display QuickSets from /V users, as well as default profiles, if the users are defined correctly in MetaLib and Primo. The only reason to switch a /V user to a default profile is to allow you to manage the QuickSets directly from /M, not /V.

For more information on /V users, see the *MetaLib QuickSet and Category Administration Guide*.

To convert a /V user to a default profile:

- 1 Make sure that the ID (=name) and password are the same as the institution's code. For example—if the institution code of the College of Bahamas is **COB**, the ID and Password should both be set to COB.
- 2 Execute Util K-6 on the MetaLib server to convert the /V user. For more information, see [Convert User to Default Profile \(Util K-6\)](#) on page 134.

For assistance, contact Ex Libris Support.

Configuring User Groups

This section describes how to configure user groups for secondary affiliation.

To configure a user group:

- 1 From the MetaLib server, enter the following command to access the MetaLib Management interface HTML files:

```
wm
```
- 2 Enter the following command to edit the `user-user-group-include` file:

```
vi user-user-group-include
```
- 3 Add an entry for the new user group. For example, if you want to add the **MEDLIB** user group for the **Medical Library**, add the following line to the list:

```
<option value="MEDLIB" $$XXX00-S"MEDLIB">Medical Library</option>
```

- 4 Exit and save the changes to the file.

- 5 Enter the following command to edit the `ird-user-group-include` file:

```
vi ird-user-group-include
```

- 6 Add an entry for the new user group. For example, if you want to add the **MEDLIB** user group for the **Medical Library**, add the following line to the list:

```
<option value="MEDLIB" $$XXX00-S"MEDLIB">Medical Library</option>
```

- 7 Exit and save the changes to the file.
- 8 Enter the following command to edit the `user-group-list-<inst>` file, where `<inst>` is the institution to which the new user group belongs:

```
vi user-group-list-<inst>
```

- 9 Add an entry for the new user group. For example, if you want to add the **MEDLIB** user group for the **Medical Library**, add the following line to the list:

```
MEDLIB=Medical Library <br>
```

- 10 Exit and save the changes to the file.
- 11 Create a default profile for the new user group. For more information on creating default profiles, see [Adding a Default Profile](#) on page 141.

Enter the following fields for each default profile:

- **User ID**—For example: `<PORTAL>-ENG-MEDLIB`

NOTES:

- User IDs must be capitalized.
 - They are limited to 40 characters.
 - They must be in the following format: `<PORTAL>-<LNG>-<USER_GROUP>`, where `<PORTAL>` is typically the institution, `<LNG>` is the language, and `<USER_GROUP>` is the name of the user group.
-
- **Password**—Typically, the password is the same as the user ID.
 - **Verify Password**—Enter the password again for verification.
 - **Secondary Affiliation**—Select a secondary affiliation, which you defined in the `user-user-group-include` file above. For example, select **Medical Library** when working with `<PORTAL>-ENG-MEDLIB`.

- 12** For the new user group, set up the IP ranges for guest users. For more information on creating IP ranges, see [Creating an IP Range](#) on page 84.

Add IP ranges for the new default user— for example, `<PORTAL>-ENG-MEDLIB`—in the IP addresses section under Institutional Settings in `/M`.

- 13** Set up the secondary affiliation for the resources.

Within the IRD records on the `/M`, indicate which resources are limited to a specific user group by clicking on the **Secondary Affiliation field** link and selecting the appropriate user group. If the Secondary Affiliation field is left blank, the resource will display to everyone, although it may be locked for external guests.

NOTE:

This drop-down list is generated by the `user-group-list-<inst>` file you updated above.

- 14** Configure authentication for the new user group.

Your authentication system must be able to pass along the secondary affiliation. In particular, it will need to pass along the secondary affiliation code, which you defined in the `user-user-group-include` file above.

In other words, the user group code defined in the `user-user-group-include` file must match whatever is being returned by the authentication module.

Patron Directory Services

MetaLib is bundled with an independent Ex Libris authentication module called PDS (Patron Directory Services). PDS is a back-end Web application that enables user authentication and delivery of user attributes from central directory services, and provides Single Sign On (SSO) capabilities.

The `www_server.conf` file contains a number of settings related to PDS functionality in MetaLib.

The relevant configurable PDS flags in this file are:

- `setenv sso_flag Y`

This flag defines whether the PDS Single Sign On mechanism is used when the system identifies an end-user upon their first access to MetaLib. The default value for an initial MetaLib installation is `Y`. This parameter is defined in the `./metalist_conf/www_server.conf` file.

- `setenv guest_bypass_pds N`

For the sites that are not using the Single Sign On (SSO) method, this flag allows them to bypass the PDS, thus improving system performance and facilitating its response. The default value for an initial MetaLib installation

is N. This parameter is defined in the `./metilib_conf/www_server.conf` file. For complete information, refer to the *Patron Directory Services* document.

13

User Self-Registration

This section includes:

- [Overview](#) on page 151
- [Performing Self-Registration](#) on page 152
- [Configuring Self-Registration](#) on page 155

Overview

MetaLib provides an optional self-registration component, which allows guest users to register and obtain personalized services, such as the e-shelf, My Databases, My e-Journals, and so forth. Access to these services depend on how self-registration is configured locally (see [Configuring Self-Registration](#) on page 155).

When this feature is enabled, users can perform self-registration by filling out the Self-Registration Form, which is accessed via the PDS Login screen. For more information, see [Performing Self-Registration](#) on page 152.

During registration, MetaLib performs the following checks:

- All mandatory fields must have values
- Password and Verify Password values must be identical
- User must not already exist in the MetaLib local database

If any of the checks fail, an appropriate message displays, allowing the user to make the necessary changes.

If all of the checks succeed, the following events occur:

- The user is logged in to MetaLib and the default screen displays (either QuickSearch, MetaSearch, or Find Database).
- MetaLib saves the user information and authenticates these users against the MetaLib user database during subsequent logins.

Self-registered users inherit their institutional affiliation from the default user of the selected institution. They acquire their secondary affiliation (such as group) as configured by the `self_reg_secondary_affiliation` system parameter. For more information, see [Setting the Secondary Affiliation](#) on page 155.

Performing Self-Registration

Sites using the PDS login page (see [Figure 51](#)), not Remote Login or Remote SSO, can activate the self-registration functionality to enable guest users to have personalization features such as the e-shelf, My Databases, My e-Journals, and so forth.

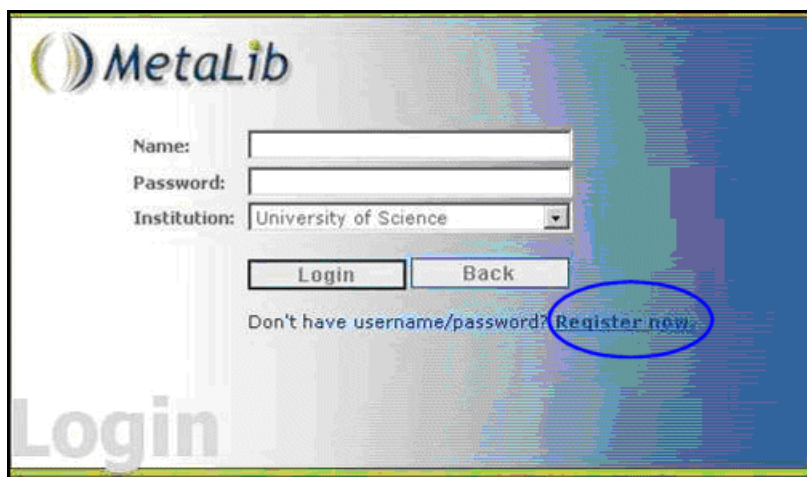


Figure 51: MetaLib Login Screen with Self-Registration Implemented

To perform self-registration:

- 1 Click the **Register Now** link at the bottom of the PDS login page (see **Figure 51**). The Self-Registration page displays (see **Figure 52**).

Figure 52: Self-Registration Form

- 2 Enter the fields on the Self-Registration page (see **Table 24**):

Table 24. Self-Registration Page Fields

Field	Description
Institution	Select an institution from the drop-down list. To customize the list, edit the following file: <code>./ins<NN>/www_v_<lng>/self-reg-institution-include</code>
User ID	Enter a user ID.
Password	Enter a password.
Verify Password	Re-enter the password for confirmation.

Table 24. Self-Registration Page Fields

Field	Description
Interface Language	Select a language from the drop-down list. To customize the list, edit the following file: <code>./ins<NN>/www_v_<lng>/user-language-include</code>
Name	Enter your name.
Title	Enter your title.
Address	Enter your street address.
City	Enter your city.
Zip Code	Enter your zip code.
State	Enter your state.
Country	Select a country from the drop-down list. To customize the list, edit the following file: <code>./ins<NN>/www_v_<lng>/bor-new-country-include</code>
Telephone 1	Enter your main telephone number.
Telephone 2	Enter a secondary telephone number.
E-Mail	Enter your e-mail address.
Send Mail?	Indicates whether e-mail notification is sent to your e-mail address. NOTE: This is possible only if Unix mail is enabled on the server. To customize the template, edit the following file: <code>./ins<NN>/form_<lng>/www-m-user-mail-00</code> NOTE: For more information, refer to Customizing the E-Mail Template on page 156.
Academic Status	Select an academic status from the drop-down list. To customize the list, edit the following file: <code>./ins<NN>/www_v_<lng>/academic-status-include</code>

NOTE:

For more information on customizing the drop-down lists, refer to **Updating the Include Files** on page 157.

- 3 Click **Submit** to complete registration.

Configuring Self-Registration

This section describes the changes required to enable and configure the self-registration module.

Enabling Self-Registration

By default, self-registration is not enabled in MetaLib. Customers who wish to enable self-registration need to activate it via the `self_reg` flag in the `./metalib_conf/www_server.conf` file.

Once this feature is activated, users can perform self-registration via the Self-Registration Form. For more information, see [Performing Self-Registration](#) on page 152.

- These instructions should be implemented by a MetaLib system librarian or other technical person familiar with MetaLib functionality.
 - This parameter applies to all institutions in an installation.
-

To enable self-registration:

- 1 Enter the following commands to edit the `www_server.conf` file:

```
cd $metalib_conf
vi www_server.conf
```

- 2 Change the following parameter to `Y` to enable self-registration:

```
setenv self_reg Y
```

- 3 Save the file and then enter the following command to restart the Web servers:

```
start_w
```

Setting the Secondary Affiliation

The `self_reg_secondary_affiliation` parameter, which is used to set the default secondary affiliation (such as group) for self-registered users, is located in the following file:

```
./metalib_conf/www_server.conf
```

The value of this parameter should be set to one of the values defined in the following include file:

```
./dat01/www_m_eng/user-user-group-include; in "value="
```

An empty value, "value=", is represented by the value `BLANK` as follows:

```
setenv self_reg_secondary_affiliation BLANK
```

This value should be used for users that are not defined as `GUEST` users, but have full institutional rights.

In the case of a non-valid value or an undefined parameter, the default value is set to `GUEST`.

To set the secondary affiliation:

- 1 Enter the following commands to edit the `www_server.conf` file:

```
cd $metalib_conf  
vi www_server.conf
```

- 2 Add the `<affiliation>` to the following parameter:

```
setenv self_reg_secondary_affiliation <affiliation>
```

- 3 Save the file and then enter the following command to restart the Web servers:

```
start_w
```

Enabling Cookies

For self-registration, cookies must be enabled by setting the `www_enable_cookies` parameter to `Y`. This parameter is located in the `./metalib_conf/www_server.conf` file.

To enable cookies:

- 1 Enter the following commands to edit the `www_server.conf` file:

```
cd $metalib_conf  
vi www_server.conf
```

- 2 Change the value of the following parameter to `Y`:

```
setenv www_enable_cookies Y
```

- 3 Save the file and then enter the following command to restart the Web servers:

```
start_w
```

Customizing the E-Mail Template

To customize the e-mail template, edit the following file:

```
./ins<NN>/form_<lng>/www-m-user-mail-00
```

To customize the e-mail template:

- 1 Enter the following command to navigate to the root directory of the relevant instance *ins<NN>*, such as *ins01*:

```
dlib ins<NN>
```
- 2 Enter the following commands to navigate to the directory that contains the relevant language *<lng>* files, such as *eng*:

```
dr
cd form_<lng>
```
- 3 Enter the following command to edit the *www-m-user-mail-00* file:

```
vi www-m-user-mail-00
```
- 4 Modify the template.
- 5 Save the file and then enter the following command to restart the Web servers:

```
start_w
```

Updating the Include Files

Update the include files under the following directory for all instances *ins<NN>* and languages *<lng>*:

```
./ins<NN>/www_v_<lng>/
```

Table 25. The *www_v_<lng>* File

File Name	Description
<code>self-reg-institution-include</code>	<p>Indicates the valid institutions for which self-registration can be activated. Edit the file and add the names of the relevant institutions to the following line:</p> <pre><option value="<institute code>" \$\$XXX00-S"<institute code>"><institute display name></option></pre> <p>For example:</p> <pre><option value="LDN" \$\$XXX00-S"LDN">London City</option></pre>
<code>user-language-include</code>	<p>Indicates the valid languages for the selected portal. Edit the file and add the relevant languages.</p> <pre><option value="<language prefix>" \$\$XXX00-S"<language prefix>"><display language></option></pre> <p>For example:</p> <pre><option value="ENG" \$\$XXX00-S"ENG">ENGLISH</option></pre>

Table 25. The www_v_<lng> File

File Name	Description
bor-new-country-include	<p>Indicates the valid countries for the user record. Edit the file and add/remove the relevant lines:</p> <pre><option value="<country>" \$\$XXX00-S"<country>"><country></pre> <p>For example:</p> <pre><option value="United States" \$\$XXX00-S"United States">United States</pre>
academic-status-include	<p>Indicates the valid academic statuses for the user. Edit the file and add/remove the relevant lines:</p> <pre><option value="<academic status>" \$\$XXX00-S"<academic status>"><display academic status></option></pre> <p>For example:</p> <pre><option value="Graduate" \$\$XXX00-S"Graduate">Graduate</option></pre>

Link from Home Page to Portal

For all instances *ins<NN>* and languages *<lng>*, update the home file, which is stored under *./ins<NN>/www_v_<lng>*.

To add a link from the home page to the portal:

- 1 Enter the following command to edit the home file:

```
vi ./ins<NN>/www_v_<lng>/home
```

- 2 Search for the following line in the file:

```
<li><a href="&server_pds?func=load-  
login&calling_system=metalib&institute=$0100&url=  
&pds_backlink?func=login" class="Normal"> Login </a></li>
```

- 3 Add a placeholder (as shown in bold) to the line. For example:

```
<li><a href="&server_pds?func=load-  
login&calling_system=metalib&institute=$0100$6300&url=  
&pds_backlink?func=login" class="Normal"> Login </a></li>
```

14

Additional User-Related Activities

This section includes:

- [Sending E-Mail to Users](#) on page 159
- [Alerts](#) on page 160
- [Limiting the Number of E-Shelf Records](#) on page 163
- [Displaying Raw IRD Data \(Util F-4-Doc\)](#) on page 164

Sending E-Mail to Users

This section describes the parameters that are used to set up e-mail for users.

Generated E-mail - Change the From Field

The following parameter, which is defined in the `./metalib_conf/metalib_start` file, sets the default sender e-mail address used in e-mails generated by MetaLib, including those sent during the alert process:

```
setenv email_sender <from>
```

If this parameter is left empty, the From field defaults to `metalib@<local host>`, where the `<local host>` is replaced by the value taken from the `WWW_HOST` parameter defined in the `./metalib_conf/metalib_start` file. For example:

To update the from field in generated e-mails:

- 1 Enter the following command to edit the `metalib_start` file:

```
vi ./metalib_conf/metalib_start
```

- 2 Update the `<from>` field in the `metalib_start` file. For example:

```
setenv email_sender mailto:helpdesk@university.com
```

- 3 Enter the following commands to apply the changes to the UI.

```
source metalib_start
metalib_conf_create
start_w
```

SMTP_HOST

The following parameter, which is defined in the `./metalib_conf/metalib_start` file, sets the mail-server that is used by the MetaLib application:

```
setenv SMTP_HOST 'localhost'
```

This parameter is set by default to use the mail-server of the local host (in the majority of cases, a UNIX mail-server installed on the server hosting MetaLib). To change this definition and use a different mail-server, insert the details of the mail-server IP that you want to use.

To modify the default mail server:

- 1 Enter the following command to edit the `metalib_start` file:

```
vi ./metalib_conf/metalib_start
```

- 2 Update the `SMTP_HOST` parameter in the `metalib_start` file. For example (Microsoft Exchange send mail):

```
setenv SMTP_HOST "library.mailserver.com"
```

- 3 Enter the following commands to apply the changes to the UI.

```
source metalib_start
metalib_conf_create
start_w
```

Alerts

Authenticated users can save searches in their personal History and request an alert for such searches. When an alert is saved, the system saves the query, the resources to search, and the number of hits per resource. Alerts are activated by a procedure on the server that should be run every day. The procedure can be activated manually or as a daily cron job. See [Alerts Procedure - Activate as a Cron Job](#) on page 162.

The procedure sends the query to the resources specified in the alert at intervals defined by the user. It compares the number of hits found with the number of hits saved from the previous search. If the number of records found is larger, it sends a report via e-mail to the user. If the user has requested to receive a report

every time the procedure is run, regardless of whether more hits are found, an e-mail is sent to the user every time the alert is run.

Activate Alerts Procedure (Util K-1)

The Alerts procedure is generated by Util K-1 which is run on the server. The procedure checks all user alert requests saved in the system. Based on the last run date and the interval defined for the specific alert, the system determines which alerts need to be run in the current run.

A report is sent to the user's e-mail address. The form for the report is in each user interface instance under the following directory:

```
./ins<NN>/form_<lng>
```

A log file of the alert procedure is saved under `./vir00/scratch/` in a file with the following syntax:

```
b_sdi_02_vir_a.log.nnnnn
```

To run the Alerts procedure:

- 1 Enter the following commands to display the MetaLib Users Management menu (see [Figure 53](#)).

```
dlib vir00  
util k
```

```
K.  MetaLib Users Management  
-----  
0.  Exit procedure  
1.  Run MetaLib Alerts Report  
2.  Run MetaLib Users Loader  
3.  Delete Expired Users  
4.  Copy QuickSets  
5.  IP Loader for IP_RANGES table  
6.  Convert User to Default Profile  
Please select [exit]:
```

Figure 53: MetaLib Users Management Menu

- 2 Enter option **1** to start the activation utility.
- 3 At the following prompt, enter **Y** to run the full alert procedure.

```
Update the Alert (Y/[N])
```

If you enter `y`, the procedure runs the full alert procedure and updates the last run date of each alert. This means that the next time the alert is generated only if the alert interval has passed (the specified number of days or weeks) as defined in the alert request.

In production mode, enter `Y`. To run tests prior to production, enter `N` so that the last run date is not updated in the database and the alerts procedure can be immediately applied again.

Explanation of the Alerts Procedure

By default, the system sends five alerts at a time. Every alert is a query run on up to the maximum number of simultaneously searched resources. After 50 seconds, if results do not come in, the search is suspended. Most alerts take much less than 50 seconds to return results.

The alerts use the same mechanism that is used for online searches. This means that when the alerts procedure is run, it is as if there are 5 different users online running 5 queries at the same time on one or more resources each.

The alerts are sorted by the user ID and a running sequence.

NOTE:

Only alerts whose interval has passed are run. If a user has more than one alert to be run on the same day, these are most probably run in the same group of five.

The standard subject of the alert message is configured in the `./ins<MN>/tab/www_const.<lng>` file.

You can change the number of alerts that are activated at a time. This can be done when the alerts are run via a cron job. For details, see **Alerts Procedure - Activate as a Cron Job** on page 162.

A site that has resources with very limited licenses (for example, 1-2) may want to run the alerts one at a time. This prevents the alerts from failing due to a license limit. (A similar problem would occur online if several users attempted to search the resource at the same time.) When making such a change, the alerts process takes longer to run. This should not present a problem, as long as the cron job can run without interruption until completion.

Alerts Procedure - Activate as a Cron Job

The alerts should be run on a regular basis. It is best to define the alerts procedure as a cron job. For this purpose, use the script called `util_k_01.cron`, which is found in the `./aleph/proc/` directory.

This procedure creates a log file under `$LOGDIR/util_k_01.cron.log.nnnnn`.

IMPORTANT:

As a suggested procedure, consider running the alerts on a daily basis, preferably at night, to avoid peak hours. Schedule the alert cron job prior to the cleanup and backup jobs.

To add this cron job to your cron jobs list:

- 1 Log in to the server as the `metalib` user.
- 2 Enter the following commands to edit the crontab file:

```
setenv EDITOR vi  
crontab -e
```
- 3 Add the `util_k_01.cron` entry to the file, using the following format:
`<minute> <hour> <day of month> <month> <day of week> <command>`
For example, the following entry runs the job every day at 4am:

```
# Run util_k_01.cron every day at 4 am with 5 searches running in parallel:  
0 4 * * * /exlibris/metalib/m4_3/aleph/proc/util_k_01.cron 5
```

Figure 54: Util K-1 Cron Job

NOTE:

The number at the end of the line defines the number of alerts to be run at the same time. The default is 5. This number can be changed. See **Explanation of the Alerts Procedure** on page 162 for an explanation of the way the alerts procedure works.

- 4 Exit and save the changes to the file.

Limiting the Number of E-Shelf Records

E-shelf record limitations are defined in the `tab_z312_limits` table, which contains the following structure:

Table 26. `tab_z312_limits` Table Structure

Column #	Description
Column 1	Institution code (maximum length 30 characters).
Column 2	User group (maximum length 30 characters).
Column 3	Maximum number of e-shelf records (maximum length 4 digits).


```
F. View procedures and files
-----
0. Exit procedure
2. Display/check word building routines
4. Display records from data files
6. Display records from sequential data files
13. Immediate update of a single document
Please select [exit]:
```

Figure 56: View Procedures and Files Menu

- 2 Enter option **4** to display records.
- 3 At the following prompt, enter **doc**:

```
***** util_f_04 display data files *****
Your active library is DAT01
data files - doc/doc_no_expand/z00
            - z01/z11
            - z95/z97/z98
            - z101
            - z05
            - z705/z715/z754
enter file name (or q to exit)
```

- 4 At the following prompt, enter a resource ID or type **[ENTER]** to view the first record in the database:

```
ENTER DOC NUMBER :
```

The resource system internal number (resource ID) is found in the IRD's subscription information screen on the /M interface. See [Figure 57](#).

The screenshot displays the 'Subscription' configuration page. At the top, there are tabs for 'Subscription', 'Presentation: Primary', 'Presentation: Secondary', 'Presentation: Library', 'Local', and 'Categories'. The 'Subscription' tab is active. The form contains the following fields and values:

- Full Name: Wilson Index to Legal Periodicals & Books (SP)
- Display Name: Legal Periodicals & Books (SP)
- Institution: Metalib
- Secondary Affiliation: [Empty] [List of user groups](#)
- IP Filter: [Empty] [List of IP filters](#)
- Configuration Code: SILVER WILP
- Free/By Subscription: Subscription
- Link to Native Interface URL: <http://www.ovid.com/>
- Proxy Server Flag: No need for proxy server Use proxy server
- Search Proxy Server Flag: No need for search proxy server Use search proxy server
- Hostname:Port: z3950.silverplatter.com:210
- Database Code: WZ
- Authentication: [Empty]
- Link to Records in Native Interface: [Empty]
- Authentication: Server Address: [Empty]
- Session Control: [Empty]
- Number of Sessions: [Empty]
- Region: [Empty]
- Entry Date (YYYYMMDD): [Empty]
- Last Update (YYYYMMDD): [Empty]
- Version: [Empty]
- Verde Indicator:
- Verde Access Type: [Empty]
- Cataloger's Note: [Empty text area]

At the bottom of the page, there are four fields: Resource ID: CKB02306, Source ID: [Empty], Original ID: BTN00330, and Sysno: 00000502. The Sysno field is circled in red.

Figure 57: Subscription Information Page on /M Interface

All IRD information as stored in the database displays on the server. See [Figure 58](#).

```
Reading doc : 000000501
001 L CKB02304
2451 L $$aAPAIS: Australian Public Affairs Information Service (Informit)
210 L $$OMETALIB$$aAPAIS (Informit)
594 L $$aSUBSCRIPTION
520 L $$aAustralian Public Affairs Information Service (APAIS), produced by
the National Library of Australia, is a bibliographic database that indexes
articles from published material on the social sciences and humanities from
1978 onwards.
593 L $$aThis configuration was developed for RMIT's 'Informit Search'
Tera-text based system.
1102 L $$aRMIT Publishing
260 L $$bNational Library of Australia
956 L $$ahttp://www.informit.com.au/support/Jumpstarting.pdf
TAR L $$aINFORMIT_APAFT
ZHS L $$az3950.informit.com.au:210
ZDC L $$aAPAIS
AF1 L $$aMETALIB
STA L $$aACTIVE
FIL L $$aHumanities
FIL L $$aSocial Science
RNK L $$a3
LUP L $$a20070426
LSD L $$b20071118
FMT L DD
7102 L $$aInformit
85642 L $$uhttp://www.informit.com.au/
655 L $$aIndex
85641 L $$uhttp://www.informit.com.au/show.asp?id=APAIS
655 L $$aIndex
CAT L $$c20071028$$1DAT01$$h0933
CAT L $$c20071028$$1DAT01$$h0951
CAT L $$c20071118$$1DAT01$$h1304
CAT L $$c20071118$$1DAT01$$h1448
CAT L $$c20071118$$1DAT01$$h1452
CAT L $$c20071206$$1DAT01$$h1020
CAT L $$c20080115$$1DAT01$$h1223
WGEN L $$a Z39 USMARC vir_z00_z39_usmarc tab_sutrs_informit_apaft
MARC8_TO_UTF UTF_TO_8859_1
WTRM L $$a 27 1 2 8 1 7 2 1 2 1 7 2
WZ39 L $$a target INFORMIT_APAFT recordtype USMARC elementsetname F find WTI
u=4 t=l,r,b find WAU u=1003 t=l,r,b find WSU u=21 t=l,r,b find WYR u=31 find
WRD u=1035 t=l,r,b find ISSN u=8 find ISBN u=7
.
.
.
```

Figure 58: Sample All IRD Information

Part IV

Web, Search, and Apache Servers

Part IV contains the following:

- **Section 15: Search Server Architecture Implementation** on page 171
- **Section 16: Search Parameter Configurations in metalib_start** on page 173
- **Section 17: Search Parameter Configurations in www_server.conf** on page 179
- **Section 18: Server Management Utility (Util W)** on page 183
- **Section 19: Log Files** on page 189
- **Section 20: Background Processes** on page 201
- **Section 21: Maintenance Procedures** on page 211
- **Section 22: UTF Files** on page 219
- **Section 23: Login** on page 223

15

Search Server Architecture Implementation

The Search server architecture is designed to handle user searches with effective and efficient use of system resources. The architecture provides the following:

- A queuing system that controls all search requests within the application level effectively managing the queuing and load balance of search requests with the goal of optimizing system resources.
- A pre-defined number of Search servers configured and ready to handle search requests.
- Multiple search configuration parameters enabled to enhance control of the local search environment.
- A logical and efficient mechanism for the division of labor between intensive search requests and other user requests.

MetaLib is configured with a number of parameters to allow customers control over their search environment. For example, customers can independently configure the number of records fetched from each target, the number of Search servers, the threshold of queued searches, and other relevant parameters. This enables sites to tweak their system to suit their particular environment and system resources. Guidelines for server configuration are provided in [Server Configuration Guidelines](#) on page 57, based on basic hardware.

16

Search Parameter Configurations in metalib_start

This section includes:

- **Introduction** on page 173
- **WEB_NUM_SERVERS** on page 173
- **SEARCH_NUM_SERVERS** on page 174
- **CJK_LANG** on page 174

Introduction

This section describes the system parameters and flags in `./metalib_conf/metalib_start`, which enable customers to control their own search environment. It is important to monitor system performance to determine the optimal configuration for your particular environment.

WEB_NUM_SERVERS

Each server handles a transaction coming from the user, such as navigating to My Space, viewing available resources, and so forth. The optimal number of Web servers is dependent on user traffic levels, the number of concurrent transactions, and hardware configuration. The number of recommended Web servers ranges from 6 or 8 on a 2 CPU server to 25 on an 8 CPU server.

The following parameter, which is defined in the `./metalib_conf/metalib_start` file, allows you to set the number of concurrent Web servers that can run simultaneously:

```
setenv WEB_NUM_SERVERS 8
```

To update the number of concurrent Web servers:

- 1 Enter the following command to edit the `metalib_start` file:

```
vi ./metalib_conf/metalib_start
```
- 2 Update the `WEB_NUM_SERVERS` parameter in the `metalib_start` file.
- 3 Enter the following commands to apply the changes to the UI.

```
source metalib_start
metalib_conf_create
start_w
```

SEARCH_NUM_SERVERS

The following parameter, which is defined in the `./metalib_conf/metalib_start` file, sets the number of Search servers that are permanently available to handle search requests.

```
setenv SEARCH_NUM_SERVERS 20
```

The number of Search servers ranges from 20 on a 2 CPU server to 150 on a strong 8 CPU LINUX server. The valid range of values is 1 - 200. The default value is 20.

To update the number of Search servers:

- 1 Enter the following command to edit the `metalib_start` file:

```
vi ./metalib_conf/metalib_start
```
- 2 Update the `SEARCH_NUM_SERVERS` parameter in the `metalib_start` file.
- 3 Enter the following commands to apply the changes to the UI.

```
source metalib_start
metalib_conf_create
start_w
```

CJK_LANG

This parameter, which is defined in the `./metalib_conf/metalib_start` file, defines the indexing and A to Z List setup on the basis of the main CJK language of a local site.

```
setenv CJK_LANG N
```

The following values are valid:

- K - Korean
- C - Chinese
- J - Japanese
- T - Chinese language in Taiwan
- N - the main language is not a CJK language

The default value is N.

This parameter controls several aspects of the system:

- **Indexing and Headings.** Word indexing and building of the headings lists is different for the Chinese, Korean, and Japanese languages. Depending on the value in this flag, the system uses a specific pre-defined sub-set of routines listed in the `tab_filing`, `tab_word_breaking`, and `tab_expand` tables in `./dat01/tab`.
- **A to Z Lists.** The A to Z List functionality differs on the basis of the CJK_LANG value. If the value is C, J, K, or T, in addition to the default A to Z list, there is an additional A to Z list in the primary language as determined by the CJK_LANG value, as follows:
 - C (A to Z list of Chinese titles). See [Figure 59](#).
 - Items grouped according to the Pinyin transliteration. The headers are the Latin A-Z.

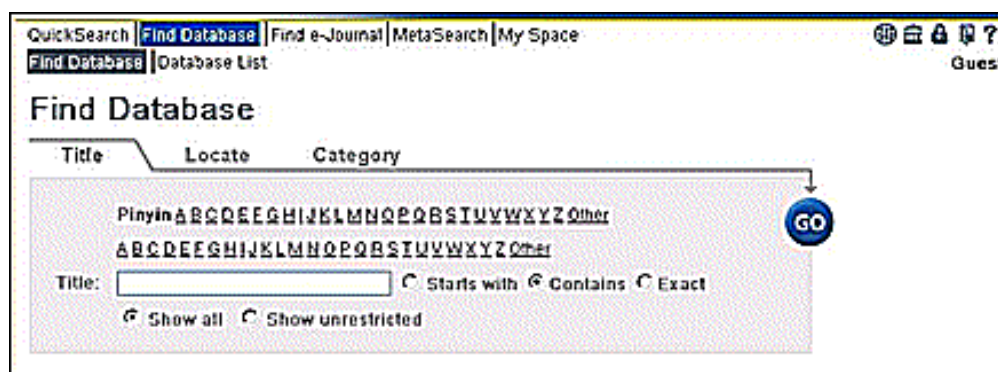


Figure 59: A-Z List of Chinese Titles - Pinyin Grouping

- T (A to Z list of Chinese titles - Two A-Z lists). See [Figure 60](#).
 - Items grouped by Stroke Count of the first Chinese character (based on a table). The headers are numbers 1-25 and 26+.
 - Items grouped by the Bopomofo of the first Chinese character (based on a table). The headers are the Bopomofo characters.

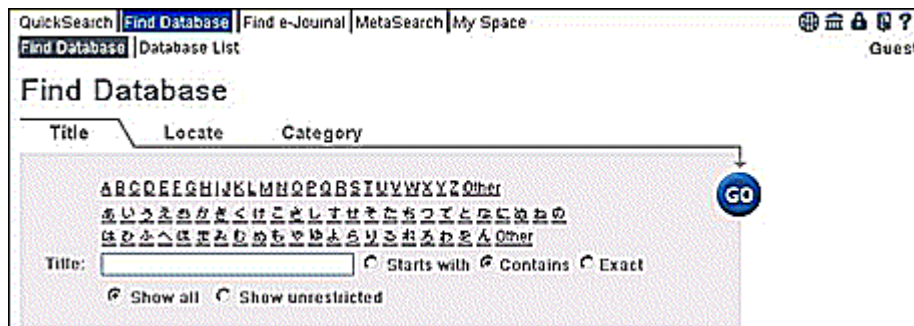


Figure 62: A-Z List of Japanese Titles

Titles in one of the CJK languages other than the primary language are added to the *others* category of the Latin A to Z list. These titles are grouped by language. In other words, in Mainland China and Taiwan, the *others* of the Latin A-Z list include the active Korean and Japanese titles. In Korea, the *others* of the Latin A-Z list include the active Chinese and Japanese titles. In Japan, the *others* of the Latin A-Z list include the active Chinese and Korean titles.

If the CJK_LANG is N, any titles in CJK are added to the *others* group of the default A to Z list.

- **Behavior of the Starts with option of Find Database.** By default the **Starts with** option searches the browse (headings) indexes and displays a list of headings. However, this is problematic for CJK titles because of the need to sort on the basis of the transliterated title, which may be manipulated manually. If the CJK_LANG parameter is C, J, K or T, the Starts with option will behave as a find, and create a set of results that match the query instead of a browse list.

IMPORTANT:

Any change to the metalib_start file should be followed by the following commands:

```
source metalib_start
metalib_conf_create
start_w
start_s
```

If this value is C or T, execute the following steps:

- 1 Enter the following commands to load the z114 table into the Oracle database:

```
dlib dat01
dt
csh -f $aleph_proc/p_file_04 dat01,z114
```

- 2 Enter the following commands to display the MetaLib Setup Procedures menu (see [Figure 63](#)).

```
dlib dat01
util t
```

```
T. MetaLib Setup Procedures
-----
0. Exit procedure
2. Re-Index Database
3. Force Unlock DAT01
4. Reset MetaLib Administrator Password
5. Reset Exlibris Support Password
6. Force Unlock "ALL" Categories
Please select [exit]:
```

Figure 63: MetaLib Setup Procedures Menu

- 3 Enter option 2 to re-index the MetaLib KnowledgeBase (DAT01).

NOTE:

While the DAT01 database is re-indexed, the system should be down.

17

Search Parameter Configurations in `www_server.conf`

This section includes:

- `Introduction` on page 179
- `no_fetched_result` on page 179
- `enable_ranking` on page 180
- `max_search_processes` on page 180
- `max_search_wait` on page 180
- `SEARCH_SERVER_TIMEOUT` on page 181
- `EXTERNAL_TIMEOUT` on page 181
- `no_fetch_before_meta` on page 181

Introduction

The section describes the system parameters and flags in `./metalib_conf/www_server.conf`, which enable customers to control their own search environment. It is important to monitor system performance to determine the optimal configuration for your particular environment.

`no_fetched_result`

The following parameter, which is defined in the `./metalib_conf/www_server.conf` file, sets the number of records retrieved from each target in all modules:

```
setenv no_fetched_result 30
```

In addition, this parameter determines the number of records fetched prior to creating the merged list in the QuickSearch module. Lower numbers expedite the QuickSearch process, as fewer records need to be fetched, merged, deduplicated, clustered and ranked. Overall, lower numbers consume less system resources.

The valid range of values is 10 through 30. The default value is 10.

enable_ranking

The ranking engine consumes system resources as each record is ranked before creating the merged lists in the QuickSearch and MetaSearch modules. The following parameter, which is defined in the `./metalib_conf/www_server.conf` file, indicates whether MetaLib's ranking algorithm is applied to records retrieved in user searches.

```
setenv enable_ranking Y
```

The valid values are `Y` (enabled) or `N` (disabled). The default value is `Y`.

max_search_processes

The following parameter, which is defined in the `./metalib_conf/www_server.conf` file, sets the threshold of queued searches that, when reached, signals a system busy message, which indicates that no further searches are processed at this stage.

```
setenv max_search_processes 150
```

The values range from 150 on a weak 2 CPU server to 450 on a powerful 8 CPU server. See [Server Configuration Guidelines](#) on page 57 for further information. Ex Libris recommends that sites consult with their local project manager or local support office before changing this parameter. The default value is 150.

max_search_wait

When a search is queued for a longer period than the threshold defined in the following parameter, the system signals a system busy message and stops processing searches.

```
setenv max_search_wait 100
```

This parameter is defined in the `./metalib_conf/www_server.conf` file. The default value is 100 seconds.

SEARCH_SERVER_TIMEOUT

The following parameter, which is defined in the `./metalib_conf/www_server.conf` file, indicates the threshold duration in seconds for the entire search process.

```
setenv SEARCH_SERVER_TIMEOUT 90
```

When this threshold is exceeded, a timeout occurs, the process stops, and an error message displays.

The valid range of values is 30 - 180 (seconds). The default value is 90 seconds.

EXTERNAL_TIMEOUT

The following parameter, which is defined in the `./metalib_conf/www_server.conf` file, is applicable for all non-z39.50 resource configurations:

```
setenv EXTERNAL_TIMEOUT 40
```

When the target resource does not respond, the search should terminate after a relatively short time, thus freeing the Search servers for other tasks.

The valid range of values is 15 - 90 (seconds). The default value is 40 seconds.

no_fetch_before_meta

The following parameter, which is defined in the `./metalib_conf/www_server.conf` file, determines the number of records retrieved from a target prior to the display of results in MetaSearch and Find Database.

```
setenv no_fetch_before_meta 10
```

The system continues to fetch records in the background as defined in the `no_fetched_result` parameter. If users change their preferences to display a larger number of records, the system fetches the user-defined number of records prior to displaying the results.

The valid range of values is 10 through the value specified for the `No_Fetched_Results` parameter. The default value is 10.

18

Server Management Utility (Util W)

This section includes:

- **Introduction** on page 183
- **Monitor Servers (Util W-1)** on page 184
- **Stop Servers (Util W-2)** on page 185
- **Start Servers (Util W-3)** on page 185
- **View Server Logs (Util W-4)** on page 187
- **Command-Line Monitoring** on page 188

Introduction

The Server Management utility (Util W) allows you to monitor servers, view log files, and perform startup and shutdown procedures on servers.

To access the Server Management menu (see [Figure 64](#)), enter the following commands:

```
dlib vir01
util w
```

```
W. Server Management
-----
  0. Exit Procedure
  1. Monitor Servers
  2. Stop Servers
  3. Start Servers
  4. View Log File

Please select [exit]:
```

Figure 64: Library Utilities - Server Management Menu

Monitor Servers (Util W-1)

There are various MetaLib servers:

- www_server
- Z39.50 servers
- search_server

To monitor a server:

- 1 From the Server Management menu, select option **1** to display the Monitor Servers submenu (see [Figure 65](#)).

```
Monitor servers

Loop is OFF

0. Exit procedure
1. All servers
2. WWW server M
3. SEARCH server
4. Z39 server
5. Z39 gate

Enter number [0]
```

Figure 65: Monitor Servers Submenu

- 2 Enter the number of the server you would like to monitor.

For example, if you would like to monitor the WWW server, select option **2** to display the following message:

Port	Pid	Server Type	Started At	Status
4337	9394	WWW Server M	Oct 28 09:44:11	Free
4337	22686	WWW Server M c0	Oct 28 14:08:05	Free
4337	11252	WWW Server M c0	Oct 28 10:21:43	Free
4337	9397	WWW Server M c0	Oct 28 09:44:11	Free
4337	9398	WWW Server M c0	Oct 28 09:44:11	Free
4337	9399	WWW Server M c0	Oct 28 09:44:11	Free
4337	9400	WWW Server M c0	Oct 28 09:44:11	Free
4337	9401	WWW Server M c0	Oct 28 09:44:11	Free
4337	9402	WWW Server M c0	Oct 28 09:44:11	Free

- 3 Type **[ENTER]** to return to the menu.

Stop Servers (Util W-2)

To stop a server:

- 1 From the Server Management menu, select option 2 to display the Stop Servers submenu (see [Figure 66](#)).

```
Stop servers

0.  Exit procedure
1.  All servers
2.  WWW Server M
3.  SEARCH server
4.  Z39 server
5.  Z39 gate
10. Stop by port number

Enter number [0]
```

Figure 66: Stop Servers Submenu

- 2 Enter the number of the server you would like to stop.

For example, if you would like to stop the WWW server, select option 2 to display the following message:

Port	Pid	Server Type	Started At	Status
4337	9394	WWW Server M	Oct 28 09:44:11	Free
4337	22686	WWW Server M c0	Oct 28 14:08:05	Free
4337	11252	WWW Server M c0	Oct 28 10:21:43	Free
4337	9397	WWW Server M c0	Oct 28 09:44:11	Free
4337	9398	WWW Server M c0	Oct 28 09:44:11	Free
4337	9399	WWW Server M c0	Oct 28 09:44:11	Free
4337	9400	WWW Server M c0	Oct 28 09:44:11	Free
4337	9401	WWW Server M c0	Oct 28 09:44:11	Free
4337	9402	WWW Server M c0	Oct 28 09:44:11	Free

Kill the servers above (Y/[N]) ?

- 3 Enter **Y** to stop the listed servers.

Start Servers (Util W-3)

Conventional server port numbers are:

- WWW server (Web) — 4331

- Z39.50 server — 9331
- Z39.50 gate — 7331
- PDS_PORT — 8331
- PDS_PORT_IN — 8331
- Apache — 8331

To start a server:

- 1 From the Server Management menu, select option **3** to display the Start Servers submenu (see [Figure 67](#)).

```
Start servers

0.  Exit procedure
1.  WWW server M
2.  SEARCH server
3.  Z39 server
4.  Z39 gate

Enter number [0]
```

Figure 67: Start Servers Submenu

- 2 Enter the number of the server you would like to start.
For example, if you would like to start the WWW server, select option **1** to display the following message:

```
Enter server port number or 0 to QUIT [4337]:
```

- 3 Enter the server port number or **0** to quit.

NOTE:

The default port is shown in brackets. Type **[ENTER]** to select the default.

Starting Your Own Server for Testing

When testing or analyzing reproducible problems, it is best to start your own instance of the server rather than using an existing one. This separates log entries for your activities from other user transactions and prevents interruption from other user activities.

The syntax for starting your own Web server is:

```
www_server <server-port> <apache-port> <num-servers> [stdout]
```

For example, enter the following command to start the Web OPAC:

```
www_server 4123 8331 1 stdout
```

`stdout` indicates that you want the server output (log) sent to the display terminal.

The following URL shows the syntax for using your own Web server:

```
http://<URL>:<server-port>/<type>
```

For example, enter the following command to use the Web OPAC:

```
http://<URL>:4123/F
```

www_server (Public)

The WWW server for MetaLib Web interface is accessed with `http://<URL>`. For example, `http://il-mldev03:8331`.

This is an interface for accessing and searching MetaLib using the HTTP Internet standard. The Web allows patrons to enter the system as guest users or sign in to activate their customized profiles.

www_server (Staff)

The www server Staff menu is accessed using the address `http://<URL>/M`. For example, `http://il-mldev03:8331/M`.

View Server Logs (Util W-4)

The logs of the various servers are written to the `$LOGDIR` directory.

The log names are prefixed with the server type – for example, `www_server_m_<port>.log`.

The log files contain statistics and any other input from the servers. They are useful for debugging and analyzing.

When a new server is executed, the old log files are renamed with a date/time extension. For example:

```
Oct 20 12:10 www_server_m_4331.log.2010.1210
```

Apache server logs are written to `$httpd_root/logs`.

Command-Line Monitoring

You can monitor Search and www_m servers using the `server_monitor` command. See [Figure 68](#) for an example.

In [Figure 68](#), Search servers c1 to c20 are the actual Search servers conducting the searches while the cG server is channeling searches to the Search servers. The main Search server creates the child processes.

Port	Pid	Server Type	Started At	Status
0	19314	SEARCH Server	Feb 08 17:54:58	Free
0	19315	SEARCH Server cG	Feb 08 17:54:58	Free
0	19316	SEARCH Server c1	Feb 08 17:54:58	Free
0	19317	SEARCH Server c2	Feb 08 17:54:58	Free
0	19319	SEARCH Server c4	Feb 08 17:54:58	Free
0	19318	SEARCH Server c3	Feb 08 17:54:58	Free
0	19320	SEARCH Server c5	Feb 08 17:54:58	Free
0	19321	SEARCH Server c6	Feb 08 17:54:58	Free
0	19323	SEARCH Server c8	Feb 08 17:54:58	Free
0	19322	SEARCH Server c7	Feb 08 17:54:58	Free
0	19324	SEARCH Server c9	Feb 08 17:54:58	Free
0	19325	SEARCH Server c10	Feb 08 17:54:58	Free
0	19326	SEARCH Server c11	Feb 08 17:54:58	Free
0	19327	SEARCH Server c12	Feb 08 17:54:58	Free
0	19328	SEARCH Server c13	Feb 08 17:54:58	Free
0	19329	SEARCH Server c14	Feb 08 17:54:58	Free
0	19330	SEARCH Server c15	Feb 08 17:54:58	Free
0	19331	SEARCH Server c16	Feb 08 17:54:58	Free
0	19333	SEARCH Server c18	Feb 08 17:54:58	Free
0	19332	SEARCH Server c17	Feb 08 17:54:58	Free
0	19334	SEARCH Server c19	Feb 08 17:54:58	Free
0	19335	SEARCH Server c20	Feb 08 17:54:58	Free
4331	19291	WWW Server H	Feb 08 17:54:40	Free
4331	19293	WWW Server H c0	Feb 08 17:54:40	Free
4331	19294	WWW Server H c0	Feb 08 17:54:40	Free
4331	19295	WWW Server H c0	Feb 08 17:54:40	Free
4331	19296	WWW Server H c0	Feb 08 17:54:40	Free

Figure 68: Server Monitor Processes

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Log Files

This section includes:

- [Apache Logs](#) on page 189
- [Web and Search Logs](#) on page 190
- [Monitoring MetaIndex Logs](#) on page 198

Apache Logs

Apache log files are found in the `$httpd_root/logs` directory as follows:

```
cd $httpd_root/logs
```

The Apache log files are:

- `access_log`
- `error_log`

IMPORTANT:

Make sure when accessing the `./apache/logs` directory, that an `httpd.pid` file is present, as follows:

```
-rw-r--r-- 1 metalib  exlibris      5 Dec 14 16:37 httpd.pid
-rw-rw-r-- 1 metalib  exlibris    17689 Dec 18 11:57 error_log
-rw-rw-r-- 1 metalib  exlibris 5283318 Dec 18 14:43 access_log
```

In some sites, the `httpd.pid` and/or the Apache log files are erased and new ones are not created automatically. In such cases, re-run Apache to create the log files and PID file. If this phenomenon persists, contact your local support office.

Web and Search Logs

MetaLib's Web log files capture a lot of information related to user behavior and MetaLib performance. The purpose of this section is to provide some guidelines and tips for setting and understanding these log files.

MetaLib's software components, batch processes, and online processes also produce log files. This document covers only the Web component log files of:

- Web server - `www_server_m_4301.log`: This log file captures all requests made to the `www_m_server` Web servers by end-users and staff accessing the /V, /M, and /X interfaces.
- Search server - `search_server_4301.log`: This log file is restricted specifically to find requests sent to targets. This log file reflects internal calls of the MetaLib application performed for the search requests sent to target information resources.

In MetaLib version 4, two log files were restructured from the previous versions and include the following features:

- Unified message format
- Filtering of the messages using the run-time environment level

Naming Convention

Log file names consist of the component name followed by the port number:

```
<component name>_<port number>.log
```

For the Web servers, the component name prefix is `www_server_m_*` and for the Search servers the component prefix is `search_server_m_*`, such as:

```
search_server_4301.log
```

```
www_server_m_4301.log
```

When a new log file is created (when the currently active Web or Search server is stopped and/or restarted), the current log file is renamed (in `$LOGDIR`) with the same name plus a suffix time stamp of the date and time `.<ddmm>.<hhss>`, such as:

```
www_server_m_4331.log.0712.1011
```

Log File Location

MetaLib's log files are kept in the `log` directory. You can access this directory using the environment variable `$LOGDIR`, as follows:

```
cd $LOGDIR
```

```
ls -lrt
```

The following example shows a sample listing of a log directory:

```
-rw-rw-r-- 1 metalib exlibris 12222 Jan 11 08:54 search_server_4301.log  
-rw-rw-r-- 1 metalib exlibris 22024 Jan 11 08:54 www_server_m_4301.log
```

Creation and Contents Update

Log files are created when MetaLib is started. Log files are created when a software component process starts and are updated by the processes until the software components terminate.

All of the Web server processes are registered in the following log file:

```
www_server_m_<port>.log
```

All of the Search server processes are registered in the following log file:

```
search_server_<port>.log
```

The `start_w` command starts the Web server and creates a Web server log file.

The `start_s` command starts the Search server and creates a Search server log file.

Both commands can also be initiated using the Util W menu available in each of the MetaLib libraries. For further information, see [Server Management Utility \(Util W\)](#) on page 183.

Cleaning Up Old Log Files

The utility Util X-9 (`clear_vir01`) deletes from the `$LOGDIR` directory log files with time stamps older than 7 days as part of the general cleanup it performs. It is recommended to perform a log cleanup on a daily basis. This can be done by running Util X-9 manually in the `VIR01` database:

```
dlib vir01  
util x  
9
```

NOTE:

This utility shuts down any servers that are running so that MetaLib is unavailable for both staff and end users. Therefore, it is recommended to run the utility at night. An alternative to activating the utility manually is adding a definition line for this utility in MetaLib's `crontab` file. For more information on this topic, refer to [Crontab - Adding Cleanup Procedures](#) on page 214.

Format

The format of the MetaLib Web log files is almost identical to Java-based Ex Libris applications. The unified format is easy to read and allows third-party monitoring tools to parse the messages and alert errors in real time, which can then prevent failure downtime.

Header

At the head of each log file there are two header lines. The header is written to the log file immediately when the file is created.

The first line contains the date and time of the file creation and the software component name.

The second line provides information about the current log file filter level. See [Filter Messages](#) on page 193 for more information.

For example:

```
START Thu Jan 18 14:08:01 IST 2007 *** start www_server_m ***  
log level: ERROR
```

Message Format

```
[Date] [Time] [Severity] [Message free text] [[Code Source file]] [pid]  
[session-id]
```

- **Date** — Formatted as *yyyy-mm-dd*.
- **Time** — Formatted as *hh:ss:mm*.
- **Severity** — STAT, FATAL, ERROR, WARN, and INFO.
- **Message free text** — The message to the user.
- **Code Source file** — The software module to which the process belongs in the format <component>.<program>.
- **pid** — The ID of the process from which the message was given.
- **session-id** — The session ID is created by the application for each user session: /V, /M, /X, or string of 50 characters, letters, or numbers. In case there is no session ID or the module which displays the message cannot access the session ID, the string XXXXX is displayed.

For example:

```
2007-01-10 11:13:27.742 ERROR 'cannot fetch Z125.'  
[www_m.www_m_category_4_right.cbl] 14216  
M2SBIHUUCB84JL2YKCY8K11TACJI73JFQC7YYGC76V6JT84U
```

The following example shows a user request as registered in the log file:

```
S00 IN 20070122 095616 192.115.76.50 956 "/V/  
EKFE9UIFK89MGPDSFUGXCRVDLN14LSIX2V  
K1S1CUF6I7XTP7P2-00057?func=find-  
1&find_code_1=WAU&find_request_1=miller&find_op  
1=AND&find_code_2=WRD&find_request_2=&BASE=IDM02023&x=0&y=0"
```

In this example, the request came in on January 22nd, 2007, at 09:56 and 16 seconds from IP 192.115.76.50 with a user find request for the author "miller" in a resource with the resource ID IDM02023.

The request starts at `?func` and ends just before `&x=0&y=0`, where `x` and `y` are not parameters of the function.

Filter Messages

The messages are filtered according to the level of the log messages defined for the installation in the `www_server.conf` file under the `./metalib_conf`.

For example:

```
setenv log_level WARN
```

There are five valid values available for this flag:

- STAT — level 1
- FATAL — level 2
- ERROR — level 3
- WARN — level 4
- INFO — level 5

The message displays in the log file only if the `log_level` flag is set to a level equal or higher than the level of the message itself. For example, to get all the messages of level `WARN` (level 4) or lower, set the log level in the `www_server.conf` to `WARN`.

The value supplied with the initial MetaLib installation is `INFO`. If the MetaLib instance is in testing mode, the log files should contain detailed messages for each transaction. The log files are often evaluated by the testers to make sure that all components are working as expected. When the system is in production, it is imperative to reduce the log file size. The log files should contain only vital information (such as warning, error, fatal error, and statistic information). The number of concurrent users is increased dramatically, and the number of messages written to the log file thus increases accordingly. To boost performance on the one hand and minimize the log file size on the other hand, it

is recommended to change this parameter to `WARN` when the system is fully customized and tested.

The STAT Log Level

If the `log_level` parameter in `www_server.conf` is set to `STAT`, the `www_m_server.log` contains messages that provide information for statistics. Currently, this log level displays the number of concurrent users for each transaction.

The FATAL Log Level

A log message of the `FATAL` level is displayed in case the application cannot perform a major action due to a problem.

The ERROR Log Level

A message is displayed when the application cannot perform a specific action correctly due to a problem.

Common `ERROR` level messages report about:

- Oracle errors
- Missing flat input files
- Problems while loading flat files, such as overflow and incorrect structure

The WARN Log Level

A message is displayed in case the application spots a problem but can still function correctly.

Examples of such errors are wrong configuration or incorrect default values assigned to some of the system-wide parameters or, in case of a very heavy load on the system, rejection of a search query.

The INFO Log Level

Log level `INFO` is used for debugging. In this level, the processes write each transaction to the log files.

NOTE:

Since a number of processes are writing to the same log file, messages should be sorted by the `pid` parameter in order to analyze the information.

Each Web transaction begins with a message containing the process ordinal number and the word `IN`.

In the following example, the end user has submitted a locate request for sage:

```
2007-01-22 09:56:00.121 INFO 'S03 IN 20070122 095600 10.1.234.64 838
"/V/RVHTTA9FLSJ51ULU373EDN9NAK322BKARFHJ1FBLCK3KJLDJPN-00126?
func=source-locate&F-WCL=sage&F-WKY=&F-WRD=&F-WTY=&x=0&y=0" '
[www_com.www_main_m.c] 30278 xxxxxx
```

Detailed Explanation:

- **Snn** (where *nn* are digits) — This parameter indicates which Web server child process has handled the user's request.
S00 is the first Web server child process, S01 is the second, and so forth. By going through the log file, one can see how frequently MetaLib used Web servers child processes S01, S02, and so forth. This information helps to analyze the usage of the Web servers.
- **IN 20070122 095600** — This parameter indicates the date and time of when the user request was received by the server. In the above example, the request was made on January 22nd, 2007 at 09:56 and 00 seconds.
- **192.115.76.50** — The IP used by the end user or the IP of a firewall or proxy server where relevant.
- **?func=source-locate&F-WCL=sage&F-WKY=&F-WRD=&F-WTY=&x=0&y=0"** — This string indicates the request submitted by an end-user. /V requests always start with `func`.

In the following example, the transaction ends with a similar message, which contains the word `OUT`:

```
2007-01-23 16:59:29.158 INFO 'S00 OUT 0.0373 '
[www_com.www_main_m.c] 30278 xxxxxx
```

Detailed Explanation:

S00 OUT 0.0373 — The Web server child process number 0 has delivered a response within 0.0373 seconds. This does not mean that the user received the response within this time. The time measured only includes the time during which the server was processing the request; the time spent on loading the HTML page or on communication matters is not measured.

Other messages reported within the span of the `INFO` log level provide detailed information on various parameters in the request. This includes internal parameters sent by the browser, such as those that begin with `HEADER: :`

For example, the following input transaction:

```
2007-01-25 15:44:03.054 INFO 'S00 IN 20070125 154403 10.1.234.64
819 "/V/DEJ6UBK81QBDABUHRY5PE98TM49B7B4QAD325IFU8L6JGM5DRH-
00034?func=quick-1-check1&mode=simple&find_request_1=meta
search&group_number=000000002"' [www_com.www_main_m.c] 462 xxxxxx
```

is followed by the following messages:

```
2007-01-25 15:44:03.057 INFO 'SERVER-NAME= V' [www_v.www_v.cbl] 462
DEJ6UBK81QBDABUHRY5PE98TM49B7B4QAD325IFU8L6JGM5DRH
2007-01-25 15:44:03.057 INFO 'QUERY_STRING= func=quick-1-
check1&mode=simple&find_request_1=meta
search&group_number=000000002' [www_v.www_v.cbl] 462
DEJ6UBK81QBDABUHRY5PE98TM49B7B4QAD325IFU8L6JGM5DRH
2007-01-25 15:44:03.057 INFO 'FUNC= QUICK-1-CHECK1'
[www_v.www_v.cbl] 462
DEJ6UBK81QBDABUHRY5PE98TM49B7B4QAD325IFU8L6JGM5DRH
2007-01-25 15:44:03.057 INFO 'MODE= simple' [www_v.www_v.cbl] 462
DEJ6UBK81QBDABUHRY5PE98TM49B7B4QAD325IFU8L6JGM5DRH
2007-01-25 15:44:03.058 INFO 'FIND_REQUEST_1= meta search'
[www_v.www_v.cbl] 462
DEJ6UBK81QBDABUHRY5PE98TM49B7B4QAD325IFU8L6JGM5DRH
2007-01-25 15:44:03.058 INFO 'GROUP_NUMBER= 000000002'
[www_v.www_v.cbl] 462
DEJ6UBK81QBDABUHRY5PE98TM49B7B4QAD325IFU8L6JGM5DRH
2007-01-25 15:44:03.058 INFO 'COOKIE::ML_SESSION_ID=
DEJ6UBK81QBDABUHRY5PE98TM49B7B4QAD325IFU8L6JGM5DRH'
[www_v.www_v.cbl] 462
DEJ6UBK81QBDABUHRY5PE98TM49B7B4QAD325IFU8L6JGM5DRH
2007-01-25 15:44:03.058 INFO 'HEADER::Accept= */*'
[www_v.www_v.cbl] 462
DEJ6UBK81QBDABUHRY5PE98TM49B7B4QAD325IFU8L6JGM5DRH
2007-01-25 15:44:03.059 INFO 'HEADER::Referer= http://il-
mldev03.corp.exlibrisgroup.com:8305/V/
DEJ6UBK81QBDABUHRY5PE98TM49B7B4QAD325IFU8L6JGM5DRH-
00009?func=quick-1' [www_v.www_v.cbl] 462
DEJ6UBK81QBDABUHRY5PE98TM49B7B4QAD325IFU8L6JGM5DRH
2007-01-25 15:44:03.059 INFO 'HEADER::Accept-Language= en-us'
[www_v.www_v.cbl] 462
DEJ6UBK81QBDABUHRY5PE98TM49B7B4QAD325IFU8L6JGM5DRH
```

```
2007-01-25 15:44:03.059 INFO 'HEADER::UA-CPU= x86'  
[www_v.www_v.cbl] 462  
DEJ6UBK81QBDABUHRY5PE98TM49B7B4QAD325IFU8L6JGM5DRH  
2007-01-25 15:44:03.059 INFO 'HEADER::Accept-Encoding= gzip,  
deflate' [www_v.www_v.cbl] 462  
DEJ6UBK81QBDABUHRY5PE98TM49B7B4QAD325IFU8L6JGM5DRH  
2007-01-25 15:44:03.060 INFO 'HEADER::User-Agent= Mozilla/4.0  
(compatible; MSIE 7.0; Windows NT 5.1; .NET CLR 1.1.4322; .NET CLR  
2.0.50727)' [www_v.www_v.cbl] 462  
DEJ6UBK81QBDABUHRY5PE98TM49B7B4QAD325IFU8L6JGM5DRH  
2007-01-25 15:44:03.060 INFO 'HEADER::Host= il-  
mldev03.corp.exlibrisgroup.com:8305' [www_v.www_v.cbl] 462  
DEJ6UBK81QBDABUHRY5PE98TM49B7B4QAD325IFU8L6JGM5DRH  
2007-01-25 15:44:03.060 INFO 'HEADER::Connection= Keep-Alive'  
[www_v.www_v.cbl] 462  
DEJ6UBK81QBDABUHRY5PE98TM49B7B4QAD325IFU8L6JGM5DRH  
2007-01-25 15:44:03.060 INFO 'HEADER::Cookie=  
ML_SESSION_ID=DEJ6UBK81QBDABUHRY5PE98TM49B7B4QAD325IFU8L6JGM5DRH'  
[www_v.www_v.cbl] 462  
DEJ6UBK81QBDABUHRY5PE98TM49B7B4QAD325IFU8L6JGM5DRH  
Transactions initiated in the user interface (/V), display the  
following user information:  
2007-01-23 16:59:29.127 INFO ' bor lib: INS02 bor id: GUEST564 bor  
ins: ARTS bor group:GUEST con lng: ENG bor portal: ARTS session:  
RVHTTA9FLSJ51ULU373EDN9NAK322BKARFHJ1FBLCK3KJLDJPN'  
[www_v.www_v.cbl] 30278  
RVHTTA9FLSJ51ULU373EDN9NAK322BKARFHJ1FBLCK3KJLDJPN
```

Detailed Explanation:

- **bor lib** — The instance (in the user interface) used by the user.
- **bor id** — An internal code identifying a patron or a guest.
- **bor ins** — The user's institutional affiliation.
- **bor group** — The user's affiliation to a specific user group.
- **con lng** — The user interface language.
- **bor portal** — The user's affiliation to a portal.
- **session** — The session ID.

In the following example, the signed-in end user initiates the transaction:

```
2007-01-23 16:59:29.127 INFO ' bor lib: INS02 bor id: PATRON9 bor  
ins: SCIENCE bor group: con lng: ENG bor portal: SCIENCE session:  
RVHTTA9FLSJ51ULU373EDN9NAK322BKARFHJ1FBLCK3KJLDJPN'  
[www_v.www_v.cbl] 30278  
RVHTTA9FLSJ51ULU373EDN9NAK322BKARFHJ1FBLCK3KJLDJPN
```

Another example of common messages displayed when the log level is set to INFO is for reporting a load of the flat file from the disk:

```
Load file: /exlibris/metalib/m4_1/utf_files/ins00/tab/  
www_heading.eng
```

Monitoring MetaIndex Logs

The MetaIndex log file provides a centralized view of MetaIndex processes, and allows you to monitor the status of the following actions:

- MetaIndex Harvesting
- MetaIndex Loading
- MetaIndex Creation

NOTE:

As each process completes, a dialog box prompts you to view the log file.

To view the MetaIndex log file at any time:

- 1 From the Management Ongoing menu, select **MetaIndex Management** to display the MetaIndex Management page (see [Figure 69](#)).

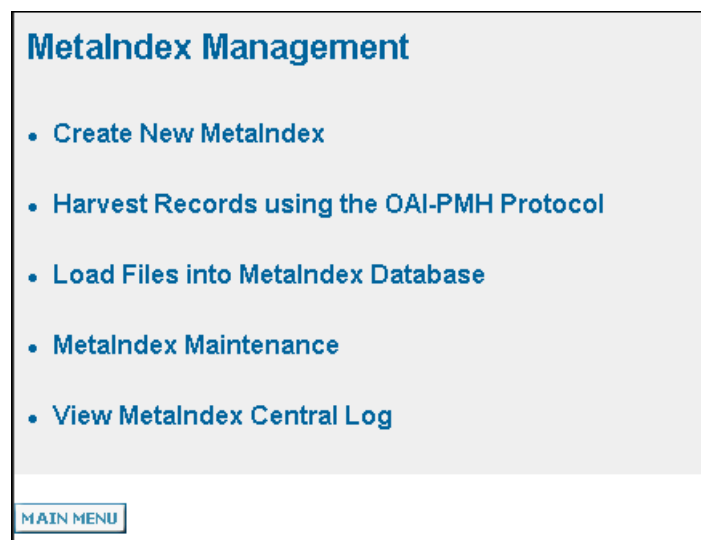


Figure 69: MetaIndex Management Page

- 2 Click **View MetaIndex Central Log** to display the log file (see [Figure 70](#)).



Figure 70: MetalIndex Central Log File

3 To view specific parts of the log file, select the criteria from the drop-down lists (see [Table 27](#)).

Table 27. Create a New IP Range Section Field Descriptions

Role	Description
Log Level	This field allows you to filter the log file by the following types of messages: <ul style="list-style-type: none"> ■ ALL ■ INFO ■ WARNING ■ ERROR
MetaIndex Code	This field allows you to filter the log file by a specific MetaIndex code.
From/To Date	These fields allow you display messages that were sent during a range of dates (YYYYMMDD).
No. of Lines to Display	This field allows you to limit the number of lines, starting from the most current date.

- 4 Click **SUBMIT** to view the filtered log file.
- 5 Click **CLOSE** to exit the log file.

20

Background Processes

This section includes:

- **Introduction** on page 201
- **Monitoring MetaLib Processes** on page 202
- **Monitoring Apache Processes** on page 203
- **Starting MetaLib Processes** on page 203
- **Stopping/Restarting Servers** on page 205
- **Apache Security Measures** on page 209

Introduction

The following processes must be running for MetaLib to work:

- Z39 gateway (Z39_gate)
- Apache, MetaLib's Web servers - www_m_servers, and MetaLib's Search servers
- Oracle server and listener

Monitoring MetaLib Processes

The `server_monitor` command displays the main `www_m_server`, `www_m_server` child processes' status, the main `search_server` process, and the `Search` server child processes. See [Figure 71](#) for an example.

Port	Pid	Server Type	Started At	Status
0	1648	SEARCH Server	Aug 29 03:00:30	Free
0	1653	SEARCH Server cG	Aug 29 03:00:30	Free
0	1654	SEARCH Server c1	Aug 29 03:00:30	Free
0	1655	SEARCH Server c2	Aug 29 03:00:30	Free
0	1656	SEARCH Server c3	Aug 29 03:00:30	Free
0	1657	SEARCH Server c4	Aug 29 03:00:30	Free
0	1658	SEARCH Server c5	Aug 29 03:00:30	Free
0	1661	SEARCH Server c8	Aug 29 03:00:30	Free
0	1659	SEARCH Server c6	Aug 29 03:00:30	Free
0	1660	SEARCH Server c7	Aug 29 03:00:30	Free
0	1662	SEARCH Server c9	Aug 29 03:00:30	Free
0	1665	SEARCH Server c11	Aug 29 03:00:30	Free
0	1667	SEARCH Server c12	Aug 29 03:00:30	Free
0	1669	SEARCH Server c13	Aug 29 03:00:30	Free
0	1671	SEARCH Server c14	Aug 29 03:00:30	Free
0	1675	SEARCH Server c16	Aug 29 03:00:30	Free
0	1677	SEARCH Server c17	Aug 29 03:00:30	Free
0	1663	SEARCH Server c10	Aug 29 03:00:30	Free
0	1673	SEARCH Server c15	Aug 29 03:00:30	Free
0	1679	SEARCH Server c18	Aug 29 03:00:30	Free
0	1680	SEARCH Server c19	Aug 29 03:00:30	Free
0	1681	SEARCH Server c20	Aug 29 03:00:30	Free
4331	1650	WWW Server M	Aug 29 03:00:30	Free
4331	1664	WWW Server M c0	Aug 29 03:00:30	Free
4331	1666	WWW Server M c0	Aug 29 03:00:30	Free
4331	1668	WWW Server M c0	Aug 29 03:00:30	Free
4331	1670	WWW Server M c0	Aug 29 03:00:30	Free
4331	1672	WWW Server M c0	Aug 29 03:00:30	Free
4331	1674	WWW Server M c0	Aug 29 03:00:30	Free
4331	1676	WWW Server M c0	Aug 29 03:00:30	Free
4331	1678	WWW Server M c0	Aug 29 03:00:30	Free

Figure 71: MetaLib Processes Example

The `server_monitor` command displays one line for each of the `www_server_m` (main and child) processes that are up and ready to handle user requests. There is a main process designated as `WWW Server M` and four child processes designated as `WWW Server M c0`. All `www_m_servers` currently have the status `Free`.

When MetaLib is used heavily, the `busy for x seconds...` status message displays. This is normal behavior for the Web servers.

Monitoring Apache Processes

The Apache server is monitored with the `ps` command as follows:

- SUN machines:

```
ps -ef | grep apache
```
- Linux machines:

```
ps -efw | grep http
```

Starting MetaLib Processes

MetaLib processes are defined to start automatically when the server is booted, or are activated with the first user search. The `z39` gate and Search servers are started automatically after reboot upon the first access made by a user to MetaLib.

These processes can be started using Util W or from the command line.

z39_gate

To run `z39_gate` from the command line, enter the following command in the background:

```
z39_gate <port> &
```

For example:

```
z39_gate 7331 &
```

NOTE:

The port number of the Z39 gate in the above example is 7331. The first digit, 7, is reserved in MetaLib for `z39` gate processes and the last digit, 1, indicates that this is the first installation of MetaLib on the server. This is similar to the default port used by Apache port 8331, in which the last digit, 1, indicates the first installation of MetaLib on the server.

www_m Servers

To start `www_m` servers from the command line, enter the following command:

```
start_w
```

Search Server

To start the Search server from the command line, enter the following command:

```
start_s
```

Apache Server (Start/Stop)

To start the Apache server from the command line, enter the following command:

```
start_apache
```

To stop the Apache server from the command line, enter the following command:

```
stop_apache
```

For sites with Apache on port 80 and/or SSL ports 443/444, the Apache server must be started with a root user as follows:

```
cd $httpd_root/bin
su
Password: <*****>
./apachectl_auto
exit
```

IMPORTANT:

When using the root user, it is necessary to define the full path of any executables, as the root user does not recognize MetaLib environment parameters, such as `$metalib_dev`. Therefore, a one-time, simple configuration of the file `./apache/bin/apachectl_auto` is necessary, as follows:

Replace the string `${metalib_dev}` with `/exlibris/metalib/m4_<current slot>`

For example, the following paths:

```
#!/bin/csh -f
source ${metalib_dev}/metalib_conf/metalib_start
$httpd_bin/httpd -d $httpd_root
```

would change to the following paths:

```
#!/bin/csh -f
source /exlibris/metalib/m4_1/metalib_conf/metalib_start
$httpd_bin/httpd -d $httpd_root
```

Exit from root session and continue as the metalib user.

NOTE:

Apache's Version 2 process listens to both the secure and non-secure ports. There is therefore no need to start a separate process for Apache with SSL.

Stopping/Restarting Servers

Occasionally, it is necessary to restart servers. See [z39_gate](#) on page 205, [www_m Server](#) on page 206, and [Oracle Server](#) on page 206 for details.

z39_gate

After making a change in a Z39 configuration, it is necessary to restart the z39_gate to update the servers.

The Z39 gate can be restarted from the Management interface main menu or the Z39 tab in the resource configuration form. It can also be restarted using Util W-3.

To start Util W-3, enter the following commands:

```
dlib vir00 (or any other library)
util w
2
5
```

The system displays prompts as shown in [Figure 72](#).

```
| Port      | Pid      | Server Type      | Started At      | Status
|-----|-----|-----|-----|-----
| 7331     | 22098   | Z39 Gate        | Aug 31 12:36:02 | Free
Kill the servers above (Y/[N]) ?
Enter server port number or 0 to QUIT [7331]
Press <Enter> to restart with the default port
```

Figure 72: Restart Prompts

www_m Server

Enter the following command to restart `www_m` server:

```
start_w
```

Enter the following command to stop the `www_m` servers:

```
kill_w
```

Oracle Server

To ensure correct shutdown procedures, shut down MetaLib before shutting down the Oracle server. The correct order for a restart is to start the Oracle server and then start MetaLib.

Shutting Down the MetaLib Server

To shut down the MetaLib server, enter the following commands:

```
cd $metalib_conf
```

```
metalib_shutdown
```

NOTE:

This kills all running `www_m`, `search`, and `z39` servers.

Stopping the Oracle Server

To stop the Oracle server:

- 1 Enter the following commands to display the Managing Oracle menu (see [Figure 73](#)).

```
dlib <library> (such as vir00, vir01, or dat01)
util o
```

```
O. Managing ORACLE
-----
 0. Exit Procedure
 1. Oracle Server
 2. Oracle Listener
 3. Oracle Logs
 5.
 6. Nls
 7. Archiving
 8.
 9. Database Users
10. SQL*Plus Session
11.
12. Database Verification Utility
13. Database Files
14. Database Free/Used Space
15.
16. Database Links
17. Database Tablespaces
18. Oracle Statistics
19. Shared Pool
20. Multi Threaded Server
Please select [exit]:
```

Figure 73: Managing Oracle Menu

- 2 Enter option 1 to the Oracle Server submenu (see [Figure 74](#)).

```
O.1. Oracle Server
-----
 0. Exit Procedure
 1. Activate Oracle Server
 2. Close Oracle Server
 3. Show Running Oracle Server
 4. Show Oracle Server Status
Please select [exit]:
```

Figure 74: Oracle Server Submenu

- 3 Enter option 2 to stop the Oracle servers.
- 4 At the following prompt, enter `yes` to restart the Oracle server:

```
Do you want to restart Oracle server after closing? yes/[no]
```

- 5 At the prompt, enter the `METALIB_DBA` user name/password.

Stopping the Oracle Listener

To stop the Oracle Listener:

- 1 Enter the following commands to display the Managing Oracle menu (see [Figure 73](#) on page 207).

```
dlib <library> (such as vir00, vir01, or dat01)
util o
```

- 2 Enter option 2 to the Oracle Listener submenu (see [Figure 75](#)).

```
0.2.  Oracle Listener
-----
      0.  Exit Procedure
      1.  Activate Oracle Listener
      2.  Close Oracle Listener
      3.  Show Running Oracle Listener
      4.  Show Listener Status
      5.  Show Listener Services
Please select [exit]:
```

Figure 75: Oracle Listener Submenu

- 3 Enter option 2 to stop the Oracle listeners.
- 4 At the following prompt, enter `yes` to restart the Oracle listener:

```
Do you want to restart Oracle Listener after closing? yes/[no]
```

- 5 Enter the Oracle password at the prompt.

Starting the MetaLib Server

Enter the following commands to start up MetaLib:

```
cd $metalib_conf
metalib_startup
```

Apache Security Measures

You can configure the Apache server to prevent Web crawlers from capturing personal user sessions.

In addition, the Apache logs can be augmented to capture the agent and URL that refers a user to the MetaLib server. For example, an augmented Apache log displaying access by Googlebot:

```
request:GET /V/DT8TJRJNHTJAM5B14S1LASI613F4HD4Y49MDRVI26Q5LFM611B-00314?func=login-guest HTTP/1.0
status:200
bytes:-
URL:metalib
Referer:-
Agent: Googlebot/2.1 (+http://www.googlebot.com/bot.html)
```

Blocking Access to Web Crawlers

To block access:

- 1 Log on to the MetaLib server.
- 2 Enter the following commands to activate the `robots.txt` file that is provided for you in the `apache/htdocs` directory, where `<v>` is the MetaLib version and `<c>` is the MetaLib installation:

```
cd /exlibris/metalib/m<v>_<c>/apache/htdocs
mv robots.txt.not_activated robots.txt
```

NOTE:

If you do NOT apply the `robots.txt` file to exclude external search engine crawler agents, they will be able to capture and save MetaLib Guest pages.

- 3 Enter the following command to restart the Apache server:

```
start_apache
```

NOTE:

To start Apache server for ports less than 1024 or SSL ports 443 / 444, the server needs to be rearted as the root user.

Augmenting Apache Log Files

To augment the log files:

- 1 Log on to the MetaLib server.
- 2 Enter the following commands to edit the `httpd.conf` file:

```
cd /exlibris/metalib/m<v>_<c>/apache/conf
```

```
vi httpd.conf
```

- 3 Change the following line in the file:

```
LogFormat "%nrequest:%r %nstatus:%>s %nbytes:%b %nURL:%V"  
aleph1
```

to:

```
LogFormat "%nrequest:%r %nstatus:%>s %nbytes:%b %nURL:%V\n  
Referer:%{Referer}i\n Agent: %{User-Agent}i" aleph1
```

IMPORTANT:

This string must be a single line.

- 4 Enter the following command to restart the Apache server:

```
start_apache
```

NOTE:

To start Apache server for ports less than 1024 or SSL ports 443 / 444, the server needs to be rearted as the root user.

21

Maintenance Procedures

This section includes:

- **Clean-Up Procedures** on page 211
- **Crontab - Adding Cleanup Procedures** on page 214
- **Apache Log Cleanup** on page 215
- **Export/Import MetaLib Library** on page 216

Clean-Up Procedures

MetaLib stores retrieved records and session data in the `vir01` library that serves as a temporary database. This data is not needed permanently and must be deleted every day to free up space for new user sessions.

In addition to the temporary database, MetaLib creates scratch and log files that should be deleted on a regular basis.

The clean-up procedures can be run using Util X (see [Figure 76](#)).

```
X. Clean Up
-----
0. Exit procedure
  1. Clean Import/Export Directories
  2. Clean MetaLib Scratch Directories
  3. Delete "empty" IRD records
  8. Clear Virtual library (VIR01)
  9. MetaLib cleanup (VIR01 + Logfiles)
 10. Clean Statistics
```

Figure 76: Cleanup Menu

To run the Clean-up utility, enter the following commands:

```
dlib vir01
util x
```

Util X-1: Clean Import/Export Directories

The Util X-1 procedure deletes files older than two weeks from the `dat01` export and import directories (`./dat01/import`, `./dat01/export`).

Util X-2: Clean MetaLib Scratch Directories

The Util X-2 procedure cleans the scratch directories under the MetaLib libraries (`vir00`, `dat01`). The procedure retains files that are up to a week old.

Util X-3: Delete Empty IRD Records

The Util X-3 procedure deletes IRD resource cataloging records that were created without an institution.

Util X-8: Clear Virtual Library (VIR01)

The Util X-8 procedure clears the temporary library `vir01`. It is the same as Util X-9, except it does not delete log files.

Util X-9: MetaLib Cleanup (VIR01 + log files)

The Util X-9 procedure should be run on a daily basis.

This utility performs the following functions:

- Shuts down MetaLib.
- Removes old `z39_gate` logs from `./m4_N/log`.
- Removes old Web log files from `./m4_N/log`.
- Clears files from the `./utf_files` directory.
- Clears the temporary library, `vir01`.
- Updates statistics tables in `vir00`.
- Starts MetaLib.

NOTE:

This procedure deletes user session information. Users who are working while this procedure is run lose their sessions. Therefore, run this procedure at off-peak times – at night, or early in the morning.

The Util X-9 procedure should run after the alerts procedure has run.

The Apache logs are not deleted as part of either Util X-8 or 9. The Apache logs can be found in the following directory:

```
./exlibris/metalib/m4_N/apache/logs or apcl
```

These logs should also be cleared periodically. See [Apache Log Cleanup](#) on page 215.

Util X-10: Clean Statistics

The Util X-10 procedure deletes old statistics data.

- Search statistics (Z705).
- Session statistics (Z754).
- Real-time event statistics (Z715).

It is recommended to use this utility to boost performance of your system.

To clean statistics:

- 1 Enter the following commands to display the Clean Up menu:

```
dlib vir00  
util x
```

- 2 Enter option **10** to start.
- 3 At the following prompt, enter the number of months you want to retain in the system:

```
This utility deletes old statistics data while preserving the most recent data. Back up the data and produce relevant reports before running this utility.
```

```
Enter the number of months of statistical data you wish to retain in the system or hit q for quit [q]:
```

Beyond the number of months you specify, all older statistics data is removed from the system.

IMPORTANT:

This utility deletes the user information and statistics. Once this is done, the only way to get them back is to restore them from a backup. Restoring from a backup fully replaces all data in the current installation. New data generated since running Util X-10 is lost. Therefore, you apply this utility only after backing up the statistics data and generating all the reports you require for future reference.

Crontab - Adding Cleanup Procedures

Util X-1 and X-2 should be run on a regular basis, at least once a week. It is recommended to run Util X-9 on a daily basis. It is recommended to add these procedures to a crontab job.

To add them to a crontab, do the following:

- 1 Log in to the server as the `metalib` user.
- 2 Enter the following commands to edit the crontab file:

```
setenv EDITOR vi  
crontab -e
```
- 3 For each of the following utilities, add the corresponding line, where `<N>` is the number of the MetaLib installation:

- For Util X-1:

```
/exlibris/metalib/m4_<N>/aleph/proc/util_x_01.cron
```

- For Util X-2:

```
/exlibris/metalib/m4_<N>/aleph/proc/util_x_02.cron
```

- For Util X-9:

```
/exlibris/metalib/m4_<N>/aleph/proc/util_x_09.cron
```

Some examples of the crontab lines are listed below:

```
# Run util_x_09.cron every day at 3am:  
0 3 * * * /exlibris/metalib/m4_1/aleph/proc/util_x_09.cron  
# Run util_x_01.cron every Sunday at 4am:  
0 4 * * 0 /exlibris/metalib/m4_1/aleph/proc/util_x_01.cron  
# Run util_x_02.cron every Sunday at 5am:  
0 5 * * 0 /exlibris/metalib/m4_1/aleph/proc/util_x_02.cron  
# Run backup everyday at 11pm:  
0 23 * * * /exlibris/metalib/m4_1/aleph/proc/backup_metalib_no_product  
> /dev/null
```

Figure 77: Util X Cron Jobs

- 4 For MetaLib backups, the following line should be added to the crontab of the root user:

```
/exlibris/backup/scripts/exec_backup_main m4
```

For more information on the backup procedure, refer to the *Ex Libris Backup Package*.

NOTE:

The root path of the version may differ from server to server.

IMPORTANT:

You must allow ample time between cron jobs.

Apache Log Cleanup

As part of regular server maintenance, sites should add a separate cron job to manage Apache logs on a regular basis. To maintain the Apache server logs efficiently, use the `clean_apache_logs` script.

The `clean_apache_logs` script performs the following functions:

- Renames the current `access_log` and `error_log` files to `access_log.<date>` and `error_log.<date>` and saves them in the same directory.
- Compresses (`gzip`) the renamed files.
- Reruns Apache and creates new log files.

The script should be incorporated into a cron job and run on the server once a week.

IMPORTANT:

If your local instance of MetaLib is running on a port lower than 1024, run the `clean_apache_logs` script using root permission. In such a case, use the root's cron job to execute this script. For ports higher than 1024, use the `metalib` user cron job to execute the script.

After the script is run as a cron job for the first time, check that the script created new Apache error and access logs and that Apache was restarted as expected.

Make sure to remove or place logs older than two or three months on an external device.

Cron job example:

```
30 03 * * 6/exlibris/metalib/m4_1/aleph/proc/clean_apache_logs
```

To run the script from the command line, enter the following command:

```
/exlibris/metalib/m4_N/aleph/proc/clean_apache_logs
```

Export/Import MetaLib Library

You can export all the data stored in the `dat01` or `vir00` libraries via Oracle's export utilities. This is useful for backup purposes or before making any major changes that might affect the data in one of these libraries. The procedure is simple, but make sure to take precautions when running these utilities to ensure that resource and user data is not overridden.

Exporting a MetaLib Library

To export a database separately, enter the following commands:

```
dlib <library>
ap
oracle_exp_library
```

For example:

```
dlib dat01
ap
oracle_exp_library
```

This example exports the data from the `dat01` Oracle tables and creates sequential files for each table all compressed into one tar gzipped file.

The resulting file is in a format such as `dat01.export.gz_aa` and can be accessed from the relevant library under the `files` directory as follows:

```
cd /exlibris/metallib/m4_<N>/<library>/files
```

For example, enter one of the following commands:

```
cd /exlibris/metallib/m4_1/dat01/files
```

or

```
df1 (using the alias)
```

Importing a MetaLib Library

To import the database, enter the following commands:

```
dlib <library>
ap
oracle_imp_various_library <source library>
```

The `<source library>` should include the source Oracle prefix followed by an underscore and the library name. For example:

```
M41_vir00
```

To confirm the Oracle prefix, enter the following command:

```
env | grep ORA_USER
```

Backing Up Z39 Gate and `tab_conversion` Directories

To back up the Z39 gate and `dat01/tab_conversion` directories:

- 1 Enter the following commands to create a `sav` directory.

```
cd $z39_gate  
mkdir sav
```

- 2 Enter the following command to back up the files:

```
cp * ./sav
```

- 3 Create a `sav` directory under the `dat01/tab_conversion` directory:

```
dlib dat01  
dr  
cd tab_conversion  
mkdir sav
```

- 4 Enter the following command to back up the files:

```
cp * ./sav
```


22

UTF Files

This section includes:

- [Introduction](#) on page 219
- [Updating the Conversion Parameter](#) on page 219

Introduction

The MetaLib interface uses UTF-8. Customers create HTML files and tables in their local character set and the system converts the files to UTF-8. These converted files are stored in the `./utf_files` directory. Files are copied from the real tree to this tree after they are converted to UTF-8. The system uses these files for display purposes.

NOTE:

Before using a file from `utf_files`, the system compares its date with that of the file in the real directory. If the file in the real directory is newer, it is converted and transferred to `./utf_files`.

Updating the Conversion Parameter

The translation of your local character set into UTF-8 should be defined in a conversion table.

The relevant conversion table must be entered in the `metalib_start` and `www_server.conf` files in the `default_character_conversion` parameter. For example:

```
setenv default_character_conversion 8859_1_TO_UTF
```

To update the conversion parameters:

- 1 Enter the following commands to edit the `metalib_start` and `www_server.conf` files:

```
cd $metalib_conf
vi <file_name>
```

NOTE:

This default can be changed to any of the conversion tables defined in the `tab_character_conversion_line` table in the `tab_unicode` directory, under the root directory of the version.

- 2 After making a change in the `metalib_start` and `www_server.conf` files, enter the following commands:

```
cd $metalib_conf
source metalib_start
source metalib_conf_create
start_w
```

To start the Apache server (for port < 1024) or sites with SSL:

- 1 Enter the following commands:

```
cd $httpd_root/bin
su
Password: <*****>
./apachectl_auto
exit
```

- 2 Make sure that the installation path in the `apachectl_auto` file is defined correctly. For example:

```
/exlibris/metalib/m4_<slot>
```

- 3 Exit from the root session and continue as the `metalib` user.

To start the Apache server (for port > 1024):

- 1 Enter the following command:

```
start_apache
```

To recreate the `utf_files` directory with the new character conversion table:

- 1 Enter the following commands to clear the `utf_files` directory:

```
cd $metalib_utf/utf_files  
rm -r *
```

NOTE:

If you translate the HTML files and tables before you create the new language interface and copy the translated files to the new directory, the date of these files may be older than the existing ones. In this case, you must delete the files from the `utf_files` directory so that the files you transferred are converted to UTF and placed under the `utf_files` directory.

23

Login

This section includes:

- [Introduction](#) on page 223
- [MetaLib and Proxy Servers](#) on page 223
- [From Another Page](#) on page 223

Introduction

You may log in to MetaLib through a proxy server or from another page. See [MetaLib and Proxy Servers](#) on page 223 and [From Another Page](#) on page 223.

MetaLib and Proxy Servers

If your installation uses a proxy server, users should log in as follows to the MetaLib user interface:

```
http://<server IP>:port(without /V)
```

This allocates a random number to the session before the users log in to ensure that users are assigned a unique number in the URL for their session.

From Another Page

If you log in directly to MetaLib, you must configure the `./apache/htdocs/.index.html` file with the correct server address and port.

NOTE:

The `./apache/conf/httpd.conf` file must contain the following definition:

```
DirectoryIndex index.html .index.html
```

To link to MetaLib from another page (for example, from the Library Home Page), use the following code on the page:

```
<!--  
function doLoad (addr)  
{  
var session = Math.round(Math.random()*1000000000);  
var loc = addr + "?RN=" + session;  
window.location.href = loc;  
}  
// -->  
</script>
```

The link to MetaLib should be entered as follows:

```
<a href='javascript:  
doLoad("http://<Server IP<port>/V");'><text> </a>
```

For example:

```
<a href='javascript:  
doLoad("http://www.metalib.com:8331/V");'>MetaLib</a>
```

An example of such a page can be found in the `./apache/htdocs/main` directory.

NOTE:

If you have a proxy server, the `/V` is valid as long as the `doLoad` function is used.

Part V

Utilities

Part V contains the following:

- **Section 24: Overview of MetaLib Library Utilities** on page 227
- **Section 25: The System Utility (Util S)** on page 231
- **Section 26: Manage Oracle Tables (Util A)** on page 253
- **Section 27: Managing Oracle (Util O)** on page 265

24

Overview of MetaLib Library Utilities

This section includes:

- **Introduction** on page 227
- **Locating Library Utilities** on page 228

Introduction

Because many of the Library utilities (Util) are relevant to a specific area in MetaLib, we have documented these utilities in their relevant sections within this document. This section provides a road map to the various utilities that are executed via the MetaLib Library Utilities menu (see [Figure 78](#)).

```
Library Utilities
=====
A. File administration and building
F. View procedures and files
G. Tables for defining database structure
K. MetaLib Users Management
O. ORACLE Management
S. System Utility
T. MetaLib Setup
W. Server Management (Monitor, Stop, Start, Log files)
X. Clean up
Y. License Management
Please select [exit]:
```

Figure 78: Library Utilities - System Utility Menu

To access the Library Utilities menu:

- 1 Enter the following command to move to the environment of one of the MetaLib libraries:

```
dlib <library>
```

CAUTION:

Some of the functions under Util, such as Util W, Server Management, are the same regardless of the library from which you are activating the Util menu. However, you must enter the correct library environment when using Util A, F, G, and T, since these procedures apply to the content of the library itself.

- 2 Enter the following command to display the Library Utilities menu:

```
util
```

Locating Library Utilities

This table provides the links to the Library Utilities within this document.

Table 28. Library Utility Road Map

Utility	Reference
Util A	Manage Oracle Tables (Util A) on page 253
Util F	Displaying Raw IRD Data (Util F-4-Doc) on page 164
Util K	Util K-1 — Activate Alerts Procedure (Util K-1) on page 161 Util K-2 — User Loader Utility (Util K-2) on page 124 Util K-3 — Delete Expired Users (Util K-3) on page 132 Util K-4 — see the <i>QuickSet and Category Administration Guide</i> Util K-5 — Using the IP Loader (Util K-5) on page 86 Util K-6 — Convert User to Default Profile (Util K-6) on page 134
Util O	Managing Oracle (Util O) on page 265
Util S	The System Utility (Util S) on page 231
Util SP	Util SP — see the <i>MetaLib Service Pack</i> document

Table 28. Library Utility Road Map

Utility	Reference
Util T	Util T-2 — CJK_LANG on page 174. Util T-4 — Reset MetaLib Administrator Password (Util T-4) on page 135 Util T-5 — Reset Ex Libris Support Password (Util T-5) on page 136 Util T-6 — see the <i>QuickSet and Category Administration Guide</i>
Util W	Server Management Utility (Util W) on page 183
Util X	Clean-Up Procedures on page 211
Util Y	License (Util Y) on page 21

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The System Utility (Util S)

This section includes:

- **Overview** on page 231
- **Change Port (Util S-1)** on page 232
- **Implement SSL (Util S-2)** on page 233
- **Copy MetaLib (Util S-3)** on page 237
- **The Monitoring Tool (Util S-4)** on page 241
- **Run Checks via Cron** on page 250

Overview

The System Utility menu (see **Figure 79**) allows you to perform system operations, such as changing ports, copying MetaLib instances, and monitoring. To use any of the system utilities, log in to appropriate slot as the `metalib` user.

NOTE:

To return to the previous menu, enter `q`.

```
System Utility
-----
1. Change port
2. Implement SSL
3. Copy MetaLib
4. MetaLib Monitoring Tool
```

Figure 79: Library Utilities - System Utility Menu

Change Port (Util S-1)

The Change Port submenu (see **Figure 80**) lists the steps needed to change the Apache port.

```
Change port
-----
1. Pre-installation checks for change port
2. Change port
3. Restart apache
4. Roll back
```

Figure 80: System Utility - Change Port Submenu

Pre-installation Checks for Change Port (Util S-1-1)

This step performs the pre-installation checks for changing the Apache port.

You are asked to enter the new port number.

The port should be numeric, higher than 10 and less than 65000, and free (not used by other version or application).

If the port is not valid or already used by another version, you receive a message and are asked to enter a new port number until the port is valid and free.

If the current port is 80, you receive a list of files that should be configured manually. The script does not change the port if the current port is 80.

When the manual configuration is complete, enter the following commands:

```
source $metalib_conf/metalib_start
$metalib_conf/metalib_conf_create
```

Change Port (Util S-1-2)

This step configures required files automatically according to your request.

You are asked to enter the new port. If the port is not valid or already used by another version, you receive a message and are asked to enter a new port number until the port is valid and free. Then you receive a list of files that should be changed and you need to confirm the changes.

NOTE:

The default is **N**. You need to enter **Y** if you want to perform the configuration.

Your original files are saved with the special extension in *YYYYMMDD_hhmm* format.

If the current and new ports are both less than 1024 or if both are higher than 1024, a message returns indicating that no changes should be done in the auto startup script.

If the current port is higher than 1024 and the new port is less than 1024 (or vice a versa), the following message returns:

```
The startup script has been configured.
```

If the ports are less than 1024, the root user must restart the Apache server.

NOTES:

- In order to activate this change, restart the Apache server (see **Restart Apache (Util S-1-3)** on page 233) and then enter the following command at the Unix prompt to restart the MetaLib Web servers:

```
start_w
```

Restart Apache (Util S-1-3)

This step restarts the Apache server. Perform this procedure after the configuration is completed.

Use the su command to have root permissions with the `metalistib` user environment if the `HTTPD_PORT` is less than or equal to 1024.

Roll Back (Util S-1-4)

This stage allows you to perform a rollback of all the files saved with the default extension (see **Pre-installation Checks for Change Port (Util S-1-1)** on page 232).

NOTE:

Rollback cannot be done if you change the port manually.

Implement SSL (Util S-2)

The SSL Implementation submenu (see **Figure 81**) lists the steps required to implement SSL.

Before implementing the SSL procedure, you should copy the certificates files to the `$metalistib_dev/apache/SSLconf/conf` directory.

```
SSL Implementation
-----

1. Pre-installation checks for SSL implementation
2. Create test certificate
3. Configure SSL
4. Restart apache with SSL
5. SSL Configuration roll back
6. Change certificate
7. Implement chain certificate
```

Figure 81: System Utility - Implement SSL Submenu

Pre-installation Checks for SSL Implementation (Util S-2-1)

This step prompts you for the new SSL port number, SSL certificate file name (*.cert or *.pem), and SSL key file name (*.key).

If the port number is invalid or used by another product, the system prompts you for a new SSL port number.

If the utility cannot locate the SSL certificate file or the SSL key file under the \$metilib_dev/apache/SSLconf/conf directory, it returns a message that it cannot locate both files.

Create Test Certificate (Util S-2-2)

This step creates the temporary test certificate under the \$httpd_root/SSLconf/conf directory with the following defaults names:

```
new.cert.key
new.cert.cert
```

This utility prompts you to enter some parameters. You can type ENTER for most of them. The following prompts are the most important:

```
Enter PEM pass phrase:           # choose pass, e.g. 1234
Verifying - Enter PEM pass phrase: # same pass, e.g. 1234
Enter pass phrase for privkey.pem: # same pass as above: e.g. 1234
```

Configure SSL (Util S-2-3)

This utility shuts down the Apache server and sends a warning about it.

The SSL certificate file name and SSL key file name are suggested as default names according to the parameters that you entered previously (see [Pre-installation Checks for SSL Implementation \(Util S-2-1\)](#) on page 234), but you can change both parameters.

If you are using a certificate that requires a **.crt** (intermediate) file, you should place it under the following directory:

```
/exlibris/metalib/m4_*/apache/SSLconf/conf
```

Your original `ssl.conf` file is saved with the special extension in format `YYYYMMDD_hhmm` and the startup script is updated.

If you have any problems, do not run this step again immediately. Run the rollback option first and then run this step again.

NOTES:

- After running Util S-2-3, you must enter the following commands to restart MetaLib:

```
cd $metalib_conf
metalib_shutdown
metalib_startup
```

- To activate this change, restart the Apache server (see **Restart Apache with SSL (Util S-2-4)** on page 235).
-

Restart Apache with SSL (Util S-2-4)

This step restarts the Apache server with the new SSL.

Perform the restart only after you complete the configuration of the SSL.

Use the `su` command to have root permissions with the MetaLib environment if one of the ports (`HTTPD_PORT/SSL`) is less than or equal to 1024.

SSL Configuration Rollback (Util S-2-5)

This stage restores all SSL files that were saved with the default extension (see **Pre-installation Checks for SSL Implementation (Util S-2-1)** on page 234).

NOTE:

The rollback procedure cannot be done if you configured SSL manually.

Change Certificate (Util S-2-6)

NOTE:

To get a permanent certificate, you must select the **Apache SSL** option during the certificate purchase process.

Before changing the SSL certificate, put the certificate files under the `$metalib_dev/apache/SSLconf/conf` directory.

This utility checks whether these files exist and changes the configuration.

In order to activate the changes, restart the Apache server (see [Restart Apache with SSL \(Util S-2-4\)](#) on page 235).

Implement Chain Certificate (Util S-2-7)

SSL certificates are signed by an Intermediate CA using a two-tier hierarchy (also known as trust chain), which enhances the security of your SSL certificate.

If the proper Intermediate CA is not installed on the server, your customers will see browser errors and may choose not to proceed and close their browsers.

Before implementing the chain certificate, ensure that you have a valid certificate and place it under the `$metalib_dev/apache/SSLconf/conf` directory.

This utility checks whether the file exists and adds the required definition to the configuration file.

To implement the chain certificate:

- 1 Enter option 7 from the Implement SSL submenu to display the following message:

```
Implement chain certificate
-----

Before implementing chain certificate, the chain certificate file,
intermediate.crt, should be placed under:
/exlibris/metalib/m4_7/apache/SSLconf/conf

Would you like to continue Y/[N]?
```

- 2 Enter Y to continue. The following message displays:

```
The default chain certificate is:
intermediate.crt

Would you like to use the above default chain file Y/[N]?
```

- 3 If your chain certificate file is not named intermediate.crt, enter N. Otherwise, enter Y to use the default file and then go to Step 5.

- 4 At the prompt, enter the name of your chain certificate file to display the following message:

```
The certificate file has been found.

The original ssl.conf file is saved with suffix <timestamp>

*****

The chain certificate has been configured
In order for the change will take place, please restart the Apache with
SSL using util s 2 4
After restarting the Apache with SSL, check the application
functionality

Please enter to continue
```

NOTE:

Rerun this utility after you place the chain certificate file in the
\$metalib_dev/apache/SSLconf/conf directory.

- 5 Type [ENTER] to display the Implement SSL submenu.

Copy MetaLib (Util S-3)

This utility allows you to copy a MetaLib instance on the same server. If you would like to copy MetaLib instances between servers, contact MetaLib Support.

Before you run this utility, check the following:

- Verify disk/tablespaces availability to host two instances.
- Ensure that you have a valid license for the new target instance.
- Take down the MetaLib source instance (Web and Apache servers).
- Leave the Oracle 10g up and running.

This utility is composed of several steps. You are prompted to continue after each step. Press [ENTER] to do so.

To copy MetaLib on the same server:

- 1 Log in to the source slot of the server that you would like to copy as the metalib user.
- 2 Stop the Web and Apache servers in the source instance.
- 3 Select option 3 from the Util S menu (see [Figure 79](#)).

4 Enter **Y** at the following prompt to continue:

```
Copy MetaLib
-----

Please note, this script is relevant only for copying MetaLib on the
same server.
Make sure to run this script as 'metalib' user only

Current MetaLib slot is: m4_1

Would you like to copy it Y/[N]?
```

5 Enter the new slot copy number at the following prompt:

```
Continue...

Please enter new slot copy number (e.g '2' for m4_2):
```

6 At the following prompt, enter **Y** to configure the target port:

```
Would you like to use the default 8332 [Y]/N?
```

NOTE:

The utility prompts you to use the default port according to the new slot number. For example, the utility prompts you to use port 8332 for slot m4_2. The port must be valid and not used.

7 When the following prompt appears, implement the license issued for the new instance and then press **[ENTER]** to continue:

```
Copying the instance...
This will take some time, between half an hour to several hours,
depending on the server and local data
-----

Place the license into the file /exlibris/metalib/m4_2/metalib_conf/
license

Press enter to continue
```

NOTE:

At this point, you can restart Web and Apache servers in the source instance.

8 Press **[ENTER]** at the following prompt to continue:

```
Updating auto startup/shutdown scripts (init.dat)
The auto startup/shutdown scripts (start_stop and init.dat files) were
updated properly

Please enter to continue
```

9 Press **[ENTER]** at the following prompt to continue:

```
Performing post installation steps...
Adding the version /exlibris/metalib/m4_2 to the MetaLib login menu
Execute master cshrc
The MetaLib login menu was updated

Press Enter to continue
```

10 Enter **Y** at the following prompt to clear the temporary library vir01 in the new slot:

```
Import is running...
This will take some time, between half an hour to several hours,
depending on the server and local data

METALIB/LINUX, Copyright Ex Libris.
version 4 copy 1, 14-Nov-2007

METALIB/LINUX, Copyright Ex Libris.
version 4 copy 1, 14-Nov-2007

METALIB/LINUX, Copyright Ex Libris.
version 4 copy 1, 14-Nov-2007

Check the import log file: /exlibris/metalib/m4_2/tmp/
imp_all_libraries.log to ensure that the import has completed
successfully
Use util g/2 and util f/4 to verify that the data has been loaded
correctly

Would you like to perform clear VIR01 in m4_2 [Y]/N ?
```

NOTE:

At this point, you can choose to clear the temporary library VIR01 or postpone the action and activate it later from the relevant Util menu.

During this step, the following messages display during the shutdown of servers:

```
Shutting down MetaLib
=====
shutdown of servers
The system is getting into sleep mode for 90 seconds
=====
Copying statistics information from VIR01 to VIR00
=====

SQL*Plus: Release 10.2.0.3.0 - Production on Tue Nov 20 15:26:41 2007

Copyright (c) 1982, 2006, Oracle. All Rights Reserved.

Connected to:
Oracle Database 10g Enterprise Edition Release 10.2.0.3.0 - Production
With the Partitioning, OLAP and Data Mining Scoring Engine options
.
.
.

Disconnected from Oracle Database 10g Enterprise Edition Release
10.2.0.3.0 - Production
With the Partitioning, OLAP and Data Mining Scoring Engine options
Delete old Oracle statistics for Analyzed Tables / Indexes
=====

METALIB/LINUX, Copyright Ex Libris.
version 4 copy 2, 20-Nov-2007

METALIB/LINUX, Copyright Ex Libris.
version 4 copy 2, 20-Nov-2007

METALIB/LINUX, Copyright Ex Libris.
version 4 copy 2, 20-Nov-2007

Table analyzed.

Table analyzed.

Table analyzed.

.
.
.

Table analyzed.

shutdown of servers
```

- 11** If the source instance is configured with SSL and you want the new target instance to work with SSL as well, enter **y** at the following prompt. Otherwise, enter **N** and go to Step **13**.

```
Is the current MetaLib version working with SSL Y/[N]?
```

If the source is not configured with SSL, the following message displays:

```
It seems that MetaLib version is not configured with SSL.  
You can use util s 2 in order to later configure SSL
```

- 12** If the source is configured with SSL, enter the Apache port at the following prompt:

```
Please enter port for the new version:
```

NOTE:

If the Apache port is less than 1024, you will have to log in as root in order to start Apache. The script prompts you to do so.

- 13** Press **[ENTER]** to continue at the following prompt:

```
*****  
*  
* Copy MetaLib has ended. *  
* New slot: m4_2 *  
* HTTPD_PORT: 8332 *  
* Please login to the relevant copy. *  
* Restart your MetaLib Web and Apache servers, *  
* and check the application functionality. *  
* *  
*****  
Press Enter to continue
```

The Monitoring Tool (Util S-4)

The MetaLib Monitoring Tool provides a solution for MetaLib system automated checks. Sites are able to check the MetaLib Web and database functionality from the server environment.

The automated MetaLib Monitoring Tool is used to test whether the following options are functioning properly in MetaLib, check whether there is sufficient

storage space, and verify that the main Oracle tables have all the relevant indexes defined:

- Web servers are up and running
- Apache server is up and running
- Login/logout via Web
- Simple search as guest user
- Simple search as local user
- Patron user table index
- Resource configuration table index
- Resource table index
- Institution table index
- Session table index
- CKB Update registration: SFTP connection and CKB update, SSH version
- Free space in Oracle tablespaces
- Free space on MetaLib drive

These checks are run according to a fixed set of parameters that are defined in a configuration file.

It is possible to run all of the steps at once or each step individually. In addition, it is possible to set up these checks to run periodically with a cron job (such as weekly or monthly).

The configuration file is supplied with default parameters for the `METALIB` institution. To tune in the checks for the local setup, the site must modify the configuration parameters.

In addition, it is possible to generate a report of missing tables and indexes from all of the relevant MetaLib Oracle schemas.

Each of the available check options is described in detail below.

NOTE:

Currently, the Monitoring Tool does not support SSL. If your site is configured with secure HTTP, the checks performed for the authenticated user (login/logout and search) cannot be executed successfully and will be marked as `FAILED`.

Accessing the Monitor Utility

The online Monitoring utility is a menu-driven utility that is accessed from the System Utility menu.

To access the Monitor utility:

- 1 Log in to the UNIX server as the metalib user.
- 2 Enter the following commands to access the System utility (see **Figure 79**):

```
dlib vir01  
util s
```

```
System Utility  
-----  
  
1. Change port  
2. Implement SSL  
3. Copy MetaLib  
4. MetaLib Monitoring Tool
```

Figure 82: Library Utilities - System Utility Menu

- 3 Enter option 4 from the MetaLib Monitoring Tool menu (see **Figure 83**).

```
MetaLib Monitoring Tool  
-----  
  
0. Exit  
1. Edit configuration file  
2. Run all checks  
3. Run a specific check  
4. Oracle report  
  
Please select [exit]:
```

Figure 83: MetaLib Monitoring Tool

Edit Configuration File (Util S-4-1)

The Edit Configuration File option allows you update the parameters listed in **Table 29**. The MetaLib installation supplies the default values for the checks.

Table 29. Configuration File

#	Configuration Data	Description
1	Patron user name	These parameters are used in conjunction to test local authentication via PDS.
2	Patron password	
3	Institution to which patron is affiliated.	

Table 29. Configuration File

#	Configuration Data	Description
4	Resource ID for test search	Resource ID must be valid. It is recommended that you use a reliable resource for the test search. Format: <i>ABCnnnnn</i> , where <i>ABC</i> is your local resource prefix (in uppercase).
5	Query for test search	Single search term sent to the Resource ID in simple mode (using the All Fields index). It is recommended to use a keyword that you know returns a non-zero result.
6	Send e-mail notification	For running checks via a cron job, an e-mail notification can be sent at the end of the process.
7	E-mail address	E-mail of the recipient when the checks are run via a cron job.

NOTE:

It is highly recommended that you configure the check parameters for your local institution. In a consortium, select one of the institutions for configuration.

To localize the parameters:

- 1 From the MetaLib Monitoring Tool submenu, enter option 1 to display the current configuration values:

```
Edit configuration data
-----
Patron user name for authentication via PDS: metalib1
Patron password for authentication via PDS: metalib1
Institution to which patron above is affiliated: METALIB
Resource ID for test search: CKB00158
Query for test search: data
Send email notification when util_s_04_02.cron completes execution: y
email address: admin@mylibrary.com

Change parameters (y/n) [n]:
```

- 2 Enter **Y** if you would like to modify any parameters.

- 3 If you would like to change a value, enter a new value at the prompt. Otherwise, type **[ENTER]** to display the next parameter.

Where possible, the system checks for the validity of the parameter. If you enter an invalid value, a message is displayed, and you are requested to retype the parameter value. For example, if you type either CKB0158 or ckb00158 for Resource ID, the following message displays:

```
Error: illegal input
```

- 4 Repeat the previous step for each parameter.
- 5 Press **[ENTER]** to return to the menu.

The following is an example of changing the parameters from the initial default values to match the local setup for the institution OPENU:

```
Change parameters (y/n) [n]: y
Patron user name for authentication via PDS [metalib1]: openu-test
Patron password for authentication via PDS [metalib1]: openu-testaa
Institution to which patron above is affiliated [METALIB]: OPENU
Resource ID for test search [CKB00158]: OPN00015
Query for test search (single keyword) [data]: BOOKS
Send email notification when util_s_04_02.cron completes execution (y/n) [y]: y
email address [admin@mylibrary.com]: admin1@mylibrary.com

Press Enter to return to the Menu
```

Run All Checks (Util S-4-2)

The Run All Checks option is used to execute all of the checks using command line mode.

The checks are launched one at a time. At the end of each check, the status displays either **PASSED** or **FAILED**. Even if a specific check fails, the procedure reports its status and proceeds to the next check. Each check takes a few seconds to run. Wait for the prompt at the end.

To run all of the checks:

- 1 From the MetaLib Monitoring Tool submenu, select option 2.
- 2 After all of the checks have completed, type **[ENTER]** to return to the menu.

The following example shows a completely successful run:

```
Run all checks
-----

This utility tests the MetaLib installation basic functionality
according to the parameters defined in the utility configuration file.
For more detailed test diagnosis, each check can be run separately via
util-s-4-3 - 'Run a specific check'.
Check if MetaLib Apache is running          PID TTY          TIME
CMD
23993 ?          00:00:14 httpd
[PASSED]
Check if MetaLib WWW server is running      [PASSED]
Check PDS login/logout                     [PASSED]
Check Simple Search as guest user          [PASSED]
Check Simple Search as local user          [PASSED]
Check IRD (dat01.z00) table index          [PASSED]
Check IRD Configuration (dat01.z58) table index [PASSED]
Check Patron Data (vir00.z312) table index [PASSED]
Check Institution (vir00.institute) table index [PASSED]
Check Session (vir01.z54) table index      [PASSED]
Check CKB registration                    [PASSED]
Check database tablespaces free space      [PASSED]
Check /exlibris/metalib directory free disk space [PASSED]

Press Enter to return to the Menu
```

The following example shows an unsuccessful run. Because the Web servers are down, as indicated by the second check, logging in to MetaLib and searches are not possible:

```
Run all checks
-----

This utility tests the MetaLib installation basic functionality
according to the parameters defined in the utility configuration file.
For more detailed test diagnosis, each check can be run separately via
util-s-4-3 - 'Run a specific check'.
Check if MetaLib Apache is running                PID TTY          TIME
CMD
23993 ?           00:00:14 httpd
[PASSED]
Check if MetaLib WWW server is running            [FAILED]
Check PDS login/logout                            [FAILED]
Check Simple Search as guest user                 [FAILED]
Check Simple Search as local user                 [FAILED]
Check IRD(dat01.z00) table index                  [PASSED]
Check IRD Configuration(dat01.z58) table index    [PASSED]
Check Patron Data(vir00.z312) table index         [PASSED]
Check Institution(vir00.institute) table index    [PASSED]
Check Session(vir01.z54) table index              [PASSED]
Check CKB registration                            [PASSED]
Check database tablespaces free space             [PASSED]
Check /exlibris/metalib directory free disk space [PASSED]

Press Enter to return to the Menu
```

To run this test as a cron job, see [Run Checks via Cron](#) on page 250.

Run a Specific Check (Util S-4-3)

The Run a Specific Check option is used to execute one or more individual checks in command line mode.

To run a specific check:

- 1 From the MetaLib Monitoring Tool submenu, select option 3 to display the list of checks:

```
Run a specific check
-----
0.  Exit
1.  Check Apache is running
2.  Check MetaLib WWW server is running
3.  Check PDS login/logout
4.  Check Simple Search as guest user
5.  Check Simple Search as local user
6.  Check IRD (dat01.z00) table index
7.  Check IRD Configuration (dat01.z58) table index
8.  Check Patron Data (vir00.z312) table index
9.  Check Institution (vir00.institute) table index
10. Check Session (vir01.Z54) table index
11. Check CKB registration
12. Check database tablespaces free space
13. Check METALIB MOUNT directory free disk space

Please select [exit]:
```

- 2 Enter the number of the specific check that you want to run. Otherwise, type **[ENTER]** to return to the menu.
- 3 When done, enter **0** or type **[ENTER]** to exit this menu.

Oracle Report (Util S-4-4)

The Oracle Report option is used to run an integrity test on all the MetaLib Oracle schemas to check that all the tables and indexes exist. This is done using command line mode. Missing tables and indexes are reported per schema.

The script derives the Oracle schemas from the `METALIB_LIBRARY_LIST` parameter defined in the `./metalib_conf/metalib_start` file.

To run the Oracle report:

- 1 From the MetaLib Monitoring Tool submenu, enter option 4.

The following example shows a successful run:

```
METALIB/LINUX, Copyright Ex Libris.  
version 4 copy 2, 10-May-2007  
DAT01  
=====  
No missing tables  
No missing indexes  
VIR00  
=====  
No missing tables  
No missing indexes  
VIR01  
=====  
No missing tables  
No missing indexes  
Enter CR to continue...
```

The following example shows that there are indexes missing from the VIR00 schema:

```
METALIB/LINUX, Copyright Ex Libris.  
version 4 copy 2, 10-May-2007  
DAT01  
=====  
No missing tables  
No missing indexes  
VIR00  
=====  
No missing tables  
Missing indexes Z710_ID Z710_ID1 Z710_ID2 Z710_ID3  
VIR01  
=====  
No missing tables  
No missing indexes  
Enter CR to continue...
```

- 2 Press [ENTER] to return to the menu.

For further information, refer to [Manage Oracle Tables \(Util A\)](#) on page 253.

Run Checks via Cron

The Monitoring Tool All Checks utility can be set up to run automatically as a cron job. The cron job script (`util_s_04_02.cron`) is located under the following directory:

```
./aleph/proc/
```

This procedure creates a log file, which contains the results of the run, under the following directory:

```
./logs/ util_s_04_02.cron.log.nnnnn.
```

NOTE:

It is highly recommended to run the utility an hour or two after the MetaLib cleanup process: `./aleph/proc/util_x_09.cron`.

If the e-mail information is set up and Unix mail is enabled on your MetaLib server, an e-mail is sent to the recipient upon completion of the cron job:

```
To: admin@mylibrary.com
Subject: Post Checks
Message body:
util_s_04_02.cron started at : Wed Mar 14 00:00:04 IST 2007
Check if MetaLib Apache is running          PID TTY          TIME
CMD
23993 ?           00:00:14 httpd
[PASSED]
Checking if MetaLib WWW server is running    [PASSED]
Checking PDS login/logout                    [PASSED]
Checking Simple Search as guest user         [PASSED]
Checking Simple Search as local user         [PASSED]
Checking IRD(dat01.z00) table index          [PASSED]
Checking IRD Configuration(dat01.z58) table index [PASSED]
Checking Patron Data (vir00.z312) table index [PASSED]
Checking Institution (vir00.INSTITUTE) table index [PASSED]
Checking Session (vir01.z54) table index     [PASSED]
Checking CKB registration                    [PASSED]
Check database tablespaces free space        [PASSED]
Check /exlibris/metalib directory free disk space [PASSED]

util_s_04_02.cron ended at : Wed Mar 14 00:01:02 IST 2007
```

Figure 84: Sample Cron E-Mail for Util S-4-1

For more information on setting up e-mail parameters, see [Edit Configuration File \(Util S-4-1\)](#) on page 243.

To add the installation checks cron job to your cron jobs list:

- 1 Log in as the metalib user.
- 2 Enter the following commands to edit the crontab file:

```
setenv EDITOR vi  
crontab -e
```
- 3 Add the `util_s_04_02.cron` entry to the file, using the following format:
<minute> <hour> <day of month> <month> <day of week> <command>
For example, the following entry runs the job every day at 5am:

```
# Run util_s_04_02.cron every day at 5 a.m.:  
0 5 * * * /exlibris/metalib/m4_1/aleph/proc/util_s_04_02.cron
```

Figure 85: Util K-2 Cron Job

- 4 Exit and save the changes to the file.

26

Manage Oracle Tables (Util A)

This section includes:

- **Introduction** on page 253
- **Drop & Create Table and Index (Util A-1)** on page 254
- **Create Index (Util A-2)** on page 254
- **Rebuild Index (Util A-3)** on page 255
- **Drop Index (Util A-4)** on page 255
- **Create/Recreate Library Sequences (Util A-9)** on page 255
- **Edit file_list of DAT01 Tables (Util A-10)** on page 256
- **Check Space Utilization of Oracle Tables (Util A-11)** on page 256
- **Check Space Utilization Of Table/Index (Util A-12)** on page 257
- **Check Space Utilization of Dynamic Tables (Util A-13)** on page 258
- **List Existing Indexes For a Table (Util A-14)** on page 258
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- **List Analyzed Tables/Indexes (Util A-17)** on page 259
- **Delete Statistics for Analyzed Tables/Indexes (Util A-18)** on page 260
- **Oracle Tables** on page 261

Introduction

The Manage Oracle Tables utility (Util A) deals with the various library objects (tables, indexes, and so forth) in the Oracle database.

To access the `util` command from the prompt, you must first select an active library as follows:

```
dlib dat01
util a
```

The Manage Oracle Tables menu appears (see [Figure 86](#)):

```
A. Manage Oracle tables of DAT01

    0.  Exit procedure
    1.  Drop & Create table and index
    2.  Create index
    3.  Rebuild index
    4.  Drop index
    9.  Create/Recreate library sequences
   10.  Edit file_list of DAT01 tables
   11.  Check space utilization of Oracle tables
   12.  Check space utilization of a table/index
   14.  List existing indexes for a table
   15.  Analyze index
   17.  List Analyzed Tables / Indexes
   18.  Delete Statistics for Analyzed Tables / Indexes
Please select [exit]:
```

Figure 86: Manage Oracle Tables Menu

NOTE:

For each option, you are prompted to confirm your action. Only if you type **yes** in full is the action executed. Any other value is regarded as a no.

Drop & Create Table and Index (Util A-1)

This option drops and creates an empty Oracle table and its corresponding indexes from the library. At the prompt, enter:

- `all` — Enter `all` to create/recreate all of the tables in the library and their indexes.
- `<table-name>` — Enter a table name to create/recreate the specified table and all of its indexes.

Create Index (Util A-2)

Creates Oracle indexes for one or more tables in the library. At the prompt, enter:

- `all` — Enter `all` to create/recreate all of the indexes for all of the tables.

- *<table-name>* — Enter a table name to create all of the given table's indexes.
- *<index-name>* — Enter an index name (such as `z01_id1`) to create the given index.

Rebuild Index (Util A-3)

Rebuilds an Oracle index in the library. This utility is used to reorganize the index and is much faster than dropping an index and recreating it. At the prompt, enter:

- `all` — Enter `all` to rebuild all of the indexes for all of the tables.
- *<table-name>* — Enter a table name to rebuild all of the given table's indexes.
- *<index-name>* — Enter an index name (such as `z01_id1`) to rebuild the given index.

Drop Index (Util A-4)

Drops an Oracle index. At the prompt, enter:

- `all` — Enter `all` to drop all the indexes for all of the tables.
- *<table-name>* — Enter a table name to drop all of the given table's indexes.
- *<index-name>* — Enter an index name (for example, `z01_id1`) to drop the given index.

Create/Recreate Library Sequences (Util A-9)

Creates or recreates library sequences. At the prompt, enter:

- `all` — Enter `all` to drop and create all of the library's sequences as defined in the `file_list`.
- *<sequence-name>* — Enter a sequence name to drop and create the given sequence.

Edit file_list of DAT01 Tables (Util A-10)

This option activates the `vi` editor and opens the library's `file_list` file (located in the library's root directory) for editing. After making changes, make sure you save the file.

Check Space Utilization of Oracle Tables (Util A-11)

To check space utilization of Oracle tables:

- 1 Enter option **11** to display the following prompt:

```
***** Space utilization of DAT01 files *****  
  
The reports are : count_rep.lst, count_sizes.lst, space_utilization.log  
To pass to next report :n to exit from all :q!  
Do you wish to edit the reports now? [y/n]
```

- 2 If you would like to view/edit the reports, enter **Y** to open the first report in the editor. Otherwise, enter **N** to return to the menu.

For example, the following report displays:

```
***** DAT01 Tables statistics *****
```

SEGMENT NAME	SEGMENT TYPE	TABLESPACE NAME	BYTES (K)	BLOCKS	EXTENTS
Z00	TABLE	TS0	23552	2944	23
Z00_ID	INDEX	TS1	512	64	8
Z01	TABLE	TS0	27648	3456	27
Z0101	TABLE	TS0	13312	1664	28
Z0101_ID	INDEX	TS1	2048	256	17
Z0101_ID1	INDEX	TS1	8192	1024	23
Z0101_ID2	INDEX	TS1	2048	256	17
Z0102	TABLE	TS0	17408	2176	17
Z01_ID	INDEX	TS1	11264	1408	26
Z01_ID2	INDEX	TS1	3072	384	18

NOTE:

The `count_rep.list` report is written into the `/dat01/scratch` directory.

- 3 To move to the next report, enter `:n`. Otherwise, enter `:q!` to return to the menu.

Check Space Utilization Of Table/Index (Util A-12)

Displays space utilization for a specified table/index. At the prompt, enter:

- `<table-name>` — Enter a table name to drop all of the given table's indexes.
- `<index-name>` — Enter an index name (for example, `z01_id1`) to drop the given index.

For example, the following message displays for `z00`:

```
TABLE_NAME = Z00
check = DAT01
active_library = DAT01

BYTES/1024      BLOCKS      EXTENTS      INITIAL_EXTENT  NEXT_EXTENT
-----
      40960      5120      40      8388608

COUNT(*)
-----
      26524
```

Check Space Utilization of Dynamic Tables (Util A-13)

This option displays the space utilization of dynamic tables as follows:

```
TABLE  BYTES/1024  BLOCKS  EXTENTS  INITIAL_EXTENT  NEXT_EXTENT
Z05
      4096      512      4      4194304
Z60
      64      8      1      16384

Enter CR to continue...
```

List Existing Indexes For a Table (Util A-14)

Lists the indexes which should exist for a table according to the library `file_list`. At the prompt, enter the name of a table.

For example, the following message displays for `z05`:

```
Defined in file_list:
```

IND z05_id	1M	1M	ts1
IND z05_id1	1M	1M	ts1
IND z05_id2	1M	1M	ts1
IND z05_id3	1M	1M	ts1
IND z05_id4	1M	1M	ts1

```
Exist in the Database:
```

INDEX_NAME	STATUS	UNIQUENES	COLUMN_NAME
Z05_ID	VALID	UNIQUE	Z05_REC_KEY
Z05_ID1	VALID	NONUNIQUE	Z05_REC_KEY_1
Z05_ID2	VALID	NONUNIQUE	Z05_LAST_DOC_NUMBER
Z05_ID3	VALID	NONUNIQUE	Z05_ID
Z05_ID4	VALID	NONUNIQUE	Z05_FIND_GROUP

Analyze Index (Util A-15)

You are prompted to enter one of following values:

- `all` — Enter `all` to analyze all of the indexes in the current library.
- `<table-name>` — Enter a table name to analyze all of the table's indexes OR index names.
- `<index-name>` — Enter an index name to analyze a specific index.

List Analyzed Tables/Indexes (Util A-17)

This option displays a list of the analyzed tables/indexes.

If there are no analyzed tables or indexes, the following message displays:

```
METALIB/LINUX, Copyright Ex Libris.  
version 4 copy 2, 10-May-2007  
  
=====  
If this list is not empty, please use util a 18 to delete statistics  
=====  
Listing analyzed tables and indexes ... please wait  
=====  
Enter CR to continue...
```

Type [ENTER] to return to the menu.

If there are analyzed tables or indexes for the selected library, a list displays as follows:

```
METALIB/LINUX, Copyright Ex Libris.  
version 4 copy 2, 10-May-2007  
  
=====  
If this list is not empty, please use util a 18 to delete statistics  
=====  
Listing analyzed tables and indexes ... please wait  
=====  
M47_DAT01.Z00R_ID1                                27-OCT-08  
M47_DAT01.Z00R_ID                                27-OCT-08  
M47_DAT01.Z580_ID1                                27-OCT-08  
M47_DAT01.Z580_ID                                27-OCT-08  
--More-- (9%)
```

Type [ENTER] to display more tables/indexes.

NOTE:

Use Util A-18 in order to delete the statistics. See **Delete Statistics for Analyzed Tables/Indexes (Util A-18)** on page 260 for more information.

Delete Statistics for Analyzed Tables/Indexes (Util A-18)

MetaLib is written and tuned to work with the Rule-Based Optimizer. The queries issued on MetaLib tables are very simple, usually a `select` by index key prefix. Queries generally do not include joins or complex `where` clauses. There is no benefit in having cost-based optimization of MetaLib queries because the rule-based query plan is always optimal. The Cost-Based Optimizer can only slow them down.

Performing `ANALYZE` or `dbms_stat` on MetaLib tables causes Oracle to choose the Cost-Based Optimizer. This might slow the application and cause a malfunction in MetaLib.

If tables or indexes are analyzed, it is possible to remove the statistical information with this utility.

Use this option in order to delete statistics for analyzed tables and indexes detected with Util A-17.

To remove the statistics:

- 1 Enter option **18**.

The following message displays:

```
METALIB/SUN_OS_2, Copyright Ex Libris.  
version 4 copy 7, 30-May-2007  
Table analyzed.  
  
Table analyzed.  
  
Table analyzed.  
...  
Enter CR to continue...
```

The statistics are deleted from the tables if detected.

- 2 Type **[ENTER]** to return to the menu.

Oracle Tables

This section lists the main Oracle tables that are used in MetaLib libraries.

DAT01 Oracle Tables

Table 30. DAT01 Oracle Tables

Table	Use
Z00	IRD records.
Z00R	Expanded IRD records. Each field in the Z00 record has an entry in this table. This table is used mainly for statistics.

Table 30. DAT01 Oracle Tables

Table	Use
Z01, Z02 Z11 Z95, Z97, Z98, Z980	Indexes: Headings, access. direct. words.
Z101	Sort.
Z13	Brief doc record, used mainly for display purposes.
Z52	Counters (system number, ID number).
Z58	Configuration record.
Z580	Contains basic information about the resource taken from Z00 and Z58 cached to efficiently display resource names and links to the resource and for other resource related reasons.
Z123	Institution Categories Master List.
Z125	Display categories for each Portal/Language.
ird_release_notes	Allows exporting of the IRD release notes from the DAT01 database into Excel format.

VIR00 Oracle Tables

Table 31. VIR00 Oracle Tables

Table	Use
Z00	e-Shelf records.
Z52	Counters.
Z122	QuickSets.
Z119	e-shelf administrative information.
Z312	User records.
Z325	Alerts and history.
Z705	Search statistics. Obtains data from Z05 and Z15 when clear_vir01 is applied.
Z754	Sessions statistics. Obtains data from Z54 session table when clear_vir01 is applied.

Table 31. VIR00 Oracle Tables

Table	Use
z715	Real-time event statistics. Captures Jump to native interface and category usage (locate on DAT01).
institute	Institutions defined for the installation.
portal	Information about the portals defined for the institutions.
proxy	Proxy definitions.
facet_cluster	Cluster facet information. Some of the data is created dynamically and some is predefined.
my_e_journals	Basic information (bor-id, title, issn) of an e-journal record.

VIR01 Oracle Tables

Table 32. VIR01 Oracle Tables

Table	Use
z00	Search result records.
z52	Counters.
z05	Results of searches made in dat01.
z54	/V user sessions.
z110	Full results of searches in dat01.
z15	Search sets from external resources.
z115	Full results of searches from external searches.
z55	/M sessions for both M session and X server.
z56	External session for external resources.
z101	Used for sorting z00 records.
z51	Used for previous searches. For each search, there is an entry listing searched resources.

27

Managing Oracle (Util O)

This section includes:

- **Introduction** on page 265
- **Oracle Server (Util O-1)** on page 267
- **Oracle Listener (Util O-2)** on page 270
- **Oracle Logs (Util O-3)** on page 273
- **NLS (Util O-6)** on page 273
- **Archiving (Util O-7)** on page 274
- **Database Users (Util O-9)** on page 277
- **SQL*Plus Session (Util O-10)** on page 280
- **Database Verification Utility (Util O-12)** on page 281
- **Database Files (Util O-13)** on page 284
- **Database Free/Used Space (Util O-14)** on page 289
- **Manage Database Links (Util O-16)** on page 296
- **Database Tablespaces (Util O-17)** on page 299
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- **Shared Pool (Util O-19)** on page 308
- **Multi Threaded Server (Util O-20)** on page 309
- **Diagnosing and Preventing Oracle Space Problems** on page 311
- **Working in a TWO_TASK Environment** on page 313

Introduction

The Managing Oracle utility (Util O) manages the database operations, such as activating/deactivating the Oracle server, creating Oracle users, and so forth.

To access the `util` command from the prompt, you must first select an active library as follows.

```
dlib dat01
util o
```

The Oracle Management menu appears (see [Figure 87](#)):

```
O. Managing ORACLE
-----
 0. Exit Procedure
 1. Oracle Server
 2. Oracle Listener
 3. Oracle Logs
 5.
 6. Nls
 7. Archiving
 8.
 9. Database Users
10. SQL*Plus Session
11.
12. Database Verification Utility
13. Database Files
14. Database Free/Used Space
15.
16. Database Links
17. Database Tablespaces
18. Oracle Statistics
19. Shared Pool
20. Multi Threaded Server
Please select [exit]:
```

Figure 87: Manage Oracle Tables Menu

Oracle Database on a Separate Server

MetaLib enables you to place the Oracle database on a separate server from the MetaLib application and to distribute Oracle tables across two or more databases on different servers. See [Oracle Tables Management - file_list](#) on page 54 for more information.

Placing the Oracle database on a separate server is done by setting the `TWO_TASK` environment variable (in the `$metalib_conf/metalib_start` file on the MetaLib Server) to the alias pointing to the Oracle server as defined in the `tnsname.ora` file in the MetaLib Server. See [Working in a TWO_TASK Environment](#) on page 313 for more information.

About the Oracle Listener

Even when MetaLib is installed on the same server as the database, MetaLib cannot function without the Oracle Listener.

On a server where both Oracle 9 and Oracle 10g are installed, the Oracle 10 Listener must be used.

The Listener must run on the server if a third-party product has to connect to the database, or if there is a remote server that is connected to the database. For example, when MetaLib is installed on one server and the database is on a different server, the Listener must be running on the database server in order for MetaLib to work properly. For more information about this option, see [Working in a TWO_TASK Environment](#) on page 313.

Oracle Server (Util O-1)

To display the Oracle Server menu (see [Figure 88](#)), enter option **1** from the Managing Oracle menu.

```
O.1.  Oracle Server
-----
      0.  Exit Procedure
      1.  Activate Oracle Server
      2.  Close Oracle Server
      3.  Show Running Oracle Server
      4.  Show Oracle Server Status
Please select [exit]:
```

Figure 88: Oracle Server Menu

Activate Oracle Server (Util O-1-1)

NOTE:

Requires the `METALIB_DBA` user name and password.

In order for MetaLib to interact with Oracle, the Oracle server and Oracle Listener must be running. They can be started automatically at boot time (this is determined during installation), and can also be controlled by the MetaLib Oracle Management utilities under Util O.

To activate the Oracle server:

- 1 Enter option **1** on the Oracle Server menu. The following prompt displays:

```
To continue you will need to enter METALIB_DBA username/password.
username/password:
```

- 2 Enter the `METALIB_DBA` user name and password.

Close Oracle Server (Util O-1-2)

NOTE:

Requires the `METALIB_DBA` user name and password.

This utility shuts down the Oracle server immediately by activating the Oracle shutdown immediate option. All the clients connected to the server are logged out immediately.

To close the Oracle server:

- 1 Enter option 2 on the Oracle Server menu. The following prompt displays:

```
Do you want to restart Oracle Server after closing? yes/[no]
```

- 2 Enter **yes** if you want to restart the server immediately after shutdown.

The following prompt displays:

```
To restart Oracle Server enter METALIB_DBA username/password.  
username/password:
```

NOTE:

If you enter `no`, the server shuts down and does not restart. In order to restart it later on, select Util O-1-1 to access the Activate Oracle Server menu.

- 3 Enter the `METALIB_DBA` user name and password.

Show Running Oracle Server (Util O-1-3)

This utility displays the background processes, the dispatchers, and the shared servers used by your Oracle instance (database).

NOTE:

This utility is only relevant if you are running the Oracle server on the same node as the MetaLib server.

The following is an example of an Oracle server that is up and running:

```
2115 ?      S      2:37 ora_pmon_meta4
2117 ?      S      0:19 ora_psp0_meta4
2119 ?      S      0:28 ora_mman_meta4
2121 ?      S      8:14 ora_dbw0_meta4
2123 ?      S     16:04 ora_lgwr_meta4
2125 ?      S      4:52 ora_ckpt_meta4
2127 ?      S      2:09 ora_smon_meta4
2129 ?      S      0:01 ora_reco_meta4
2131 ?      S      2:39 ora_cjq0_meta4
2133 ?      S      2:24 ora_mmon_meta4
2135 ?      S      5:11 ora_mmn1_meta4
2137 ?      S      0:01 ora_d000_meta4
2139 ?      S      0:11 ora_d001_meta4
2141 ?      S      0:02 ora_d002_meta4
2143 ?      S      0:03 ora_d003_meta4
2145 ?      S      0:02 ora_d004_meta4
2147 ?      S      0:17 ora_d005_meta4
2149 ?      S      0:02 ora_d006_meta4
2151 ?      S      0:13 ora_d007_meta4
2153 ?      S      6:55 ora_s000_meta4
2155 ?      S      0:48 ora_s001_meta4
2157 ?      S      5:44 ora_s002_meta4
2159 ?      S      0:32 ora_s003_meta4
2270 ?      S      0:04 ora_qmnc_meta4
3052 ?      S      0:00 ora_q000_meta4
3122 ?      S      0:02 ora_q001_meta4

Enter CR to continue...
```

The processes that appear on your server may differ slightly from the lines presented in the example.

If these lines do not appear, the Oracle server may be activated using Activate Oracle Server menu (Util O-1-1).

Show Oracle Server Status (Util O-1-4)

This utility displays the status of the Oracle server. For example:

```
INSTANCE_N  HOST_NAME          VERSION          STARTUP_TI     STATUS
LOGINS
-----
meta4       mldev02.corp.ex   10.2.0.3.0      06-OCT-08     OPEN
ALLOWED
librisgroup.com

BANNER
-----
Oracle Database 10g Enterprise Edition Release 10.2.0.3.0 - 64bi
PL/SQL Release 10.2.0.3.0 - Production
CORE       10.2.0.3.0       Production
TNS for Solaris: Version 10.2.0.3.0 - Production
NLSRTL Version 10.2.0.3.0 - Production

Enter CR to continue...
```

Oracle Listener (Util O-2)

To display the Oracle Listener menu (see [Figure 89](#)), enter option **2** from the Managing Oracle menu.

```
0.2. Oracle Listener
-----
0. Exit Procedure
1. Activate Oracle Listener
2. Close Oracle Listener
3. Show Running Oracle Listener
4. Show Listener Status
5. Show Listener Services
Please select [exit]:
```

Figure 89: Oracle Listener Menu

When a user process makes a connection request using a connect string, the Oracle Listener process examines the request and connects it to a server process. Both the Oracle server and the Oracle Listener must be running. They can be started automatically at boot time (this is determined during installation), and can also be controlled by the MetaLib Oracle Management utilities.

Activate Oracle Listener (Util O-2-1)

NOTE:

Requires Oracle software owner password.

To activate the Oracle listener:

- 1 Enter option 1 on the Oracle Listener menu. The following prompt displays:

```
To continue you will need to enter Oracle's password.  
Password:
```

- 2 Enter the Oracle password.

Close Oracle Listener (Util O-2-2)

NOTE:

Requires Oracle software owner password.

To close the Oracle listener:

- 1 Enter option 2 on the Oracle Listener menu. The following prompt displays:

```
Do you want to restart Oracle Listener after closing? yes/[no]
```

- 2 Enter **yes** if you want to restart the server immediately after shutdown.
The following prompt displays:

```
To restart Oracle Listener enter oracle10's password.  
Password:
```

NOTE:

If you enter **no**, the listener shuts down and does not restart. In order to restart it later on, select Util O-2-1 to access the Activate Oracle Listener menu.

- 3 Enter the `oracle10` password.

Show Running Oracle Listener (Util O-2-3)

This utility displays the active process for the Oracle listener. For example:

```
1513 ?    S    0:20 /exlibris/app/oracle/product/102/bin/tnslsnr
LISTENER -inherit
```

Show Listener Status (Util O-2-4)

This utility displays the status of the Oracle listener. For example:

```
LSNRCTL for Solaris: Version 10.2.0.3.0 - Production on 01-NOV-2008
06:18:59

Copyright (c) 1991, 2006, Oracle. All rights reserved.

Connecting to (DESCRIPTION=(address=(protocol=ipc)(key=meta4)))
STATUS of the LISTENER
-----
Alias                LISTENER
Version              TNSLSNR for Solaris: Version 10.2.0.3.0 -
Production
Start Date           23-SEP-2008 13:39:46
Uptime               38 days 17 hr. 39 min. 13 sec
Trace Level          off
Security              ON: Local OS Authentication
SNMP                 OFF
Listener Parameter File /exlibris/app/oracle/product/102/network/
admin/listener.ora
Listener Log File    /exlibris/app/oracle/product/102/network/log/
listener.log
Listening Endpoints Summary...
  (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc)(KEY=meta4)))
  (DESCRIPTION=(ADDRESS=(PROTOCOL=ipc)(KEY=meta3)))
  (DESCRIPTION=(ADDRESS=(PROTOCOL=tcp)(HOST=il-
mldev02.corp.exlibrisgroup.com)(PORT=1521)))
Services Summary...
Service "meta3" has 1 instance(s).
  Instance "meta3", status UNKNOWN, has 1 handler(s) for this
service...
Service "meta4" has 1 instance(s).
  Instance "meta4", status UNKNOWN, has 1 handler(s) for this
service...
Service "meta4.mldev02.exlibris-int.il" has 1 instance(s).
  Instance "meta4", status READY, has 9 handler(s) for this service...
Service "meta4_XPT.mldev02.exlibris-int.il" has 1 instance(s).
  Instance "meta4", status READY, has 9 handler(s) for this service...
The command completed successfully

Enter CR to continue...
```

Oracle Logs (Util O-3)

To display the Oracle Logs menu (see [Figure 90](#)), enter option **3** from the Managing Oracle menu.

```
O.3. Oracle Logs
-----
    0.  Exit Procedure
    1.  View Oracle ALERT LOG
    2.
Please select [exit]:
```

Figure 90: Oracle Logs Menu

View Oracle ALERT LOG (Util O-3-1)

You are prompted for the number of lines to display from the Oracle ALERT LOG. The displayed lines are the most recent.

NLS (Util O-6)

To display the NLS menu (see [Figure 91](#)), enter option **6** from the Managing Oracle menu.

```
O.6.  NLS
-----
    0.  Exit Procedure
    1.  Show NLS Parameters
Please select [exit]:
```

Figure 91: NLS Menu

Show NLS Parameters (Util O-6-1)

MetaLib version 4 uses the UTF8 character set (earlier versions use the US7ASCII character set). This utility shows the NLS (National Language Support) definition of the database.

PARAMETER	VALUE
NLS_LANGUAGE	AMERICAN
NLS_TERRITORY	AMERICA
NLS_CURRENCY	\$
NLS_ISO_CURRENCY	AMERICA
NLS_NUMERIC_CHARACTERS	.,
NLS_CALENDAR	GREGORIAN
NLS_DATE_FORMAT	DD-MON-RR
NLS_DATE_LANGUAGE	AMERICAN
NLS_CHARACTERSET	UTF8
NLS_SORT	BINARY
NLS_TIME_FORMAT	HH.MI.SSXFF AM
NLS_TIMESTAMP_FORMAT	DD-MON-RR HH.MI.SSXFF AM
NLS_TIME_TZ_FORMAT	HH.MI.SSXFF AM TZR
NLS_TIMESTAMP_TZ_FORMAT	DD-MON-RR HH.MI.SSXFF AM TZR
NLS_DUAL_CURRENCY	\$
NLS_NCHAR_CHARACTERSET	UTF8
NLS_COMP	BINARY
NLS_LENGTH_SEMANTICS	BYTE
NLS_NCHAR_CONV_EXCP	FALSE

Archiving (Util O-7)

To display the Archiving menu (see [Figure 92](#)), enter option 7 from the Managing Oracle menu.

```
0.7. Archiving
-----
0.  Exit Procedure
1.  Turning Archiving On
2.  Turning Archiving Off
3.  Show Archiving Status
Please select [exit]:
```

Figure 92: Archiving Menu

Introduction to Archiving

MetaLib backup and recovery procedures are based on Oracle. In order to have the complete ability to recover data up to the time of failure, the Oracle database mode should be ARCHIVELOG. This ensures full recovery up to the time of failure. Hot backup cannot be done without ARCHIVELOG mode.

If the database is in NOARCHIVELOG mode, only cold backups can be performed. In addition, when recovering using a cold backup, the data is

restored to the time the backup was performed and all the changes done afterwards up to the time of the failure are lost.

If the database is in ARCHIVELOG mode, both cold and hot backups can be used to recover the database until the time of the failure, provided all the archive files that were generated from the time the backup (hot or cold) was performed up to the time of failure are available. This is why it is highly recommended to work in archiving mode.

There are some preliminary actions that need to be done before Util O-7 can be used. For further information, refer to the *Oracle Backup* manual and the *Ex Libris Backup Package - Version 2.3* document. You need to ensure that you have adequate system resources, as well as a backup facility to a separate disk or tape to run the backup in this mode.

NOTE:

Changing the archiving mode shuts down the database and restarts it again in ARCHIVELOG mode.

The sequence of events is as follows:

- 1 MetaLib processes (servers and batch procedures) are stopped (using the `metalib_shutdown` script in `$metalib_conf`).
- 2 The Oracle database is shut down.
- 3 The Oracle database is started up.
- 4 MetaLib is restarted (using the `metalib_startup` script in `$metalib_conf`).

Performing a full cold backup after switching to ARCHIVELOG mode is mandatory because otherwise, there is a gap in ARCHIVELOG files which prevents recovery.

Turning Archiving On (Util O-7-1)

This utility turns Oracle archiving on and requires the `METALIB_DBA` user name and password.

NOTE:

Changing the archiving mode shuts down the database and restarts it again in ARCHIVELOG mode.

The sequence of events is as follows:

- 1 MetaLib processes (servers and batch procedures) are stopped (using the `metalib_shutdown` script in `$metalib_conf`).
- 2 Oracle database is shut down.
- 3 Oracle database is started up.

- 4 MetaLib is restarted (using the `metalib_startup` script in `$metalib_conf`).

Turning Archiving Off (Util O-7-2)

This utility turns Oracle archiving off and requires the `METALIB_DBA` user name and password.

NOTE:

Changing the archiving mode shuts down the database and restarts it again in `NO ARCHIVELOG` mode.

The sequence of events is as follows:

- 1 MetaLib processes (servers and batch procedures) are stopped (using the `metalib_shutdown` script in `$metalib_conf`).
- 2 Oracle database is shut down.
- 3 Oracle database is started up.
- 4 MetaLib is restarted (using the `metalib_startup` script in `$metalib_conf`).

Show Archiving Status (Util O-7-3)

This utility displays the archiving status and requires the `METALIB_DBA` user name and password.

After entering the user name and password, you can see the following if archiving is off:

```
SQL*Plus: Release 10.2.0.1.0 - Production on Mon Feb 20 18:01:57 2006

Copyright (c) 1982, 2005, Oracle. All rights reserved.

idle> Connected.
idle> idle> Database log mode           No Archive Mode
Automatic archival                     Disabled
Archive destination                    USE_DB_RECOVERY_FILE_DEST
Oldest online log sequence             384
Current log sequence                   388
idle> Disconnected from Oracle Database 10g Enterprise Edition Release
10.2.0.1.0 - Production
With the Partitioning, OLAP and Data Mining Scoring Engine options
```

When archiving is on, you can see that the Database Log Mode is set to **archive mode** and **Automatic Archival** is enabled.

In a production database, it is highly recommended to set the Database Log Mode to **archive mode**. If you do not have an expert DBA on site, you should consult one before using this mode.

Database Users (Util O-9)

To display the Database Users menu (see [Figure 93](#)), enter option **9** from the Managing Oracle menu.

```
0.9. Database Users
-----
    0. Exit Procedure
    1. List Database Users
    2. Create a New User
    3. Update Oracle passwords of MetaLib users
Please select [exit]:
```

Figure 93: Database Users Menu

List Database Users (Util O-9-1)

This utility shows the list of all the users that exist in the database. Note that some of the users are MetaLib library users and others are administrative users.

The meta4 database contains the following users:

```
-----
SYS
SYSTEM
OUTLN
DBSNMP
METALIB
METALIB_ADMIN
CTXSYS
PERFSTAT
METALIB_BACKUP
METALIB_DBA
M41_VIR01
M41_DAT01
M41_VIR00
```

Create a New User (Util O-9-2)

This utility creates a new user and gives it a default password, which is the same as the user name.

NOTE:

If the name of the user already exists, all of the tables and data belonging to that user are dropped, and the user is created with all of its tables empty.

To create a new user:

- 1 Enter option **2** on the Database Users menu. The following prompt displays:

```
Enter User Name to Create New User:
```

- 2 Enter the new user name. The following prompt displays:

```
enter yes to create oracle user <new user name>
```

- 3 Enter **yes** to continue. The following prompt displays:

```
default password is M47_<new user name>  
if user M47_<new user name> exists all data will be erased!!!  
enter no to reconfirm
```

4 Enter **no** to reconfirm. The following prompt displays:

```
source create_ora_user_b M47_<new user name>
create_ora_user_b M47_<new user name>

SQL*Plus: Release 10.2.0.3.0 - Production on Sat Nov 1 06:48:53 2008

Copyright (c) 1982, 2006, Oracle. All Rights Reserved.

Enter user-name:
Connected to:
Oracle Database 10g Enterprise Edition Release 10.2.0.3.0 - 64bit
Production
With the Partitioning, OLAP and Data Mining Scoring Engine options

metalib_admin@META4> EXIT
Disconnected from Oracle Database 10g Enterprise Edition Release
10.2.0.3.0 - 64bit Production
With the Partitioning, OLAP and Data Mining Scoring Engine options

SQL*Plus: Release 10.2.0.3.0 - Production on Sat Nov 1 06:48:54 2008

Copyright (c) 1982, 2006, Oracle. All Rights Reserved.

Enter user-name:
Connected to:
Oracle Database 10g Enterprise Edition Release 10.2.0.3.0 - 64bit
Production
With the Partitioning, OLAP and Data Mining Scoring Engine options

metalib_admin@META4> DROP USER M47_matt CASCADE
*
ERROR at line 1:
ORA-01918: user 'M47_<new user name>' does not exist

User created.

Grant succeeded.

Disconnected from Oracle Database 10g Enterprise Edition Release
10.2.0.3.0 - 64bit Production
With the Partitioning, OLAP and Data Mining Scoring Engine options

Enter CR to continue...
```

5 Type **[ENTER]** to return to the menu.

Update Oracle Passwords of MetaLib Users (Util O-9-3)

This utility enables you to change the password of an existing MetaLib user.

To update the password of a MetaLib user:

- 1 Enter the following commands to shut down MetaLib:

```
cd $metalib_conf  
metalib_shutdown
```

- 2 Enter option 3 on the Database Users menu. The following prompt displays:

```
Update password for Oracle user  
Enter user name:
```

- 3 Enter the user name to update. The following prompt displays:

```
Enter new password:
```

- 4 Enter the new password. The following prompt displays:

```
Do you want to update this password ([n]/y)?
```

- 5 Enter y to confirm update. The following prompt displays:

```
If you want to update this password in Oracle  
Enter METALIB_DBA user/passwd, or press [Enter] to exit :
```

- 6 Enter the METALIB_DBA user and password to update the MetaLib user.
- 7 Enter the following commands to restart MetaLib:

```
cd $metalib_conf  
metalib_startup
```

SQL*Plus Session (Util O-10)

In Oracle 10g, `svrmgr1` no longer exists. In Oracle 10g SQL*Plus is used in order to perform `sysdba` operations which were previously done via `svrmgr1`. This

utility runs `sqlplus/nolog`. You can then connect as `sysdba` using the `sysdba` user `metalib_dba`.

This utility starts an Oracle SQL*Plus session as `sysdba`, as follows:

```
***** DO: connect METALIB_DBA as sysdba

SQL*Plus: Release 10.2.0.3.0 - Production on Sat Nov 1 07:08:19 2008

Copyright (c) 1982, 2006, Oracle. All Rights Reserved.

idle>
```

Type **exit** to end your SQL session.

Database Verification Utility (Util O-12)

To display the Database Verification Utility menu (see [Figure 94](#)), enter option **12** from the Managing Oracle menu.

```
0.12. Database Verification Utility
-----
0. Exit Procedure
1. Run Database Verification Utility
2. Find Corrupted Object
Please select [exit]:
```

Figure 94: Database Verification Utility

Run Database Verification Utility (Util O-12-1)

NOTE:

Requires the Oracle password.

This procedure verifies that all the Oracle data files are fully readable and accessible. It is advisable to run it periodically for all database files.

To run the Database Verification utility:

- 1 Enter option **1** on the Database Verification Utility menu. The following prompt displays:

```
Select one of the oracle files:
```

- 2 Enter the Oracle file, such as `/exlibris/oradata/meta4/meta4_ts0_01.dbf`. The following prompt displays:

```
Enter database block size [8192]:
```

- 3 Enter the database block size or type **[ENTER]** to use the default. The following prompt displays:

```
To continue you will need to enter oracle10's password.  
Password:
```

- 4 Enter the oracle10 password. The following prompt displays:

```
Execute oracle cshrc
Oracle 10.2.0.1.0
Oracle Home : /exlibris/app/oracle/product/102          Oracle SID :
meta4

DBVERIFY: Release 10.2.0.1.0 - Production on Mon Feb 20 18:16:29 2006

Copyright (c) 1982, 2005, Oracle. All rights reserved.

DBVERIFY - Verification starting : FILE = /exlibris/oradata/meta4/
meta4_ts0_01.dbf
.....

DBVERIFY - Verification complete

Total Pages Examined          : 229376
Total Pages Processed (Data)  : 202702
Total Pages Failing (Data)    : 0
Total Pages Processed (Index): 575
Total Pages Failing (Index)   : 0
Total Pages Processed (Other) : 5869
Total Pages Processed (Seg)   : 0
Total Pages Failing (Seg)     : 0
Total Pages Empty             : 20230
Total Pages Marked Corrupt    : 0
Total Pages Influx            : 0
Highest block SCN             : 9336450 (0.9336450)

Enter CR to continue...
```

- 5 Type [ENTER] to return to the menu.

Find Corrupted Object (Util O-12-2)

If the Run Database Verification utility (Util O-12-1) indicates that corrupt blocks were found, use this utility to identify the Oracle objects that reside in the corrupted blocks.

NOTE:

This routine should be activated by a DBA only.

To identify the Oracle objects that reside in the corrupted blocks:

- 1 Enter option 2 on the Database Verification Utility menu. The following prompt displays:

```
Enter datafile name :
```

- 2 Enter the datafile name. The following prompt displays:

```
Enter block number :
```

- 3 Enter the block number.

Database Files (Util O-13)

To display the Database Files menu (see [Figure 95](#)), enter option 13 from the Managing Oracle menu.

```
0.13. Database Files
-----
0.  Exit Procedure
1.  List of Database Files
2.  Resize Oracle Datafile
3.  Add File to Tablespace
4.  Show Datafile Free Blocks by KBytes
5.  Show Datafile Free Blocks by BlockID
Please select [exit]:
```

Figure 95: Database Files Menu

List of Database Files (Util O-13-1)

This utility lists the Oracle data files and their sizes.

For example, the meta4 database contains the following files:

```
The Database meta4 Contains the Following Files:
=====
```

T	NAME	SIZE K	F
LOG	/exlibris/oradata/meta4/meta4_log01.dbf	65536	6
SYSAUX	/exlibris/oradata/meta4/meta4_sysaux01.dbf	655360	3
SYSTEM	/exlibris/oradata/meta4/meta4_system01.dbf	655360	1
TS0	/exlibris/oradata/meta4/meta4_ts0_01.dbf	2048000	5
TS0	/exlibris/oradata/meta4/meta4_ts0_02.dbf	2048000	7
TS1	/exlibris/oradata/meta4/meta4_ts1_01.dbf	2048000	9
UNDOTBS1	/exlibris/oradata/meta4/meta4_undotbs01.dbf	524288	2
USERS	/exlibris/oradata/meta4/meta4_users01.dbf	204800	4
TEMP	/exlibris/oradata/meta4/meta4_temp01.dbf	1048576	8
TEMP	/exlibris/oradata/meta4/meta4_temp02.dbf	1024000	2

Resize Oracle Datafile (Util O-13-2)

NOTE:

Requires the METALIB_DBA user name and password.

This utility is used to enlarge or reduce the size of an Oracle datafile. You are prompted for the datafile name and the new size.

To resize an Oracle datafile:

- 1 Enter option 2 on the Database Files menu. The following prompt displays:

```
To resize a database file enter METALIB_DBA username/password.
username/password:
```

- 2 Enter the METALIB_DBA user name and password. The following prompt displays:

```
Enter Tablespace name:
```

- 3 Enter the tablespace name. For example, the following prompt displays if TS0 is specified:

```
Tablespace TS0 consist of the following files:
/exlibris/oradata/meta4/meta4_ts0_05.dbf
/exlibris/oradata/meta4/meta4_ts0_04.dbf
/exlibris/oradata/meta4/meta4_ts0_03.dbf
/exlibris/oradata/meta4/meta4_ts0_02.dbf
/exlibris/oradata/meta4/meta4_ts0_01.dbf

Enter file name to resize:
```

- 4 Enter the name of the datafile to resize (specify full path). For example, the following prompt displays if /exlibris/oradata/meta4/meta4_ts0_05.dbf is specified:

```
-rw-rw---- 1 oracle dba 1048584192 Nov 1 07:05 /exlibris/
oradata/meta4/meta4_ts0_05.dbf
Enter new file size (MB):
```

- 5 Enter the new size in MB. For example, the following prompt displays if 105 is specified:

```
Tablespace: TS0
File: /exlibris/oradata/meta4/meta4_ts0_05.dbf
New size: 105MB

confirm (y/[n]):
```

- 6 Enter y to confirm.

Add File to Tablespace (Util O-13-3)

NOTE:

Requires the METALIB_DBA user name and password.

Tablespaces are composed of one or more data files. When a tablespace does not have enough free space, it needs to be enlarged. This may be done by adding new files or by resizing existing files (see [Database Tablespaces \(Util O-17\)](#) on page 299).

To add a file to a tablespace:

- 1 Enter option 3 on the Database Files menu. The following prompt displays:

```
To add a file to a tablespace enter METALIB_DBA username/password.  
username/password:
```

- 2 Enter the METALIB_DBA user name and password. The following prompt displays:

```
Enter Tablespace name:
```

- 3 Enter the tablespace name. For example, the following prompt displays if TS0 is specified:

```
Tablespace TS0 consist of the following files:  
  
/exlibris/oradata/meta4/meta4_ts0_05.dbf  
/exlibris/oradata/meta4/meta4_ts0_04.dbf  
/exlibris/oradata/meta4/meta4_ts0_03.dbf  
/exlibris/oradata/meta4/meta4_ts0_02.dbf  
/exlibris/oradata/meta4/meta4_ts0_01.dbf  
  
Enter new file name:
```

- 4 Enter the name of the datafile to add (specify full path). For example, the following prompt displays if /exlibris/oradata/meta4/meta4_ts0_06.dbf is specified:

```
Enter file size (MB):
```

- 5 Enter the size in MB. For example, the following prompt displays if 105 is specified:

```
Tablespace: TS0  
New file: /exlibris/oradata/meta4/meta4_ts0_06.dbf  
Size: 105MB  
  
confirm (y/[n]):
```

- 6 Enter y to confirm.

Show Datafile Free Blocks by KBytes (Util O-13-4)

Option 4 of the Database Files menu displays the Free Blocks Report as follows:

```
Free Blocks Report by Kbytes
=====
TABLES  F    BLOCK_ID  KBYTES  NAME
-----  -    -
TS1     9    65161    707520  /exlibris/oradata/meta4/meta4_ts
1_02.dbf
UNDOTS  2     2953    500672  /exlibris/oradata/meta4/meta4_un
dots_01.dbf
TS0     8    227465  228288  /exlibris/oradata/meta4/meta4_ts
0_02.dbf
TOOLS   3     2869    181856  /exlibris/oradata/meta4/meta4_to
ols_01.dbf
TABLES  F    BLOCK_ID  KBYTES  NAME
-----  -    -
TS0     8    209673  110592  /exlibris/oradata/meta4/meta4_ts
0_02.dbf
DRSYS   7     617    81088   /exlibris/oradata/meta4/meta4_dr
--More--
```

Show Datafile Free Blocks by BlockID (Util O-13-5)

This option displays the free blocks for a specified tablespace and datafile.

To show the free blocks for a datafile:

- 1 Enter option 5 on the Database Files menu. The following prompt displays:

```
Enter Tablespace name:
```

- 2 Enter the tablespace name. For example, the following prompt displays if TS0 is specified:

```
Datafile Number:
```

- 3 Enter the datafile number. The following report displays:

```
Enter value for ts: Enter value for fl_no:
BLOCK_ID          BYTES
-----          -
190601            1048576
190345            1048576
170505            1048576
166921            1048576
166793            1048576
166665            1048576
166537            1048576
166153            1048576
165897            1048576
165129            1048576
165001            1048576

BLOCK_ID          BYTES
-----          -
144905            1048576
144369            65536
144361            65536
144353            65536
144345            65536
--More--
```

NOTE:

To determine the value of the datafile number, use the Show Datafile Free Blocks by Kbytes menu (Util O-13-4).

- 4 Type **[ENTER]** to continue.

Database Free/Used Space (Util O-14)

This utility provides information about the tablespaces' free space.

To display the Database Free/Used Space menu (see [Figure 96](#)), enter option **14** from the Managing Oracle menu.

```
0.14. DataBase Free/Used Space
-----
0. Exit procedure
1. All Tablespaces free space summary
2. Number of Free extents by size in a Tablespace
3. All Free extents of min size in a Tablespace
4. Space Used by a Library/Libraries in each Tablespace
5. Space Used by a Group of Libraries in each Tablespace
6. Coalesce Contiguous Free Extents
7.
8. MetaLib Tablespaces Total/Free/Used space report
9. Clean Temporary Tablespace Free Storage
Please select [exit]:
```

Figure 96: Database Free/Used Space Menu

All Tablespaces Free Space Summary (Util O-14-1)

This utility displays details about the database free space in the Oracle `DBA_FREE_SPACE` table. It is important to review this report from time to time in order to prepare additional resources for the database.

This report (see [Figure 97](#)) contains the following columns:

- `TABLESPACE_NAME` — The tablespace's name.
- `TOTAL_FREE_SPACE` — The total amount of free space in the tablespace (in megabytes).
- `MAX_EXTENT`: The size of the largest contiguous extent of the tablespace (in megabytes).
- `NUM_FREE_EXTENTS`: The number of free extents in the tablespace.

NOTE:

If a tablespace has no free space left, it does not appear in this report.

TABLESPACE_NAME	TOTAL_FREE_SPACE	MAX_EXTENT	NUM_FREE_EXTENTS
SYSTEM	174.095634	174.033099	2
LOG	63.9726412	63.9726412	1
USERS	200.031756	200.031756	1
TS0	2385.18522	3.00164885	4062
SYSAUX	343.563725	338.123237	14
UNDOTBS1	168.029802	13.9451603	79
TSLOB	64.0351756	64.0351756	1
TS1	1261.25533	.437740458	20163

Temporary Tablespace Space Usage

TABLESPACE_NAME	SIZE M
TEMP	1011.55566

Sort Segments Usage (in Temporary Tablespace)

TABLESPACE_NAME	Total M	Used M	Free M
TEMP	12	0	12

Enter CR to continue...

Figure 97: Tablespace Free Space Summary

Number of Free Extents by Size in a Tablespace (Util O-14-2)

This utility lists the number of extents per size (truncated in megabytes) in the tablespace.

To show the number of free extents:

- 1 Enter option 2 on the DataBase Free/Used Space menu. The following prompt displays:

```
Enter Tablespace name:
```

- 2 Enter the tablespace name. For example, the following prompt displays if TS0 is specified:

```
SIZE IN MB  NUM OF EXTENTS
-----
          3             2
          2             1
          1           2259
          0           1800
```

```
Enter CR to continue...
```

- 3 Type [ENTER] to return to the menu.

All Free Extents of Minimum Size in a Tablespace (Util O-14-3)

This utility lists the exact size (in megabytes) of all free extents that are larger than a given size.

To show the number of free extents per minimum size:

- 1 Enter option **3** on the DataBase Free/Used Space menu. The following prompt displays:

```
Enter Tablespace name:
```

- 2 Enter the tablespace name. For example, the following prompt displays if **TS0** is specified:

```
Enter Min size (MB) of free extent [0=ALL]:
```

- 3 Enter the minimum size (MB). For example, the following prompt displays if **0** is specified:

```
EXTENT_SIZE
-----
3.00164885
3.00164885
2.00109924
1.00054962
1.00054962
1.00054962
1.00054962
1.00054962
1.00054962
1.00054962
1.00054962
1.00054962
1.00054962
1.00054962

EXTENT_SIZE
-----
1.00054962
1.00054962
1.00054962
1.00054962
1.00054962
--More--
```

- 4 Type **[ENTER]** to continue.

Since the minimum size entered was zero, this example lists the exact sizes of all the free extents in TableSpace TS0.

Space Used by a Library/Libraries in Each Tablespace (Util O-14-4)

This utility shows, for each library, the amount of space that the library occupies in each tablespace. If a truncated library name is used, all the libraries starting with the given characters are listed and the occupied space is listed for each one of them.

To show the space used by libraries in each tablespace:

- 1 Enter option 4 on the DataBase Free/Used Space menu. The following prompt displays:

```
Enter Library name (full or truncated, e.g. usm):
```

- 2 Enter the library name (full or truncated). For example, the following prompt displays if `vir` is specified:

```
OWNER                TABLESPACE_NAME      SIZE_MB
-----
M47_VIR01            TS1                    49.152
M47_VIR01            TS0                    110.310595
M47_VIR00            TS0                    40.0845191
M47_VIR00            TS1                    30.9545038

Enter CR to continue...
```

- 3 Type **[ENTER]** to return to the menu.

Space Used by a Group of Libraries in Each Tablespace (Util O-14-5)

This utility shows the total amount of space that all the libraries whose names start with the given characters occupy in each tablespace.

To show the space used by a group of libraries in each tablespace:

- 1 Enter option **5** on the DataBase Free/Used Space menu. The following prompt displays:

```
Enter first 3 characters of Library code (e.g. usm):
```

- 2 Enter the first three characters of the library code. For example, the following prompt displays if `vir` is specified:

```
TABLESPACE_NAME          SIZE_MB
-----
TS0                      150.395115
TS1                      80.1065038

Enter CR to continue...
```

- 3 Type **[ENTER]** to return to the menu.

Coalesce Contiguous Free Extents (Util O-14-6)

This utility is no longer needed when using a locally-managed tablespace. It remains only for backward compatibility and will be removed in future versions.

NOTE:

Requires the `METALIB_DBA` user name and password.

Database free space may be composed of extents of various sizes. It is worthwhile to use this procedure to coalesce the contiguous free extents in an attempt to create larger free extents. Perform this procedure periodically.

To coalesce contiguous free extents:

- 1 Enter option **6** on the DataBase Free/Used Space menu. The following prompt displays:

```
To Coalesce Tablespaces enter METALIB_DBA username/password.
username/password:
```

- 2 Enter the `METALIB_DBA` user name and password to enter SQL*Plus to perform the update.

NOTE:

The procedure only coalesces extents for tablespaces TS0 and TS1.

MetaLib Tablespaces Total/Free/Used Space Report (Util O-14-8)

This utility provides details about the database free and used space in the Oracle tablespaces that is in use for the MetaLib application and the size used by each MetaLib library in MB in each tablespace. For example:

NAME	TOTAL SIZE M
TS0	5520
TS1	3024

NAME	TOTAL FREE M
TS0	2383
TS1	1260

NAME	TOTAL USED M
TS0	5504
TS1	3023

NAME	LIB	TOTAL USED M
TS1	M48_DAT01	81
TS1	M48_VIR00	29
TS1	M44_LAW01	13
TS1	M41_VIR01	35

--More--

Clean Temporary Tablespace Free Storage (Util O-14-9)

In rare cases, the temporary tablespace does not free non-used pages quickly enough. This utility allows you to free those pages manually.

Manage Database Links (Util O-16)

The Manage Database Links utilities are used to manage one logical database throughout the network from more than one physical database. They are used when there are some Oracle tables that are on one or more separate servers, and not on the MetaLib application's server.

For additional information about managing database links, see **Oracle Tables Management - file_list** on page 54.

NOTE:

The use of database links is different from the use of `TWO_TASK`, where the entire database is on a remote server.

To display the Manage Database Links menu (see **Figure 98**), enter option **16** from the Managing Oracle menu.

```
0.16. Manage Database Links
-----
0. Exit Procedure
1. List Database Links
2. Create Database Link
3. Drop Database Link
Please select [exit]:
```

Figure 98: Manage Database Links Menu

List Database Links (Util O-16-1)

This utility lists the existing database links. An empty list returns if no links exist.

Create Database Links (Util O-16-2)

This utility creates a new database link.

In MetaLib database links are used when working with tables on a remote database (see **Oracle Tables Management - file_list** on page 54).

To create a new database link:

- 1 Enter option 2 on the Manage Database Links menu. The following prompt displays:

```
Enter Database Link Name (only one word) :
```

- 2 Enter the name of the new database link. The following prompt displays:

```
Enter oracle TNS service name for remote database:
```

- 3 Enter the name of the Oracle TNS service (*<hostname>.<SID>*) as defined in the `$ORACLE_HOME/network/admin/tnsnames.ora` file.

If the network service is defined, the following prompt displays:

```
Enter username to remote system [metalib]
```

NOTE:

If the network service is not defined in the configuration file, an error message appears and you are not able to create the new link.

- 4 Enter the user name. The following prompt displays:

```
Enter password to remote system [metalib passwd]
```

- 5 Enter the password. The database link is created and the following message appears (in this example, the TNS service name is `ram40.metah1` and the user name is `metalib`):

```
Now creating a private database link to remote user metalib,  
If the remote database's metalib password is changed  
in the remote location, then  
this database link should be recreated!  
  
drop database link ram40.metal  
      *  
ERROR at line 1:  
ORA-02024: database link not found  
  
Database link created.
```

Note that this utility drops the link and then creates it. Therefore, if this is the first time a link is created, the following error message can be ignored:

```
ERROR at line 1:  
ORA-02024: database link not found
```

Drop Database Link (Util O-16-3)

This utility is used to drop a database link when it is not needed anymore. You are prompted for the name of the database link to drop.

Database Tablespaces (Util O-17)

To display the Database Tablespaces menu (see [Figure 99](#)), enter option **17** from the Managing Oracle menu.

```
0.17. Database Tablespaces  
-----  
0. Exit Procedure  
1. Create a Tablespace  
2. List Tablespace Files  
3.  
4. Show Tablespace Definitions  
5. Show Tablespace Allocated/Free/Used Space  
Please select [exit]:
```

Figure 99: Manage Database Tablespaces Menu

Create a Tablespace (Util O-17-1)

One rarely needs to create a tablespace, since all necessary tablespaces are created during system installation. This utility is used if there is a need for an additional tablespace. You can read about tablespaces and their types in [Oracle Tables Management - file_list](#) on page 54.

To create a tablespace:

- 1 Enter option 1 on the DataBase Tablespaces menu. The following prompt displays:

```
To Create a new Tablespace, Enter METALIB_DBA username/password.  
username/password:
```

- 2 Enter the METALIB_DBA user name and password to enter SQL*Plus to perform the update.

```
Enter Tablespace name:
```

- 3 Enter the new tablespace name. The following prompt displays:

```
Enter new file name (full path) :
```

- 4 Enter the new datafile, including the full path. The following prompt displays:

```
Enter new file size (MB):
```

- 5 Enter the file size (MB). The following prompt displays:

```
=====  
Tablespaces can be created with a UNIFORM size for all extents  
or with allocation type AUTOALLOCATE which means  
Oracle will decide how to define extents  
Util o 17 4 can be used to see current definitions  
for existing tablespaces  
=====  
Tablespace Allocation Type : [AUTO/UNIFORM]
```

- 6 Enter the allocation type (`uniform` or `auto`). The following prompt displays:

```
UNIFORM SIZE : [128K/1M/4M/128M/1920M]
```

NOTE:

If you select `auto`, Oracle will decide how to define extents. Use Util O-17-4 to see current definitions for existing tablespaces.

- 7 Specify one of the uniform sizes: 128K, 1M, 4M, 128M, or 1920M. The following prompt displays:

```
Tablespace: TEST
File:       /exlibris/oradata/meta4/test_01.dbf
File size:  1000MB
Allocation : UNIFORM SIZE 128k
confirm (y/[n]):
```

- 8 Enter `y` to continue.

List Tablespace Files (Util O-17-2)

To list a tablespace's files:

- 1 Enter option 2 on the DataBase Tablespaces menu. The following prompt displays:

```
Enter Tablespace name:
```

- 2 Enter the tablespace name. The following message displays:

```
Enter Tablespace name: ts0

Tablespace TS0 consist of the following files:

NAME                                                    SIZE K  F
-----
/exlibris/oradata/meta4/meta4_ts0_01.dbf              1536000  7
/exlibris/oradata/meta4/meta4_ts0_02.dbf              2048000  9
/exlibris/oradata/meta4/meta4_ts0_03.dbf              1024000 11
/exlibris/oradata/meta4/meta4_ts0_04.dbf               20480  12
/exlibris/oradata/meta4/meta4_ts0_05.dbf              1024000 13

Enter CR to continue...
```

- 3 Type [ENTER] to return to the menu.

Show Tablespaces Definition (Util O-17-4)

This utility shows for each tablespace: the types of extent management, segment allocation, tablespace (for permanent or temporary objects or for undo segments), and the tablespace status (online or offline). For example:

TS_NAME	EXT_MGMT	ALLOC_TYP	INIT_EXT	NEXT_EXT	TYPE	STAT
LOG	LOCAL	SYSTEM	65536		PERM	ONL
SYSAUX	LOCAL	SYSTEM	65536		PERM	ONL
SYSTEM	LOCAL	SYSTEM	65536		PERM	ONL
TEMP	LOCAL	UNIFORM	1048576	1048576	TEMP	ONL
TS0	LOCAL	SYSTEM	65536		PERM	ONL
TS1	LOCAL	SYSTEM	65536		PERM	ONL
TSLOB	LOCAL	UNIFORM	8388608	8388608	PERM	ONL
UNDOTBS1	LOCAL	SYSTEM	65536		UNDO	ONL
USERS	LOCAL	UNIFORM	40960	40960	PERM	ONL

```
Enter CR to continue...
```

Show Tablespace Allocated/Free/Used Space (Util O-17-5)

This utility shows a given tablespace's total tablespace size, amount of free space, and amount of used space.

To display space details for a tablespace:

- 1 Enter option 5 on the DataBase Tablespaces menu. The following prompt displays:

```
Enter Tablespace name:
```

- 2 Enter the tablespace name. The following message displays:

```
Enter Tablespace name : ts0
Tablespace TS0 :
-----
TOTAL SIZE M
-----
          5520
TOTAL FREE M
-----
          2383
TOTAL USED M
-----
          5504
Enter CR to continue...
```

- 3 Type **[ENTER]** to return to the menu.

Oracle Statistics (Util O-18)

This utility displays Oracle statistics. To display the Oracle Statistics submenu (see [Figure 100](#)), enter option **18**.

```
0.18. Oracle Statistics
-----
0. Exit Procedure
1. Performance Statistics
2. Rollback Segments Definitions
3. Rollback Segments Dynamic Allocation
4. View Long Operations
5. IO Statistics
6. Sort Operations
Please select [exit]:
```

Figure 100: Oracle Statistics Menu

Enter the number of the utility to display the statistics.

Performance Statistics (Util O-18-1)

Option 1 on the Oracle Statistics menu allows you to display the performance statistics as follows:

```
SYSTEM GLOBAL AREA (sga)
  BYTES
  734003200
=====
BUFFER CACHE HIT RATIO (db_block_buffers)
  GETS      MISSES  RATIO
  61467161  1414940  97.7%
=====
STATISTIC (db_block, DBWR, sort_area)
NAME                                             VALUE
opened cursors current                          486
db block gets                                  12069868
consistent gets                                49397295
physical reads                                 1414940
physical writes                                539234
DBWR checkpoints                               2552
redo log space requests                        117
sorts (memory)                                 15999806
sorts (disk)                                   0

Enter CR to continue...

=====
DATA DICTIONARY CACHE (shared_pool_size)
  GETS      MISSES  RATIO
  4472598   232193  94.81%
=====
LIBRARY CACHE (shared_pool_size)
EXECUTIONS  MISSES  LIBCACHEPROZ
  2891325    28527  99.01%

Enter CR to continue...
```

Rollback Segments Definitions (Util O-18-2)

In Oracle 10g, there is a new feature named Automatic Undo Management (AUM), which simplifies and automates the management of undo segments. When AUM is used, the rollback segments are defined and managed by Oracle and called UNDO segments.

NOTE:

Util O-18-2 and Util O-18-3 are still available for backward compatibility.

For example, option 2 on the Oracle Statistics menu displays the following message:

```

All Rollback Segments
Segm Name      Ownr  In TabSpace  File containing header of rbs
SYSTEM         Priv  SYSTEM      /exlibris/oradata/meta4/meta4_system01.dbf
_SYSSMU2$     Publ  UNDOTBS1    /exlibris/oradata/meta4/meta4_undotbs01.dbf
_SYSSMU3$     Publ  UNDOTBS1    /exlibris/oradata/meta4/meta4_undotbs01.dbf
_SYSSMU4$     Publ  UNDOTBS1    /exlibris/oradata/meta4/meta4_undotbs01.dbf
_SYSSMU5$     Publ  UNDOTBS1    /exlibris/oradata/meta4/meta4_undotbs01.dbf
_SYSSMU6$     Publ  UNDOTBS1    /exlibris/oradata/meta4/meta4_undotbs01.dbf
_SYSSMU7$     Publ  UNDOTBS1    /exlibris/oradata/meta4/meta4_undotbs01.dbf
_SYSSMU8$     Publ  UNDOTBS1    /exlibris/oradata/meta4/meta4_undotbs01.dbf
_SYSSMU9$     Publ  UNDOTBS1    /exlibris/oradata/meta4/meta4_undotbs01.dbf
_SYSSMU10$    Publ  UNDOTBS1    /exlibris/oradata/meta4/meta4_undotbs01.dbf
_SYSSMU11$    Publ  UNDOTBS1    /exlibris/oradata/meta4/meta4_undotbs01.dbf
Segm Name      Ownr  In TabSpace  File containing header of rbs
_SYSSMU12$    Publ  UNDOTBS1    /exlibris/oradata/meta4/meta4_undotbs01.dbf
_SYSSMU13$    Publ  UNDOTBS1    /exlibris/oradata/meta4/meta4_undotbs01.dbf
_SYSSMU14$    Publ  UNDOTBS1    /exlibris/oradata/meta4/meta4_undotbs01.dbf
_SYSSMU15$    Publ  UNDOTBS1    /exlibris/oradata/meta4/meta4_undotbs01.dbf
_SYSSMU16$    Publ  UNDOTBS1    /exlibris/oradata/meta4/meta4_undotbs01.dbf
_SYSSMU17$    Publ  UNDOTBS1    /exlibris/oradata/meta4/meta4_undotbs01.dbf
_SYSSMU18$    Publ  UNDOTBS1    /exlibris/oradata/meta4/meta4_undotbs01.dbf
_SYSSMU1$     Publ  UNDOTBS1    /exlibris/oradata/meta4/meta4_undotbs01.dbf
Online Rollback Segments:
Name          NrEx  Size      Init      Next  PctI  MinE  MaxE      Opt size  Stat
SYSTEM        6     376K     114,688   1     ##### 1     #####    OnL
_SYSSMU       14    12408K   131,072   2     ##### 2     #####    OnL
_SYSSMU       14    12408K   131,072   2     ##### 2     #####    OnL
_SYSSMU       17    15480K   131,072   2     ##### 2     #####    OnL
_SYSSMU       13    11384K   131,072   2     ##### 2     #####    OnL
_SYSSMU       21    19576K   131,072   2     ##### 2     #####    OnL
_SYSSMU       26    24696K   131,072   2     ##### 2     #####    OnL
_SYSSMU       12    10360K   131,072   2     ##### 2     #####    OnL
_SYSSMU       21    19576K   131,072   2     ##### 2     #####    OnL
_SYSSMU       21    19576K   131,072   2     ##### 2     #####    OnL
_SYSSMU       12    10360K   131,072   2     ##### 2     #####    OnL

Enter CR to continue...
    
```

Rollback Segments Dynamic Allocation (Util O-18-3)

Because rollback segments are now managed by Oracle, Util O-18-3 is not needed, but it is still available for backward compatibility.

For example, option 3 on the Oracle Statistics menu displays the following message:

NAME	EXT	RSSIZE	WRITES	SHRN	AVGSHR	WRAPS	CUREXT	WAITS
SYST	6	385024	7740	0	0	0	1	0
_SYS	14	12705792	53731066	22	1429876	71	7	0
_SYS	12	10608640	49175572	21	1298236	64	4	0
_SYS	14	12705792	77033996	27	1553445	94	5	1
_SYS	17	15851520	94917994	22	2049489	113	7	0
_SYS	13	11657216	90844366	23	2689825	107	7	3
_SYS	21	20045824	89677044	23	2188332	106	10	0
_SYS	26	25288704	84519748	21	1697694	102	10	1
_SYS	12	10608640	78118184	18	3087473	93	3	0
_SYS	21	20045824	81158204	26	1693853	97	4	0
_SYS	21	20045824	80653304	22	1909480	98	16	0

Enter CR to continue...

View Long Operations (Util O-18-4)

This utility displays Oracle long operations, if they occur in the system at the time the utility is run. The following information displays:

- SID — Session identifier
- OPNAME — Operation name
- TARGET — The object on which the operation is being performed
- DONE SO FAR — Percentage of work already done

Use <CTRL> + C to stop the display.

IO Statistics (Util O-18-5)

This utility displays the I/O statistics. The following information displays:

- BLOCK_GETS - Block gets for this session
- CONSISTENT_GETS - Consistent gets for this session
- PHYSICAL_READS - Physical reads for this session
- BLOCK_CHANGES - Block changes for this session
- CONSISTENT_CHANGES - Consistent changes for this session

Use <CTRL> + C to stop the display.

For example:

BLOCK_GETS	CONSISTENT_GETS	PHYSICAL_READS	BLOCK_CHANGES	CONSISTENT_CHANGES
5360720	16859217	153081	4975011	15065
5364774	16869224	153118	4978618	15065
5368592	16877862	153138	4981732	15065
5375440	16891538	153180	4986583	15065
5378493	16898409	153196	4988801	15065

Sort Operations (Util O-18-6)

This utility displays sort operations if they occur in the system when the utility is running.

Use <CTRL> + C to stop the display.

Shared Pool (Util O-19)

To display the Shared Pool menu (see [Figure 101](#)), enter option **19** from the Managing Oracle menu.

```
0.19. Shared Pool
-----
    0. Exit Procedure
    1. Show SGA Buffers
    2. Flush Shared Pool
Please select [exit]:
```

Figure 101: Shared Pool Menu

Show SGA Buffers (Util O-19-1)

This utility shows the various SGA buffers.

NAME	BYTES
-----	-----
fixed_sga	2032960
buffer_cache	356515840
log_buffer	6348800
ENQUEUE STATS	11760
VIRTUAL CIRCUITS	1040920
transaction	1075712
table definiti	8400
KGSKI scheduler heap 2 de	232
KTCN: Obj Invalidation Se	2336
kgl lock hash table state	12600
ksunfy: nodes of hierarch	320
NAME	BYTES
-----	-----
object stat dummy stat	288
kks stbkt	1572864
plwda:PLW_STR_NEW_RVAL	24
plwspv:PLW_STR_NEW_VAL	32
simulator latch/bucket st	2816
--More--	

Flush Shared Pool (Util O-19-2)

This utility flushes the shared pool. You are prompted for the METALIB_DBA user and password.

Multi Threaded Server (Util O-20)

In a standard Oracle configuration, a separate server process is created on behalf of each user process. It is called a dedicated server process (or shadow process), because it acts only on behalf of the associated user process.

Oracle also supports the Shared Server Architecture (or Multi Threaded Server Architecture - MTS) in which there are several server processes, each serving several user processes.

In MetaLib, the MTS infrastructure is implemented in the database and used in SEARCH mechanism of application.

To display the Multi-Threaded Server menu (see [Figure 102](#)), enter option 20 from the Managing Oracle menu.

```
0.20. Multi Threaded Server
-----
0. Exit Procedure
2. Show Listener Services
Please select [exit]:
```

Figure 102: Multi-Threaded Server Menu

Show Listener Services (Util O-20-2)

This utility displays the listener services as follows:

```
MTS Dispatchers by Instance
=====

Service "meta3" has 1 instance(s).
Instance "meta3", status UNKNOWN, has 1 handler(s) for this service...
Handler(s):
Service "meta4" has 1 instance(s).
Instance "meta4", status UNKNOWN, has 1 handler(s) for this service...
Handler(s):
Service "meta4.mldev02.exlibris-int.il" has 1 instance(s).
Instance "meta4", status READY, has 9 handler(s) for this service...
Handler(s):
"D007" established:0 refused:0 current:0 max:992 state:ready
DISPATCHER <machine: mldev02.corp.exlibrisgroup.com, pid: 12023>
(AADDRESS=(PROTOCOL=ipc)(KEY=#12023.1))
"D006" established:0 refused:0 current:0 max:992 state:ready
DISPATCHER <machine: mldev02.corp.exlibrisgroup.com, pid: 12013>
(AADDRESS=(PROTOCOL=ipc)(KEY=#12013.1))
"D005" established:0 refused:0 current:0 max:992 state:ready
DISPATCHER <machine: mldev02.corp.exlibrisgroup.com, pid: 12010>
(AADDRESS=(PROTOCOL=ipc)(KEY=#12010.1))
"D004" established:0 refused:0 current:0 max:992 state:ready
DISPATCHER <machine: mldev02.corp.exlibrisgroup.com, pid: 12000>
(AADDRESS=(PROTOCOL=ipc)(KEY=#12000.1))
"D003" established:0 refused:0 current:0 max:992 state:ready
DISPATCHER <machine: mldev02.corp.exlibrisgroup.com, pid: 11993>
(AADDRESS=(PROTOCOL=tcp)(HOST=il-
mldev02.corp.exlibrisgroup.com)(PORT=59006))
"D002" established:0 refused:0 current:0 max:992 state:ready
DISPATCHER <machine: mldev02.corp.exlibrisgroup.com, pid: 11988>
(AADDRESS=(PROTOCOL=tcp)(HOST=il-
mldev02.corp.exlibrisgroup.com)(PORT=59005))
"D001" established:0 refused:0 current:0 max:992 state:ready
DISPATCHER <machine: mldev02.corp.exlibrisgroup.com, pid: 11986>
(AADDRESS=(PROTOCOL=tcp)(HOST=il-
mldev02.corp.exlibrisgroup.com)(PORT=59004))
"D000" established:0 refused:0 current:0 max:992 state:ready
DISPATCHER <machine: mldev02.corp.exlibrisgroup.com, pid: 11973>
(AADDRESS=(PROTOCOL=tcp)(HOST=il-
mldev02.corp.exlibrisgroup.com)(PORT=59003))
--More--
```

Diagnosing and Preventing Oracle Space Problems

Error Message: “Unable to Extend”

If you see one of the following errors in a job, server, or daemon log as shown in the following examples, where *znn* is a MetaLib table and *xxxmm* is a MetaLib library:

```
Oracle error: io_znn_write  
ORA-01653: unable to extend table xxxmm.Znn by 128 in tablespace TS0
```

or

```
ORA-01654: unable to extend index xxxmm.Znn_ID by 12800 in tablespace  
IO_Znn: WRITE ERROR
```

Perform the following procedure:

- 1 Perform Util O-14-1 to see if this tablespace appears.
- 2 If it appears, continue with the next step.

If it does *not* appear: When a tablespace is 100% full, it may cease to appear in Util O-14-1. This means that space needs to be added. This can be done using Util O-13-3. Make sure that the file is numbered one number higher than the existing files for this tablespace and that it is on the right disk. An Oracle expert should do this.

- 3 Check the *znn* (or *znn_id*) entry in the *xxxmm file_list* to determine the table's tablespace and allocation.
- 4 Check the `MAX_EXTENT` (available) for this tablespace using Util O-14-1:

TABLESPACE_NAME	TOTAL_FREE_SPACE	MAX_EXTENT	NUM_FREE_EXTENTS
DRSYS	84.0383511	84.0383511	
RBS	199.476763	198.968672	2
SYSTEM	183.960427	183.960427	1
TEMP	1000.5418	853.351573	539
TOOLS	6.30815267	6.30815267	1
TS0	2469.25484	695.647756	967
TS1	1867.50241	222.465954	1063

This problem has occurred because the `MAX_EXTENT` (available) for this table's (or index's) tablespace is less than this table's (or index's) allocation, which was verified in the previous step.

5 Add files to the tablespace.

The records which the system was attempting to write when you got the error were (in the case of the 01653 error) not actually written or (in the case of the 01654 error) did not have the Oracle index written.

In the case of the 01653 table error, you need to rerun the job or transactions that generated the update. Other tables may have been successfully updated as part of this same job/transaction. You need to consider how to bring them back in synch.

In the case of the 01654 index error, it is simply a matter of running Util A-4 to drop the index followed by Util A-2 to recreate it.

Preventing “Unable to Extend” Problems

The table needs another extent, but the tablespace in which the table resides does not have a large enough extent.

To prevent this:

- 1** Examine each library's `file_list` to see what tablespaces the files reside in and what the largest secondary allocation is for each tablespace.
- 2** Run Util O-14-1 and find the `MAX_EXTENT` value for each tablespace. This value shows you the largest available extent in the tablespace.
- 3** If this value is not greater than the largest secondary allocation for this tablespace in the `file_list` (see Step 1), perform one of the following:
 - Decrease the size of the allocations
 - Add space
 - Defragment the tablespace

NOTE:

This problem could occur even though the total amount of available space in the tablespace (the Util O-14-1 `TOTAL_FREE_SPACE` value) is fine. Consult an Oracle expert as what to do. Note that files can be added to a tablespace with Util O-13-3.

Even if the value obtained in Step 2 is not greater than the largest secondary allocation, you may still be close to a problematic situation. Use Util O-14-2 to check the exact sizes of the tablespaces.

A new site should take a weekly snapshot of the Util O-14-1 to try to get a sense of how fast each of the tablespaces is being filled up. Some tables, especially in `VIR01`, can show great percentage increases even though they start out small.

Working in a TWO_TASK Environment

TWO_TASK functionality enables working with the MetaLib application on one server and the Oracle database on a different server. The server on which the database is located is referred to as the remote host and the server on which MetaLib is installed is referred to as the local host.

The Oracle server software has to be installed on the database server.

The Oracle client software has to be installed on both the database server and the MetaLib server.

MetaLib software has to be installed only on the MetaLib server.

Note that using TWO_TASK entails having some network overhead, which is significant in batch jobs but is not significant when working online (for example with the WEB server).

The option of running MetaLib batch jobs on the database server should be taken into consideration. If this option is chosen, MetaLib software must also be installed on the database server.

To support the TWO_TASK configuration, make sure that the following variables appear in the `$metalib_conf/metalib_start` file:

```
setenv    metalib_db      <remote host>.<oracle_SID>
setenv    TWO_TASK       <remote host>.<oracle_SID>
```

The `<remote host>` is the name of the remote server and `<oracle_SID>` is the name of the Oracle database on that server.

On the local host, the following lines should appear in the `$ORACLE_HOME/network/admin/tnsnames.ora` file:

```
<remote host>.<oracle_SID>=(description=
  (address=
    (protocol=tcp)
    (host=<full remote host name>)
    (port=1521))
  (connect_data=(service_name=<oracle_sid>)))
```

When all definitions are complete, shut down Oracle and MetaLib, reboot the server, and test. During the test you should ensure that the only MetaLib activity on the local server is the Web server activation and use, and that there is no other MetaLib and/or Oracle activity.

An Example of TWO_TASK Definitions

In the following example, the following settings are used:

- `ram01.exlibris.co.il` — local host
 - `ram02.exlibris.co.il` — remote host
 - `meta4` — DB on remote host
- 1 On `ram02` install Oracle and create DB `meta4`.
 - 2 On `ram01` perform the following:
 - a Log in to MetaLib.
 - b Edit the `$metalib_conf/metalib_start` file and perform the following modifications:

```
# setenv metalib_db      ${ORA_HOST}.${ORACLE_SID}
setenv metalib_db      ram02.meta4
setenv TWO_TASK        ram02.meta4
```

- c After completion of all modifications, log out and log in again in order for the changes in `metalib_start` to take effect.
 - d Enter the following commands to recreate `metalib.conf`:

```
cd $metalib_conf
metalib_conf_create
```
- 3 As the `oracle` user, add the following lines to the `$ORACLE_HOME/network/admin/tnsnames.ora` file:

```
ram02.meta4=(description=
  (address=
    (protocol=ipc)
    (key=meta4))
  (address=
    (protocol=tcp)
    (host=ram02.exlibris.co.il)
    (port=8003))
  (connect_data=(service_name=meta4)))
```

- 4 Shutdown Oracle and MetaLib, reboot the server, and test MetaLib on `ram01`.

Part VI

Appendixes

Part VI contains the following:

- **Section A: MPSYNC** on page 317
- **Section B: MetaLib Backup Package FAQ** on page 321

A

MPSYNC

This section includes:

- **Overview** on page 317
- **Export of Categories** on page 318
- **MPSync Export Tools** on page 318
- **MPSync Import Tools** on page 319

Overview

To use the MPSync Tool, it is important to make sure that KnowledgeBase data on your servers is synchronized. This is important because the MPSync Tool overwrites IRDs and configurations once implemented.

If the data is not identical on both servers – that is, changes/additions have been made in your master and in your production server in the past, the following process is recommended:

- If there are IRDs/configurations that are in process on the master server, ensure the IRDs are in test status and use the Local XML Import/Export Tools (see the *MetaLib Resource Management Guide* for details) to move them to the production server.
- Run a one-time MPSync from the production server to the master server. This ensures that the master server has the complete current KnowledgeBase.
- Schedule regular MPSyncs from the Master server to the Production server.

The KnowledgeBase Master/Production Synchronization Tool (MPSync Tool) was designed to move records between MetaLib KnowledgeBases. This tool is designed for sites using two servers, a production server and a master server.

The Production server is the server accessed by end users, such as students and faculty. The master server is the test or working server accessed by library staff for KnowledgeBase work.

The Master server holds the definitive KnowledgeBase, which is periodically copied over to the Production server. The MPSync Tool is designed to synchronize the KnowledgeBase between both servers so staff can work on the Master server without disturbing the work of end users on the Production server.

The MPSync Tool can be used only between mirrored systems. The systems must be running the same version/revision of the MetaLib software. The systems must use the same resource prefix, the same Resource IDs, and the same configuration codes.

The MPSync Tool exports and imports the IRDs, resource configurations, z39_gate files, tab_conversion files, and external programs directly between DAT01 libraries. This is instead of converting records to XML and importing from XML, which is the process used by the XML Local Import/Export tools.

The MPSync commands are run from the server command line and may be used in batch processes.

The MPSync Tool can be used for back up of the KnowledgeBase data.

Export of Categories

Categories linked to each resource are exported and imported as part of the MPSync process in the following cases:

- If the entire KnowledgeBase is exported.
- If the KnowledgeBase of one institution is exported.

Categories are not exported if only one resource is exported.

MPSync Export Tools

The export tool may be used to export the entire KnowledgeBase, one entire institution from the KnowledgeBase, or one or more records from the KnowledgeBase.

The export is based on the IRD record. If an IRD is linked to a configuration record that belongs to a different institution, the configuration is exported and imported without a change to the institution to which it belongs.

To export all records in the KnowledgeBase, use the following command:

```
ssh -f $aleph_proc/p_ckb_export ALL
```

To export all records from one institution (where INSTITUTE is the institution code), use the following command:

```
ssh -f $aleph_proc/p_ckb_export INSTITUTE
```

To export a specific record (Resource ID = XXX00001) from the KnowledgeBase, use the following command:

```
csch -f $aleph_proc/p_ckb_export XXX00001
```

The process runs and outputs the name of the file it created. The file is created in the `./dat01/import` directory. The name of the file has the following format, where the date and time stamp are included in the extension:

```
kb_export.200509230737.tar.gz
```

MPSync Import Tools

The import procedures should only be used on files that were exported from a mirror MetaLib system using the MPSync Tool.

To import, the file must be in the `./dat01/import` directory. To import the records, use the following command where *<import file>* is the file name to be imported:

```
csch -f $aleph_proc/p_ckb_import <import file>
```

The name of the file has the following format, where the date and time stamp are included in the extension:

```
kb_export.200509230737.tar.gz
```

If the file contains the whole KnowledgeBase or an entire institution's KnowledgeBase, a backup is run automatically before the import is done. If the file contains only one record, no backup is done.

The import process updates existing records and adds new records, but it does not delete any records. If an institution's KnowledgeBase is imported, no IRDs are removed if they are in the KnowledgeBase but not in the data being imported.

B

MetaLib Backup Package FAQ

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Q1. What backup options are available?

The Ex Libris Backup Package offers six options to back up your MetaLib installation (see [Table 33](#)). Each backup activity is assigned an identifying code `m#`, which corresponds to an entry in the `bkp_init.dat`:

```
#MetaLib
m1:MetaLib:MetaLib:/exlibris/MetaLib/m4_1:ora_cold
m2:MetaLib:MetaLib:/exlibris/MetaLib/m4_1:ora_hot
m3:MetaLib:MetaLib:/exlibris/MetaLib/m4_1:ora_archive
m4:MetaLib:MetaLib:/exlibris/MetaLib/m4_1:prd_software
m5:MetaLib:MetaLib:/exlibris/MetaLib/m4_1:exp_user_data

#Oracle
o4:oracle:oracle:/exlibris/app/oracle/product/102:ora_software
```

NOTE:

`prd_usr_data` (or `user_data`) that is listed under other products in the `bkp_init.dat` file and described in the *Ex Libris Backup Package* document is not applicable to MetaLib.

Table 33. Backup Options

Task Name	Description	DBA?*	Sensitivity†
ora_cold (m1)	Provides full Oracle database backup while database is down. Frequency: Weekly (see Q4)	Yes	Low
ora_hot (m2)	Provides full Oracle database backup while database is up (requires archive logs). Frequency: Monday, Wednesday, and Friday (see Q4)	Yes	High
ora_archive (m3)	Deletes obsolete Oracle archive logs. Frequency: Tuesday and Thursday – but only if you are using Hot Backups (see Q4)	Yes	High
ora_software (o4)	Provides Oracle software directory backup. Frequency: Quarterly or before a service pack or critical patch update	No	All

Table 33. Backup Options

Task Name	Description	DBA?*	Sensitivity†
MetaLib_software (m4) ³	Provides backup of MetaLib directory and Oracle data export. Frequency: If you are using hot or cold oracle backups, run this quarterly or before a service pack or critical patch update. Run nightly if you are not using oracle hot/cold backups. (see Q4 and Q6)	No	All
exp_user_data (m5) ³	Provides Oracle data export. Frequency: Daily (see Q6)	No	All

*. An Oracle DBA is required to recover data from backups that are marked Yes.

†. Sensitivity is a guideline for a site's comfort level with data currency. For example, if your site doesn't have a DBA, you may want to use the last three options and skip the Oracle backups. If your site has a DBA and you want to restore as much data as possible (for example, your site has a high sensitivity), then you may want to set up hot backups. If a site has a DBA and the potential loss of a few days of data is acceptable (depending on the date of the last backup and the date of loss), then sites may want to work with just cold backups.

Q2. Why are the options different in bkp_init.dat?

Make sure you have installed the latest version of the backup package. The following command will show you the version that your institution currently has in place:

```
grep version /exlibris/backup/scripts/exec_backup_main
```

The system displays your current version of the Backup Package – for example:

```
# Backup version $Name: V2_5_3 $
```

For more information on downloading and installing the Ex Libris Backup Package, see the *Ex Libris Backup Package* document.

Q3. If I'm only running MetaLib, do I need to comment out cron jobs for the other Ex Libris products in bkp_init.dat?

No, it's not necessary to comment out the unused options. Only the MetaLib and Oracle options that are listed in the crontab are used.

Q4. Should I set up cron jobs for all of the backup options?

No, the list of backup options that are described above is a menu of choices, not a list of all backup processes you need to implement. You should make your backup selections based on the availability of an Oracle DBA at your institution, and your sensitivity to data currency (as described above). Examples of backup schemes with low and high sensitivity to data currency are outlined in the [Table 34](#) and [Table 35](#):

Table 34. Sites With Low Data Sensitivity

Option	Frequency
ora_cold	Weekly
MetaLib_export	Every day

Table 35. Sites With High Data Sensitivity

Option	Frequency
ora_cold	Weekly
ora_hot	Monday, Wednesday, and Friday
ora_archive	Tuesday and Thursday
MetaLib_export	Every day

NOTE:

An Oracle DBA is required to recover data from both of these backup schemes.

In the following example, the M1 (oracle cold) backup is performed at 3:00 am on Saturdays, and the M5 Backup (oracle data export) is run daily at 10:00 pm.

where bkp_init.dat:

```
m1:MetaLib:MetaLib:/exlibris/MetaLib/m4_1:ora_cold  
m5:MetaLib:MetaLib:/exlibris/MetaLib/m4_1:exp_user_data
```

Add the following jobs to the ROOT crontab:

```
0 3 * * 6 /exlibris/backup/scripts/exec_backup_main m1  
0 22 * * * /exlibris/backup/scripts/exec_backup_main m5
```

NOTE:

Backups should be scheduled at least 1 hour before Util-X-8 or Util-X-9 maintenance utilities, which are scheduled under the MetaLib crontab.

Q5. Can I schedule the backups to run at the same time?

Scheduling of the cron jobs will depend on the backup options you select. If you decide to use the `ora_*` backups, they can be set to run at the same time on given days. The `exp_user_data` should be run at least an hour prior to these backups. Note that this is an estimate and results may vary.

NOTE:

Backups should be scheduled at least 1 hour before Util-X-8 or Util-X-9 maintenance utilities, which are scheduled under the MetaLib crontab.

Q6. I don't have an Oracle DBA at my institution. What backups can I perform?

If you do not have an Oracle DBA at your institution, the following cron jobs provides a backup scheme similar to the method that was used prior to the release of the Ex Libris Backup Package:

where bkp_init.dat:

```
m4:MetaLib:MetaLib:/exlibris/MetaLib/m4_1:prd_software  
m5:MetaLib:MetaLib:/exlibris/MetaLib/m4_1:exp_user_data
```

Add the following jobs to the ROOT crontab:

```
0 20 * * 1,3,5 /exlibris/backup/scripts/exec_backup_main m4  
0 20 * * 0,2,4,6 /exlibris/backup/scripts/exec_backup_main m5
```

In this example, the M4 (Oracle data export and MetaLib directory backup) is performed on Monday, Wednesday and Friday, and an M5 Backup (Oracle data export) is run on Sunday, Tuesday, Thursday, and Saturday.

NOTE:

Backups should be scheduled at least 1 hour before Util-X-8 or Util-X-9 maintenance utilities, which are scheduled under the MetaLib crontab.

Q7. Does exec_backup_main allow additional parameters on the same command line?

No, you will need to set up individual cron jobs for each backup parameter.

Q8. Since Oracle databases must be in Archivelog Mode in order for hot backups to work, how can I confirm the archiving status?

You can confirm archiving status and turn this feature on via Util O-7 (see **Figure 103**):

```
0.7. Archiving  
-----  
0. Exit Procedure  
1. Turning Archiving On  
2. Turning Archiving Off  
3. Show Archiving Status
```

Figure 103: Archiving Menu

To show the archiving status:

- 1 Select option **3** from the Archiving menu (see [Figure 103](#)).
- 2 To continue, enter the METALIB_DBA username/password:
METALIB_DBA/METALIB_DBA

The following message displays:

```
SQL*Plus: Release 10.2.0.3.0 - Production on Fri Jan 11 08:35:07 2008  
Copyright (c) 1982, 2006, Oracle. All Rights Reserved.  
idle> Connected.  
idle> idle> Database log mode No Archive Mode  
Automatic archival Disabled  
Archive destination /exlibris/oradata/meta4/arch  
Oldest online log sequence 22  
Current log sequence 26  
idle> Disconnected from Oracle Database 10g Enterprise Edition Release
```

- 3 If you need to turn archiving on, select option **1** from the Archiving menu (see [Figure 103](#)).

NOTE:

Enabling this feature requires a shutdown of Oracle and MetaLib.

Q9. After I generate a backup, where can I find the files?

The Ex Libris Backup Package stores most of the actual backup files in the location you specify via the `bkp_param.conf` configuration file (go to the `/exlibris/backup/conf` directory and view the `bkp_param.conf` file). The line in bold below designates where most of the backup files are stored:

```
# BKP_DIR directory where the Backup Package will write the backup  
files  
# ensure write permissions to directory - chmod 777 $BKP_DIR  
#setenv BKP_DIR /exlibris/backup_files/
```

This configuration file will determine the location of the following backup types: `m1`, `m2`, `m3`, `o4`, and `m4`.

`m5` backups are always stored in the following directory, even if you configure the `bkp_param.conf` file to put the backup files in another location:

```
<instance>/dat01/files
```

Q10. Can the Backup Package automatically remove old backups for me?

The Ex Libris Backup Package allows you to configure how many successful backups are retained via the `bkp_param.conf` configuration file. If you go to `/exlibris/backup/conf` and view the `bkp_param.conf` file, you will see the setting:

```
# SUCCESS_BKPS the number of successful backups to keep
setenv SUCCESS_BKPS 3
```

The default setting for backup types m1, m2, m3, and o4 retains the last three successful backups.

NOTE:

To prevent an incomplete deletion and improper running of your backup jobs, Ex Libris strongly recommends that you use the `SUCCESS_BKPS` setting in the `bkp_param.conf` file to delete old copies of the m1, m2, m3, and o4 backups.

Because m4 backups are not automatically removed by the `SUCCESS_BKPS` setting in the `bkp_param.conf` file, you will need to periodically remove m4 backups from the directory that you designated for storing backup files.

m5 backups only store the most recent backup in the `<instance>/dat01/files` directory.

Q11. Where can I find more detailed documentation on the Backup Package?

The latest Ex Libris Backup Package document is located on the DocPortal under the following directory:

```
Cross-Product Information/Ex Libris Backup Package
```

To access this folder, log in to the DocPortal and click the **Cross-Product Information** link.