LIFE SCIENCES DISTRIBUTION (LSD) BROWSER *v. 1.0*

USER'S GUIDE

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About This Guide

This chapter introduces you to the *LSD Browser User's Guide*. It includes the following topics:

- *Introduction to the LSD Browser User's Guide* on this page
- *Organization of this Guide* on this page
- *Text Conventions Used* on page 2

Introduction to the LSD Browser User's Guide

The LSD Browser User's Guide provides an overview of the caBIG® Life Sciences Distribution Browser (LSDB). It explains how to use the browser to search LSD application data and to access LSD applications directly.

This document does not describe the use of the applications that are components of the LSD. For instruction about their use, refer to the user's guide for each application (https://gforge.nci.nih.gov/frs/?group_id=450).

Organization of this Guide

The following topics explain what you will find in each chapter of the guide.

- *Chapter 1, Getting Started with the LSD Browser,* describes basic functions of the LSD Browser.
- *Chapter 2, Using the LSD Browser,* describes the steps for launching a search of the applications accessible through the LSDB, and processes for viewing search results. It also explains how to access applications directly through the LSDB.

Text Conventions Used

This section explains conventions used in this guide. The various typefaces represent interface components, keyboard shortcuts, toolbar buttons, dialog box options, and text that you type.

Convention	*Description*	*Example*
Bold & Capitalized Command **Capitalized command > Capitalized command**	Indicates a Menu command Indicates Sequential Menu commands	**Admin > Refresh**
URL	Indicates a Web address.	http://domain.com
TEXT IN SMALL CAPS	Keyboard key that you press	Press ENTER
TEXT IN SMALL CAPS + TEXT IN SMALL CAPS	Keyboard keys that you press simultaneously	Press SHIFT + CTRL and then release both.
`Monospace type`	Used for filenames, directory names, commands, file listings, and anything that would appear in a Java program, such as methods, variables, and classes.	`URL_definition ::= url_string`
Icon	A toolbar button that you click	Click the **Paste** button () to paste the copied text.
Boldface type	Options that you select in dialog boxes or drop-down menus. Buttons or icons that you click.	In the Open dialog box, select the file and click the **Open** button.
Italics	Used to reference other documents, sections, figures, and tables.	*caCORE Software Development Kit 1.0 Programmer's Guide*
`Italic boldface monospace type`	Text that you type	In the New Subset text box, enter ***`Proprietary Proteins.`***
Note:	Highlights a concept of particular interest	**Note:** This concept is used throughout the installation manual.
Warning!	Highlights information of which you should be particularly aware.	**Warning!** Deleting an object will permanently delete it from the database.
{ }	Surrounds replaceable items.	Replace `{root directory}` with its proper value, such as `c:\cabio`

CHAPTER 1
GETTING STARTED WITH THE LSD BROWSER

This chapter introduces you to the LSD Browser and its navigation. It includes the following topics:

- *Using LSD Browser Online Help* on this page
- *LSD Browser Overview* on this page
- *Browser Login* on page 5
- *Searching Data* on page 5
- *Opening Data* on page 5
- *Exporting Data to File* on page 5

Using LSD Browser Online Help

The online help explains how to use all of the features of the LSD Browser. To access online help in the Browser, use any of the following methods:

- To open the complete online help project, click the **Help** menu option.
- Click the **Help** icon ( at the top of each page to open a context-sensitive topic. Context-sensitive help displays information that corresponds to the page from which help was opened.

Once you are in online help, several options help you locate topics of interest.

- Click the **Show in Contents** button () at the top left of the help page to open the complete online help table of contents and locate your current topic in the table.

- The breadcrumb trail at the top of the page shows the location of the current help topic relative to neighboring topics. Click a breadcrumb link to display that help topic.
- Follow hypertext links or the **Related Topics** buttons in the help topics to open other closely related topics. If the current help page has related topics associated with it, you can also view them by clicking the **Related Topics** button () at the top right of the help page.
- Locate topics using the table of contents that displays in the left pane of the online help project or the **Index** tab that displays at the top of the Table of Contents pane.
- Perform word searches of Help by entering query text in the search text box.
- Print the current topic by clicking the **Print** button () at the top right of the help page.

LSD Browser Overview

The Life Sciences Distribution product suite provides a representative set of applications for creating, managing, and analyzing life sciences research data. When the LSDB is installed at a cancer center as part of the Life Sciences Distribution, applications that are part of the LSD are installed there, as well.

- The LSDB provides a tool which unites the LSD products by providing a front end interface to access each application installed as part of the LSD.
- The LSDB provides a unified query tool that allows users to search and collect data from local, remote (on the Grid) and NCICB instances of LSD applications.
- In LSDB v. 1.0, only caArray and NCIA are available. Future releases of the LSDB will include caGWAS, CTODS, and caTissue as well.
- While data from component applications can be accessed, you must continue to use domain specific tools to perform detailed analyses on the data.

An example scenario in which the LSDB might be used is described as follows:

A set of cancer center researchers are studying prostate neoplasm using heterogeneous experimental technologies. Specific techniques include but are not limited to molecular pathology using tissue micro-arrays for studying PI3K pathway activation and expression studies. To accomplish the research goal, they need to integrate these datasets in a meaningful way to answer research questions that target the PI3K pathway in prostate cancer. The researchers use the LSDB to search across a number of projects – some within their local cancer center (local search) and some within other collaborators' cancer centers (federated search). Once the data is identified, PIs from other studies are contacted and the identified data is reviewed to validate the original hypothesis.

Note: The LSD Browser supports Firefox version 2.0 or higher, Internet Explorer, version 5.5 or higher. The LSDB has not been tested with but is expected to work with Safari 3.x and Chrome Beta.

Browser Login

LSDB release 1.0 does not require a login. For LSDB v.1.0 queries, note the following:

- When data is returned from a search of NCIA, you must log into NCIA to access the data.
- caArray can return public data which can be accessed without logging into caArray. Limited details about private data associated with public data may also be returned. Private data associated with the public data can be accessed only by logging into caArray with appropriate authorizations, or by contacting the study PI directly.
- If you do not have an account for the application you are entering, you must stop work in the LSDB and request an account for the other application.

Searching Data

The LSDB provides a unified query tool where you can collect data from all installed local, remote (on the Grid) and NCICB instances of LSD applications.

For more information, see *Initiating a Search* on page 8.

Opening Data

Data located in a search launched from the LSD Browser will open in the host applications, both those that are locally installed as part of your LSD, and those installed as part of the LSD on caGrid.

For more information, see *Viewing Search Results Details* on page 10.

Exporting Data to File

You can export only public data from the application in which the data opens. For more information see the user's guides or online help for the specific LSD-associated application.

CHAPTER

2

USING THE LSD BROWSER

This chapter describes how to perform searches using the LSD Browser and how to access LSD applications directly. The chapter includes the following topics:

- *About LSD Browser Searches* on this page
- *Initiating a Search* on page 8
- *Search Results* on page 9
- *Access to LSD Applications* on page 11

About LSD Browser Searches

For LSDB v.1.0, only keyword searches are implemented. For more information, see *Initiating a Search* on page 8.

As noted previously, LSDB v.1.0 faciltitates searches and accessibility with caArray and NCIA.

- caArray searches return samples and/or experiments.
- NCIA searches return study and series data.

For LSDB v.1.0 queries, data returned from NCIA can be viewed only by logging into NCIA. caArray can return public data as well as limited details about private data.

- All public data in any accessible application is available to any user.
- Data identified as “private” cannot be viewed in detail unless you have the appropriate permissions. If you see private data you want to access, you should stop your work, request access to that data and wait for access to be granted.

For more information, see *Viewing Search Results Details* on page 10.

Initiating a Search

To launch a search of LSD applications from your local machine follow these steps:

1. Click the **Search** menu option. This opens the Search query page (*Figure 2.1*).

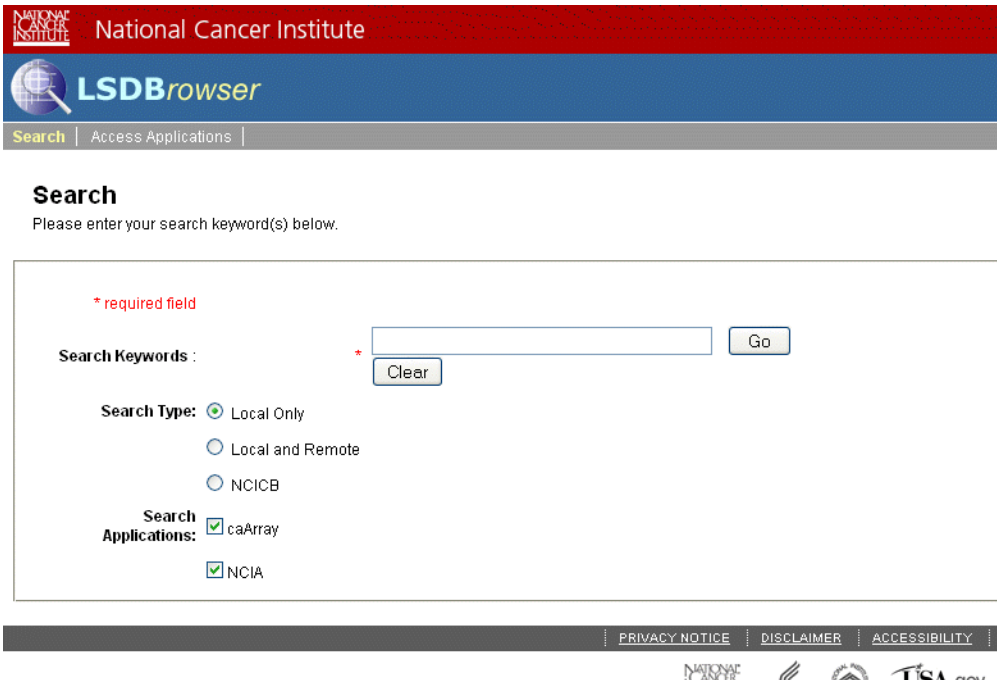


Figure 2.1 Search query page

2. **Search Keywords** is a required field. Provide one or more keywords that will help locate the files/experiments you want to retrieve.

   Note: Keywords separated by a space have an implicit "and" between the words. When you enter more than one keyword separated by a space, LSDB finds all items that contain all of the keywords in one or in any combination of fields in the application.

   Any text is allowable in the search, but all entries are treated as plain text. For example, searching for "thickness > 0.5" locates records that contain the phrases "thickness", a ">" sign, and the phrase "0.5". Therefore, this search will probably not be productive. A search also finds partial matches. For example, the keyword "blast" returns anything with "glioblastoma".

3. Select a **Search Type.**

   - **{Local}* Only** searches instances of caArray and NCIA installed at your institution.
   - **{Local}* and Remote** searches all instances of caArray and NCIA installed on caGrid.

     *{Local} indicates the term used when an application was installed at your local institution. {Local} refers only to applications installed locally as part of the LSD.

   - **NCICB** searches the NCI instance of the application(s).

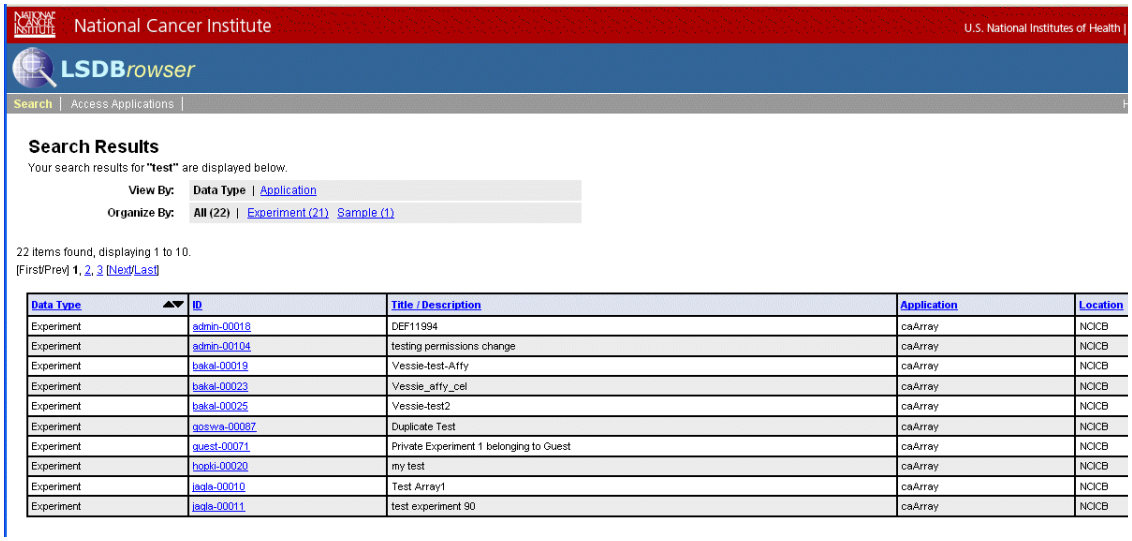
4. Select one or more applications to be the target of the search.

   Note: If you click **Search** without selecting any applications, you are asked to select at least one application.

5. Click **Go** to initiate the search.

Search Results

When the search finishes, a list of search results opens on a new LSDB page (*Figure 2.2*). The page displays all matching results organized by data type (Experiment, Series, etc.). Only summary information is presented in search results.



Data Type	ID	Title / Description	Application	Location
Experiment	admin-00018	DEF11994	caArray	NCICB
Experiment	admin-00104	testing permissions change	caArray	NCICB
Experiment	bakal-00019	Vessie-test-Affy	caArray	NCICB
Experiment	bakal-00023	Vessie_affy_cel	caArray	NCICB
Experiment	bakal-00025	Vessie-test2	caArray	NCICB
Experiment	goswa-00087	Duplicate Test	caArray	NCICB
Experiment	guest-00071	Private Experiment 1 belonging to Guest	caArray	NCICB
Experiment	hopki-00020	my test	caArray	NCICB
Experiment	jagla-00010	Test Array1	caArray	NCICB
Experiment	jagla-00011	test experiment 90	caArray	NCICB

Figure 2.2 LSDB Search Results page from a search of caArray

The search results are listed in table format. Table fields are described in *Table 2.1*.

Column Header	*Description*
Data Type	The type of data located in the search. caArray searches can find samples and experiments. An NCIA search can search by study and series.
ID	The unique identifier for the data
Title/Description	A description of the data entered by the data creator **Note:** This field provides a quick, easy-to-identify summary of each search result. This can be the title of the data item, its description, or another summary field, depending on the data type.
Application	The application that is the source of the data
Location	The home location for the application and data

Table 2.1 Descriptive fields for search results

The number of search results show just above the table. You can navigate or sort through the search results or organize them using a variety of methods, described as follows:

- Next to the **View By** text, click **Data Type** or **Application** to sort by these selections. If you select, for example, to view by Application, multiple tables, one for each application, display results matching the query keywords.
- Next to **Organize By**, click a hypertext selection, such as **Sample** or **Experiment**. When you select one of these options such as Experiments, more detailed data is shown for the selection, including, for example, organism, assay type for experiments.
- To navigate through the pages of results, click the page numbers, or the **Next/ Last** links.
- To sort results, click on a table column title. The first sort is in ascending alphabetical order; if you click the title a second time, the sort switches to descending order. The column being sorted is identified by vertical arrows in the column header. If multiple tables are displayed on the same page, each table can be sorted independently.

You can also open data itself in the application where the data resides. See *Viewing Search Results Details* on page 10.

Viewing Search Results Details

To view details for data shown in the search results, follow this step:

1. In the ID column of the search results table, click any ID that is a hypertext link. This hypertext identifier takes you to the application where the data resides.
    - For data returned in an NCIA search, you are directed to the NCIA login page. You must login to access the data. If you do not have an account, you can request one from the login page.
    - Most of the data returned in a caArray search is public; there may be limited information about public data that is private.

      If the data is public, you are directed to the data. You do not need to log in to see the data. To see private information associated with the public data, you are directed to the caArray login page where you must login. For more information, see the caArray online help or user's guide both of which can be opened from the login page.
    - If you do not have appropriate permissions to the data once you are logged in, you will be directed to the application home page. To view the data, you may need to stop your work, request access, and wait for that access to be granted.

This user's guide does not provide directions for the use of LSD component applications. For user documentation, you must refer to user's guides or online help provided for that host application.

Working with Search Results

While data from component applications can be accessed from the LSDB, you must continue to use domain specific tools to perform detailed analyses on the data.

Access to LSD Applications

LSDB provides a front end interface to directly access any applications you have installed as part of your local LSDB.

To access these applications, follow these steps:

1. Click the **Access Applications** menu option in the LSDB (*Figure 2.3*).

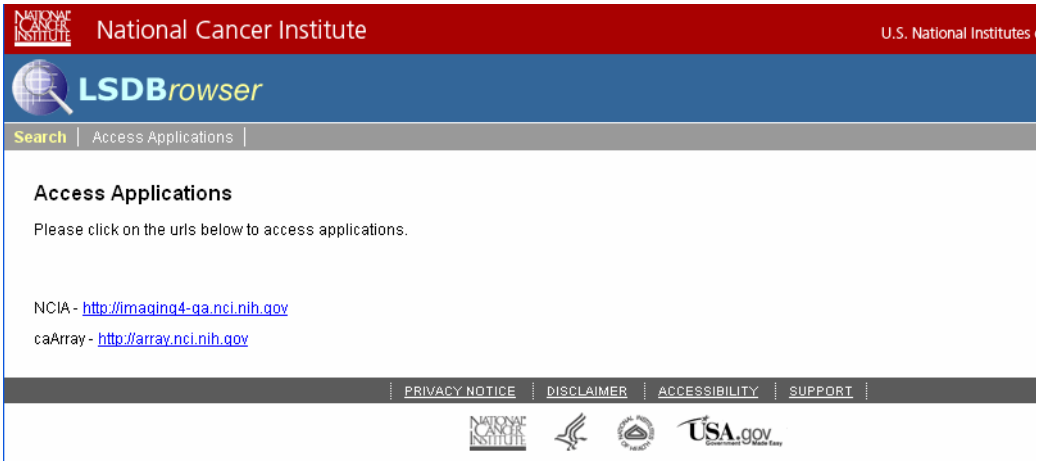


Figure 2.3 LSDB Access Applications page

2. Hypertext links for any applications you have installed as part of the LSDB will show on this page.

   On the Access Applications page (*Figure 2.3*), click the URL corresponding to the application you want to open.

3. For more information about using the application you open, refer to the corresponding user's guide or online help.

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