How to Look Up People Using LDAP in Eudora

Introduction

Eudora lets you look up individuals on the Internet and within your company using several Directory Services protocols. Each of these protocols is a search method following a set of predefined rules.

As of Eudora Pro v4.0 for Macintosh you can now perform these Internet and intranet queries using the popular protocol LDAP, which stands for Lightweight Directory Access Protocol.

There are a number of public LDAP servers connected to the Internet today that can be used by virtually anyone to look up individuals on the Internet. These include those supplied by White Pages-style Internet directory providers such as Four11, Bigfoot, WhoWhere?, and InfoSpace, among others. In addition, many companies have their own in-house LDAP servers for performing both in-house searches of employee information and external searches of the Internet.

An *LDAP server* is simply a service that provides information about people. Perhaps the one drawback of LDAP servers is that many of them require complex setup to work properly. Fortunately, however, you can perform this setup right in Eudora: all you need is an LDAP URL (Universal Resource Locator).

The rest of this section shows you how to set up and use LDAP URLs for LDAP searches. We begin with the syntax of an LDAP URL, followed by examples; we then show how to set up Eudora so that it uses an LDAP URL by default, for Directory Services lookups; and then we show how to use LDAP URLs "on the fly" to perform LDAP searches. The section closes with notes for advanced users on LDAP searching.

Syntax of an LDAP URL

The standard syntax for an LDAP URL is shown below. Underlined items are parameters (variables), to be replaced with their actual names or values. Items within brackets are optional. *Do not type the brackets.*

```
ldap://host[:port]/[base][?fields-to-return]
```

> *Note: Your Internet Service Provider (ISP) or your company's Eudora Support Coordinator can provide you with values for **host**, **port**, **base**, and even **fields-to-return** for various LDAP servers.*

> *Note: The forward slash (/) after the host or port is only required if you include values for **base** or **fields-to-return** or both.*

host   The name of the computer that hosts the LDAP server (e.g., **ldap.myfirm.com**). This host name is always required.

port   A number from 1 to 65535. This item is seldom needed: check with your ISP or in-house Eudora Support Coordinator to make sure. If you do specify a port number, you must precede it with a colon (:).

base   The location where the LDAP directory stores the information you are seeking. The term or terms you enter here will qualify your search and limit it to a subset of the LDAP database rather than the entire database. When entering these terms, separate multiple entries with a comma. Further instructions for specifying the base are given below. Check with your ISP or in-house Eudora Support Coordinator to see if you need to specify a base for a given LDAP server. **Note:** Some servers require that you enter the base variables in a specific order. You may need to experiment to find the correct order. Or, check with your ISP or in-house Eudora Support Coordinator.

fields-to-return

These are the raw field names that instruct the LDAP server to return the information you want when you perform LDAP queries. You must precede the entire entry with a single question mark (?), whether you enter one name or many. When entering multiple field names, separate each name with a comma. Further instructions for specifying the fields-to-return are given below. This item is optional.

How to Specify the Base

Here is a sample entry for that part of an LDAP URL that specifies the base:

```
o=qualcomm,c=us
```

This specifies that when you perform your LDAP search, you will limit your search to that part of the database containing only those people whose organization is QUALCOMM and who are located in the United States (us). "o" stands for organization and "c" stands for country.

Base values are specified in the form

name=value[,*name=value*][,*name=value*]...

where *name* is the raw field name for the subset you want to specify and *value* is the value you want to use for that subset, to limit your search. The brackets indicate that multiple values are optional. *Do not type the brackets.* The ellipsis (...) indicates that you can continue entering multiple values. *Do not type the ellipsis.*

To determine what raw field names you should use for *name*, follow the procedure described in "How to Determine Raw Field Names" below. Note that field names may differ from LDAP server to LDAP server.

Remember that the base itself is optional. You do not have to specify *anything* for the base in order to use an LDAP URL.

Note: *Some servers require that you enter the base variables in a specific order. Thus, in the example above, a particular LDAP server may require that you specify the country before the organization —* c=us,o=qualcomm *— rather than vice versa. You may need to experiment with base variables for a given LDAP server until you find the proper order. Or, check with your ISP or in-house Eudora Support Coordinator.*

How to Specify Fields-to-Return

Here is a sample entry for the fields-to-return part of an LDAP URL — note that the question mark must precede the entire list of field names, and that commas separate multiple field names:

```
?cn,mail,o,l,st,c
```

An LDAP search using the base values specified in the section above and these field names might yield this result, as one entry among many:

cn: John Doe
mail: johndoe@qualcomm.com
o: QUALCOMM
l: Chicago
st: Illinois
c: US

In this example, **cn** stands for *canonical name* (you can think of it as *complete name*), **mail** for *e-mail address*, **o** for *organization*, **l** for *location* (city, county, etc.), **st** for *state* or province, and **c** for *country*, which is generally expressed as a two-letter country code.

Note that field names may vary from LDAP server to LDAP server, but here are some of the more common raw field names and their meanings:

c	Country, expressed as a two-letter country code (US = United States, UK = United Kingdom, CA = Canada, FR = France, SE = Sweden, etc.).
st	State or province (e.g., California, Ontario). This is sometimes shown as a two-letter state or province code (e.g., CA, IL). Also, if a country is itself considered a "state" (e.g., France), this field may show a city name (e.g., Paris).
l	Location: city, county, etc. Examples: San Francisco, Toronto, Augsburg, Roma, Paris.
mail	The individual's e-mail address. More than one e-mail address may be listed, and more than one search listing may be returned for an individual with multiple e-mail addresses.
givenname	Sometimes abbreviated as **gn**. The person's first name and/or middle initial, or any part of the person's name before the last name. Examples: **J Fred** for J. Fred Muggs, and **George C** for George C. Scott. Titles are sometimes given (Dr., Fr., etc.).
sn	The person's surname, or last name. Suffixes are sometimes given (Jr., III, M.D., Esq., etc.).
cn	The person's *canonical name*, meaning their complete name. This includes the given name (first name and middle initial, title if any) and the surname (last name and any suffixes).
o	Organization, which includes companies, universities, non-profit organizations, government agencies, and others.

To determine what field names to specify when querying a particular LDAP server, see the instructions in "How to Determine Raw Field Names" below.

How to Determine Raw Field Names

Different LDAP servers may require different raw field names when specifying the base and the fields-to-return; so you will generally need to customize an LDAP URL to the particular LDAP server you are querying.

To determine the raw field names to use in an LDAP URL, you need to perform a procedure that involves conducting a basic LDAP query using just the host name (and perhaps an option or two) and identifying the field names in the results. This procedure is presented below in four steps.

Step 1: First, install Eudora's Esoteric Settings:

1. Quit Eudora.

2. Locate the **Esoteric Settings 4.x** plug-in file (x = 0, 0.1, or higher). This should be in your **Eudora Pro Folder** (the folder containing your Eudora application), under the **Extra Plugins** folder.

3. Drag the **Esoteric Settings 4.x** plug-in into your **Eudora Stuff** folder, which is also contained in your **Eudora Pro Folder**.

4. Restart Eudora.

The Esoteric Settings are now available from your Settings dialog.

Step 2: Now, set up Eudora to display raw LDAP attribute names in response to LDAP queries:

1. From the **Special** menu in Eudora, select the **Settings...** command.

2. In the Settings dialog, click the **LDAP** category on the left.

3. Turn on the **Display raw LDAP attribute names** setting by clicking the checkbox so that a checkmark appears in the box.

4. Click **OK** to save your setting and close the Settings dialog.
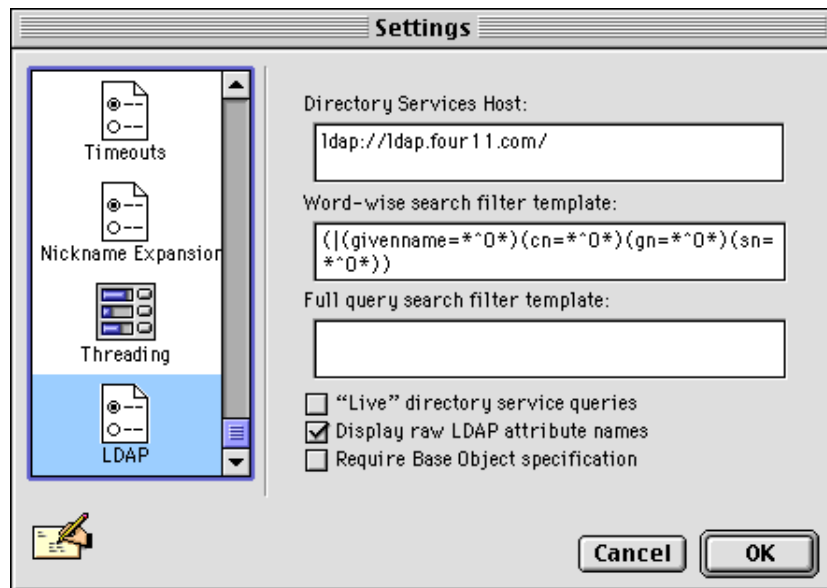
LDAP Esoteric Settings (combined results of Steps 2 and 3)

Step 3: Now set up Eudora so that when you perform a Directory Services query, Eudora uses the LDAP host computer you're interested in querying — this procedure is identical to that described below in "How to Use an LDAP URL as the Default Directory Services Host":

1. From the **Special** menu in Eudora, select the **Settings...** command.

2. In the Settings dialog, click the **Hosts** category on the left.

3. In the **Directory Services** text box, type (or copy and paste) the desired LDAP URL in a basic form: host only, with perhaps an option or two if you wish to narrow the search further. Here's a sample URL showing host only:

        ldap://ldap.four11.com/

    This is the URL for the public LDAP server provided by Four11. Note that the forward slash (/) at the end is optional in this case, since no base or fields-to-return values are specified.

4. Click **OK** to save your setting and close the dialog.

Step 4: Now, do a Directory Services query to obtain the raw field names used by that LDAP server:

1. From the **Window** menu, select **Directory Services** (or press **Cmd+Y**).

2. In the **Enter query** field, type a query name (such as a person's last name — your own, for example), then press **Return** or click **Lookup**. (**Note:** The LDAP host computer you specified in Step 3 above should be listed in the parentheses after the **Enter query** field label.)

3. Examine the returned results for the raw field names you want to include when customizing the fields-to-return and base options in your LDAP URL. Remember that these raw field names may differ from LDAP server to LDAP server, so if you query another LDAP server, you may need to use different field names in your URL.

Sample LDAP URLs

This section presents a number of sample LDAP URLs, with explanations of their component parts.

First, here again, for convenience, is the standard syntax of an LDAP URL, with components as described above in the syntax section:

    ldap://host[:port]/[base][?fields-to-return]

Remember that you *don't* type the brackets, and that items enclosed in brackets are optional. (Underlined items are variables that are replaced with their actual names when you enter the URL.)

Let's look at some URLs containing the host only. Following are the URLs for a number of public LDAP servers that are available to virtually anyone with Internet access:

    ldap://ldap.four11.com/

    ldap://ldap.whowhere.com/

    ldap://ldap.infospace.com/

```
ldap://ldap.biz.infospace.com/
```

```
ldap://ldap.bigfoot.com/
```

```
ldap://ldap.switchboard.com/
```

Note that in these cases, the inclusion of the forward slash (/) at the end of each URL is optional, because no base or fields-to-return values are specified. In each of these URLs, the name of the host computer — that is, the name of the LDAP server — is the name included between the forward slashes: **ldap.four11.com**, **ldap.whowhere.com**, **ldap.infospace.com**, **ldap.biz.infospace.com**, **ldap.bigfoot.com**, and **ldap.switchboard.com**.

A URL containing host and port only would be in the following form:

```
ldap://ldap.myfirm.com:65389/
```

In this example, the name of the LDAP host computer (LDAP server) is **ldap.myfirm.com**, and the port number is **65389**. Note that the port number is preceded by a colon (:). The forward slash (/) at the end is optional, because no base or fields-to-return values are specified.

Now let's look at some examples involving a hypothetical company called Widgetz, which has an internal LDAP server called **ldap.widgetz.com** that it uses to let employees look up other employees at Widgetz and also lets them look up people on the Internet.

As you will see from the procedures below, when you conduct an actual search using an LDAP URL, you enter a search item in the Directory Services window — usually a person's last name. When you perform actual searches using the public LDAP servers, try searching for your own last name. In the examples below, we will use the hypothetical search name **guggenheim**. (You can mix upper and lower case when entering names in the Directory Services window.)

Here's an example of an LDAP URL containing only the host name and a base:

```
ldap://ldap.widgetz.com/o=widgetz,c=us
```

In this example, when you type **guggenheim** in the Directory Services window, you're asking the LDAP server to return all information in its database pertaining to people named Guggenheim who work at Widgetz (**o=widgetz**, where **o** is organization) and who also are based in the United States (**c=us**, where **c** is country).

Now here's an example of a Widgetz LDAP URL showing host and fields-to-return only:

```
ldap://ldap.widgetz.com/?o,c,cn,mail
```

Note the question mark preceding the list of fields-to-return; note that multiple fields are separated with a comma (but no space after the comma); and note that only the field names are listed — no values. In this example, when you enter **guggenheim** in the Directory Services window, the Widgetz LDAP server will return the following information for all Guggenheims it knows about: their organization (**o** — Widgetz or another), their country (**c**), their complete name (**cn**), and their e-mail address (**mail**).

If we specify the Widgetz LDAP URL with host, port, and base, it might look something like this:

```
ldap://ldap.widgetz.com:65356/o=widgetz,c=us
```

In this example, we access the LDAP server through port **65356**, and we narrow our target search area to that portion of the Widgetz LDAP database that contains people who both work at Widgetz and are based in the United States. Our **guggenheim** search will yield all information known by the LDAP server on Guggenheims who work at Widgetz in the U.S.

Here's a URL containing host, port, and fields-to-return only (no base):

```
ldap://ldap.widgetz.com:65356/?o,c,cn,mail
```

Note that in this example, we're not restricting the organization or the country, or anything else, by specifying a base. When we perform our **guggenheim** search, we're asking the LDAP server to return information on *all* Guggenheims in its database, listing for each one only their organization (**o** — Widgetz or another), their country (**c**), their complete name (**cn**), and their e-mail address (**mail**).

Here's an example with host, base, and fields-to-return (no port):

```
ldap://ldap.widgetz.com/o=widgetz,c=us?st,l,cn,mail
```

The base narrows down our search to only those people who work at Widgetz and who are based in the United States, so we don't have to specify those two field names in the fields-to-return section. When we enter **guggenheim** in the Directory Services window, we're asking the database to return us, for each Guggenheim who works at Widgetz in the U.S., their state (**st**), their location (**l** — city, county, etc.), their complete name (**cn**), and their e-mail address (**mail**). This assumes, of course, that these are the raw field names (**o**, **c**, **st**, **l**, **cn**, **mail**) used by the Widgetz LDAP server. And again keep in mind that you can search for *any* name (not just Guggenheim) and you will get, in this example, the state, location, full name, and e-mail address for all people with that name who work at Widgetz in the U.S.

Finally, here's a URL with the whole shebang — host, port, base, and fields-to-return:

```
ldap://ldap.widgetz.com:65356/c=us,st=maine?o,l,cn,mail
```

This URL restricts the search to those individuals located in the United States and in the state of Maine, and asks the server to return, for each such person it knows about who also has the specified search name (e.g., **guggenheim**), their organization (Widgetz or otherwise), their location (city, county, etc.), their complete name, and their e-mail address.

Following are two URLs you can try with the public LDAP servers from Four11 and Bigfoot. Use the procedures described in the sections below for conducting a search using an LDAP URL (either by default or on the fly), then open the Directory Services window (**Window:Directory Services**), type your search name (a last name) in the **Enter query** field, and either press **Return** or click **Lookup**. Try these URLs and see what you get:

```
ldap://ldap.four11.com/c=us?l,st,o,mail,givenname
```

```
ldap://ldap.bigfoot.com/c=us,st=california?cn,mail,l,o
```

Notes and Caveats

- Public LDAP servers are sometimes too busy to answer at all, or too busy to return all entries that match a query.

- Field values are returned from an LDAP server in the order in which you list them in the fields-to-return part of the URL.

- LDAP databases do not always contain information for all possible fields in every listing.

- Remember that some LDAP servers require that you specify the base values in a particular order, not just any order you please. Experiment until you find the right order, or check with your ISP or in-house Eudora Support Coordinator.

- In general, you will need to experiment with LDAP searches in order to fine-tune your LDAP URLs for a particular LDAP server.

How to Use an LDAP URL as the Default Directory Services Host

Note: The procedure here is also outlined in Step 3 of "How to Determine Raw Field Names" above.

You have now constructed an LDAP URL tailored to the demands of your LDAP searching needs, and conforming to the syntax described above.

To use this URL as the default search filter (search instruction) for all Directory Services queries in Eudora, you need to enter this URL as your default Directory Services host in Eudora. Take the following steps:

1. From the **Special** menu in Eudora, select the **Settings...** command.

2. In the Settings dialog, click the **Hosts** category on the left.

3. In the **Directory Services** text box, type (or copy and paste) your LDAP URL.

4. Click **OK** to save your setting and close the dialog.
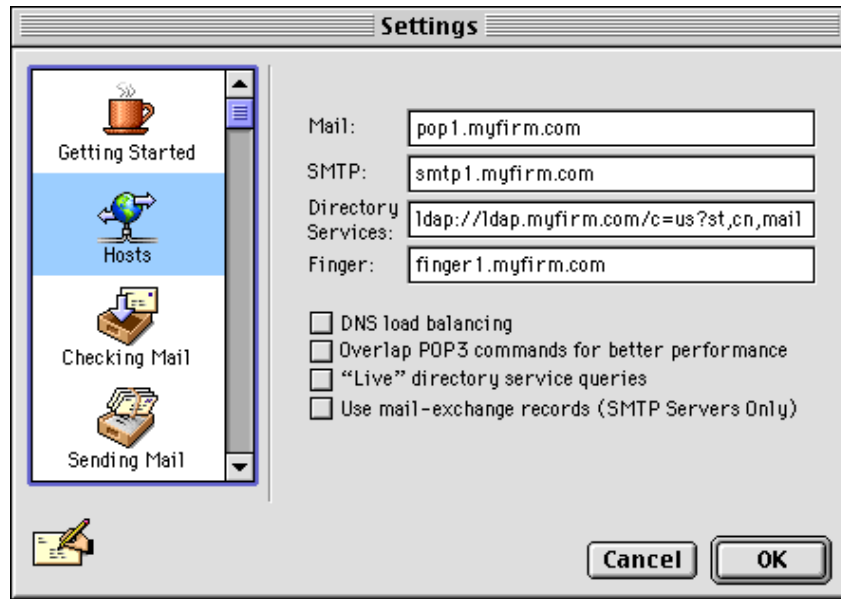
An LDAP URL as the Directory Services Host

From now until you change this setting, the following occurs: Every time you open the Directory Services window (**Window:Directory Services**, or **Cmd+Y**), then enter a name in the **Enter query** field, and then press **Return** (or click **Lookup**), the LDAP URL is queried — that is, the host in the URL is queried, according to any additional options (port, base, fields-to-return) you specified in the URL, and according to the name you've entered. The default LDAP host should also be listed in the parentheses after the **Enter query** label in the Directory Services window (the options of the URL are not shown: only the host name).

Using LDAP URLs "On the Fly"

If you don't want to change your default Directory Services host to an LDAP URL, here are three methods for *temporarily* changing the host to an LDAP URL, allowing you to perform LDAP queries on the fly. The specified LDAP URL will remain in effect until you close the Directory Services window, in which case the host reverts to the default specified in the **Hosts** Settings category (**Special:Settings:Hosts**), or until you specify another on-the-fly URL, in which case the Directory Services host changes to that one.

Method 1: Using an LDAP URL Received in an Incoming Message

If you receive an incoming message that contains an LDAP URL in the syntax specified above, you can do the following:

1. Open the message. (In Eudora Pro 4.1, you can just select the message summary and make sure the LDAP URL is visible in the preview pane.)

2. **Command-click** or double-click on the LDAP URL in the message (or preview pane).

3. The Directory Services window is now open with the server set to the LDAP URL. Enter a name or other item in the **Enter query** field and press **Return** or click **Lookup** to perform the LDAP query. You can continue querying the LDAP server until you close the Directory Services window.

4. Close the Directory Services window. The Directory Services host reverts to the default specified in the Hosts Settings.

Method 2: Using the Directory Services Listing of LDAP Servers

1. Open the Directory Services window (**Window:Directory Services** or **Cmd+Y**).

2. Click the globe icon to the right of the **Enter query** field. Wait several seconds for the listing to appear.

3. Scroll through the listing and locate the list of public LDAP servers. (**Note:** In Eudora Pro 4.1, you may also see LDAP servers listed under the headings "Configured server" and "Servers used recently.")

4. **Command-click** or double-click on the desired LDAP server.

5. The Directory Services host is now set to your selected LDAP server until you close the Directory Services window. From now until then, you can continue querying this server by entering a name or other item in the **Enter query** field and pressing **Return** or clicking **Lookup**.

6. Close the Directory Services window when finished to revert to your default Directory Services host as set in the Hosts Settings.

Method 3: Typing an LDAP URL into the Directory Services Window

1. Open the Directory Services window (**Window:Directory Services** or **Cmd+Y**).

2. Type (or copy and paste) the LDAP URL directly into the **Enter query** field, then press **Return** or click **Lookup**. The Directory Services host is now changed to the LDAP URL and will stay that way until you close the Directory Services window.

3. Clear the **Enter query** field to prepare for your query: If the LDAP URL is not already highlighted in the field, highlight it by pressing **Tab** or double-clicking on it, then press **backspace** or **delete**.

4. Type your query into the **Enter query** field (generally a last name) and press **Return** or click **Lookup**.

5. Continue querying the LDAP host as desired. When you're finished, close the Directory Services window to revert to the default Directory Services host set in the Hosts Settings.

Advanced Search Notes

The following notes on LDAP searching are for advanced users:

• Search filters (RFC 2254) tell the LDAP server how to perform the searching.

• The default search pattern is to split the LDAP query into words, look for each word in any number of fields, and make sure each word appears somewhere. This is the template used in the **Word-wise search filter template** field of the **LDAP** Settings category when you use Eudora's **Esoteric Settings 4.x** (see the installation procedure in Step 1 under "How to Determine Raw Field Names" above). If you find that searches fail or take a long time, you may want to put a simpler template in that field, such as this one:

```
(cn=*^0^*)
```

• You can also search on a full query string using Eudora's Esoteric Settings. With the Esoteric Settings installed (see above), select **Settings...** from the **Special** menu, click the **LDAP** category, type the full query string into the **Full query search filter template** field, and click **OK**.

• When editing search filters in the LDAP Esoteric Settings fields, **^0** (caret-zero) will be replaced with the word or query, and ***** (asterisk) is a wildcard.

• Also when editing search filters, use raw field names, as obtained using the procedure in "How to Determine Raw Field Names" above.

• Any whitespace (blank) in an LDAP query will be replaced with the asterisk (*****) wildcard.

• If desired, you can type the raw filter into the **Enter query** field of the Directory Services window (e.g., **cn=guggenheim**).

• Note that some LDAP servers have trouble with complicated search filters.