

Using ph

SYNOPSIS

Cal Poly's Directory Server may be accessed directly using the *ph* client software. The software allows you to perform queries on the Directory Server database. The Directory Server is an electronic phone book where you can find information about the Cal Poly community.

INTRODUCTION

ph is the UNIX client for the Directory Server. It is an interactive tool which may be used in a command line mode or in an interactive mode to perform queries or lookups on the directory server.

The Directory Server is a large database containing information about people and things at Cal Poly. An electronic version of the University Directory (the campus telephone book) makes up the bulk of the database. In addition, the Directory Server holds lots of other useful data that will grow over time.

The Directory Server is really a pair of programs: one that manages the actual data (this program is called *qi*, for query interpreter) and another program (or rather a group of programs, (one for each computing platform on the campus network) that handles end-user requests. The programs that handle user requests are usually called *ph* (or *ph* clients), which stands for phone book. Because *ph* is the name of the software familiar to most end users, many people refer to the Directory Server itself as *ph* or use the terms Directory Server and *ph* interchangeably.

This user guide will introduce you to the basic features of the Directory Server. You will learn how to request, or extract, information from Cal Poly's Directory Server database as well as from similar Directory Servers maintained at other institutions across the Internet. You will also learn how to update the information that the Directory Server keeps about you. Finally, you will learn about some of the policies and procedures involved in updating and maintaining the Directory Server database.

HOW THE DIRECTORY SERVER WORKS

The Directory Server uses the "client/server" model. This means that the database for all Directory Server information resides on one Cal Poly computer known as the "server." The program that manages the database, *qi*, runs on this computer. Mainframes and desktop computers can transparently access server data over the campus network, using special software designed to "talk to" the server. Machines running such software (and the end-user software itself) are typically called "*ph* clients." The client takes care of sending the user's requests to the server and presenting the results of that request in a digestible form. Thus, the end-user need know little or nothing about how the server works or how the client actually interacts with it. Instead, the client presents the user with a friendly (or reasonably friendly) interface for requesting, displaying, and manipulating Directory Server data.

HOW DO I START PH?

Ph can be started in two different ways. The first way is from the command line and has the general form of

```
% ph [command] [query_string]<CR>
```

where "*command*" defines an optional command which may be used ("*query*" is the

default) and "*query_string*" is the definition of the query to be performed (See the section "What are *ph*'s Start-up Options" for more information on the command line parameters).

The second way is interactive and has the general form of

`% ph<CR>`

which results in a "*ph*> " prompt at which interactive commands may be entered.

USING PH TO ACCESS INFORMATION IN THE DIRECTORY SERVER DATABASE

The process of sending a request to the Directory Server to retrieve specific information about a person or thing is referred to as making a query (or doing a lookup). Regardless of whether you are in command-line mode or interactive mode, the simplest form a query can take is: *ph name*, where *name* is the full or partial name of the person or item that you want to find in the database. Ph queries can also include additional information to broaden or narrow the scope of the query. This section will cover some of the more common options that can be used when executing a query and describe how to extract particular types of information from the Directory Server. A summary of query options and *ph* commands is given at the end of this chapter.

A. INFORMATION ABOUT PEOPLE AT CAL POLY

1. A SIMPLE QUERY

To use *ph* to obtain information about an individual on campus, you must be logged in to a machine with a *ph* client program installed on it.

At the machine's normal system prompt or at the "**ph**> " prompt, enter the command

`ph name`

where *name* consists of the first and last name (separated by a space) of the person about whom you want information. Be careful to type the person's official name as he or she is known to the University and not a nickname or shortened version of the name (e.g., use "*ph douglas jones*" instead of "*ph doug jones*"). (For more information about the use of nicknames in *ph*, see section entitled "The nickname Field" later in this document.) Ph will respond with data about that person in the form of an entry, for example:

`% ph john doe<CR>`

```
-----  
      name: doe, john b  
      phone: (805) 756-9999  
      office_location: Digital Computer Lab  
      department: computing services office  
      title: sr res programmer  
      email to: jdoe@calpoly.edu (jdoe@polymail.calpoly.edu.edu)  
-----
```

Note that in a *ph* entry such as the one above, information about the person is organized into discrete pieces of information called fields. Each

field has a name (the text preceding each colon) describing the contents of the field. For example, the field called address contains the campus address of the person in question.

When a simple query is executed, *ph* looks for and displays every entry in the Directory Server database whose name or nickname field contains the name(s) specified in the query. Matching in *ph* is not sensitive to upper and lower case letters and is done on a word-by-word basis. That is, both the query expression and the entry are broken up into words, and the individual words are compared. Thus, the commands "*ph john doe*", "*ph doe john*", and "*ph John Doe*" will all produce the same results.

If you only know a person's last name (or even only a first name), you may query *ph* using only the one name (e.g., "*ph doe*"), although this often results in multiple matches. See the next section for instructions on how to deal with multiple matching entries.

2. QUERIES RESULTING IN MULTIPLE MATCHES/NARROWING THE SCOPE OF A QUERY

Queries on common names (e.g., John Smith) or just a first or last name will often produce multiple matches. When multiple entries match a query expression, *ph* will display the list of matching entries one screen at a time. To advance to the next screen of entries on UNIX systems, press the spacebar.

If there are more than 25 matches for a particular name, the Directory Server will not list the matching entries, but instead will return the response "Too many entries to print." This is to prevent the *ph* program from being used to generate mailing lists. To get around this problem, provide the Directory Server with additional information, such as a phone number or address, in order to narrow the range of possible matches. This additional element is included in the query command using the form

ph name field=value

where *name* is the person's first and/or last name, and *field* is an existing field name (typed exactly as the field name appears in *ph*) with *value* being that field's value (or a portion thereof) as listed in the Directory Server entry. For example, if you were trying to look up an acquaintance named Paul who works in the Computer Science building, you could use the command "*ph paul office_location=computer*". This would result in a list of matching entries for all persons named Paul whose *office_location* field contains the character string "computer". It is also possible to use more than one field specifier in a query expression, e.g., "*ph paul office_location=computer ext=999 ...*". The object here is to make the query specific enough so that it does not generate more than 25 matches.

Another easy way to narrow a search on a person is to include a middle initial (without a period) as part of the name, for example: "*ph john b doe*".

3. ADDING A RETURN CLAUSE TO A QUERY EXPRESSION

A Directory Server entry may actually contain more information (in additional fields) than is displayed by executing a query in the form *ph name*. *Ph* will return only a default list of fields unless a return clause is

added to the query expression. A return clause consists of the word return followed either by the word all or a list of the fields in which you are interested. If the word all is used, all viewable fields from the entries matching the first part of the query will be displayed, for example:

```
% ph john doe return all
-----
      alias: jdoe
      name: doe, john b
      email: jdoe@polymail.calpoly.edu
      phone: (805)756-9999
office_phone: (805)756-9999
      fax: (217) 244-7089
office_location: 1429 Digital Computer Lab
      nickname: joe
      department: computing services office
      title: sr res programmer
      type: person staff
-----
```

If the word return is followed by a specific list of field names (separated by spaces), only the specified fields will be displayed, for example:

```
% ph john doe return name phone
-----
      name: doe, john b
      phone: (805)756-9999
-----
```

4. SEARCHING ON FIELDS OTHER THAN NAME AND NICKNAME

It is possible to look up information in the Directory Server database, not by name, but by searching for information held in another field of an entry. Such queries must be in the form

```
ph field=value
```

where the specified field has both the Indexed and Lookup attributes. For example, office_phone is an indexed lookup field, and a query like "ph ext=9999" will yield the entry for John Doe, whose office phone number is 756-9999.

5. PROBLEM SPELLINGS

Although *ph* doesn't care about capitalization of words, it generally requires words to match exactly, with no characters left over. For example, a query on the character string "john" will not match entries for "johnson." However, special symbols, or so-called wildcard characters, can be used in a *ph* query to find an entry for which only a few letters of a name are known.

The * (asterisk) is used in place of one or more unknown characters in a name. For example, to find the *ph* entry for S. Dorner, where the remainder of the first name is not known, an appropriate command would be:

```
ph s* dorner
```

When only one character of a name is unknown, the ? (question mark) can be used in place of the character. For example, to find Gladys Johnson (or is that JohnsEn?), one could use the command:

```
ph gladys johns?n
```

When using *ph* in command-line mode on UNIX machines, expressions with wildcards must be surrounded by double quote marks; thus, the query *ph s* dorner* should be typed *ph "s*" dorner* from the UNIX operating system prompt. Similarly, the query *ph gladys johns?n* should be entered as *ph gladys "johns?n"* at the UNIX prompt. When in interactive mode on a UNIX machine, quotation marks should not be used in the query.

B. INFORMATION ABOUT PEOPLE AT OTHER INSTITUTIONS

Many other universities and institutions on the Internet have adopted the *ph* program to maintain their own student/staff directories and e-mail routing information. The UNIX *ph* client can query these remote *ph* Directory Servers for name, phone number, address, e-mail address, and any other field information contained in the remote database.

All of the options described for queries in earlier sections of this chapter also apply to remote queries (i.e., you can use wildcards, specify fields, etc). For example, to get *ph* information for a "John Smith" at Princeton University, one would enter the command:

```
ph -s princeton.edu john smith
```

The query will be directed to the *ph* server specified after the "-s" option (Princeton University, in the above example), instead of the local *ph* server, and all matching entries will be displayed.

To enter interactive mode on a remote server, type the name of the server but do not specify the name of a person or thing. For example, the command:

```
ph -s ns.nwu.edu
```

will connect you to the Directory Server at Northwestern University. Once connected, all queries typed at the "**ph>**" prompt will search Northwestern's database.

Directory Server entries for other institutions can be found via gopher by entering the item "Electronic Phonebooks on the Internet", followed by "Phone books at other institutions", then going on to select the directory server of your choice. Once a directory server has been found (it usually has the "<CSO>" label after it on UNIX gopher client), either use the gopher service or press the "=" key to receive technical information about the item. The information you are looking for is the "Host" value. Simply copy that value and use it after the "-s" parameter on the *ph* command line.

C. THE NICKNAME FIELD

The nickname field is provided so that nicknames can be used in Directory Server queries. While the name field of the Directory Server database contains every person's official full name (as known by the University), individuals are often more commonly known by names other than their full names. "William" might be known to most people as "Bill," or "Steven" as "Steve." You may enter

<i>ph "nam*"</i>	Use the * wildcard to search for entries when part of a name or field value isn't known.
<i>ph "m*" johnson</i>	
<i>ph "n?me"</i>	Use the ? wildcard to search for entries when a single letter in a name or field value isn't known.
<i>ph "franc?s" johnson</i>	
<i>ph -s server.name name</i>	Process a query on a remote Directory Server.
<i>ph -s princeton.edu albert einstein</i>	
<i>ph type=type name</i>	Use a type field specifier to select the type of information you want to find.

B. INTERACTIVE MODE COMMANDS

The following is a subset of the interactive commands available in the interactive mode with the *ph* command. Some commands are not documented here because the features they support have not been implemented yet at Cal Poly.

<i>ph</i>	Enter interactive mode from command-line mode.
<i>query</i>	Synonym for <i>ph</i> .
<i>ph name</i>	Process a simple query on the name and/or nickname fields.
<i>ph John Doe</i>	
<i>ph name field1=value field2=value ...</i>	Add one or more field specifiers to narrow the scope of the query.
<i>ph john doe address=swanlund</i>	
<i>ph field1=value field2=value ...</i>	Process a query on one or more fields other than name/nickname.
<i>ph phone=333-5555</i>	
<i>ph name return all</i>	Display ALL fields (not just the default fields) for entries matching the query.
<i>ph john doe return all</i>	
<i>ph name return field1 field2 field3 ...</i>	Display only the fields specified for entries matching the query.
<i>ph john doe return name alias phone</i>	
<i>ph nam*</i>	Use the * wildcard to search for entries when part of a name or field value isn't known.
<i>ph m* johnson</i>	

<i>ph n?me</i>	Use the ? wildcard to search for entries when a single letter in a name or field value isn't known.
<i>ph franc?s johnson</i>	
<i>fields</i>	Display information about the fields used in the Directory Server database.
<i>fields field</i>	Display information about the field specified.
<i>fields name</i>	
<i>help</i>	Display a screen that describes how to use <i>ph</i> 's on-line help and lists the available help topics.
<i>help topic</i>	Display help for the topic specified.
<i>help query</i>	
<i>ph name</i>	Process a simple query in interactive mode.
<i>ph james dean</i>	
<i>quit</i>	Exit <i>ph</i> 's interactive mode and return to the system prompt.
<i>switch</i>	View the current <i>ph</i> switch settings.
<i>switch [-mMrRbBTILFcC] [-t type] [-f field1, field2, ...]</i>	Set various <i>ph</i> options or switches to control query and output results
<i>switch -rb -t person -f alias, email, phone</i>	

WHAT ARE PH'S START-UP OPTIONS?

The complete start-up command line format is

```
% ph [ -s server ] [ -p port ] [ -t type ] [-f field1, field2, ... ]
    [ -mMrRbBTILF ] query<CR>
```

and the complete start-up for interactive is

```
% ph [ -s server ] [ -p port ] [ -t type ] [-f field1, field2, ... ]
    [ -h topic ] [ -MnNrRbBTILFcC]<CR>
```

with the various parameters being defined as

<i>-n</i>	Do not read the <i>.netrc</i> file. This option has meaning only when using <i>ph</i> in interactive mode (see below for descriptions of the <i>.netrc</i> file and interactive mode).
<i>-N</i>	Do read the <i>.netrc</i> file. This is the default.
<i>-r</i>	Do not reformat alias and email fields to show alias-based e-mail addresses.
<i>-R</i>	Reformat alias and email fields to show alias-based e-mail addresses. This is the default.
<i>-b</i>	Do not beautify query responses; print them in gory detail, complete with response codes.

- <i>B</i>	Beautify query responses. This is the default.
- <i>m</i>	Do not use a paging program (like more(1)) when printing responses.
- <i>M</i>	Use a paging program. This is the default.
- <i>I</i>	Do not label field values with field names when printing queries.
- <i>L</i>	Label field values with field names when printing queries. This is the default.
- <i>t type</i>	Use <i>type</i> as a default type on queries. This is just like adding <i>type=type</i> to all queries. The - <i>t</i> option can be overridden by specifying an explicit type in the query, as in, " <i>ph pomes type=phone</i> ".
- <i>T</i>	Do not specify any type by default; this is the default.
- <i>s server</i>	Use <i>server</i> as a Directory Server host, instead of the default host. A list of suitable servers may be found with the query " <i>ph alias=ns-servers</i> ".
- <i>p port</i>	Connect to the tcp port port , instead of the default port.
- <i>c</i>	Do not wait for confirmation of edit commands. This is the default.
- <i>C</i>	Wait for confirmation of edit commands (see edit below).
- <i>f field1, field2, . . .</i>	Return fields <i>field1, field2, . . .</i> instead of the default list of fields, if no return clause is specified on queries. This is just like adding " <i>return field1 field2 . . .</i> " to all queries.
- <i>F</i>	Return default list of fields; this is the default.
- <i>h topic</i>	Display a list of on-line help topics. If the - <i>h</i> option is followed by the name of one of the on-line help topics, the help screen for <i>topic</i> will be displayed.

NOTE: Portions of this User Guide are taken from the "The CCSO Directory Server (Ph)" User Guide (CCSO User Guide #200) from the University of Illinois "Computing and Communication Services Organization" (CCSO).

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NOTES