

Tutorial of Using General Server for Prolog

11/26/2013

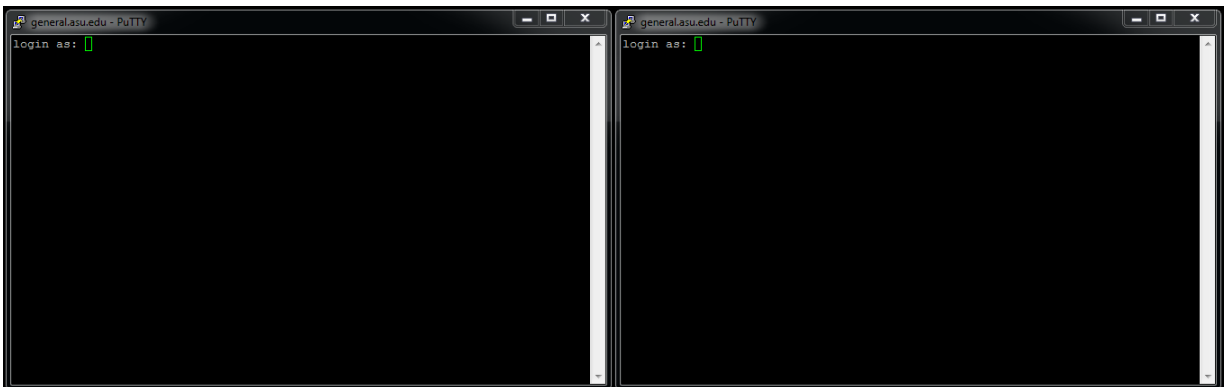
In previous documents, we discussed the basics of connecting to ASU's General server for the purposes of compiling and running C/C++ or prolog code. Please familiarize yourself with those instructions before proceeding. We assume you have already installed a SSH client and have saved the appropriate connection information for General.

In this document we will discuss the use of prolog (via gprolog) on General and a more advanced workflow for programming your assignments. Previously you had to alternate between opening gprolog and a text editor (e.g. nano), here we will demonstrate how to use two SSH connections to speed up this process.

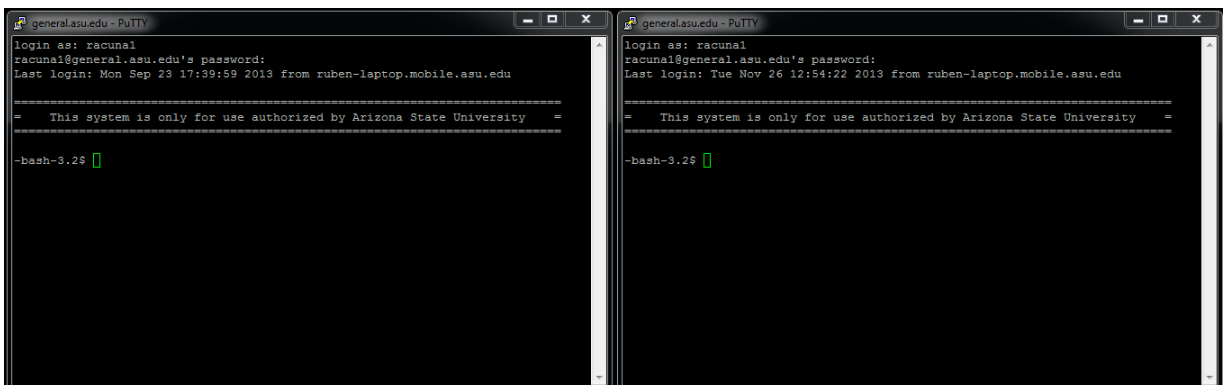
For this tutorial, we will be use PuTTY on Windows 7.

Windows

1. Start by running two instances of PuTTY. We will use one for editing the file and the other for running it.

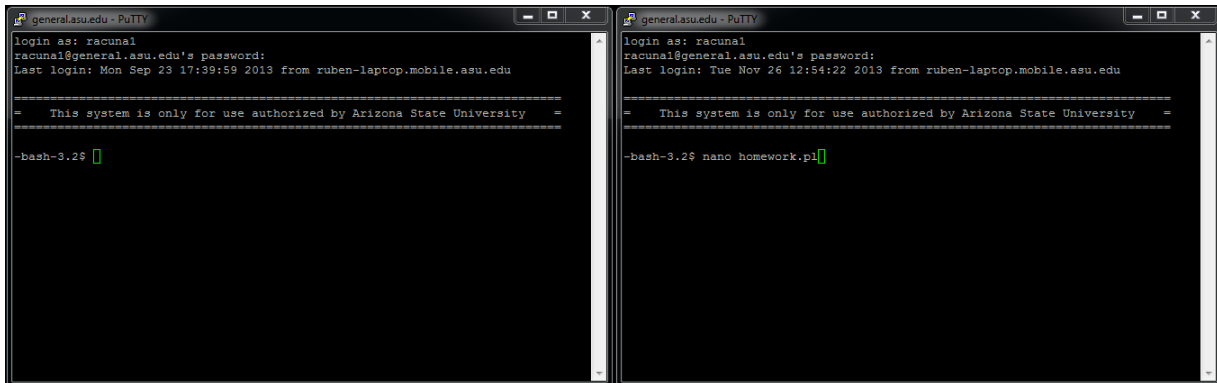


2. Log into each PuTTY instance – this will create two simultaneous connections to General.



Now that we have logged on, we will write and query a few facts for a family tree program.

- At the prompt (**-bash-3.2\$**) of one of the windows type “**nano <filename>.pl**”, where **<filename>** is the name of a source file that exists or should be created. For example, we would type “**nano homework.pl**” to start editing a file called **homework.pl** – if it already exists it will be opened, otherwise it will be created. Be sure to type **nano** in lower case. The **nano** text editor will now open. In the following screen shot we have already typed in a short program:



```
general.asu.edu - PuTTY
login as: racuna1
racuna1@general.asu.edu's password:
Last login: Mon Sep 23 17:39:59 2013 from ruben-laptop.mobile.asu.edu

=====
This system is only for use authorized by Arizona State University
=====

-bash-3.2$
```

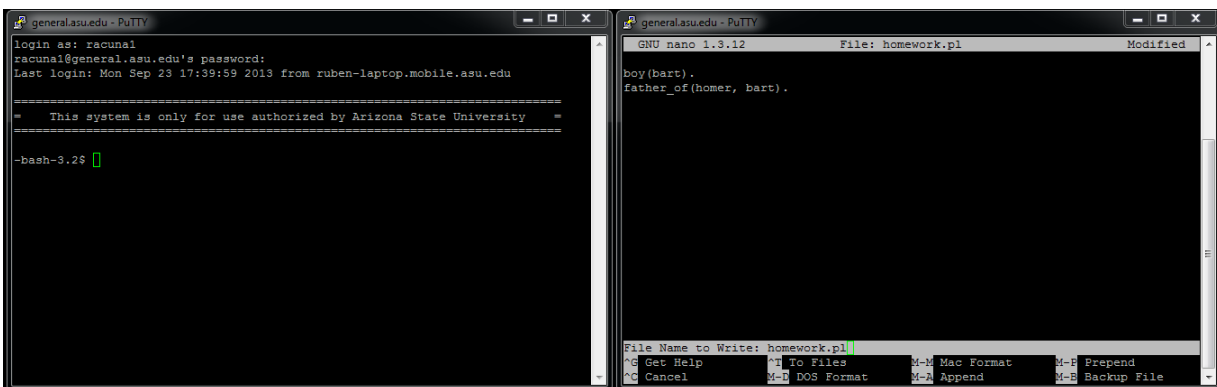
```
general.asu.edu - PuTTY
login as: racuna1
racuna1@general.asu.edu's password:
Last login: Tue Nov 26 12:54:22 2013 from ruben-laptop.mobile.asu.edu

=====
This system is only for use authorized by Arizona State University
=====

-bash-3.2$ nano homework.pl
```

Note: The name we have selected for our program has no underscores – this is required.

The nano text editor will now open. In the following screen shot we have already typed in a short program:



```
general.asu.edu - PuTTY
login as: racuna1
racuna1@general.asu.edu's password:
Last login: Mon Sep 23 17:39:59 2013 from ruben-laptop.mobile.asu.edu

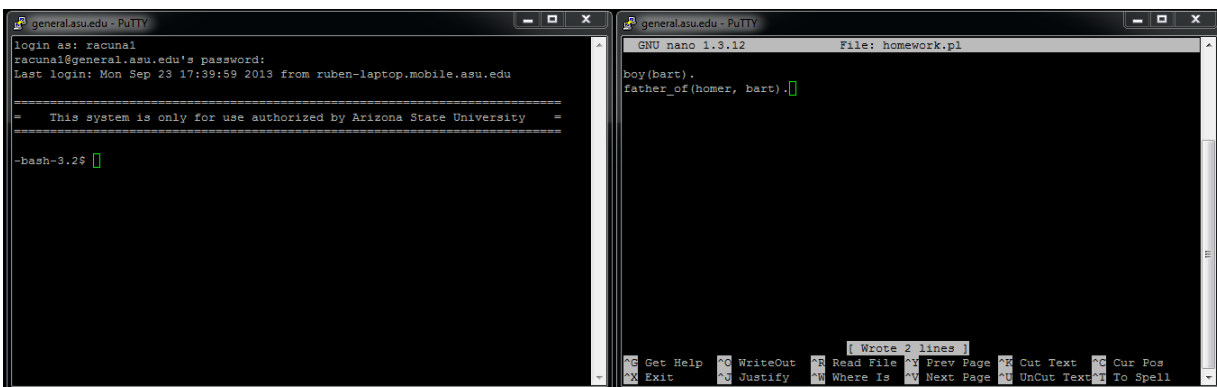
=====
This system is only for use authorized by Arizona State University
=====

-bash-3.2$
```

```
GNU nano 1.3.12 File: homework.pl Modified
boy(bart).
father_of(homer, bart).

File Name to Write: homework.pl
^G Get Help      ^T To Files      ^M-M Mac Format  ^M-F Prepend
^C Cancel        ^M-D DOS Format  ^M-A Append      ^M-B Backup File
```

- Press **Ctrl-O** to save. A new prompt will appear labeled **File Name to Write**. The filename you entered earlier will already be displayed so you can simply press enter. A status update will be shown which indicates how many lines were saved to the file.



```
general.asu.edu - PuTTY
login as: racuna1
racuna1@general.asu.edu's password:
Last login: Mon Sep 23 17:39:59 2013 from ruben-laptop.mobile.asu.edu

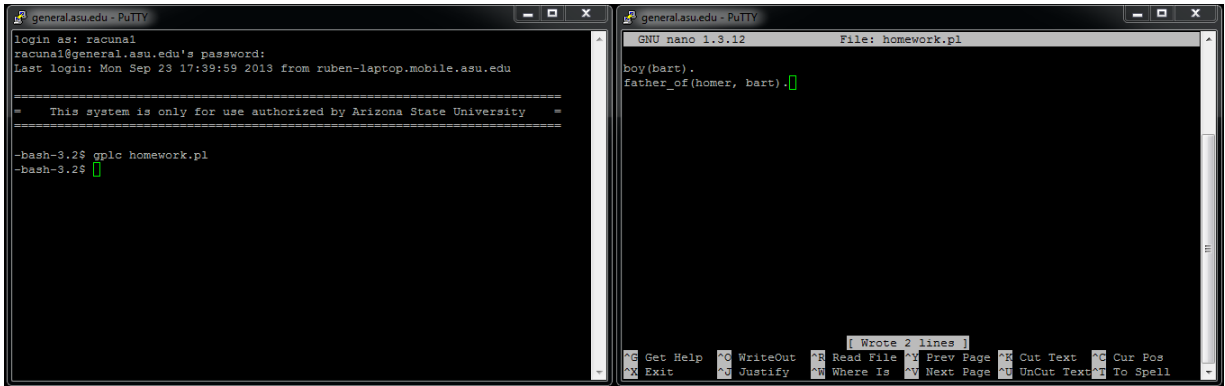
=====
This system is only for use authorized by Arizona State University
=====

-bash-3.2$
```

```
GNU nano 1.3.12 File: homework.pl
boy(bart).
father_of(homer, bart).

Wrote 2 lines
^G Get Help      ^C WriteOut      ^R Read File     ^Y Prev Page    ^K Cut Text     ^C Cur Pos
^X Exit          ^J Justify       ^W Where Is     ^N Next Page    ^U UnCut Text  ^T To Spell
```

- Since this is a Prolog program, we will use the **gplc** command to compile instead of **gcc** or **g++**. This is part of the gprolog programming environment installed on General. To compile a file, we will type: "**gplc <filename>.pl**" in the window that does not have **nano** open. For our example, type: "**gplc homework.pl**". After running this command, a new prolog binary called **homework** will have been built from **homework.pl**. Unlike binaries built with gcc or g++, gprolog binaries must be run in a prolog interpreter.



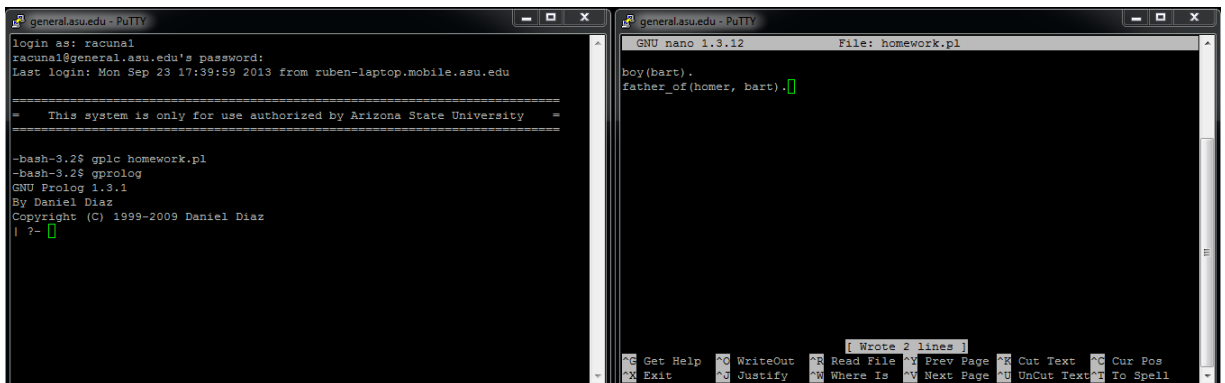
```
general.asu.edu - PuTTY
login as: racunai
racunai@general.asu.edu's password:
Last login: Mon Sep 23 17:39:59 2013 from ruben-laptop.mobile.asu.edu

=====
This system is only for use authorized by Arizona State University
=====

-rbash-3.2$ gplc homework.pl
-rbash-3.2$

GNU nano 1.3.12 File: homework.pl
boy(bart).
father_of(homer, bart).
```

- To start the gprolog interpreter, type "**gprolog**".



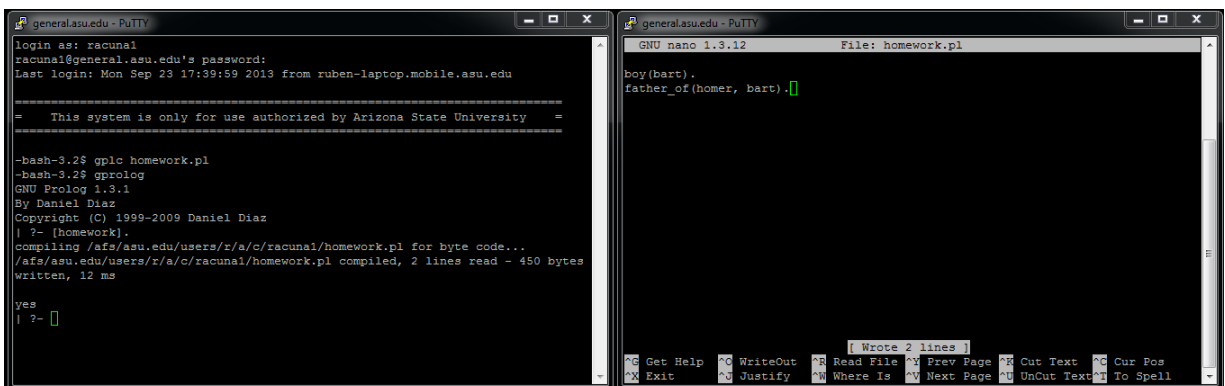
```
general.asu.edu - PuTTY
login as: racunai
racunai@general.asu.edu's password:
Last login: Mon Sep 23 17:39:59 2013 from ruben-laptop.mobile.asu.edu

=====
This system is only for use authorized by Arizona State University
=====

-rbash-3.2$ gplc homework.pl
-rbash-3.2$ gprolog
GNU Prolog 1.3.1
By Daniel Diaz
Copyright (C) 1999-2009 Daniel Diaz
| ?-

GNU nano 1.3.12 File: homework.pl
boy(bart).
father_of(homer, bart).
```

To execute the file we compiled earlier, we must type "[<filename>].". Notice that we do not include the .pl extension. In our example, our filename was homework.pl so we must type "[homework].".



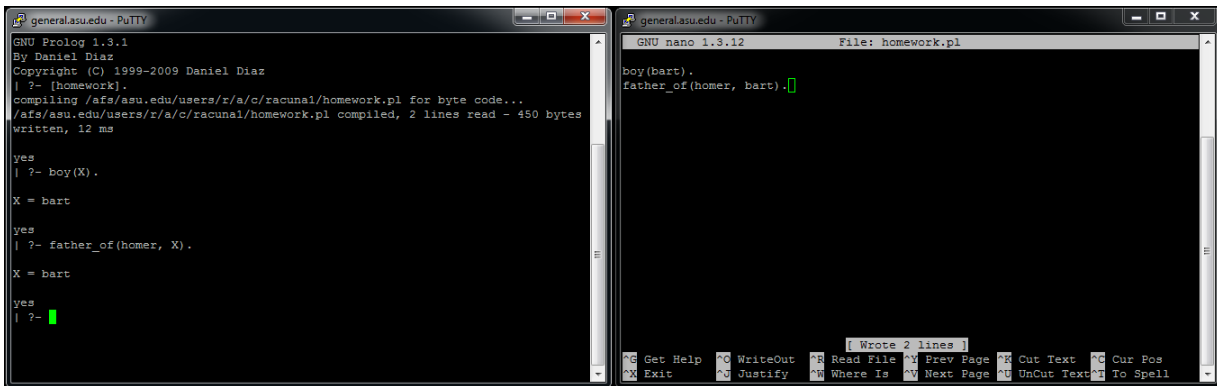
```
general.asu.edu - PuTTY
login as: racunai
racunai@general.asu.edu's password:
Last login: Mon Sep 23 17:39:59 2013 from ruben-laptop.mobile.asu.edu

=====
This system is only for use authorized by Arizona State University
=====

-rbash-3.2$ gplc homework.pl
-rbash-3.2$ gprolog
GNU Prolog 1.3.1
By Daniel Diaz
Copyright (C) 1999-2009 Daniel Diaz
| ?- [homework].
compiling /afs/asu.edu/users/t/a/c/racunai/homework.pl for byte code...
/afs/asu.edu/users/t/a/c/racunai/homework.pl compiled, 2 lines read - 450 bytes
written, 12 ms
yes
| ?-

GNU nano 1.3.12 File: homework.pl
boy(bart).
father_of(homer, bart).
```

7. The program that was written in nano is now loaded and can be queried



```
GNU Prolog 1.3.12
By Daniel Diaz
Copyright (C) 1999-2009 Daniel Diaz
| ?- [homework].
compiling /afs/asu.edu/users/t/a/c/racunal/homework.pl for byte code...
/afs/asu.edu/users/t/a/c/racunal/homework.pl compiled, 2 lines read - 450 bytes
written, 12 ms

yes
| ?- boy(X) .
X = bart

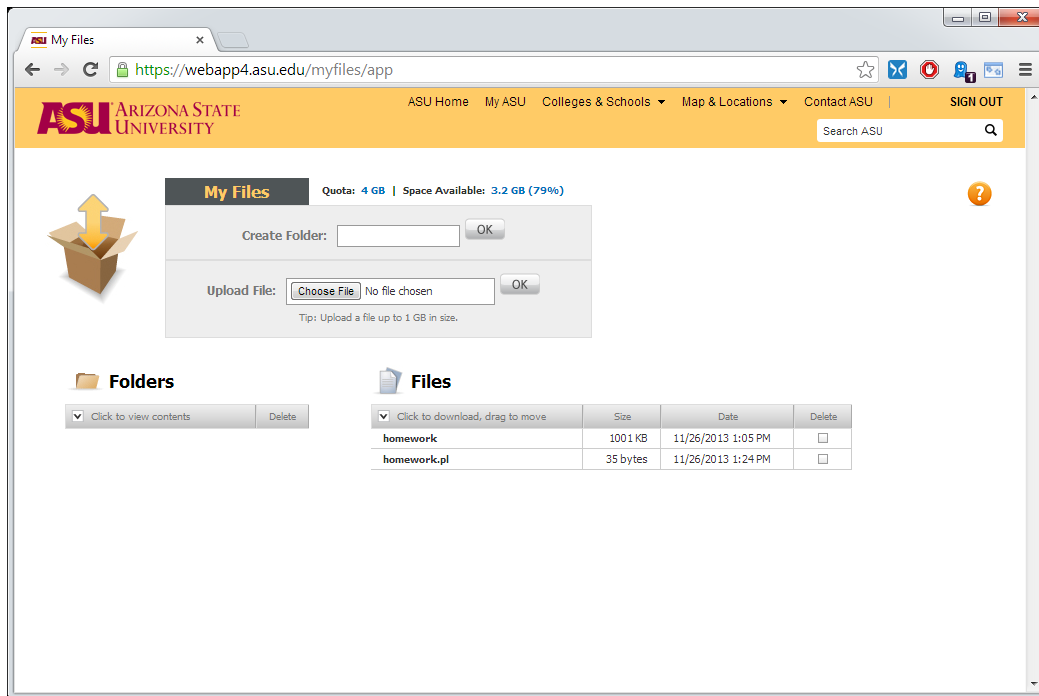
yes
| ?- father_of(homer, X) .
X = bart

yes
| ?-
```

```
GNU nano 1.3.12 File: homework.pl
boy(bart).
father_of(homer, bart).
```

To exit **gprolog**, you will need to enter “**halt.**” To exit **nano**, you will need to press **Control-X**.

8. To develop your program further, you will: edit in the nano window, save in the nano window, compile in the gprolog window, and then run in the gprolog window.
9. We will now briefly discuss accessing your files on General. Files can be accessed in a web browser by going to: <https://www.asu.edu/myfiles/>. Once you have logged in, you will be shown the following screen:



By clicking the **Choose File** button (by the **Upload File** panel), you can upload a file into the currently shown directory. To download a file, simply click its name in the **Files** list.

You may also retrieve files by connect using a SFTP client (such as WinSCP) to general.asu.edu.

Linux

The process is similar but you will be using multiple instances of Terminal.