Installation of *XPPAUT* is done either by downloading the source code and compiling it or downloading one of the binary versions. I will give sample installations for UNIX, Windows, and MacOS X. If you are totally clueless at compiling source code, it is best to either have your system administrator install it for you or download a precompiled binary for your computer. There are compiled versions available for Ubuntu Linux, Windows, and Mac OSX. Installation for the iPad/iPhone simply involves downloading it from the iTunes store like any other app. All files are currently available at the *XPPAUT* website:

`http://www.math.pitt.edu/~bard/xpp/xpp.html`

1 Installation on UNIX

1.1 Installation from the source code

Create a directory called `xppaut` and change to this directory by typing:

```
mkdir xppaut
cd xppaut
```

Step 1. Download the compressed tarred source code `xppaut_latest.tar.gz` into this directory from:

`http://www.math.pitt.edu/~bard/xpp/xpp.html`

Step 2. Uncompress and untar the archive:

```
tar zxvf xppaut_latest.tar.gz
```

This will create a series of files and subdirectories.

Step 3. Type

```
make
```

and lots of things will scroll by including occasional warnings (that you can safely ignore). If you get no errors, then you probably have succeeded in the compilation. If the compilation stops very quickly, then you probably you will have to edit the Makefile according to the architecture of your computer. Look at the README file and the Makefile which has suggestions for many platforms.

Step 4. If you successfully have compiled the program, then you should have a file `xppaut` in your directory. To see, type

```
ls xppaut
```

If you see something like `xppaut*` listed then you have succeeded. If you don't see this, then the compilation was unsuccessful. Consult the README file for a variety of possible fixes. Also, there are many comments in the Makefiles that are included with the package. I have not yet found a computer on which I cannot compile the program. A common problem is the wrong path to the X Windows libraries. **WARNING:** I compile using `-m32` flags that compile to a 32 bit architecture. You may try compiling to a 64 bit architecture, but I have had lots of problems getting AUTO to run on in the 64 bit compiled version, so I advise against it.

Step 5. Once you have compiled it, just move the executable to someplace in your path. (The usual is `/usr/local/bin` but you must have root privileges to do this.) *XPPAUT* needs no environment information, however, you can change lots of aspects using the `.xpprc` file which is described below.

Step 6. If you have root privileges, you can type `make install` from the command line and *XPPAUT* will be installed in default directories.

1.2 Binaries.

I generally compile a version for UBUNTU linux and you can find the binary there. It will probably work on any Intel-based Linux system. Download a Linux binary and then create a folder (directory) called `xppaut`. Move the downloaded file into your directory. Then type

```
tar zxvf xppaut7.0-ubuntu32.tgz
```

and you should see the binary `xppaut` which you can move into a globally accessible directory if you want such as `/usr/local/bin`. (The name of the binary file may be diferent depending on the version.)

1.3 Additional UNIX setup

In some systems, the zooming and cursor movement does not always work properly. In these systems, you want to call *XPPAUT* with an additional command line argument, e.g.,

```
xppaut -xorfix file.ode
```

This will usually fix these problems.

1.4 Running on Linux.

I usually just call *XPPAUT* from the command line

```
xppaut file.ode
```

However, in Ubuntu, it is pretty easy to make it drag and drop. Right click on the Desktop and choose the Add Launcher. Then fill in the dialog; the only tricky thing is to put the correct command in for `xppaut`. It is advisable to include the full path. Then, once you have done this, you can drag ODE files onto the launcher or just double click it.

2 Native MS Windows

Just download the program `winpp.zip` into a folder, say **wpp** and then use Winzip or a similar program to unzip the file. Create a shortcut to `winpp`. This version does not have all the features of the full version. Furthermore, the interface is quite different. Many of the equation files will work for this version and most of the standard features are extant. I will not maintain this version anymore, but it still works and will continue to be available.

3 X-windows version on Windows.

This is the recommended way to run the program in the Windows environment. It is only slightly more difficult to install. It does not use the Windows API, but works identically to the UNIX version. This looks quite complicated, but that is because I have included even the most trivial steps

1. Download

   `http://www.math.pitt.edu/~bard/bardware/binary/Xming-20050131-setup.exe`

2. Once this file is downloaded, double click on it and Allow it to open.

3. You will get the Xming setup wizard. Just follow the directions and also let it make a shortcut on your desktop.

4. Once it is installed, it will probably start, To make sure the X11 server is running, click on the little hidden icon bar at the bottom of the screen and you should see a little X. If you don't see the X, try clicking on the Xming icon on your Desktop. Check again. Sometimes the server will complain about firewalls. You should make sure that it has permission.

5. Download the latest version of XPP for windows

   `http://www.math.pitt.edu/~bard/bardware/binary/latest/xppwin.zip`

6. It will appear in your Downloads section.

7. Double click on `xppwin` (it is a zip file)

8. Windows explorer will open and you will see a folder called `xppall`

9. Click on Extract all files.

10. **THIS IS IMPORTANT!! For the destination, choose C:\. DO NOT CHOOSE ANYTHING ELSE!!**

11. If you did this correctly, the you should be able to click on Computer or My Computer from the Explorer and see `Local Disk C:`

12. Double click on`Local Disk C:` and the `xppall` folder should be there. If not see step 9!!!

13. Double click on the `xppall` folder.

14. Find the file called `xpp` (batch file) and create a shortcut using the right click. Drag the shortcut to your Desktop.

15. Now try XPP as follows. In the `xppall` folder double click on the ode folder.

16. Drag a file, say, `lorenz.ode` (lorenz: type ODE-File) onto the XPP shortcut on your Desktop and XPP should fire up. If it doesn't, then either you did not put `xppall` in the correct location, or, the X11 server is not running.

17. To edit the ODE file or make your own, right click and use wordpad or some other editor. When you save ODEs always save in plain text format!! For creating new ODE files, I recommend NotePad, but always save as a plain text. The extension doesn't matter to `XPP` so you can save it as `.txt` if you want.

4 Mac OS-X

Here is how to install the binary application on a Mac.

1. NOTE! As of Mountain Lion (OSX 10.8), the X11 server is no longer part of the installed OS. So you have to go get X11. Here is what Apple says:

   `X11 is not included with Mountain Lion, but X11 server and client libraries for OS X`

2. Go to

   `http://www.math.pitt.edu/~bard/bardware/binary/latest/`

3. Find the file that corresponds to the mac. It will have a name like `xppaut7.0-osx.dmg`

4. Click on this file, then it will download the binary file

5. Depending on where you save your Downloads (I save them in Downloads), you should open this (Click on the Finder to open the Downloads folder.)

6. Double click on the xppaut DMG file (for me it was called `xpp7.0-osx.dmg`) and a new folder will appear, `xppmac`.
7. Drag this folder to your desktop
8. Double click on the folder and a new Finder window will open.
9. Drag the little xpp icon (with the image of the pink and grey cockatoo) to your dock
10. Open a new finder window (File New Finder window or Command+N)
11. Click on the Applications in the new Finder.
12. Drag the file `xppaut` from the `xppmac` Folder to the Applications folder.
13. Now you are set to test it!
14. In the `xppmac` folder, click on the `ode` folder. Drag an "ode" file (for example `lin.ode` onto the little cockatoo icon on the dock. It may ask your permission, go ahead and say yes.
15. If all is good, the Mac will automatically start up the X11 Server and then run XPP!
16. If this fails, then look in the Applications/Utilities Folder to make sure you have X11. If not, you will have to install it from the original disk. Recent versions of the OS (up to Lion but not Mountain Lion) do this automatically.
17. To run from the command line, start a terminal program `Applications/Utilities/Terminal` and from the terminal type `/Applications/xppaut` and it will fire up. (You should probably put `XPPAUT` in your path if you plan on doing things from the command line!)

NOTE. The version that is the default was compiled under version 10.7 of the OS and will not work with 10.4,10.5, etc. I will try to maintain versions of `xppaut` compiled on the older OS's. If you look at the folder created from the DMG, `xppmac`, you may find files compatible with older versions of the OS. Rename the appropriate file `xppaut` and put it in /Applications

5 iPhone and iPad.

Go to the App store, look for XPP, and install it on your device!