PYCTS Administrative and Technical Manual Software Version: 1.0

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# 1) Introduction

There should always be at least one person (the“maintainer”) responsible for the technical maintenance of PYCTS. This document will be a reference for that person. It contains an installation manual, and other procedures useful to the “maintainer”.

This document shall assume that the maintainer is competent with the Linux command line (specifically, the bash shell).

To reach out to the current maintainer(s) of PYCTS contact Andreas Wilke, his contact information can be found at:

http://www.clarkson.edu/psychology/

# 2) System Requirements

PYCTS requires the following software to operate correctly:

• Web space on a Linux server.

• A PHP installation on the web server.

• A MySQL database.

• An authentication server.

PYCTS was written with compatibility and maintainability in mind and should not experience any failures in the future due to software upgrades. However, it is not always possible to predict how software will evolve. The following is the “reference” platform on which PYCTS is most likely to operate correctly.

• Platform: Any Linux platform is suitable. The author performed all development on a Gentoo system, and PYCTS was first deployed on an Ubuntu web server.

• Web server: PYCTS was developed on the lighttpd web server, and the first deployment was made on an Apache web server. Any web server that supports PHP should be suitable.

• PHP: Version 5.3.6 was used for development, and older versions should be suitable.

• Database server: PYCTS was developed on MySQL 5.1.51, and older versions of MySQL are known to work correctly.

• Authentication server: PYCTS supports any authentication server that supports LDAP, though it was tested on Clarkson’s Active Directory server.

Windows platforms are not supported.

# 3) Installation

## 3.1) Acquiring the Source Code

Installation begins by downloading the source code for PYCTS. The source code can be pulled from Git:

git clone github.com/andlindsay/pycts

Alternatively, use sftp or scp to transfer a source tarball to the web server. Put the source code where the web server will see it. PYCTS is licensed under the GNU General Public license and is free to use.

## 3.2) Configuring the Database Server

You will need a MySQL database server ready for PYCTS to use. Go to the extras/ directory, where you will find a SQL script named create db.sql that will be used to create the database schema. Edit lines 1 and 3 in this file to specify the name of the database you wish to use. By default, the script creates a database named “points2”.

Log into the database server and enter the command source create db.sql. This will create the database schema used by PYCTS.

## 3.3) Prepare Local Configuration

The next step is to set some global variables PYCTS requires to function in the local environment. The file containing these variables is includes/globals.php.

• $mysql user: set this to be the username used to log into the database server.

• $mysql pass: set this to be the password for the username used to log into the database server.

• $mysql server: set this to the URL of the database server.

• $mysql db: set this to the name of the database (points2 by default).

• $ad server: set this to the name of the server against which PYCTS will authenticate users. Clarkson uses an Active Directory server at ad.clarkson.edu.

• $use ad: set this to true to enable authentication against the AD server. Only set this to “false” for debugging purposes.

• $software version: this is just the version number reported by the software. Don’t change it.

• $root pw: PYCTS has a root user that is authenticated locally. This is the password for that user.

When you have configured the global variables to your satisfaction, PYCTS is almost ready to use.

## 3.4) Directory Permissions

PYCTS requires write permissions for several internal directories. They are:

• utility/download

• utility/upload

• utility/flyers

• utility/flyers/tmp

Use chmod to make sure they are writable by the web server, use octal permissions 0777 if in doubt.

On Clarkson’s AFS system, it’s necessary to set additional permissions. Use the following commands to do this:

fs sa utility/download web rliwd

fs sa utility/upload web rliwd

fs sa utility/flyers web rliwd

fs sa utility/flyers/tmp web rliwd

PYCTS is now installed, congratulations! Continue on to the initial login to finish the installation.

## 3.5) Initial Login

PYCTS is installed, but there are no users! You will have to log in as the root user to add them. Navigate to PYCTS and log in with the username root and the password that you set in the globals.php file. Navigate to the Admin Panel, and add at least one Professor-level user.

The system is now ready for use.

# 4) Upgrades and Maintenance

PYCTS requires very little in the way of periodic maintenance. You might want to check that no extra files are left over in the writable directories, but PYCTS generally does not make a mess.

To upgrade PYCTS, simply replace the old source code with new source code. Be sure to verify that the database schema has not changed between versions, since changes to the schema generally break compatibility with old source code. After upgrading, don’t forget to reset the permissions on the writable directories, and be sure to copy over all numbered directories in utility/flyers to the new installation.

# 5) Technical Resources

## 5.1) PHP

To learn PHP from scratch, see the tutorial located at http://www.w3schools.com/php. For a complete reference of PHP functions, syntax, and anything else one could need, see http://www.php.net

## 5.2) MySQL

To learn MySQL from scratch, w3schools.com once again provides a good tutorial located at http://www.w3schools.com/sql/. For a reference of commonly used functionality see the following page at w3schools.com http://www.w3schools.com/sql/sql\_quickref.asp. To understand PYCTS’ SQL all that will be needed is an understanding of the *insert*, *update*, and *delete* statements, as well as the *where* clause.

## 5.3) Apache Web Server

If the system is of interest, chances are you work for a University already equipped with a web server setup on which space can be requested for PYCTS

If this is not the case, and you do not have the knowledge to setup an Apache Web Server, referring to the following stack overflow answer for more information on Apache setup would be a good place to start. This can be found at http://stackoverflow.com/a/12933536

## 5.4) Linux

While PYCTS only officially supports Linux web servers as a base platform, in truth anything which supports MySQL and PHP will do just fine. If you intend to set PYCTS up and do not possess an understanding of Linux, it is likely that the learning curve would be significantly steep as to dissuade you from setting up the system.

At this point it would be recommended to look into setting up the Apache/PHP/MySQL stack on a Windows or Mac platform. The following sites offer end-to-end solutions for doing just that: http://www.wampserver.com/en/, http://www.mamp.info/en/index.html (Windows and Mac respectively)