LabAssist
User Documentation

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1. Installation

1.1. Introduction

OS independent instructions are provided. Please refer to your OS or distributions documentation for detailed information on how to perform certain tasks.

1.1.1. Document Assumptions

- Operating System of Choice is Linux
- Apache is installed and functioning properly
- postgreSQL v. 9.6+ is installed and functioning properly
- PHP v7.0 is installed and functioning properly

Respectable tutorials for setting up the aforementioned items can be found in the documentation for your distribution. If these do not suit your purposes, DigitalOcean provides guides that are simple and easy to follow.

1.1.2. PHP Extensions/packages

For PHP, the following extensions are required (The names in parentheses are the OpenSUSE package names for those extensions. Refer to your package manager or distribution documentation if you use a different one)

- LDAP (php7-ldap)
- pgSQL (php7-pgsql)
- MBString (php7-mbstring)
- PDO (php7-pdo)
- OpenSSL (php7-openssl)

1.2. Configuration

1.2.1. Important settings

1 Change postgreSQL authentication to ‘‘trust’’ authentication for the localhost

2 If your system uses SELinux, you must enable ‘‘httpd_can_network_connect’’ to allow PHP to communicate with the LDAP/Active Directory server.

1.2.2. Downloading

0 Create a directory in your home folder and change directory to it

```
bash
mkdir ~/dir
cd ~/dir
```

0 Clone the repository into your directory

```
git clone https://github.com/AdamC1228/LabAssist.git
```

0 Change to the repository directory

```
cd LabAssist
```

1.3. Database Setup

1.3.1. User Creation

0 Run the following commands to create the user and database

```
sudo -u postgres createuser labassist
sudo -u postgres createdb labassist
```

0 Start the postgreSQL console with the following command

```
sudo -u postgres psql
```

0 Run the following commands in the postgreSQL console to give the user a password and permission to use the database.

```
alter user labassist with encrypted password
'labassist';
grant all privileges on labassist to labassist;
```

0 Finally, run the following command to load the schema into the database

```
sudo -u postgres psql labassist labassist -f
dbschema.sql
```

1.4. Site Installation

0 Change directory into the document root for your webserver. Traditionally, this is at /var/www/html or /var/www/htdocs. If you have changed this, use the document root you created.

0 Copy the repository folder you cloned earlier to the document root.

0 Update the permissions on the document root. The following command will do this, assuming that the name of the user who is installing the application is 'usr' and that 'apache' is the group of the webserver (This is typically apache, httpd or www-data) and that your document root is at /var/www/html

```
chown -R user:apache /var/www/html
```

0 On SELinux systems, the appropriate security contexts must be set. You will likely need to refer to your distribution for the correct set of contexts to use.

0 Apply the appropriate context across all of the files in the document root (Assuming that your document root is at /var/www/html, and that the appropriate context is system_u:object_r:httpd_sys_content_t:s0)

```
chcon -R system_u:object_r:httpd_sys_content_t:s0
/var/www/html
```

0 Set the proper permissions on all files in the document root with the following commands, assuming your document root is /var/www.

```
find /var/www/ -type f -exec chmod 640 {} ;
find /var/www/ -type d -exec chmod 751 {} ;
```

1.5. Site Configuration

There are two files that need configuration for the website to function properly. These are dbCon.php and ldap.php.

1.5.1. Database (dbCon.php)

0 Open the dbCon.php file located in <documentRoot>/logic/database in an editor.

0 Change the username, password and database variables to be 'labassist'. These can be something different if you set a different username, password or database earlier, in which case it should be the things you specified.

0 Save and close the file.

1.5.2. LDAP (ldap.php)

0 Open the ldap php file located in <documentRoot>/logic/common in an editor.

0 Change the server URL on lines 16 and 40 to reflect your LDAP servers URL and port.

- On lines 4, 5 and 6; update the LDAP parameters to match your active directory structure. (Specifying the OU here is not necessary, but it speeds up the application substantially to do so.)
- If you are not setting this system up within a WVU network, the attribute names in the getUserAttr and getSidnoAttr functions must be update. Not doing this will cause the system to fail to get required information from the directory.

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