Installation: MySQL database server

1) Install server packages on server computer:
Enable ubuntu universe repository and install server packages
$ *sudo apt-get install mysql-server*
or
Enable mariadb repository and install server packages
$ *sudo apt-get install mariadb-server*

2) Edit /etc/mysql/my.cnf and comment (to enable client communications)
bind-address = 127.0.0.1

3) Create a users with suitable privileges. Usually a user which can create database and alter tables and a common user with specific privileges which can be used from any host (%).
$ *mysql -h localhost -u root -p*

> *CREATE USER **'admin'**@'%' IDENTIFIED BY **'passwrod'**;*
> *GRANT ALL PRIVILEGES ON *.* TO **'admin'**@'%';*
> *CREATE USER **'userid'**@'%' IDENTIFIED BY **'password'**;*
> *GRANT SELECT,INSERT,UPDATE,DELETE,CREATE,TRIGGER,INDEX ON **database**.* TO **'userid'**@'%';*
> *FLUSH PRIVILEGES;*

4) Restart MySQL server :
$ *systemctl restart mysql.service*
or
 $ *systemctl restart mariadb.service*

Installation: PostgreSQL database server

1) Install postgresql server
$ *sudo apt-get install postgresql*

2) connect to the default PostgreSQL template database
$ s*udo -u postgres psql template1*

3) Run the following SQL command at the psql prompt to configure the password for the user postgres
template1=# ALTER USER postgres with encrypted password '**password**';
template1=# \q

4)Edit /etc/postgresql/<version>/main/postgresql.conf
-Locate the line #listen_addresses = 'localhost' and change it to listen_addresses = '*'. To allow both IPv4 and IPv6 connections replace 'localhost' with '::'

6) Restart postgresql server
$ *systemctl restart postgresql.service*

Installation of FTP server

1) Install VsFTPD package
$ *sudo apt-get install vsftpd*

2) Edit /etc/vsftpd.conf file and make changes as follows.
    i.   Uncomment the below lines (line no:29 and 33).
         write_enable=YES
         local_umask=022

    ii. Uncomment the below line (line no: 120) to prevent access to the other folders outside the Home directory.
         chroot_local_user=YES

    iii. add the following line at the end.
         allow_writeable_chroot=YES

    iv. Add the following lines to enable passive mode.
         pasv_enable=Yes
         pasv_min_port=40000
         pasv_max_port=40100

3) Restart service
$ *systemctl restart vsftpd*

4) Create user with the below command.Use /usr/sbin/nologin shell to prevent access to the bash shell for the ftp users .
$ *sudo useradd -m **user** -s /usr/sbin/nologin*
$ *sudo passwd **user***

5) Allow login access for nologin shell . Edit /etc/shells and add the following line at the end.
    /usr/sbin/nologin

Server Configuration

1) Set Static IP
Edit /etc/network/interfaces   and change as
```
auto eth0
iface eth0 inet static
    address 10.253.0.50
    netmask 255.255.255.0
    network 10.253.0.0
    gateway 10.253.0.1
    dns-nameservers 8.8.8.8
```

Installation: Client computer for server configuration
1) Install client packages on a client computer:
MySQL:
Enable ubuntu universe repository and install client packages
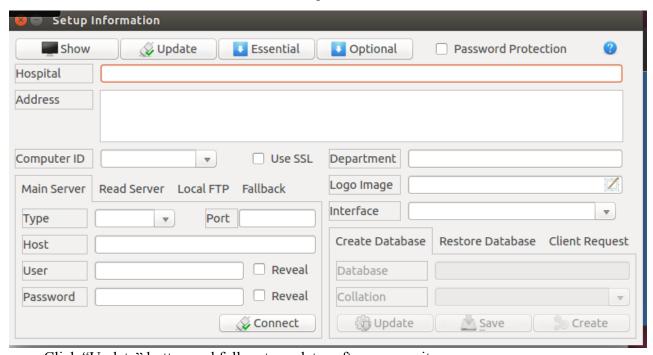$ *sudo apt-get install mysql-client*
or
Enable mariadb repository and install client packages
$ *sudo apt-get install mariadb-client*

PostgreSQL:
$ *sudo apt-get install postgresql-client*

2) Run "SISH" application from menu. Please read carefully the terms of use. You need to accept the terms of use. This will lead to initial database setup form.

- Click "Update" button and follow to update software repository
- Click "Essential" button and follow to check if all essential softwares are installed.
- Click "Optional" button and follow to check if all optional softwares are installed.
- Check "Password Protection" to password protect setting configuration file (Optional)
- Write Hospital Name in "Hospital" text box. This will be displayed on top of all reports.
- Write complete address in "Address" text box. This will be displayed after hospital name in all reports.
- Select "Computer ID" from list. Select same Computer ID for all computers of a department.
- Write Department name in "Department" text box.
- Select "Logo Image" which is displayed in all reports.
- Select "Interface" if particular network interface is to be used for database connection (Optional).
- Check "Use SSL" to SSL encrypt database password in configuration file (Optional).
- Fill "Local FTP" settings to manage files in secure FTP folder (Optional).

Database settings:

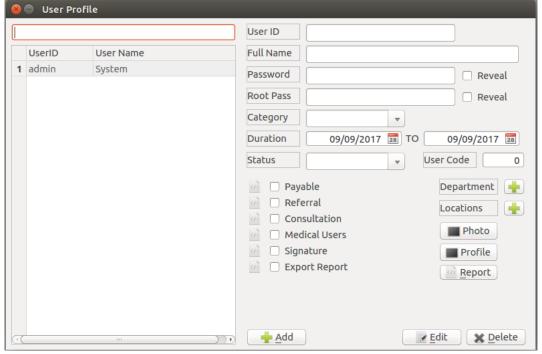Fill "Main Server" values for single server. In case of clustering (eg Galera Cluster),
- "Main Server" is the working server
- "Fallback" is server used when "Main Server" gets offline
- "Read Server" is used for slow but large reports

The components of database Settings are:
- Select database "Type" (either MySQL, PostgreSQL, SQLite or ODBC)
- Write Server fixed IP in "Host" text box
- Write database user in "User" text box to access database
- Write database password in "Password" text box to access database
- Write port used by database connection in "Port" text box (Optional)
- Click "Connect" to verify database connection. Green icon represents successful database connection.

I. If you are creating new database for use then use procedures for "Create Database". You need to use database user with privileges to create database and create index.
- Write database name to be created in "Database" text box
- Write MySQL collation in "Collation" text box to force database to specific collation (Optional)
- Click "Update" button to confirm all settings.
- Click "Save" button to copy local configuration file to /etc/sishgambas folder. This process will ask you to provide Desktop password. The configuration file cannot be edited/moved without providing Desktop password.
- Click "Create" button to create required database. Wait for a while and proceed to Step 3.

II. If you are restoring database from backup dump file then use "Restore Database" procedures.
- Write database name to be restored in 'Database' text box.
- Select dump file from "Backup File".
- Click "Update" button to confirm all settings.
- Click "Save" button to copy local configuration file to /etc/sishgambas folder. This process will ask you to provide Desktop password. The configuration file cannot be edited/moved without providing Desktop password.
- Click "Restore" to initiate restoration process.

III. If you are connecting client computer to central database then use procedures from "Client Request"
- Select database to connect from "Database" list
- Check "Request Computer Access"
- Click "Update" button to confirm all settings.
- Click "Save" button to copy local configuration file to /etc/sishgambas folder. This process will ask you to provide Desktop password. The configuration file cannot be edited/moved without providing Desktop password.
- Click "OK" to send access request. (Administrator needs to grant access from "Computer Access" form to make the client use central database)

3) At end of "Create Database" procedure "Application Settings" form appears. Please note that this form appears only once. You need to fill
- Initial Values for Patient No, Encounter ID, Invoice No etc.
- Fill text box for "User Name", "Password" and "Root Password" for first application user to log in into the system. Click "Insert User" to insert this information into database.
- Click "Allow Access" to allow this computer as valid database client.
- After completion please close all open forms

4) Run "SISH" application from menu. The Log In form will appear.
   i.   Select "Admin" mode. From list select "Record". Put application user name on first text box and password on second text box. Click on "OK" to log in into application.
   ii. In Record Desk From "RootUser" menu click on "Add User". Put user name on first text box, password on second and root password on third. Click on "OK" to open "User profile" form. Click on "Add" to create a new user. Fill required parameters and then click on "Save". Please note that the user will be active during duration specified.

   iii. Click "Department" to grant this user access to selective departments of software. Select desired departments and click "Change"
   iv. Click "Locations" to grant this user access to selective computers. Select desired computer ID from list and click "Add".