# Cornell University College of Veterinary Medicine Student Training Simulation Project

# Open VetSim Manager Configuration

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**Update Section 2.8**
**Update Section 2.9**
**Update Section 2.11**
**Update Section 2.12**
**Add Section 2.13**
**Add Section 2.14**

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**2018-July 12 – V1.8    - Added additional OBS setup**

**2018-Nov 12 – V1.9    - Added additional OBS setup and updated suppressing of update messages**

**2018-Nov 15 – V1.10   - Added additional corrections from feedback**

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**Remove keyring requirement**
**Added vitals monitor window test**
**Additional minor edits**

**2021-Jan-19 – V1.16   - Incorporated changes for Ubuntu 20.04**

**2021-Mar-07 – V1.17   - Minor edits**

**2021-Sep-28 – V1.18   - Updates for Ubuntu 20.04 and OBS WebSocket**

# Cornell University College of Veterinary Medicine Student Training Simulation Project Open VetSim Manager Configuration

# 1.   Introduction and Overview

This document will describe the Open VetSim Manager configuration for the Cornell University College of Veterinary Medicine Student Training Simulation Project.

The OVSM can be any PC architecture computer which meets the *minimum* requirements, as follows:

1. 250GB hard drive
2. Dual i5 core processor or better
3. 8 GB main memory
4. 1 USB port
5. Video port
6. Network connection (LAN or WiFi)

The OVM is the main processing unit for the simulator.  It handles the functionality for controlling the mannequin, serving the instructor interface web interface, and logging of events.

It is assumed the user has reviewed the documentation pertaining to system and software block diagrams, and the user has a basic understanding of Ubuntu.

A basic understanding of Ubuntu Linux is helpful, but installation is possible by following the detailed instructions that follow.

# 2.  OVM Configuration

## 2.1 Install Ubuntu

The OVSM software runs on the free, open-source Ubuntu Linux operating system. Download an ISO image of the latest Ubuntu LTS (currently 20.04.1) onto a computer. The downloads can be found here:

https://www.ubuntu.com/download/desktop

The utility Rufus (https://rufus.akeo.ie/) can then be used to create a bootable flash drive for installation on the OVSM from a Windows computer. For MacOS, you can use Etcher (https://www.balena.io/etcher/).

Install the USB flash drive and power up the OVM.  You will need to access the boot menu which is hardware dependent.  Select the USB flash drive and follow the directions to install a complete copy of Ubuntu.  If another OS is already installed, Ubuntu will detect this and ask if you want to erase the entire disk or install Ubuntu alongside the existing OS as a dual boot.

Set the user name to 'Vet Sim' and the password to 'vet'.  You will get a warning for a short password which can be ignored.  The account user will be set to 'vet'.

After installation be sure to remove the USB flash drive.

During the installation the OVM will attempt to establish a network connection either as a wired connection or over WiFi.

**NOTE**:  **A network connection with public access is required to complete this installation.**

After the installation is completed, reboot the OVM and login using the credentials:

User: vet
Password: vet

## 2.2 Install git and sim-mgr repository

Reboot the OVSM and log in as user Vet Sim, (password vet), perform the following steps:

Click through the "What's new…" slideshow.

Run the Software Update utility:
- o Click on the 3x3 grid on the bottom left of the screen and a list of installed applications will display.
- o Click on 'All' at the bottom center of the screen. Locate and open the application 'Software Updater'. The OVM will check for any additional Ubuntu updates. **NOTE:** There is an application called 'Software & Updates', and an application called 'Software Updater'. Be sure to choose the correct application!
- o Follow the direction to update your software if any updates are detected. The updates may take several minutes. You will then be asked to reboot the computer.

After rebooting, log in to the Vet Sim account and open a terminal window.
**> CTRL-ALT-T**

Perform an update
**> sudo apt update**

Install git to download the github repositories:
**> sudo apt –y install git**

Clone the repository for sim-mgr (do not clone as root account):
**> git clone https://github.com/openvetsim/sim-mgr.git**

## 2.3 Install Apache Server, MySQL Server and PHP 7.2

Navigate to the scripts directory:
**> cd /home/vet/sim-mgr/scripts/**

Run the following script:
**> ./bash1.sh**

The message **PHP is RUNNING!!** should be echoed at the terminal.


## 2.4 Install phpMyAdmin

Run the second bash script:
**> ./bash2.sh**

When the window for configuring PHPMyAdmin appears do the following:

1.  Press the "space" key to select apache2.  An asterisk will then appear indicating that apache2 has been selected.
2.  Press the tab key to highlight "OK"
3.  Press "Enter".

You will then be asked to reconfigure the database ("Configure database for phpMyAdmin with dbconfig-common?") …click Yes

You will then be asked for a MySQL password.  **Set the password for user phpMyAdmin to "vet$im".**

At the prompt:
**libmcrypt prefix [autodetect]:**

press 'Enter'.  Allow the install script to complete.

## 2.5 Install g++ Compiler, Libraries and simmgr User

Run the third bash script:
**> ./bash3.sh**

When the script prompts for the setup of the simmgr account, set password to 'simmgr' and accept defaults for account name, room number, home and work phone, and other. When prompted if the information is correct type 'y' then press 'Enter'.

## 2.6 Installing the Web Based SIM Instructor Interface

Run the fourth bash script:
**> ./bash4.sh**

## 2.7 Install misc tools and 'vitals' User

Run the misc bash script:
**> ./misc.sh**

When the script prompts for the setup of the vitals account, set password to 'vitals' and accept defaults for account name, room number, home and work phone, and other. When prompted if the information is correct type 'y' then press 'Enter'.

Run the script to install the OBS Websocket:
**> ./obs_socket.sh**

## 2.8 Application User Setup and Instructor Interface Test

In the terminal window do the following:
1. Type in **sudo mysql** and Enter
2. Type **GRANT ALL ON \*.\* to 'phpmyadmin'@'localhost';** and Enter. You will see a response 'Query OK. 0 rows affected'.
3. Type **FLUSH PRIVILEGES;** and Enter. You will see a response 'Query OK. 0 rows affected'.
4. Type exit.

**Add database vet and table Users**

1. Open a browser and go to http://localhost/phpmyadmin
2. Login with user 'phpmyadmin' and password 'vet$im'.
3. Click on 'New' in the menu bar on the left of the screen
4. Create a new database 'vet' with default options
5. Click on 'Import' in the menu bar at the top of the web page.
6. Click on the "Browse…" button
7. Click on the button labeled 'vet' with the house icon at the upper left of the screen
8. Navigate to sim-mgr/Users.sql (this will be the path /home/vet/sim-mgr/Users.sql) and click "Open" on the top right of the window.
9. Scroll to the bottom of the page and click the 'Go' button.
10. You should see a new table 'Users' under 'vet' in the left sidebar.

**Test Instructor Interface:**

1. Open a browser
2. Go to URL localhost/sim-ii
3. Login using User: admin, Password: admin
4. You should see the instructor interface open with the scenario default ready to start.
5. Click on 'Start Scenario'.  You should see a log appear.
6. Click on 'Terminate Scenario'.
7. Click on 'Debrief'.  You should see the Debrief Viewer with a new log file.

**Test Vital Monitor Window:**

1. Open a browser
2. Go to URL localhost/sim-ii/vitals.php
3. You should see the Vital Monitor screen which responds to changes made through the instructor interface.

**Note:** This window opens automatically upon bootup if install was fully successful.

## 2.9 Set up Auto Login

In the graphic interface follow these steps:

1. Click on the Show Applications icon in the lower left hand corner of the desktop. The icon is a 3x3 array of dots.
2. Type "Settings" into the search bar and then click on the Settings app
3. Select Users
4. Select account 'vitals'
5. Click the unlock icon at the top of the window.
6. Enter the password for the vet (sudo) account (the password would be "vet" if you used the instructions on the previous section).
7. Set Autologin to 'ON'
8. Close the app.

## 2.10 Open Broadcaster Setup

The application Open Broadcaster has been installed as part of the automated setup. This application is used for recording audio and video during simulations which can then be played synched to a log file for review and critiques.

The video and audio sources must be configured for proper recording. There are three components for recording: audio, video cameras, and the vitals screen. The directory for saving the recording, OBS hotkeys, and the video format must also be configured.

### 2.10.1 Audio Setup

1. Reboot the OVM.  Click through the "What's new…" slideshow.  The simulated vital sign monitor should be displayed.
2. Type the F11 key.  The vital sign monitor should minimize allowing access to the desktop.
3. Connect all webcams that will be used for recording the simulations.
4. Click on the Show Applications icon in the lower left hand corner of the desktop (3x3 grid array)
5. In the upper left hand corner of the display click the search icon and type in "obs".  The Open Broadcaster icon should be displayed.  Click on the icon to open the application.
6. When prompted to accept the license click 'OK'.  Click 'NO' for autoconfig.  Click 'OK' when prompted again.
7. Under Tools click on WebSockets Server Settings:
   a. Check Enable WebSockets Server
   b. Verify Server Port is set to 4444
   c. Uncheck all other boxes
   d. Click OK
8. Under "Sources" click the plus sign ("+").
9. Select "Audio Input Capture (Pulseaudio), then "Create New" and click "OK".
10. Select the audio source from the dropdown presented and click "OK".  The audio source should now be listed in the Sources window.

### 2.10.2 Webcam Setup

1. Under "Sources" click the plus sign ("+").
2. Select "Video Capture Device (V4L2)" and then "Create New" and click "Ok".
3. Select the video source and click "Ok". The video source should appear in the sources list and the video feed will appear in the live window.
4. Repeat steps for each video camera.

### 2.10.3 Vitals Screen Record Setup

1. Under "Sources" click the plus sign ("+").
2. Select "Window Capture" and then "Create New" and click "Ok".
3. Select the window "Vet School Simulator – Mozilla Firefox". The screen should appear in the sources list and the video feed will appear in the live window.
4. Check the box that says "Swap red and blue".
5. Click "OK" to save the screen recording. The different video sources can be resized and moved so that they are all visible.

### 2.10.4 Video Recording Format and Path Setting

1. Click "Settings" then "Output".
2. Set "Recording Path" to "/var/www/html/simlogs/video".
3. Set video "Recording Format" to "mp4".
4. Click "OK" to save the setting.

### 2.10.5 Hot Keys

The hot keys are used to programmatically start and stop the recording of Open Broadcaster.

1. Click "Settings" then "Hotkeys".
2. In "Start Recording" click CONTROL A (hold down Ctrl and type 'a').
3. In "Stop Recording" click CONTROL B (hold down Ctrl and type 'b').
4. Click "OK" to save the setting.

Click "Exit" to close OBS.

Reboot the OVM. OVM is now configured.