

# IBES Virtual Presence Project

## Setup Instructions

### Introduction

This document explains how to set up the Virtual Presence Ambient Orb prototype. If you have any questions about this document or the Virtual Presence Client Application, please contact the developer Paul Deng ([dengpeng.cn@gmail.com](mailto:dengpeng.cn@gmail.com)) or Dr Frank Vetere, Department of Information Systems, The University of Melbourne ([f.vetere@unimelb.edu.au](mailto:f.vetere@unimelb.edu.au)).

For more information about this research project, funded by The University of Melbourne's Institute for Broadband Enabled Society, please go to [www.rch.org.au/education](http://www.rch.org.au/education) or <http://www.broadband.unimelb.edu.au/research/education/040.html> or contact Dr Amy Nisselle ([amy.nisselle@rch.org.au](mailto:amy.nisselle@rch.org.au)).

### Architecture

The Virtual Presence consists of three components:



- **Presence:** This is a Windows client application for the child in hospital; the child can turn the light orb on or off and change the light colour. The application can detect if the child is active or absent;
- **Command Server:** This is the controller of the light orbs. Theoretically, it is able to control multiple light orbs. Each school has to have at least one server. It is connected to mobile internet and waits for commands from the Presence client application. Once it receives a command, it sends a corresponding message to a target light orb. In the current deployment, the laptop in the school is the command server and deployed in the same classroom as the light orb.
- **Light Orb:** This is a wireless sensor node-controlled LED light. It will be placed in the child patient's classroom.

# Setup Step-by-Step

I will explain how to setup the system step-by-step by an example, using the example of John Smith as the child patient participant who wants to control a light orb in his classroom.

## 1. Register child's information

Open browser and go to <http://lc.sensorapp.net/>, click "Admin page", you should see a web page like this below:

School Name	Command Server	Light Orb	Student Name	Student Login	Student Password	Action
Demo1School	ibeslight03.webhop.net	0014.4F01.0000.46E0	Demo one	demo1	111	<input type="button" value="delete"/>
Demo2School	ibeslight03.webhop.net	0014.4F01.0000.46E1	Demo two	demo2	222	<input type="button" value="delete"/>
Demo3School	ibeslight03.webhop.net	0014.4F01.0000.4804	Demo three	demo3	333	<input type="button" value="delete"/>

Click "Add Record" and fill in the information required:

### New Record

School Name	<input type="text" value="Glen Waverley Seconda"/>
Command Server	<input type="text" value="ibeslight01.webhop.ne"/>
Light Orb	<input type="text" value="46E0"/>
Student Name	<input type="text" value="John Smith"/>
Student Login	<input type="text" value="jsmith"/>
Student Password	<input type="text" value="123456"/>

- **School Name:** The name of child patient's school;
- **Command Server:** The identifier of laptop in the child patient's classroom. Currently, we have three laptops:
  - lbeslight01.webhop.net
  - lbeslight02.webhop.net
  - lbeslight03.webhop.net
- **Light Orb:** The identifier of the light orb that sits in the child patient's classroom. Currently, we have three light orbs:
  - 46E0
  - 46E1
  - 4804
- **Student Name:** Full name of child patient.
- **Student Login:** Child patient's login name in the Presence client application. This login must be unique.
- **Student Password:** Password for the corresponding login name.

Click "Add Record"; new record is successfully added.

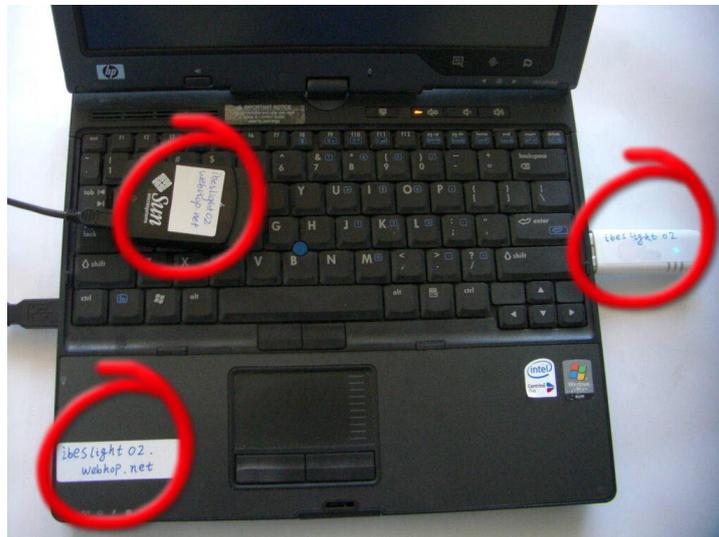
If you want to update a record, click on the field you want to change. When done, press Enter to save the change.

## 2. Setup command server in classroom

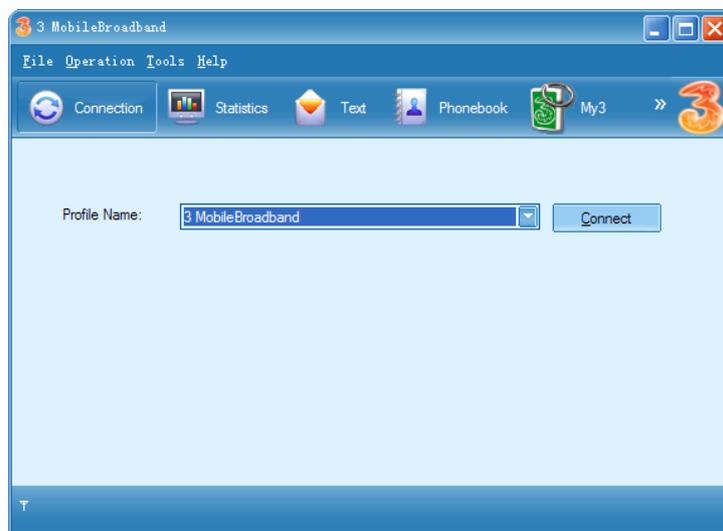
Power on the laptop and login using appropriate login for the laptop:

- USERxxxx, password xxxx
- USERxxxx, password xxxx
- USERxxxx, password xxxx

Connect the mobile internet USB stick and base station.

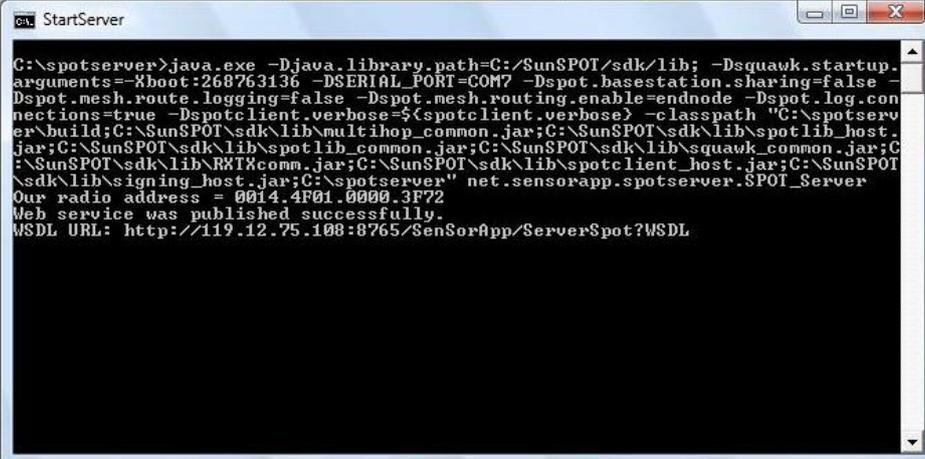


Open the IBES\_Presence\_Project folder on the desktop, run the mobile broad connect application (could be 3 or Virgin mobile depending on the particular laptop) and click Connect.



Run the Command Server by double clicking StartServer; once server is successfully running, you

should see a window similar to this:



```
C:\spotserver>java.exe -Djava.library.path=C:/SunSPOT/sdk/lib; -Dsquawk.startup.arguments=-Xboot:268763136 -D SERIAL_PORT=COM7 -Dspot.basestation.sharing=false -Dspot.mesh.route.logging=false -Dspot.mesh.routing.enable=endnode -Dspot.log.connections=true -Dspotclient.verbose=${spotclient.verbose} -classpath "C:\spotserver\build;C:\SunSPOT\sdk\lib\multihop_common.jar;C:\SunSPOT\sdk\lib\spotlib_host.jar;C:\SunSPOT\sdk\lib\spotlib_common.jar;C:\SunSPOT\sdk\lib\squawk_common.jar;C:\SunSPOT\sdk\lib\RXTXcomm.jar;C:\SunSPOT\sdk\lib\spotclient_host.jar;C:\SunSPOT\sdk\lib\signing_host.jar;C:\spotserver" net.sensorapp.spotserver.SPOT_Server
Our radio address = 0014.F01.0000.3F72
Web service was published successfully.
WSDL URL: http://119.12.75.108:8765/SensorApp/ServerSpot?WSDL
```

*Note: If the laptop has only recently been connected to the internet, it may take more than 10 minutes to update the mapping of the domain name and new IP address.*

### 3. Setup light orb

Connect the adaptor to power board and wall socket.

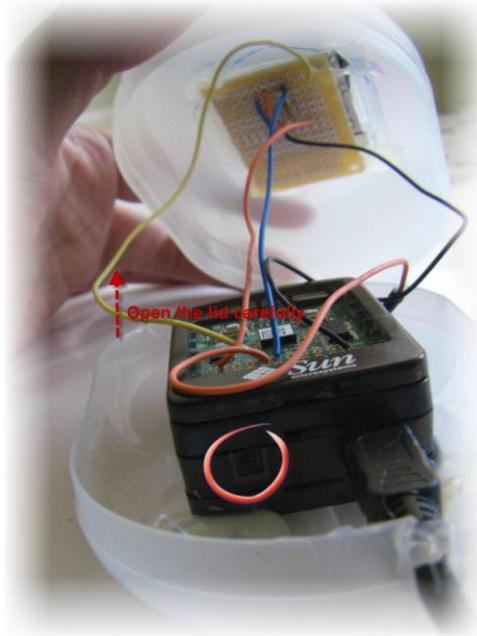


The light orb should flash once or twice and then stop waiting for turn on command.

When the light orb is disconnected from mains power, it's better to switch it off.

To switch it off, first disconnect light orb from mains power. Open the lid carefully and press and hold the button on the sensor node for about 5 seconds, until the LED light flashes red twice.

Plug the light orb to power will automatically switch it on.



#### 4. Setup Presence client application

Go to <http://lc.sensorapp.net/> and click "Download Presence"

Extract the zip file.

If the netbook is Windows Vista or Windows 7, run the Presence application by double clicking the  icon.

If the netbook is Windows XP, you may need to install .Net Framework from Microsoft:  
<http://download.microsoft.com/download/20/e/20e90413-712f-438c-988e-fdaa79a8ac3d/dotnetfx35.exe>.

Enter the Student Login and Student Password you created for this particular child patient. In this example, login is *jsmith* and password is *123456*.



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User Id:

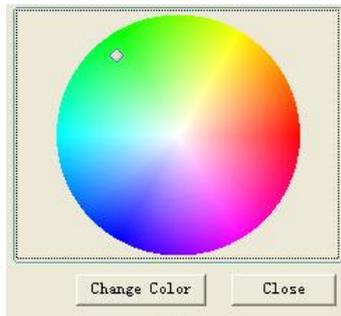
Password:

Click Login. The system should immediately turn the light orb on and the Presence application is

minimized to taskbar



Doubling clicking the light bulb will open a popup colour wheel window; select the colour and click the change colour button to change the colour of light orb:



## 5. Observe pilot's activities

Go to <http://lc.sensorapp.net/> and click "Activity log". This will show you the behavior of all child patient participants, like this:

Student Name	Action	Timestamp	Color
John Smith	login	2010-5-23_21:26:01	ffffff
John Smith	changeColor	2010-5-23_21:29:15	F10D18
John Smith	exit	2010-5-23_21:29:24	000000
John Smith	login	2010-5-23_21:29:46	ffffff
John Smith	exit	2010-5-23_21:37:03	000000

If required, the developer, Paul Deng, can export this data to a .CSV format or another statistic-friendly data format.

## 6. Get help

Manage the Virgin Mobile broadband account:

Go to <https://www.virginmobile.com.au/selfcare/MyAccount/login.jsp>

Login with

White Virgin USB stick:

Account 046875xxx

PIN xxxxxx

Black Virgin USB stick:

Account 043545xxxx

PIN xxxxxx

*They are activated on 19 May 2010, need to recharge before 16 June 2010.*

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