Software

Unity Hololens Technological preview 5.0.24
Leap Motion Orion 3.1.3
Visual Studio 2015

The setup guide is on the Hololens Official Website:
https://developer.microsoft.com/en-us/windows/holographic/install_the_tools
The Leap Motion Orion software is downloaded from the Leap Motion official site.

Follow this web page: https://community.leapmotion.com/t/remote-connections-to-leap-motion-websocket-server/2581 to enable the websocket connection through network. Find the config.json file on the disk (there should be two) and replace them with the following:


```
{
"configuration": {
"background_app_mode": 2,
"head_mounted_display_mode": true,
"image_processing_flipped": false,
"images_mode": 2,
"interaction_box_height": 70.0000,
"no_cp_startup": true,
"websockets_allow_remote": true,
"websockets_enabled": true,
"ws_port": 6437,
"wss_port": 6437
}
}
```


Pay attention that the "websockets_allow_remote" and "head_mounted_display_mode" are set to true.
For Windows users, you may need to change the permission config.json file before making any changes to it. Also, if you are using windows, you need to change your firewall settings to allow in and out communication for the port 6437. You can follow this guide: http://www.dummies.com/computers/operating-systems/windows-7/how-to-open-a-port-in-the-windows-7-firewall/

I also include a simple websocket script to test if the websocket communication is working. Replace the ip with your own compter's ip. Open it with a browser to see if you can receive data from the Leap Motion. If you does, then you are good to go with connecting the Hololens.

```
<!DOCTYPE html>
 <meta charset="utf-8" />
 <title>WebSocket Test</title>
 <script language="javascript" type="text/javascript">

var wsUri = "ws://158.130.2.229:6437/v6.json";
 var output;

 function init()
 {
   output = document.getElementById("output");
   testWebSocket();
 }

 function testWebSocket()
 {
   websocket = new WebSocket(wsUri);
   websocket.onopen = function(evt) { onOpen(evt) };
   websocket.onclose = function(evt) { onClose(evt) };
   websocket.onmessage = function(evt) { onMessage(evt) };
   websocket.onerror = function(evt) { onError(evt) };
 }

 function onOpen(evt)
 {
   writeToScreen("CONNECTED");
   doSend("{\"focused\" : \"true\"}");
 }

 function onClose(evt)
 {
   writeToScreen("DISCONNECTED");
 }

 function onMessage(evt)
 {
   writeToScreen('<span style="color: blue;">RESPONSE: ' + evt.data+'</span>');
   // websocket.close();
 }
```

Replace this ip with your own host ip

WebSocket Test

CONNECTED

SENT: {"focused" : "true"}

RESPONSE: {"serviceVersion":"3.1.3+41910","version":6}

RESPONSE: {"event":{"state":{"attached":true,"id":"LP93526668564","streaming":true,"type":"peripheral"},"type":"deviceEvent"}}

RESPONSE: {"currentFrameRate":113.764,"devices":[],"gestures":[],"hands":[],"id":759782,"interactionBox":{"center":
[0.000000,200.000,0.000000],"size":[235.247,235.247,147.751]},"pointables":[],"r":[[-0.906715,0.405473,-0.116014],
[-0.251928,-0.300120,0.920033],[0.338230,0.863435,0.374273]],"s":5.18602,"t":[-1230.33,346.545,2580.99],"timestamp":617117688226}

RESPONSE: {"currentFrameRate":113.859,"devices":[],"gestures":[],"hands":[],"id":759783,"interactionBox":{"center":
[0.000000,200.000,0.000000],"size":[235.247,235.247,147.751]},"pointables":[],"r":[[-0.906715,0.405473,-0.116014],
[-0.251928,-0.300120,0.920033],[0.338230,0.863435,0.374273]],"s":5.18602,"t":[-1230.33,346.545,2580.99],"timestamp":617117696845}

RESPONSE: {"currentFrameRate":113.911,"devices":[],"gestures":[],"hands":[],"id":759784,"interactionBox":{"center":
[0.000000,200.000,0.000000],"size":[235.247,235.247,147.751]},"pointables":[],"r":[[-0.906715,0.405473,-0.116014],
[-0.251928,-0.300120,0.920033],[0.338230,0.863435,0.374273]],"s":5.18602,"t":[-1230.33,346.545,2580.99],"timestamp":617117705535}

RESPONSE: {"currentFrameRate":113.997,"devices":[],"gestures":[],"hands":[],"id":759785,"interactionBox":{"center":
[0.000000,200.000,0.000000],"size":[235.247,235.247,147.751]},"pointables":[],"r":[[-0.906715,0.405473,-0.116014],
[-0.251928,-0.300120,0.920033],[0.338230,0.863435,0.374273]],"s":5.18602,"t":[-1230.33,346.545,2580.99],"timestamp":617117714160}

RESPONSE: {"currentFrameRate":114.036,"devices":[],"gestures":[],"hands":[],"id":759786,"interactionBox":{"center":
[0.000000,200.000,0.000000],"size":[235.247,235.247,147.751]},"pointables":[],"r":[[-0.906715,0.405473,-0.116014],
[-0.251928,-0.300120,0.920033],[0.338230,0.863435,0.374273]],"s":5.18602,"t":[-1230.33,346.545,2580.99],"timestamp":617117722862}

RESPONSE: {"currentFrameRate":114.072,"devices":[],"gestures":[],"hands":[],"id":759787,"interactionBox":{"center":
[0.000000,200.000,0.000000],"size":[235.247,235.247,147.751]},"pointables":[],"r":[[-0.906715,0.405473,-0.116014],
[-0.251928,-0.300120,0.920033],[0.338230,0.863435,0.374273]],"s":5.18602,"t":[-1230.33,346.545,2580.99],"timestamp":617117731567}

RESPONSE: {"currentFrameRate":114.143,"devices":[],"gestures":[],"hands":[],"id":759788,"interactionBox":{"center":
[0.000000,200.000,0.000000],"size":[235.247,235.247,147.751]},"pointables":[],"r":[[-0.906715,0.405473,-0.116014],
[-0.251928,-0.300120,0.920033],[0.338230,0.863435,0.374273]],"s":5.18602,"t":[-1230.33,346.545,2580.99],"timestamp":617117740205}

RESPONSE: {"currentFrameRate":114.156,"devices":[],"gestures":[],"hands":[],"id":759789,"interactionBox":{"center":
[0.000000,200.000,0.000000],"size":[235.247,235.247,147.751]},"pointables":[],"r":[[-0.906715,0.405473,-0.116014],
[-0.251928,-0.300120,0.920033],[0.338230,0.863435,0.374273]],"s":5.18602,"t":[-1230.33,346.545,2580.99],"timestamp":617117748944}

RESPONSE: {"currentFrameRate":114.209,"devices":[],"gestures":[],"hands":[],"id":759790,"interactionBox":{"center":
[0.000000,200.000,0.000000],"size":[235.247,235.247,147.751]},"pointables":[],"r":[[-0.906715,0.405473,-0.116014],
[-0.251928,-0.300120,0.920033],[0.338230,0.863435,0.374273]],"s":5.18602,"t":[-1230.33,346.545,2580.99],"timestamp":617117757608}

RESPONSE: {"currentFrameRate":114.261,"devices":[],"gestures":[],"hands":[],"id":759791,"interactionBox":{"center":
[0.000000,200.000,0.000000],"size":[235.247,235.247,147.751]},"pointables":[],"r":[[-0.906715,0.405473,-0.116014],

For Mac users, there is only V2 from Leap Motion official site (Orion is not supported on Mac yet), and V2 supports websocket connection. Change the config.json file above and it's good to go.

Now import the asset into your already configured unity project.

To run the project, find the "LeapWebProcessor.cs" in the /Assets/LeapMotion/Scripts folder. As you can see part of the code in this file is commented (the websocket part). The code is commented is because Unity doesn't support the Message Websocket APIs, and using other Websocket API from the asset store always prove to have problems when compiling to the Windows Store App (All the websocket APIs works fine in the

Unity Play mode, but doesn't work building a Windows Store App). Now compile the Unity project into a Windows Store App following the Hololens starter guide.

After the Windows Store App is compiled, open the folder and open the project in Visual Studio. In the project, find the "LeapWebProcessor.cs" and then replace it with the uncommented code(which is also in the folder named "LeapWebProcessorUncommented"). You can notice that now all code compile successfully. Now compile and run the program on Hololens.
Now you can see your hands and interact with the environment.