Working with the Server Code Base

The first step to working with server code is to check out the code base from github. In your git bash, run: **git clone https://github.com/browngraphicslab/tagServer.git.** Next, run Visual Studio as an *administrator* and open the project file HumBub.sln in the repository. There are many solution files that make up the TAG Server but to run the application, you should right click on the solution file *WorkTopServerApp* in the Solution Explorer and *Set as StartUp Project*.

When you run the application, two windows should appear, one called *Login* and the other called *TAG Server*. If it's your first time working with the TAG Server, in the Login window, create a new database as a starting point. Give your database a useful name, and make sure to choose to run the correct server instance (SQLExpress if you've followed the SQLExpress 2008 installation instructions).

Connect to the desired database in the login window and leave the port number as is. Now, in the TAG Server window, you should see these messages:

Saving Defaults
Starting session
User set to: TAG
Serving 18 doquments, and 0 linqs.
beginning listening loop...

The first message(s) should be "Failed to connect to server <user>\." So don't worry about that.

You should now have a complete TAG server running on your machine!

Connecting to your local TAG server

If you would like to connect to your local TAG server from the TAG client running on the same machine, you may want to enable loopback. Download the latest Fiddler: *http://www.telerik.com/fiddler*. Open Fiddler and select *Win8 Config* and a new window should open. Check *TAG: Touch Art Gallery* in the list of applications to enable loopback.

While the server is running, open a Win8 instance or webapp instance of TAG and click on *Change Server*. Type in localhost (or your ip address) and TAG should switch to using the server instance running on your machine.

If you want to test a TAG instance running on a different machine with a server running on your own machine, make sure you are not on a Brown network (you will run into firewall issues). The machine running the TAG server should also have a static ip address (use ethernet). Check your IPv4 Address by running *ipconfig* in your shell. Configure your firewall by setting inbound and outbound rules on the TCP ports 8080, and 8086 to allow all connections. If your server has HTTPS set up with a valid SSL certificate, you should also open port 9001. Otherwise, in *Options*, uncheck the use HTTPS box.

Here is another comprehensive guide for setting up firewall rules and setting up HTTPS on your server:
http://cs.brown.edu/research/ptc/tag/TAGUsersGuide.pdf

Creating a TAG Server Executable

If you would like to build a TAG Server installer from your server code base, you need to have the Visual Studio extension for *Install Shield*: http://learn.flexerasoftware.com/content/IS-EVAL-InstallShield-Limited-Edition-Visual-Studio

In the VS Solution Explorer open the project *TAGServerInstaller*; the project should be divided by steps. Under *Step 1*, navigate to *General Information* and increment the *Product Version* number and change the *Product Code*. You can generate a new product code by mousing over to the end of the Product Code row and clicking on the {} button that will appear. In the same subfolder, open *Upgrade Paths*, navigate to *Prev Vers* in the side bar and increment your *Max Version* by the same amount.

If you don't already have *Microsoft .Net Framework 4.5 Web* installed for Install Shield, you can navigate to *Redistributables* under *Step 2,* right click on the correct file and download the selected.

If you would like to add new files to be installed when the user installs the TAG Server, you can navigate to *Files* under *Step 2*. Install Shield automatically adds your files from relative paths but this is a problem when time comes to push your server changes since the links to these files would be paths local to your machine. Navigate to *<Your Server Repo>\TAGServerInstaller\TAGServerInstaller.isl* and nested within the tags *<table name="File"></table>* you should be able to find the relative paths used to link your new files. Change the file paths to build from the path variable: **<ISProjectFolder>** which points to <Your Server Repo>\TAGServerInstaller.

After you build the TAGServerInstaller project, you can find your setup executable in *<Your Server Repo>\TAGServerInstaller\TAGServerInstaller\Express\SingleImage\DiskImages\DISK1*