Department Of Computer Science Advising Tool
Server Setup

Last Place Champions
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Last Updated: 8th of March 2018

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1 Overview

This document discusses how to setup the server for the website. This server could be the same as the server housing the Databases, but this is not required for everything to function. First, we will discuss how the server must be configured, and then we will setup the website, and ensure everything is working properly.

2 Requirements

In order for the website to function, the .NET Core 2.0.x tools must be installed. For more information regarding this, see https://docs.microsoft.com/en-us/dotnet/core/linux-prerequisites?tabs=netcore2x.
Furhtermore, this website was designed for operation in a Linux environment, specifically Debian 9 Server, and the developers cannot guarantee it will work on any other operating system.
Lastly, the user making these changes must either be root, or a user with permissions to use the *sudo* command.

2.1 Compiling

The website is part of the same compilation unit as the Database Handler, see Section 2 in the "DBH Setup.pdf" document for more information on how to compile the website. Throughout this document, we will refer to the "publish directory" as the directory that was created in Section 2 of the "DBH Setup.pdf" document, **the same publish directory is used for both the Database Handler, and the Website.**

3 Installation

In order to host the website on the server, we must first download, and setup the nginx service, this will be used as a reverse proxy to forward requests from port 80 to port 5000 which is used by all .NET Core MVC websites. After that, we will setup the hosting for the website.

3.1 Nginx

To install nginx on your system, follow these steps:

1. Execute the command: **sudo apt-get install nginx**
2. Execute the command: **sudo service nginx start**

Now nginx is installed, and it should be running. You can verify it is running by executing this command: **systemctl status nginx**. If it is running, you should see output that states: Active: active (running), in green colour, alongside some other information.

3.1.1 Nginx Settings

Included with this document is a file named "default", this is the settings file we will use with nginx. During the installation, nginx created the `/etc/nginx/sites-available/default`, we will now update this file, and then ensure all settings are correct.

1. Place the file "default" (included with this document) in your home directory
2. Open a command shell and execute the command: `cd~`
3. Execute the command: **sudo mv default /etc/nginx/sites-available/default**
4. Execute the command: **sudo nano /etc/nginx/sites-available/default**
   You should now see the contents of the default file in a text editor. Verify the following settings are in the file:

```
server {
    listen 80;
        location / {
            proxy_pass http://localhost:5000;
            proxy_http_version 1.1;
            proxy_set_header Upgrade $http_upgrade;
            proxy_set_header Connection keep-alive;
            proxy_set_header Host $http_host;
            proxy_cache_bypass $http_upgrade;
        }
    }
```

5. If the file contains other contents, remove them and replace them with the above text.
6. Once the file contains these contents, press CTRL+O, then Enter, and finally CTRL+X to save and exit the editor. You should now be back in the command shell.
7. Execute the command: **sudo systemctl daemon-reload**

3.2 Website

3.2.1 Creating the Service

We will now create the service that will host the website. To do this, follow these steps:

1. Find the file titled "kestrel-advising.service" which is in the same directory as this document, place this file into your home directory.

2. Find the publish repository (Created in Section 2 of "DBH Setup.pdf") and place it into your home directory.

3. Execute the command: `cd~`

4. Execute the command: **sudo mv -r publish /var/aspnetcore/**

5. Execute the command: **sudo mv kestrel-advising.service /etc/systemd/system/**

6. Execute the command: **sudo nano /etc/systemd/system/kestrel-advising.service** You should now see the contents of the serivce file in a text editor. Verify the following settings are in the file:

```
[Unit]
Description=CS department advising website

[Service]
WorkingDirectory=/var/aspnetcore/publish
ExecStart=/usr/bin/dotnet /var/aspnetcore/publish/CwuAdvising.dll
Restart=always
RestartSec=10
SyslogIdentifier=cs-advising-website
User=www-data
Environment=ASPNETCORE_ENVIRONMENT=Development
Environment=DOTNET_PRINT_TELEMETRY_MESSAGE=false

[Install]
WantedBy=multi-user.target
```

7. If the file contains other contents, remove them and replace them with the above text. Feel free to alter the Description, or SyslogIdentifier to something more appropriate for you, these have no effect on the service.

8. Once the file contains these contents, press CTRL+O, then Enter, and finally CTRL+X to save and exit the editor. You should now be back in the command shell.

9. Execute the command: **sudo systemctl daemon-reload**

10. To verify the service is running, execute the command: **sudo systemctl status kestrel-advising.service**