

# FRAME STORE

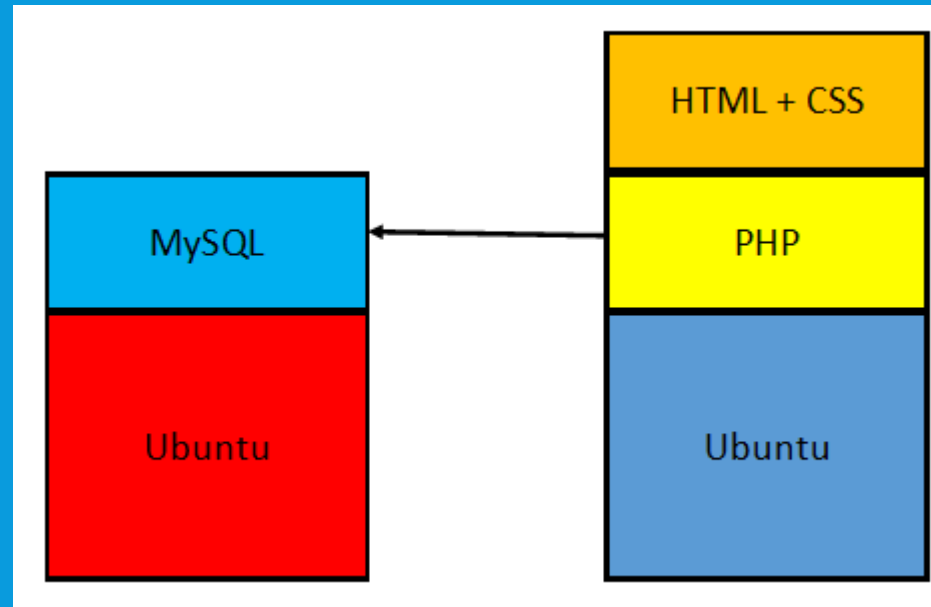
By Baker Ousley

# OBJECTIVES

- Create a website framework to display eyeglass frames
- Create a database to store frame information
- Connect the website to the database
- Serve the website online

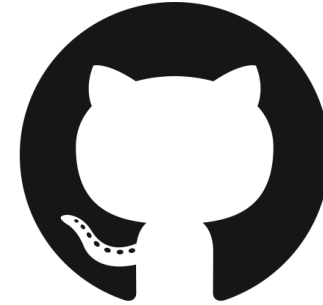
# TECHNOLOGIES

- Servers: Ubuntu
- Language: PHP, HTML
- Web server: PHP
- Database: MySQL



# EXTERNAL SERVICES

- Repository: Github.com
- Domain Registrar: Namecheap.com
- ISP: Tahlequah Cable
- Router: Netgear
- PHP Dependency Manager: Composer



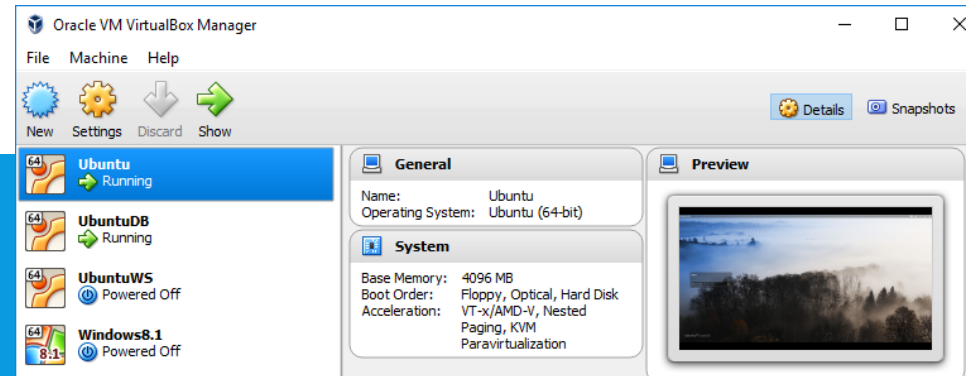
# SERVERS

- Ubuntu 16.04 LTS
  - Free, open source operating system based on the Debian architecture
  - Light weight, easy to use, and huge community
  - APT (Advanced Package Tool) package manager
  - Massive library selection and support

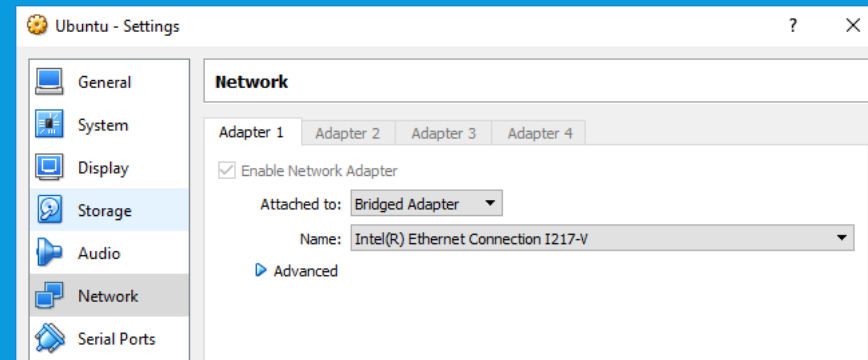


# SERVERS

- Type 2 Hypervisor: Virtual Box



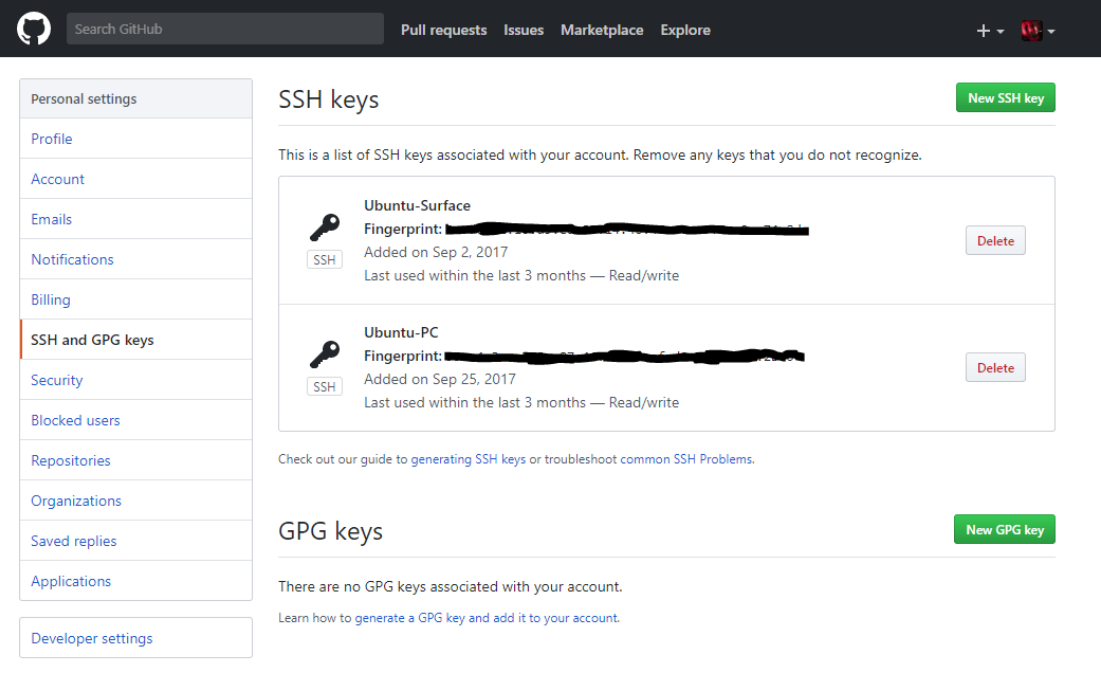
- Set the Network Adapters to Bridged Adapter



# INSTALLED PACKAGES

## Web Server:

- `sudo apt install php php-zip php-xml php-mbstring git`
- `ssh-keygen -t rsa -b 4096 -C "your@email.com"`
- `gedit ~/.ssh/id_rsa.pub`
  - Copy and paste the key into your github.com SSH settings
- `ssh -T git@github.com`
  - This tests your SSH connection



The screenshot shows the GitHub 'SSH keys' settings page. On the left is a sidebar with navigation links: Personal settings, Profile, Account, Emails, Notifications, Billing, SSH and GPG keys (highlighted), Security, Blocked users, Repositories, Organizations, Saved replies, Applications, and Developer settings. The main content area is titled 'SSH keys' and includes a 'New SSH key' button. Below the title is a message: 'This is a list of SSH keys associated with your account. Remove any keys that you do not recognize.' There are two SSH keys listed: 'Ubuntu-Surface' and 'Ubuntu-PC'. Each entry shows a key icon, the name, a redacted fingerprint, the date added (Sep 2, 2017 and Sep 25, 2017 respectively), and the last used status ('Last used within the last 3 months — Read/write'). Each entry has a 'Delete' button. Below the list is a link to a guide: 'Check out our guide to [generating SSH keys](#) or [troubleshoot common SSH Problems](#).' The 'GPG keys' section is also visible, with a 'New GPG key' button and a message stating 'There are no GPG keys associated with your account.' and a link to learn how to generate a GPG key.

# INSTALLED PACKAGES

## Web Server:

- Composer:

- Copy and paste this from [getcomposer.org/download](https://getcomposer.org/download)

```
php -r "copy('https://getcomposer.org/installer', 'composer-setup.php');"
php -r "if (hash_file('SHA384', 'composer-setup.php') ===
'669656bab3166a7aff8a7506b8cb2d1c292f042046c5a994c43155cobe6190fa0355160742ab2e
1c88d40d5be660b410') { echo 'Installer verified'; } else { echo 'Installer corrupt';
unlink('composer-setup.php'); } echo PHP_EOL;"
php composer-setup.php
php -r "unlink('composer-setup.php');"
```

- `sudo mv composer.phar /usr/local/bin/composer`

- `sudo nano ~/.bashrc`

- Add

```
export PATH="$HOME/.composer/vendor/bin:$PATH"
```

- Write out



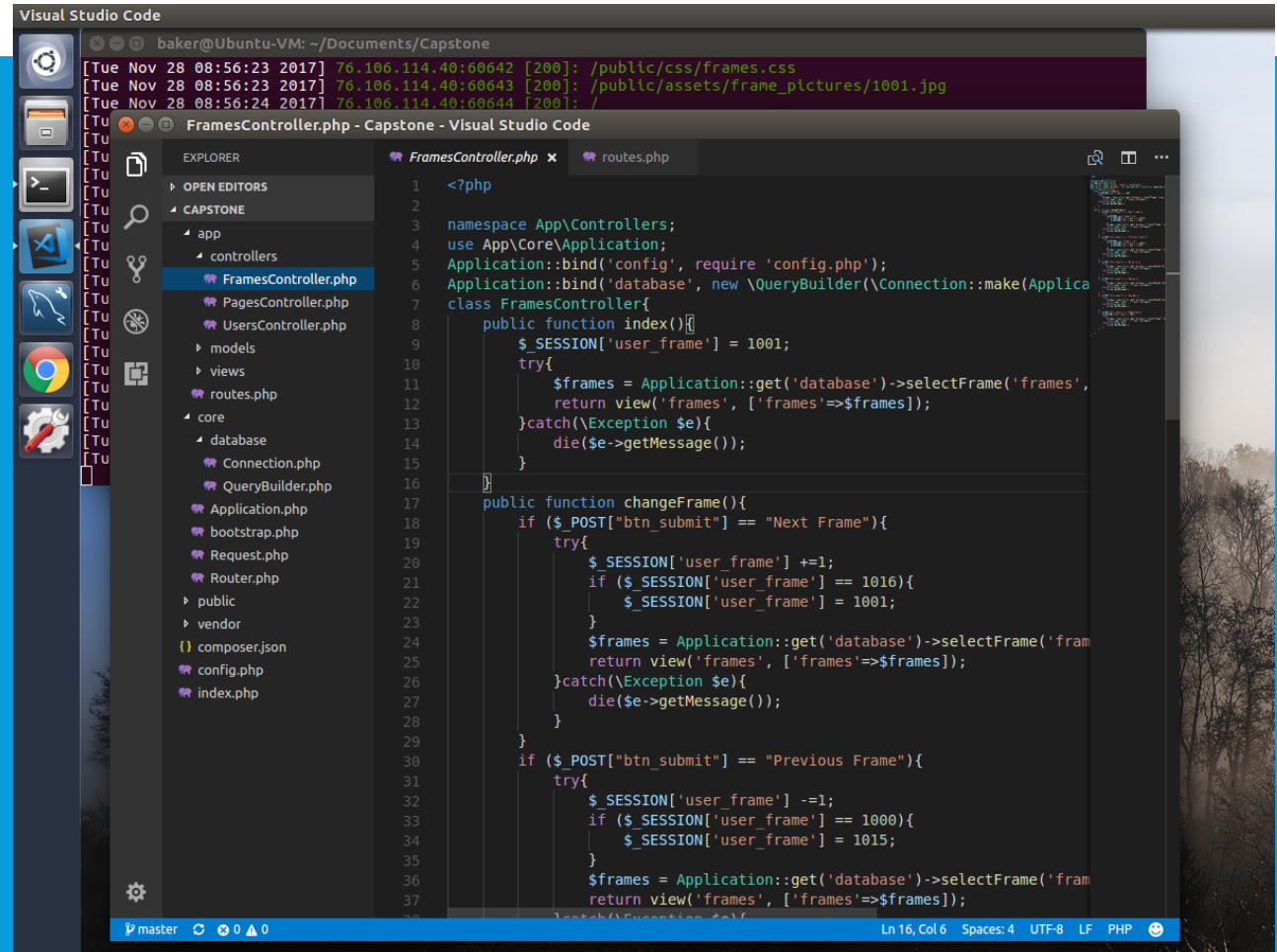




# DEVELOPMENT TOOLS

## Visual Studio Code

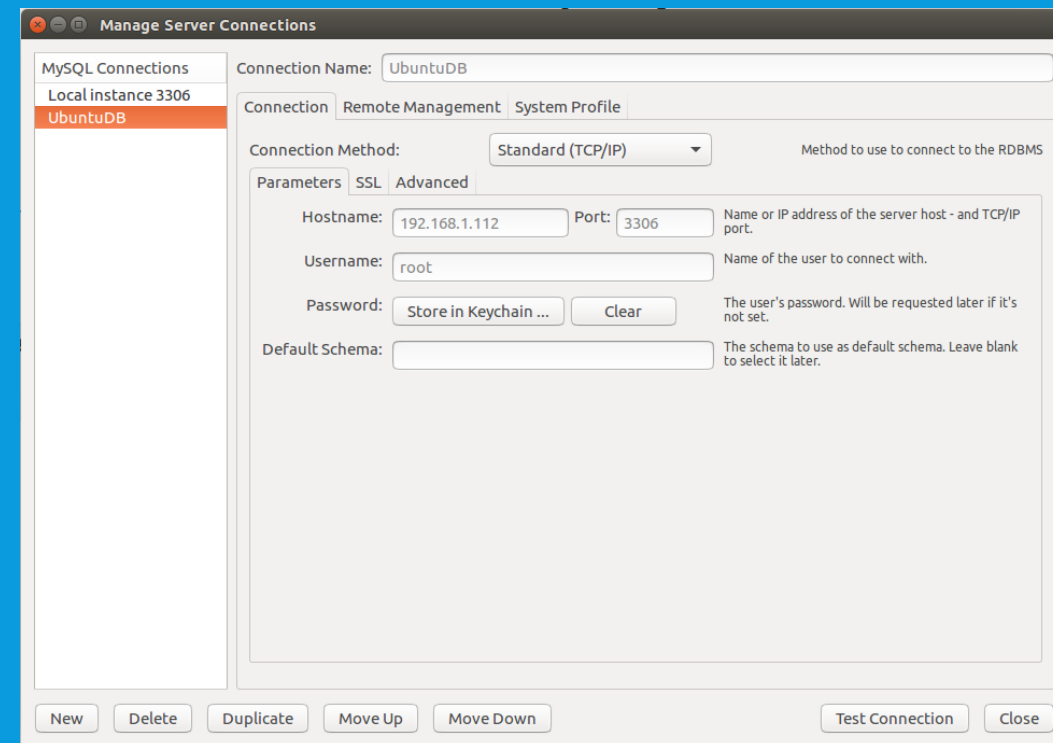
- Free code editor from Microsoft
- Runs on Linux, MacOS, and Windows
- To Install on Ubuntu:
  - Download the .deb file from <https://code.visualstudio.com>
  - cd to the Download folder
  - `sudo dpkg -i code...deb`



# DEVELOPMENT TOOLS

## MySQL Workbench

- GUI for easy database testing and editing
- `sudo apt install mysql-workbench`
- Create a new connection with the IP address of the Database Server and port 3306 (default MySQL port)
- Enter the username and password of the MySQL database



# DEVELOPMENT TOOLS

- Github.com
  - Code Repository: file archive of source code which tracks changes
  - Uses Git, a free and open source distributed version control system
  - `git add .`
  - `git commit -s -m "Message"`
  - `git push origin master`



# FLOW CONTROL

- Index.php ->
  - Instantiate Router class, loading routes.php
  - Listen for a request's URI and Method ->
    - Call a Controller function
    - Return a View

# WEB SERVER

- Internal PHP Server
  - Change Directory to your project
  - Serve your project your local IP address, and a custom port
  - `sudo php -S 192.168.1.108:8888`

```
baker@Ubuntu-VM: ~/Documents/Capstone
[Tue Nov 28 19:51:29 2017] 206.255.128.145:34517 [200]: /frames
[Tue Nov 28 19:51:29 2017] 206.255.128.145:34518 [200]: /public/css/frames.css
[Tue Nov 28 19:51:29 2017] 206.255.128.145:34519 [200]: /public/assets/frame_pictures/1001.jpg
^Cbaker@Ubuntu-VM:~/Documents/Capstone$ php -S 192.168.1.108:8888
PHP 7.0.22-0ubuntu0.16.04.1 Development Server started at Tue Nov 28 20:35:09 2017
Listening on http://192.168.1.108:8888
Document root is /home/baker/Documents/Capstone
Press Ctrl-C to quit.
[Tue Nov 28 20:41:52 2017] 206.255.128.145:34923 [200]: /frames
[Tue Nov 28 20:41:52 2017] 206.255.128.145:34924 [200]: /public/css/frames.css
[Tue Nov 28 20:41:52 2017] 206.255.128.145:34925 [200]: /public/assets/frame_pictures/1001.jpg
[Tue Nov 28 20:41:54 2017] 206.255.128.145:34926 [200]: /frames
[Tue Nov 28 20:41:54 2017] 206.255.128.145:34927 [200]: /public/css/frames.css
[Tue Nov 28 20:41:54 2017] 206.255.128.145:34928 [200]: /public/assets/frame_pictures/1006.jpg
[Tue Nov 28 20:41:54 2017] 206.255.128.145:34930 [200]: /public/assets/frame_pictures/1008.jpg
```

# DOMAIN NAME SERVER

## Namecheap.com

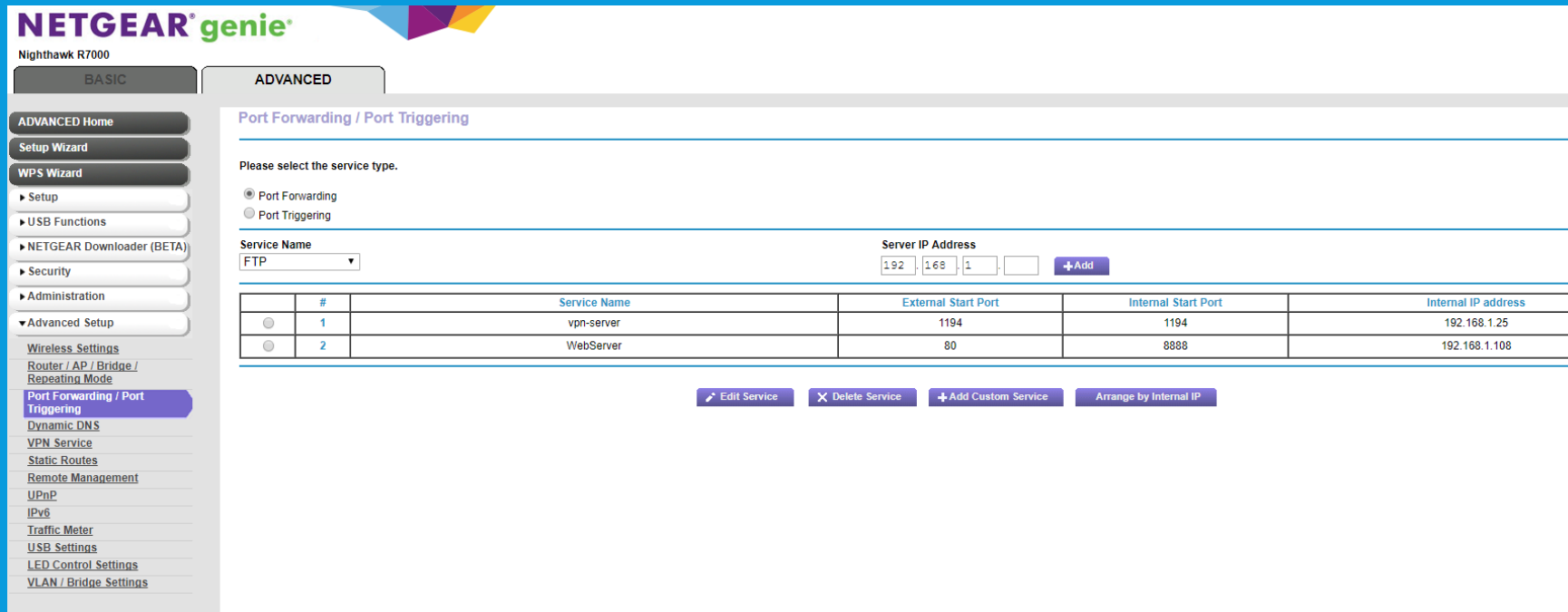
- Set the A Record to your Public IP Address

	Domain	Products	Sharing & Transfer	Advanced DNS	
HOST RECORDS ?					
Actions Filters Search					
<input type="checkbox"/>	Type	Host	Value	TTL	
<input type="checkbox"/>	A Record	@	206.255.128.145	Automatic	
<input type="checkbox"/>	A Record	www	206.255.128.145	Automatic	
+ ADD NEW RECORD					

capstone	Bulk Options	Search	Your Cart	
			Subtotal	\$0.00
			View Cart	
Popular New Discounted International Suggestions				
capstone.mx		\$37.88/year		
capstone.lat		\$25.88/year		
capstone.com.mx		Make Offer Whois		
capstone.org.mx		\$21.88/year		
capstone.tel		Make Offer Whois		
capstone.ac		\$32.88/year		
capstone.sh		\$32.88/year		
capstone.art		\$1,235.00/year		
capstone.gdn SPECIAL		\$1.88/year Retail \$11.88/year		
capstone.eco		\$64.88/year		
capstone.observer		\$800.00/year		
capstone.realty		\$10,400.00/year		
capstone.baby		\$64.88/year		
capstone.fun AMAZING 885		\$0.88/year Retail \$19.88/year		
capstone.lol		\$25.88/year		

# PORT FORWARDING

- Login to your Router
- Port Forward 80 (HTTP) to your Web Server (custom port)
- This makes your Router listen for HTTP traffic and will route it to your LAN



The screenshot shows the NETGEAR genie web interface for a Nighthawk R7000 router. The left sidebar contains navigation links for various settings, with 'Port Forwarding / Port Triggering' highlighted. The main content area is titled 'Port Forwarding / Port Triggering' and includes a section to 'Please select the service type.' with radio buttons for 'Port Forwarding' (selected) and 'Port Triggering'. Below this is a form to add a new service, with 'Service Name' set to 'FTP' and 'Server IP Address' set to '192.168.1.1'. A table lists existing services, and at the bottom, there are buttons for 'Edit Service', 'Delete Service', 'Add Custom Service', and 'Arrange by Internal IP'.

**NETGEAR genie**  
Nighthawk R7000

**BASIC** | **ADVANCED**

ADVANCED Home  
Setup Wizard  
WPS Wizard  
▶ Setup  
▶ USB Functions  
▶ NETGEAR Downloader (BETA)  
▶ Security  
▶ Administration  
▼ Advanced Setup

Wireless Settings  
Router / AP / Bridge / Repeating Mode  
**Port Forwarding / Port Triggering**  
Dynamic DNS  
VPN Service  
Static Routes  
Remote Management  
UPnP  
IPv6  
Traffic Meter  
USB Settings  
LED Control Settings  
VLAN / Bridge Settings

### Port Forwarding / Port Triggering

Please select the service type.

☒ Port Forwarding  
☐ Port Triggering

Service Name: FTP Server IP Address: 192.168.1.1 [+ Add](#)

	#	Service Name	External Start Port	Internal Start Port	Internal IP address
<input type="radio"/>	1	vpn-server	1194	1194	192.168.1.25
<input type="radio"/>	2	WebServer	80	8888	192.168.1.108

[Edit Service](#) [Delete Service](#) [Add Custom Service](#) [Arrange by Internal IP](#)



# FUTURE ADDITIONS

- User Login
- Remove frames from Cart
- Serve on Apache
- Run multiple web servers and load balance
- Host from AWS EC2