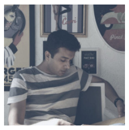

Nitin Nain

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by nitinnain February 6, 2019

Setting up Django on Windows IIS Server

Setting up Django on Windows Server 2016

This post is almost a copy of this very good post by Matt Woodward.

The main edits/additions I've made to the original article are:

- Added the section on configuring a MySQL or Sqlite3 database on Windows.
- Added information on configuring the Firewall to access the Django install from remote computers.
- Re-ordered some steps to group them better.
  For instance instead of first setting up IIS → then Django → then finalising IIS configuration, the flow in this post is to set up Django at the start followed by the IIS configuration.
- Simplified the text at places where I felt the text was too verbose or where I found it difficult to grasp.

Software development skills required to handle the install:

- Working knowledge of Python.
- Fairly good understanding of WebServers in Python (viz. Django).
- Basic competence in system administration tasks — Servers are important and firewall security should be maintained while configuring the server. i.e. DONOT disable the firewall entirely. It is possible and I've explained how to configure the Firewall in the last section.

Software Required:

- Python, Django, wfastcgi</span
- IIS
- Windows Server 2012 R2 or Windows Server 2016 (64-bit)
- Database (Optional): MySQL/SQLite/PostgreSQL + DB Connector for Python
- Knowledge of Php, Apache and Webserver technologies would come in handy.

A quick note on `wfastcgi` and WSGI:

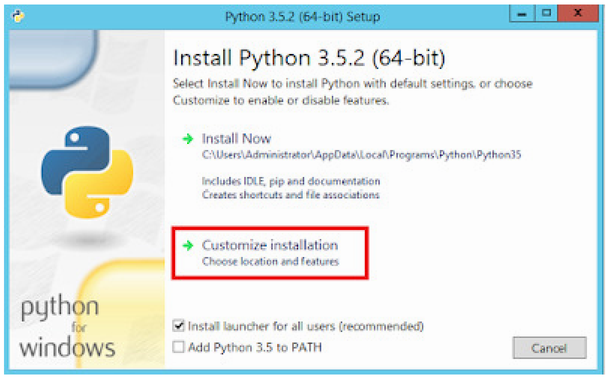
There aren't really any issues in targetting Windows Server and IIS as the production environment for your Django application, other than including the wfastcgi Python package (https://pypi.python.org/pypi/wfastcgi) in your application.

wfastcgi is maintained by Microsoft and provides a file that serves as the entry point of the IIS handler for WSGI applications in Python. It's similar in purpose to a tool like Gunicorn (http://gunicorn.org), with the end result being that requests that come into IIS are handed off to the Python application for processing.

Let’s Start:

1. Install Python

1. Download the latest Windows x86-64 executable installer from https://python.org
2. Double-click the Python installer. If you get a security warning at this point, click “Run” to continue.
3. In the Python Setup dialog that appears, click “Customize Installation”



Python 3.5.2 (64-bit) Setup

Install Python 3.5.2 (64-bit)

Select Install Now to install Python with default settings, or choose Customize to enable or disable features.

→ Install Now
C:\Users\Administrator\AppData\Local\Programs\Python\Python35

Includes IDLE, pip and documentation
Creates shortcuts and file associations

→ Customize installation
Choose location and features

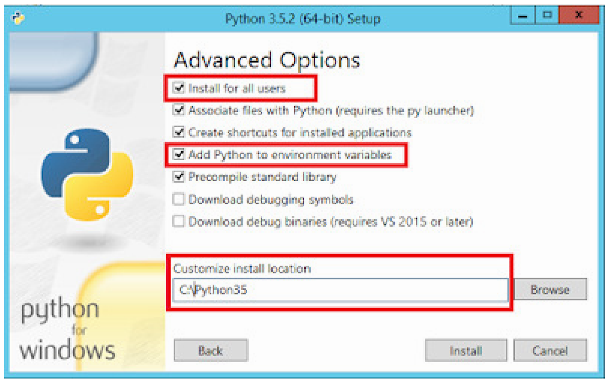
☑ Install launcher for all users (recommended)
☐ Add Python 3.5 to PATH

4. On the Optional Features step, leave the default settings and click “Next”
5. On the Advanced Options step, make the following changes:

    A. Check the “Install for all users” box (note that this will also check the “Precompile standard library” box)

    B. Check “Add Python to environment variables”

    C. In the input box below “Customize install location” change the value to the following: `C:\Python35`



Python 3.5.2 (64-bit) Setup

Advanced Options

☑ Install for all users
☑ Associate files with Python (requires the py launcher)
☑ Create shortcuts for installed applications
☑ Add Python to environment variables
☑ Precompile standard library
☐ Download debugging symbols
☐ Download debug binaries (requires VS 2015 or later)

Customize install location
C:\Python35

6. Click “Install”

7. When the installation is complete, click “Close”

Confirm the Python installation works by typing `python --version` on a new command prompt (open a new command prompt so that Env variables viz. PYTHONPATH is loaded). The command will output the Python version installed on your computer.

2. Create and Configure a Python Virtual Environment

Say, you keep all your virtual environments in a `virtualenvs` directory. Then in a command prompt:

`cd C:\`

`mkdir virtualenvs`

`cd virtualenvs`

Create a virtual environment named `django_iis_demo_env` inside `virtualenvs`:

`python -m venv django_iis_demo_env`

Enter the newly created virutual environment and activate it:

`cd django_iis_demo_env`

`Scripts\activate.bat` # activate the virtual env

`python -m pip install --upgrade pip` # Upgrade pip

3. Setup the Django Project

Install Django and other project dependencies:

1. Place your Django code directory inside the `django_iis_demo_env` directory.

   cd into your django code directory.
2. Install the project dependencies:

   `pip install -r requirements.txt`
3. Install wfastcgi

   `pip install wfastcgi`

   wfastcgi is a WSGI similar in purpose to Gunicorn or uwsgi. `wfastcgi` is maintained by Microsoft and you would be better of using this than trying to compile other linux based WSGI servers on windows.

   If your Django App is to be used on Windows only, you can consider putting `wfastcgi` in the requirements.txt file.

4. Most probably you need a database for the Django Project

To use MySQL with this Django App:

(For a very detailed "How to install MySQL 8 on Windows Server 2016" see my other post.)

1. Download MySQL installer from here: https://dev.mysql.com/downloads/installer/ .
2. I prefer downloading the larger package listed here. I find it better to have a full snapshot of the installer used during setup. The latest version, at the time of this

writing is MySQL 8.0.15 (MySQL 8.0.11 has known bugs!). The smaller ~15MB file eventually downloads the main MySQL installer while finishing the steps.

3. Double click MySQL 8 from the executable `.msi` file.
4. Goto custom settings and select the Python connector.
5. Setup a root password (Make a note of the Password at a safe place).
6. Login to mysql as superuser `mysql -u <superuser> -p`
7. Create Database: `CREATE DATABASE mydatabase CHARACTER SET utf8mb4 COLLATE utf8mb4_unicode_ci;`
8. Create a DB User with Password: `mysql> CREATE USER '<DATABASE_USER>'@'localhost' IDENTIFIED BY '<DATABASE_PASSWORD>';`
9. Grant permissions to user for the database:
10. `mysql> GRANT ALL PRIVILEGES ON <DATABASE_NAME>.* TO '<DATABASE_USER>'@'localhost';`
11. Then, if you have a mysql dump file, import the database into MySQL: `mysql -u DATABASE_USER_ID -p <DATABASE_NAME> < db_dump_file.sql`
12. If you don't have a MySQL database dump file, initialise a fresh set of database tables (See the following section).
13. Make sure the Django Projects `settings.py` file contain the settings to connect to the MySQL database (See: https://docs.djangoproject.com/en/2.1/ref/settings/#std:setting-DATABASES)

(Optionally you can setup PhpMyAdmin to manage the MySQL database via UI.)

(Note: In my testing I found that MySQL was rather slow on Windows, so do consider the Database choice well. That's beyond the scope of this article but I encourage you to research it a bit.)

(Note: The steps for PostgreSQL would be similar, with minor changes to the commands.)

To use SQLite3 with this Django App:

It’s quite simple to work with SQLite3, as you don’t have to configure the Database Name, DB User, Password etc.

Just download a pre-compiled SQLite3 binary from https://sqlite.org/download.html . Make sure sqlite is in your PATH variable.

Then, you simply need the SQLite3 database file and make sure the Django Projects `settings.py` file contain the settings to connect to the Sqlite3 database (https://docs.djangoproject.com/en/2.1/ref/settings/#std:setting-DATABASES) or initialise a fresh SQLite3 database using the following steps.

To Initialise Fresh Tables in the Database (if a database dump isn’t available):

1. Activate Virtual Environment
2. cd into the project code directory.
3. Generate migration files for all your Django Apps one by one

   `python manage.py makemigrations <your_django_app-1>`

   `python manage.py makemigrations <your_django_app-2>` etc.
4. Run the migrate command, which runs the migration scripts generated in previous step.

   `python manage.py migrate`
5. Create a superuser account. Make a note of the username/Password.

   `python manage.py createsuperuser`

5. Make sure the Django Application is functional

Start the Django Development Server:

$ `python manage.py runserver`

This should start a functional Django Application on `localhost` — if you've kept the defaults, you'll can see your Django site by visiting `http://127.0.0.1:8000/`

We aren't done yet though. This is just the Development server running locally. We need to make the install ready for production…

6. Install IIS with CGI

What is IIS?

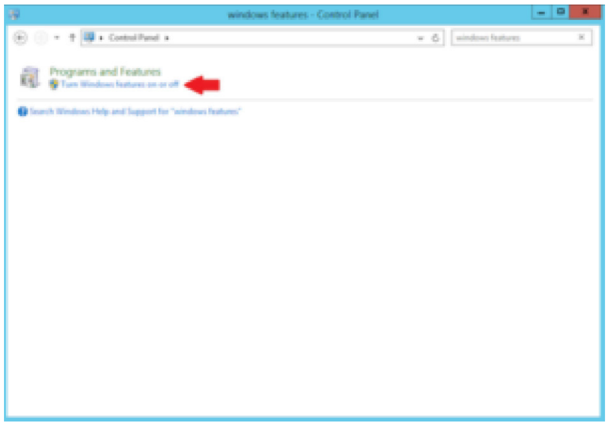
Internet Information Services (IIS) is an extensible web server created by Microsoft for use with the Windows NT family to serve HTML pages or files. That is, IIS would accept request from a remote clients computers and respond with the requested data. IIS is to Windows, what Apache is to Linux/MacOS.*Even if you already have IIS installed, you may need to go through these steps to install the CGI feature if it wasn't installed as part of the original IIS installation.*

---

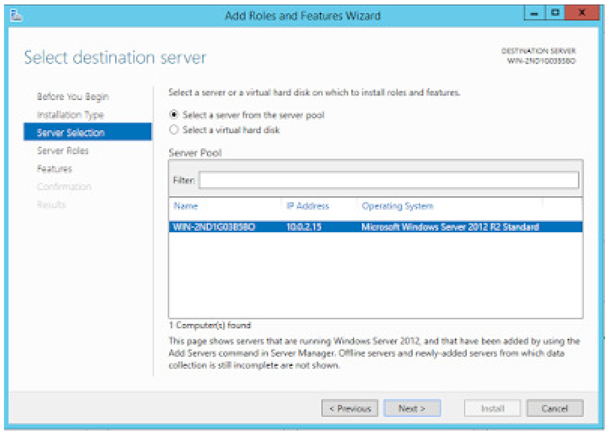
1. Installation Steps

1. Open the Control Panel
2. In the search box in the top right, type "windows features" (without the quotes)

3. In the search results under “Programs and Features” click “Turn Windows features on or off.” This launches the Add Roles and Features Wizard.


windows features - Control Panel
Control Panel
windows features
Programs and Features
Turn Windows features on or off
Search Windows Help and Support for "windows features"

4. On the “Before you begin” step, click “Next”
5. On the “Select installation type” leave the “Role-based or feature-based installation” radio button selected and click “Next”
6. On the “Select destination server” step, leave the current server highlighted and click “Next”



Select a server or a virtual hard disk on which to install roles and features.

(●) Select a server from the server pool
( ) Select a virtual hard disk

Server Pool

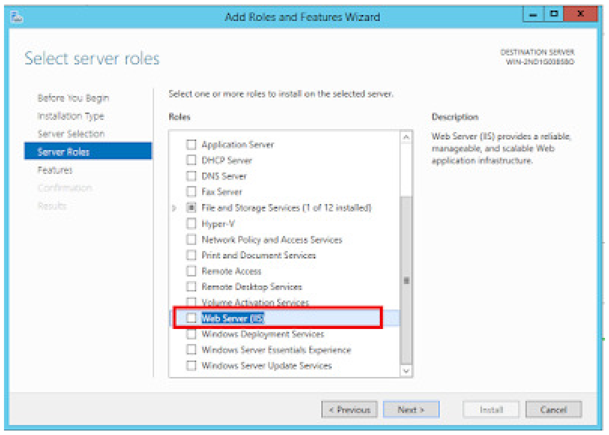
Filter:

Name	IP Address	Operating System
WIN-2ND1G03B5BO	10.0.2.15	Microsoft Windows Server 2012 R2 Standard

1 Computer(s) found

This page shows servers that are running Windows Server 2012, and that have been added by using the Add Servers command in Server Manager. Offline servers and newly-added servers from which data collection is still incomplete are not shown.

7. On the “Select server roles” step, scroll to the bottom of the list and check “Web Server (IIS)”



Select one or more roles to install on the selected server.

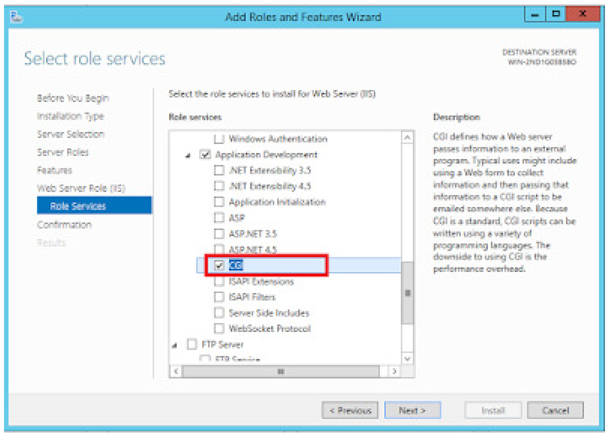
Roles

- ☐ Application Server
- ☐ DHCP Server
- ☐ DNS Server
- ☐ Fax Server
- ▣ File and Storage Services (1 of 12 installed)
- ☐ Hyper-V
- ☐ Network Policy and Access Services
- ☐ Print and Document Services
- ☐ Remote Access
- ☐ Remote Desktop Services
- ☐ Volume Activation Services
- ☐ Web Server (IIS)
- ☐ Windows Deployment Services
- ☐ Windows Server Essentials Experience
- ☐ Windows Server Update Services

Description

Web Server (IIS) provides a reliable, manageable, and scalable Web application infrastructure.

8. In the “Add features that are required for Web Server (IIS)?” dialog that appears, leave the “Include management tools (if applicable)” checkbox checked and click “Add Features”
9. On the “Select server roles” step, now that “Web Server (IIS)” is checked, click “Next”
10. On the “Select features” step, leave the defaults and click “Next”
11. On the “Web Server Role (IIS)” step, click “Next”
12. On the “Select role services” step, scroll down to “Application Development,” expand that section, and check the “CGI” box. This will also check the “Application Development” checkbox. With “CGI” checked, click “Next.”



Select the role services to install for Web Server (IIS)

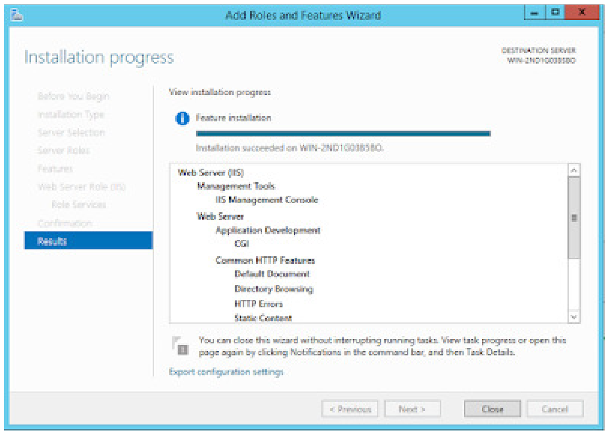
Role services

- [ ] Windows Authentication
- [✓] Application Development
  - [ ] .NET Extensibility 3.5
  - [ ] .NET Extensibility 4.5
  - [ ] Application Initialization
  - [ ] ASP
  - [ ] ASP.NET 3.5
  - [ ] ASP.NET 4.5
  - [✓] CGI
  - [ ] ISAPI Extensions
  - [ ] ISAPI Filters
  - [ ] Server Side Includes
  - [ ] WebSocket Protocol
- [ ] FTP Server

Description

CGI defines how a Web server passes information to an external program. Typical uses might include using a Web form to collect information and then passing that information to a CGI script to be emailed somewhere else. Because CGI is a standard, CGI scripts can be written using a variety of programming languages. The downside to using CGI is the performance overhead.

13. On the “Confirmation” step, click “Install”
14. Once the installation completes, click “Close”



View installation progress

Feature installation

Installation succeeded on WIN-2ND1G038580.

Web Server (IIS)
Management Tools
IIS Management Console
Web Server
Application Development
CGI
Common HTTP Features
Default Document
Directory Browsing
HTTP Errors
Static Content

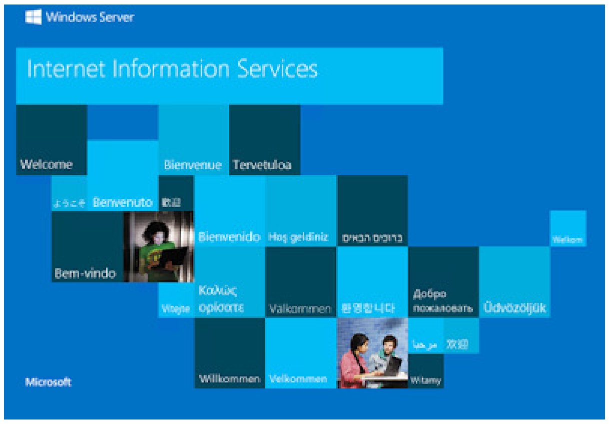
You can close this wizard without interrupting running tasks. View task progress or open this page again by clicking Notifications in the command bar, and then Task Details.

15. Close Server Manager
16. Close Control Panel

2. Verify the IIS Installation

1. Open a web browser on the server

2. Enter http://localhost in the address bar and press Enter. You should see the default IIS page.



3. If you don't see the default IIS page:

   A. Open Control Panel
   B. Type "services" in the search box
   C. Under "Administrative Tools" click "View local services"
   D. Scroll to the bottom of the list and ensure you see "World Wide Web Publishing Service" listed, and that the status is "Running"

TIP: To open the IIS Manager:

1. Click the Windows button
2. Click on Administrative Tools
3. Double-click **Internet Information Services (IIS) Manager**

(You would need the IIS Manager at several points, so remember these steps.)

7. Configure IIS to serve Django Applications

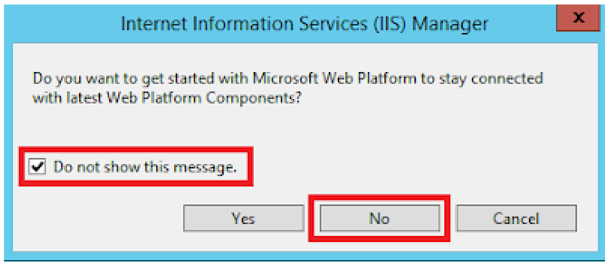
This is the last major section of this tutorial!

As noted at several places in Django docs, the "Django development server" is not designed for production use, so using a production-quality web server such as IIS is mandatory for production applications.

1. Configure FastCGI in IIS

A. Open the IIS Manager

B. Click on the name of the server in the list on the left. If you see the following dialog box, check the box “Do not show this message” and click “No.” (You can always get to this later if necessary by clicking “Get New Web Platform Components” under “Actions” on the right-hand side of IIS Manager.)

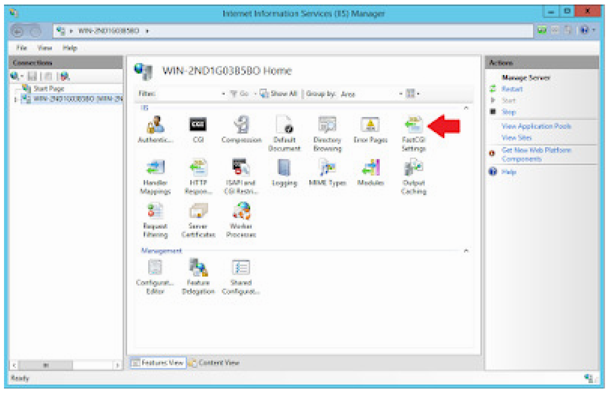


Internet Information Services (IIS) Manager

Do you want to get started with Microsoft Web Platform to stay connected with latest Web Platform Components?

☑ Do not show this message.

C. Double-click the “FastCGI Settings” icon

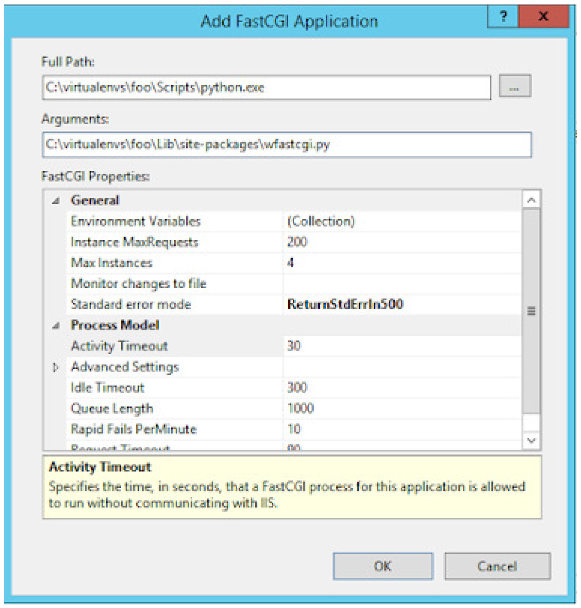


D. Under “Actions” on the right-hand side click “Add application ...”

E. In the Add FastCGI Application dialog, in the “Full Path” box, type the path to the Python executable for the application’s virtual environment: C:\virtualenvs\foo\Scripts\python.exe

F. In the Arguments input box, type the path to the wfastcgi.py file in the application’s virtual environment: C:\virtualenvs\foo\Lib\site-packages\wfastcgi.py

G. At this point your settings in the Add FastCGI Application dialog should look like this:



Full Path:
C:\virtualenvs\foo\Scripts\python.exe

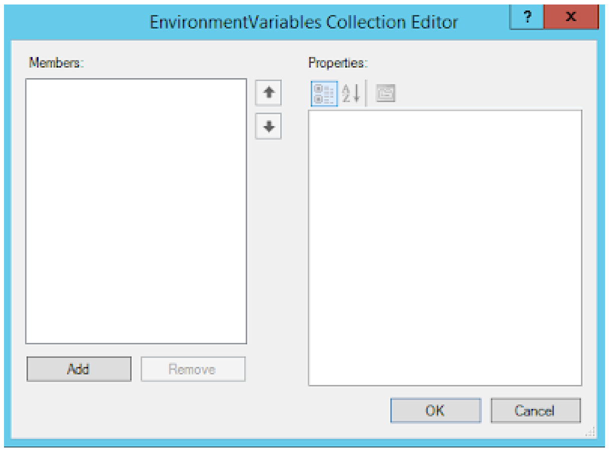
Arguments:
C:\virtualenvs\foo\Lib\site-packages\wfastcgi.py

FastCGI Properties:

General	
Environment Variables	(Collection)
Instance MaxRequests	200
Max Instances	4
Monitor changes to file	
Standard error mode	**ReturnStdErrIn500**
Process Model	
Activity Timeout	30
Advanced Settings	
Idle Timeout	300
Queue Length	1000
Rapid Fails PerMinute	10

Activity Timeout
Specifies the time, in seconds, that a FastCGI process for this application is allowed to run without communicating with IIS.

H. With the Add FastCGI Application dialog box still open, under the "General" section, click on the "Environment Variables" line, then click the gray "..." button that appears next to (Collection) on the right-hand side of the line. This opens the EnvironmentVariables Collection Editor dialog.

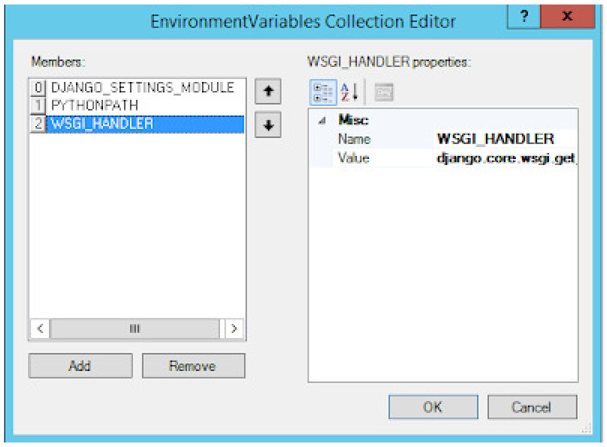


I. In the EnvironmentVariables Collection Editor dialog, click "Add"

J. In the "Name properties" section on the right, click the input box to the right of "Name," remove the "Name" text that is already in the input box, and enter `DJANGO_SETTINGS_MODULE` (note that this MUST be entered in ALL CAPS)

K. Click the input box to the right of "Value" and enter donor_mgmt_system.settings

L. Click “Add” again and enter the following: Name: `PYTHONPATH` Value: `C:\apps\donor_mgmt_system`
M. Click “Add” again and enter the following: Name: `WSGI_HANDLER` Value: `django.core.wsgi.get_wsgi_application()`
N. At this point you will have three environment variables:



0 DJANGO_SETTINGS_MODULE
1 PYTHONPATH
2 WSGI_HANDLER

Misc
Name WSGI_HANDLER
Value django.core.wsgi.get

NOTE: All of these settings are CASE-SENSITIVE. They must be entered with exactly the case indicated here in order to work.

O. Click “OK” to close the EnviromentVariables Collection Editor
P. Click “OK” to close the Add FastCGI Application dialog

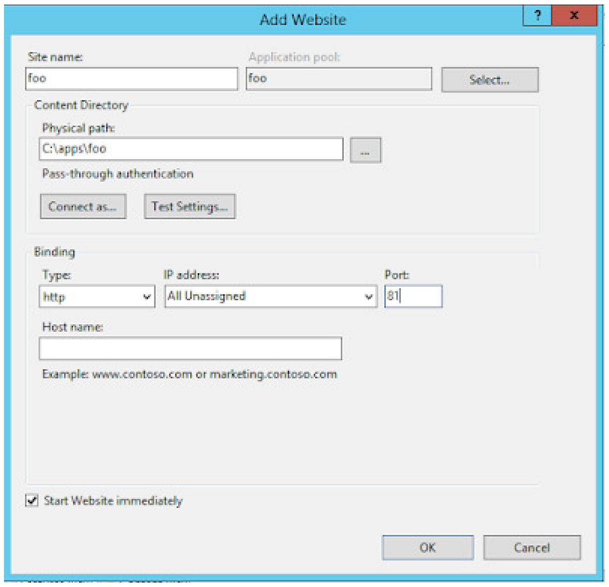
2. Create and Configure a New IIS Web Site

Next we need to create a new web site in IIS for the Django application, and add a Handler Mapping to the newly created web site so that requests coming to the IIS web site are passed off to the Django application for processing.

A. Open IIS Manager
B. On the left-hand side under Connections, expand the tree under the server name by clicking on the arrow to the left of the server name
C. Right-click on the Sites folder and click “Add Website …”
D. For the site name enter foo
E. For the physical path, type the following: C:\apps\foo

F. For the purposes of this example configuration, change the Port to 81, since the Default site is running on port 80. For a real-world application you'll likely want to use name-based virtual hosting by adding bindings and run the site on port 80.

G. You may leave the "Host name" blank. At this point the Add Website dialog should look like this:



Add Website

Site name: foo

Application pool: foo

Select...

Content Directory

Physical path: C:\apps\foo

Pass-through authentication

Connect as... Test Settings...

Binding

Type: http

IP address: All Unassigned

Port: 81

Host name:

Example: www.contoso.com or marketing.contoso.com

☑ Start Website immediately

OK Cancel

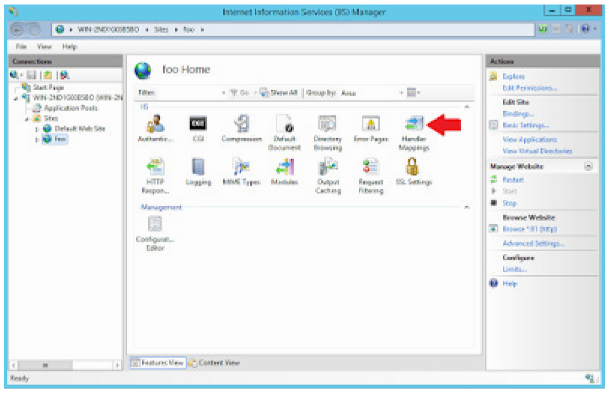
H. Click "OK"

3. Add a FastCGI handler mapping to this site

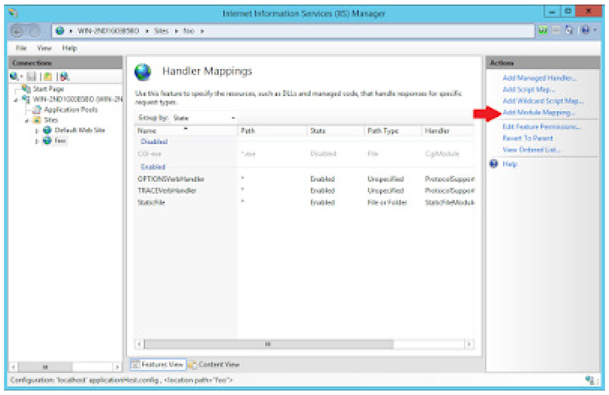
Add a FastCGI handler mapping to this site so the requests coming into the site will be processed by the Django application.

A. In IIS Manager, expand the Sites folder on the left-hand side and click on the foo site

B. On the right, double-click "Handler Mappings"



C. On the right, under “Actions,” click “Add Module Mapping”



Handler Mappings

Use this feature to specify the resources, such as DLLs and managed code, that handle responses for specific request types.

Group by: State

Name	Path	State	Path Type	Handler
Disabled				
CGI-exe	*.exe	Disabled	File	CgiModule
Enabled				
OPTIONSVerbHandler	*	Enabled	Unspecified	ProtocolSupport
TRACEVerbHandler	*	Enabled	Unspecified	ProtocolSupport
StaticFile	*	Enabled	File or Folder	StaticFileModule

Configuration: 'localhost' applicationHost.config , <location path="foo">

D. In the “Request path” box enter an asterisk: *

E. Click the arrow on the right-hand side of the “Module” box and select “FastCgi Module”

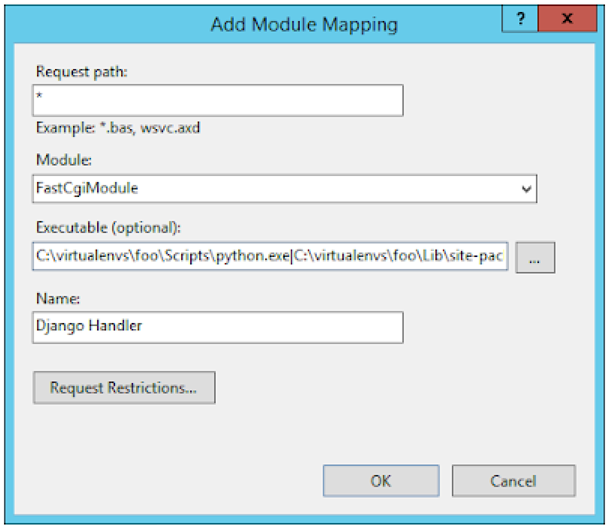
   NOTE: Make sure to select **FastCgi Module**, *NOT* CgiModule

F. In the “Executable” box, enter the following: C:\virtualenvs\foo\Scripts\py-thon.exe|C:\virtualenvs\foo\Lib\site-packages\wfastcgi.py

   Note that the character after python.exe is a pipe (|), which is entered by press-ing Shift-\ on your keyboard

G. In the “Name” box, enter Django Handler (you can call this whatever you want; it’s merely a friendly name for the module mapping)

H. The Add Module Mapping dialog should now look like this:



Request path:
*
Example: *.bas, wsvc.axd

Module:
FastCgiModule

Executable (optional):
C:\virtualenvs\foo\Scripts\python.exe|C:\virtualenvs\foo\Lib\site-pac

Name:
Django Handler

I. Click the “Request Restrictions” button and uncheck the “Invoke handler only if request is mapped to:” checkbox.

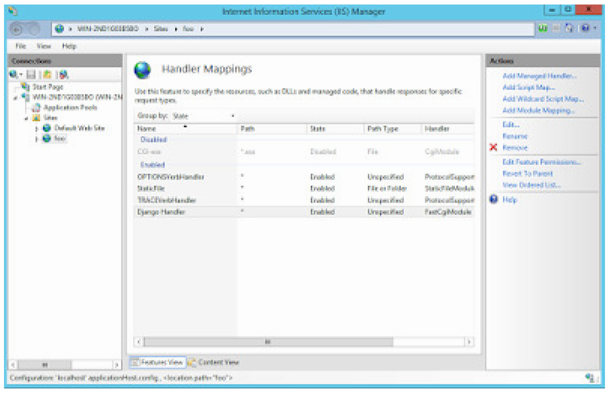
J. Click “OK” to close the Request Restrictions dialog.

K. Click “OK” to close the Add Module Mapping dialog.

L. When prompted “Do you want to create a FastCGI application for this executable?” click “No” since we created the application earlier.

   Note that you CAN have it create the FastCGI application for you from the module mapping, but the settings seem to be different and the end result isn’t fully editable. I also detailed how to create the FastCGI application to be as thorough as possible with all the various pieces involved.

M. You will now see the Django Handler listed in the Handler Mappings for the foo website:



Handler Mappings

Use this feature to specify the resources, such as DLLs and managed code, that handle responses for specific request types.

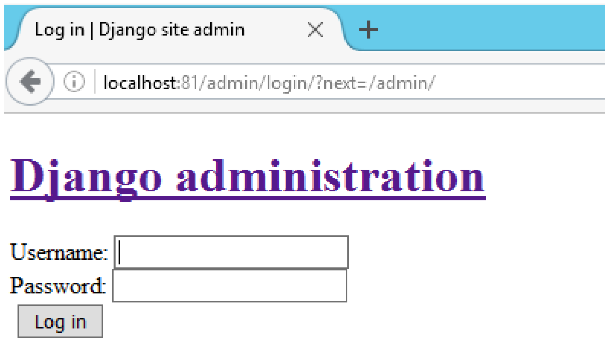
Group by: State

Name	Path	State	Path Type	Handler
Disabled				
CGI-exe	*.exe	Disabled	File	CgiModule
Enabled				
OPTIONSVerbHandler	*	Enabled	Unspecified	ProtocolSupport
StaticFile	*	Enabled	File or Folder	StaticFileModule
TRACEVerbHandler	*	Enabled	Unspecified	ProtocolSupport
Django Handler	*	Enabled	Unspecified	FastCgiModule

4. Configure Django and IIS to Serve Static Files

Now we have things more or less working but we aren’t quite done.

If you visit http://localhost:81/admin via a browser, you’ll see something like this:



Log in | Django site admin

localhost:81/admin/login/?next=/admin/

Django administration

Username:

Password:

Log in

The reason things look a little strange is because IIS doesn't know where things like the CSS and image files for the Django application are located. We need to perform a couple of steps for IIS to be able to serve these files.

This isn't an issue during development since Django has a static file server built into it, which can even serve static files if they are spread over various locations in code. But in production we need a comprehensive Webserver like Apache/IIS/Gunicorn to handle serving these files.

How Django handles static files is a bit of a topic in and of itself, so for further information please consult the Django documentation (https://docs.djangoproject.com/en/2.0/howto/static-files/). In this guide we'll focus on a specific set of steps to get things working without getting into too many behind-the-scene technical details, the different philosophies on where static files can or should be placed, or the various and sundry ways in which this aspect of Django applications can be addressed.

For complete information about Django's handling of static files, and production deployment of static files, please refer to the following section of the Django documentation:

https://docs.djangoproject.com/en/2.0/howto/static-files/

https://docs.djangoproject.com/en/2.0/howto/static-files/deployment/

a) Configure Django's settings.py file to tell it where to put the static files

First, your Django application's settings file needs to include a `STATIC_ROOT` setting, and this setting is **not in Django applications by default**.

This `STATIC_ROOT` setting is used when Django's `collectstatic` management command is run to determine where to place the collected static files.

In our sample foo application, we'll tell Django to collect the static files in a static directory located in the same directory as the `settings.py` file. (You can ultimately put your `static` directory wherever you wish, but this is where we'll be putting it for the purposes of this example.)

To accomplish this, do the following:

A. Using a plain text editor such as Notepad, or Idle if that was installed when you installed Python, open the file `C:\apps\foo\foo\settings.py`
B. Scroll to the bottom of the file, or use the find feature of your text editor, and find the `STATIC_URL` setting
C. Above the `STATIC_URL` setting, add the following setting: `STATIC_ROOT = os.path.abspath(os.path.join(BASE_DIR, 'foo', 'static'))`

    i. The placement of the `STATIC_ROOT` setting in the settings.py file doesn't matter, but putting it right next to the STATIC_URL setting is typical and keeps all the settings related to static files in one place.
    ii. The `STATIC_ROOT` setting we're using as our example will put the static files in `C:\apps\foo\foo\static`
    iii. Save the `settings.py` file

b) Run the collectstatic Management Command

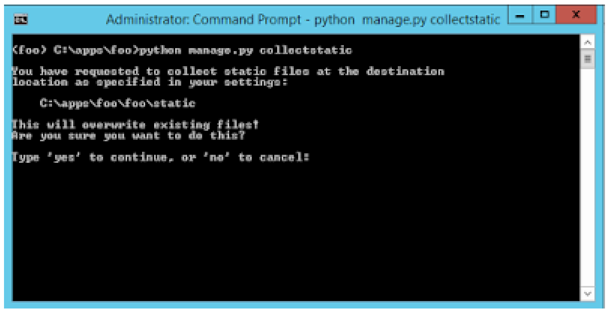
Now that Django knows where to put the static files, we can run the `collectstatic` management command. This command takes all the static files for your project, including the static files used by the Django admin and other packages in your virtual environment, and puts them under one static directory, the location of which is the `STATIC_ROOT` setting we added above, so they can be served by the web server.

```
C:\virtualenvs\foo\Scripts\activate.bat
```

```
cd django_apps_directory
```

`python manage.py collectstatic`

Type `yes` at the prompt where Django asks you to confirm copying the the files into the `STATIC_ROOT` directory.


Administrator: Command Prompt - python manage.py collectstatic

```
(foo) C:\apps\foo>python manage.py collectstatic

You have requested to collect static files at the destination
location as specified in your settings:

    C:\apps\foo\foo\static

This will overwrite existing files!
Are you sure you want to do this?

Type 'yes' to continue, or 'no' to cancel:
```

The static files will then be copied to the directory indicated by the `STATIC_ROOT` setting.

c) Add a `static` Virtual Directory to the IIS Web Site

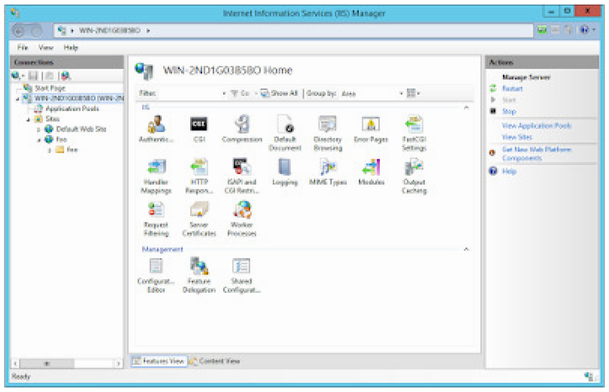
Now we have all our static files in one place, but we still haven't told IIS where they're located. We'll accomplish this by adding a `static` virtual directory to the IIS web site for our application.

Note that the name of the virtual directory in IIS *must match* the value of the `STATIC_URL` setting in the Django application's settings.py file, absent the beginning and trailing slashes. For our sample application we're using a value of `/static/` for the `STATIC_URL` setting, so the name of the virtual directory in IIS will be `static`.

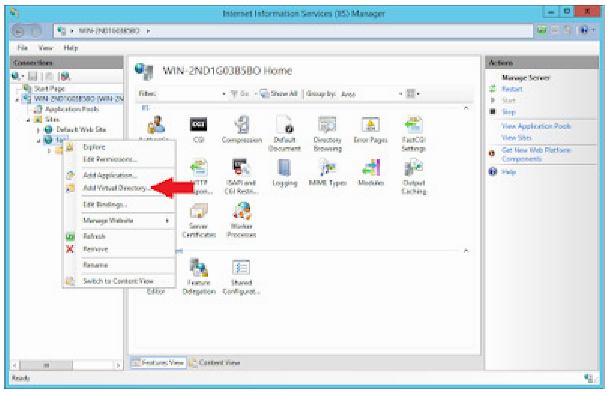
Create a virtual directory in IIS as follows:

i. Open IIS Manager
ii. On the left-hand side under "Connections," expand the server's tree
iii. Expand the "Sites" folder

iv. Expand the foo web site. At this point, things should look like this:

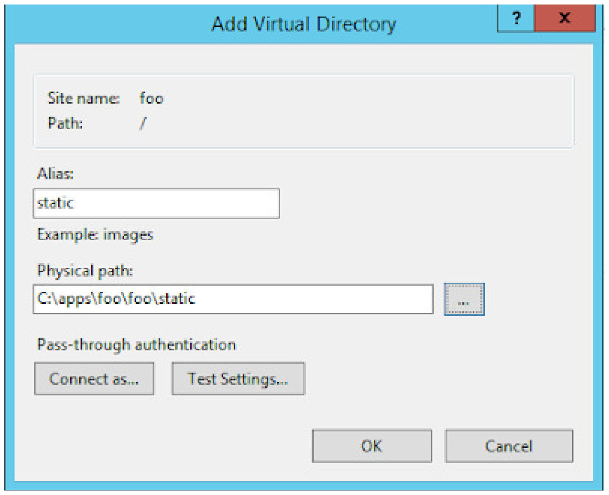


v. Right-click the foo web site and click “Add Virtual Directory”



vi. In the Add Virtual Directory dialog, enter the following values: Alias: `static`

Physical path: `C:\apps\foo\foo\static`

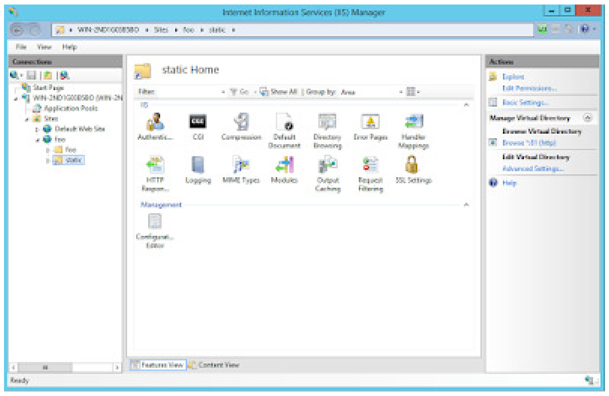

Add Virtual Directory

Site name: foo
Path: /

Alias: static
Example: images

Physical path: C:\apps\foo\foo\static

vii. Click “OK.” You’ll see the `static` virtual directory appear under the web site.



d) Configure Handler Mappings in IIS for the `static` Virtual Directory

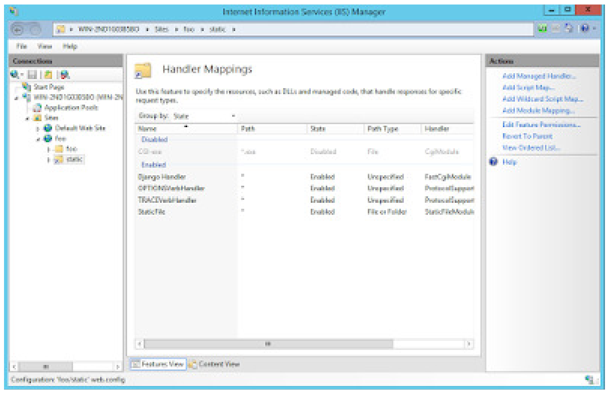
The last step is to tell IIS which handler to use to serve files out of the static virtual directory.

Since at this point our Django Handler is set to serve all files for our application, even with the static virtual directory in place the Django Handler will still be attempting to serve these files.

IIS already has a static file handler active in the web site, but it’s down further in the list of handlers than the global Django Handler we configured, so to get IIS to serve the static files under the static virtual directory we’ll move the static file handler to the top of the handler list on the static virtual directory.

i. Open IIS Manager
ii. Expand the server tree
iii. Expand the foo web site
iv. Click on the `static` virtual directory

v. Double-click the “Handler Mappings” icon. You’ll see the following list of handler mappings:



Handler Mappings

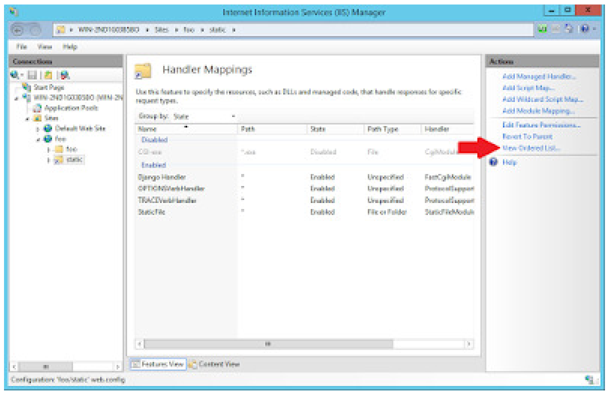
Use this feature to specify the resources, such as DLLs and managed code, that handle responses for specific request types.

Group by: State

Name	Path	State	Path Type	Handler
Disabled				
CGI-exe	*.exe	Disabled	File	CgiModule
Enabled				
Django Handler	*	Enabled	Unspecified	FastCgiModule
OPTIONSVerbHandler	*	Enabled	Unspecified	ProtocolSupport
TRACEVerbHandler	*	Enabled	Unspecified	ProtocolSupport
StaticFile	*	Enabled	File or Folder	StaticFileModule

Configuration: 'foo/static' web.config

vi. On the right-hand side under “Actions” click on “View Ordered List ...”



Handler Mappings

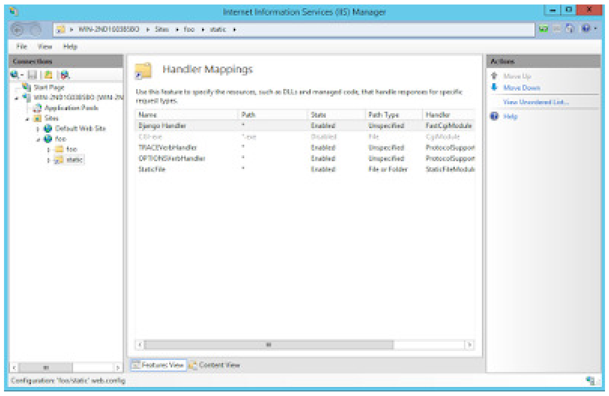
Use this feature to specify the resources, such as DLLs and managed code, that handle responses for specific request types.

Group by: State

Name	Path	State	Path Type	Handler
Disabled				
CGI-exe	*.exe	Disabled	File	CgiModule
Enabled				
Django Handler	*	Enabled	Unspecified	FastCgiModule
OPTIONSVerbHandler	*	Enabled	Unspecified	ProtocolSupport
TRACEVerbHandler	*	Enabled	Unspecified	ProtocolSupport
StaticFile	*	Enabled	File or Folder	StaticFileModule

Configuration: 'foo/static' web.config

vii. You’ll now see a list of the handler mappings in the order in which they’re run, with the Django Handler at the top.



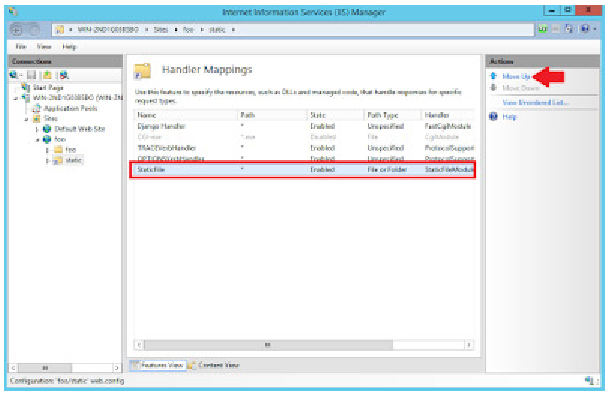
Handler Mappings

Use this feature to specify the resources, such as DLLs and managed code, that handle responses for specific request types.

Name	Path	State	Path Type	Handler
Django Handler	*	Enabled	Unspecified	FastCgiModule
CGI-exe	*.exe	Disabled	File	CgiModule
TRACEVerbHandler	*	Enabled	Unspecified	ProtocolSupport
OPTIONSVerbHandler	*	Enabled	Unspecified	ProtocolSupport
StaticFile	*	Enabled	File or Folder	StaticFileModule

Configuration: 'foo/static' web.config

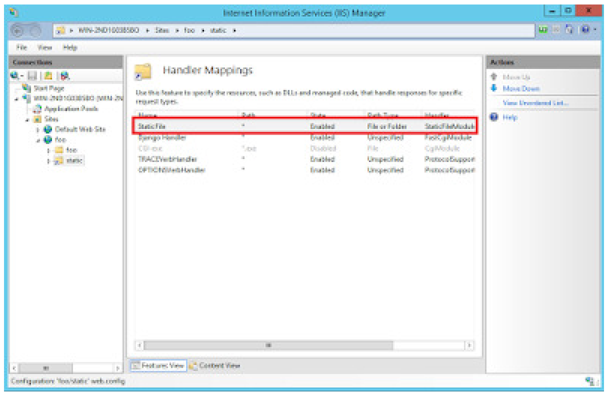
viii. Click on the StaticFile handler at the bottom of the list, then click “Move Up” under “Actions” on the right-hand side.



Name	Path	State	Path Type	Handler
Django Handler	*	Enabled	Unspecified	FastCgiModule
CGI-exe	*.exe	Disabled	File	CgiModule
TRACEVerbHandler	*	Enabled	Unspecified	ProtocolSupport
OPTIONSVerbHandler	*	Enabled	Unspecified	ProtocolSupport
StaticFile	*	Enabled	File or Folder	StaticFileModule

Note at this point you may receive a warning that by moving handlers you are detaching this virtual directory from the inheritance of the parent’s handler mappings. This is what we want to do, so if you get this warning click “Yes”.

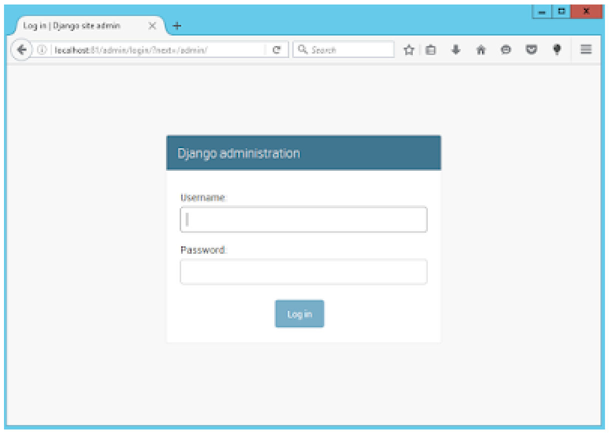
ix. Continue to click “Move Up” until the StaticFile handler is at the top of the list of Handler Mappings.



Name	Path	State	Path Type	Handler
StaticFile	*	Enabled	File or Folder	StaticFileModule
Django Handler	*	Enabled	Unspecified	FastCgiModule
CGI-exe	*.exe	Disabled	File	CgiModule
TRACEVerbHandler	*	Enabled	Unspecified	ProtocolSupport
OPTIONSVerbHandler	*	Enabled	Unspecified	ProtocolSupport

With the StaticFile handler at the top of the list of Handler Mappings, requests that come into the static directory will be handled by the StaticFile handler as opposed to being processed by the Django Handler, so IIS will serve the static files now.

Confirm that everything is working by going to http://localhost:81/admin in a browser. You should now see the CSS being applied to the page.


Log in | Django site admin
localhost:81/admin/login/?next=/admin/
Search
Django administration
Username:
Password:
Log in

At this point your Django application should be playing nicely with IIS.

You can now login with the password you configured during the initial Django setup i.e. when using `manage.py createsuperuser` or `manage.py migrate` etc. at the start.

If you're only able to access Django on the local system you might need to open the required ports on the Firewall.

8. Firewall Settings

You're most probably going to access the server from a remote browser. To do this, you'll need to open the Firewall ports.

I setup this server on a LAN with 192.168.0.x range of addresses (255.255.255.0 subnet mask). Incoming connections to port 81 were locked on the Server.

Say the Server's IP Address is 192.168.0.100:

- Test that the remote server is reachable

```
ping 192.168.0.100
```

- Open `http://192.168.0.100` in a browser (from the client computer)

  This was accessible i.e. Port 80 was open.
- Open `http://192.168.0.100:81`

  If this link is accessible, you're done setting up. Else, you need to open the server ports.
- Open Control Panel. Click on System and Security. Then click on Windows Firewall.
- Select Advanced settings and highlight Inbound Rules in the left pane.
- Right click Inbound Rules and select New Rule.
- Add the port you need to open and click Next.
- Add the protocol (TCP or UDP) and the port number into the next window and click Next.
- Select Allow the connection in the next window and hit Next.
- Select the network type as you see fit and click Next.
- Name the rule something meaningful and click Finish.
- Visit http://192.168.0.100:81 again in a browser from the remote server, and everything should be active.

If you're still not able to access the django application from the remote computer, work with your System Administrator to figure out the problem. DONOT disable the entire Firewall.

Additional Notes

Follow the steps closely when configuring IIS

Configuring IIS might give you the most issues. In particular configuring the static files location in IIS. I had to redo the steps twice before it worked. So yeah, patience and caution as always.

Performance on Windows

I used this Django install with MySQL installed on the same server. Both Python and MySQL were painfully slow on this windows server in comparision to the same setup running on Linux on even half the hardware. I didn't have time to benchmark it but a quick search on the net will give you enough tips on improving MySQL performance on Windows.

Security and Firewall

If you're operating on a critically important server, check with the server administrator regarding the firewall rules you're easing to make the django application accessible. Do not disable virus scanners/firewalls without explicit permission from the system administrator.

Database

The application I created, though critical had very little load (1 to 2 users at any time). In this case Sqlite3 might be as good as MySQL/Postgres. It's when there are too many users and concurrency concerns that Sqlite3 has a shortcoming, otherwise it's a very good database.

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