Faculty of Engineering & Information Technology
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31338 Network Servers
Lab 10d: Web server (IIS) on Windows

Aims

1. To configure a Windows machine to act as a web server

Task 1: Install the Internet Information Services role

Windows has an integrated web server called Internet Information Services (IIS).

In Server Manager, we need to add the "Web Server (IIS)" role. Choose "Local Server" on the left, then scroll down to "Roles and Features". From the "Tasks" dropdown, choose "Add Roles and Features".

Follow the prompts and add the "Web Server (IIS)" role and its associated features (IIS management console). When prompted, specify that you want the following role services:

a. Common HTTP features
b. Security – Request Filtering, Basic Authentication, IP and Domain Restrictions, URL Authorization, Windows Authentication
c. FTP Service
d. Management tools – IIS Management Console, Management Service

Assuming the installation occurred smoothly, you can now check the status of the server. Browse the configuration, especially taking note of the services running. You might notice that IIS does not start certain services. Which ones are not starting? Why do think this is so?

Test that the IIS server is running by opening **http://localhost**

Task 2: Manage the IIS role

Internet Information Services (IIS) has a separate management panel from the default Server Manager panel.

In Server Manager, you can use the Tools menu (top-right of Server Manager) to choose "Internet Information Services (IIS) Manager". You can also use the Start menu → Windows Administrative Tools → Internet Information Services (IIS) Manager.

In the IIS manager, you can view the start page, and a "folder" labelled after your Windows hostname. In the left-hand menu of IIS manager, expand the folder labelled with your Windows hostname. It should have 2 sub-folders: Application Pools and Sites.

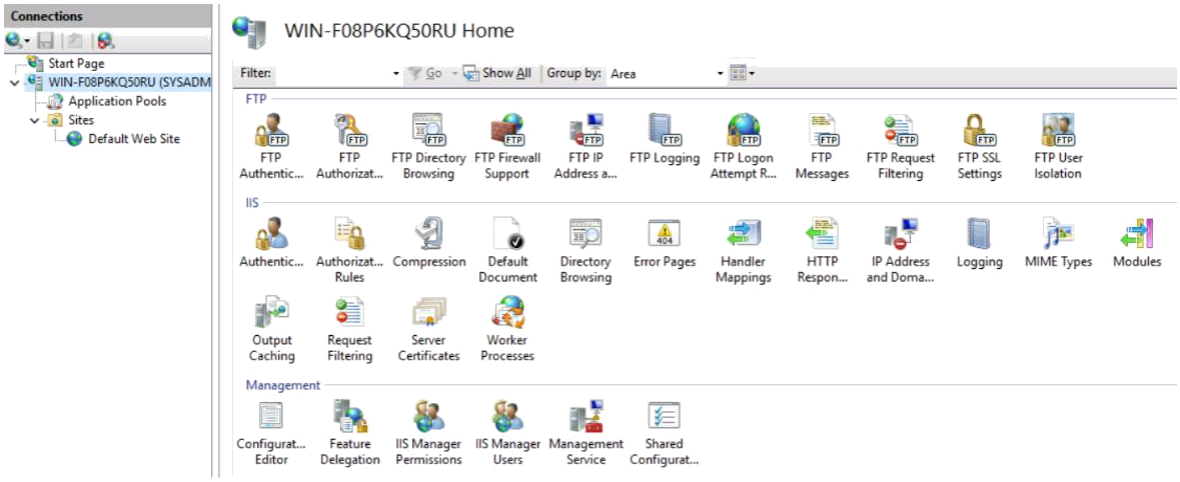
We generally will only use 1 application pool – the DefaultAppPool. These app pools allow us to isolate and tune our web server (when we use virtual hosts you can run them on different pools if you wish to)

Sites are fairly obvious – these are FTP or Web sites, and we will modify the "Default Web Site" in this task.

Overall settings

The OVERALL settings are controlled by the top-level server home. In the IIS group, the icons such as Authentication, Default document, Directory Browsing, Error Pages etc will apply by default to all the sites controlled by this server.

See the screenshot at the top of the next page to see the kinds if icons you should be seeing (yours may not be exactly the same, but many/most will be).



Double Click on Default Document: Note that this is a list of filenames which the server will display first if found in top-to-bottom order.

You can also allow directories to be browsed via the Directory Browsing applet. This turn on/off the option to generate a default directory list if the Default Document is not found.

Error pages allows you to override the default page generated when you get certain HTTP errors. A good one to change is 404 page not found. Feel brave and create your own.

You can add restrictions based on the clients IP address via the IP Address and Domain Restrictions applet.

You can create and update MIME types – this tells the client browser what the type of file being served is based on its file extension.

Finally, you can enable the web management service feature and add users (like yourself) to the authorised manager list.

Site specific settings:

If you select the ***Default Web Site***, you will find a similar control panel to the overall panel – this overrides the server defaults.

The following Actions are some of the ones available on the top right hand side panel:

- Explore – opens the folder which contains the default document root directory
- Bindings – allows you to choose the protocol (e.g. http) and IP address (*) and Port (80) to bind to.
- Basic Settings – shows the default document root – in our case it should be %SYSTEMDRIVE%\inetpub\wwwroot. You can reassign this anywhere.
- Finally, Advanced Settings – lets you change the site name, physical path etc

Creating web pages:

Create an index.html file in the default document root directory (see above) & test it

> **CAUTION:** by default, the Windows 'File Explorer' hides the file extensions. You should unhide them by clicking the 'This PC' icon on the left-hand side of File Explorer, then use the menu at the top to choose View → File name extensions (turn on the checkbox).
>
> **HINT:** You can create a new file via Right Mouse Button → New Document → rename the file to index.html

Experiment with changing various settings, but please make sure you document your changes in your journal! You will often want to reset the settings if you make a mistake….

Task 3: SSL web sites

You can enable SSL for this web site by selecting the **BINDINGS action** on the IIS management panel for your default web site. Recall we only saw "**http * 80**" for the default setup?

You can **Add a Site Binding**, and then choose the **https:** type, and the port will change to 443.

You also need to add an SSL certificate – you choose the default one for your system by selecting from the dropdown of available certificates (the IIS installer generated one for you)

Test this via **https://localhost**

Note that you will be prompted in the browser to accept/deny the server certificate ("This site is not secure"). For the moment, accept the exception

Self Signed Certificate

If you want to create your own server certificate, you need to return to the main IIS server Home management panel and locate the **Server Certificates** icon.

Since we don't want to pay $$$ for a real certificate, you will select the **Create a Self-Signed Certificate** Action & follow the wizard. Store it in the "web hosting" certificate store (not personal).

Return to your **default web site** menu and **Bindings** action & Edit the existing https binding, and choose the new certificate & test again.

Note that when you test, rather than entering https://localhost, you should enter the DNS hostname exactly as it mentions in the certificate, e.g. **https://www.netserv.edu.au** (yours may be different).

In general, if you want a real SSL server certificate, you will need to visit a certification authority (CA) such as Verisign or others (use Google!). You would need to use the Server Certificate manager to "**Create Certificate Request**" , submit this to your CA and when they reply, use the "**Complete Certificate Request**" to save it

Task 4: Virtual hosting

You can create virtual hosting much like Apache by simply adding a new Site from the Sites menu in IIS Manager.

Choose **Sites** → **Add Web Site** action and give this a friendly name and a physical directory path. (you will need to create a new directory for this e.g. c:\inetpub\wwwroot2

The difference is that you now need to assign a HOST NAME.

This would be an Alias in your DNS e.g. you could add www2.netserv.edu.au to your DNS, and this alias would be a CNAME that points to the real server A record (e.g. site.netserv.edu.au)

Other tasks

You can right mouse button on the site (eg Default Web Site) and **Add virtual directory** - this is a mapping of a real directory to a "**Alias**" or virtual directory.

e.g. you could create a virtual directory called "staff" which maps to "c:\inetpub\wwwroot\secure" and you should create a different index.html in this physical directory

You test this by opening http://localhost/staff (and this should open up the c:\inetpub\wwwroot\secure\index.html)