

SwitchMap

Windows Installation 11.12

Introduction

If you reading this, you obviously have already downloaded and extracted the SwitchMap source files, however this guide will assume you are starting from scratch.

You will want to make sure you have the latest version of SwitchMap. At the time of writing the most current is version 11.12. SwitchMap can be downloaded from SourceForge at the following location: <https://sourceforge.net/projects/switchmap/>

You will need Microsoft Internet and Information Server (IIS) running on your windows machine. IIS is available on Windows 2000, XP Pro (not Home Edition), Vista (all versions except Home Basic), Windows 7(all versions except Home Basic), Windows 2003 servers and 2008 Server

Installing IIS is beyond the scope of this document, but if you are looking for information on IIS, start here: <http://www.google.co.uk/search?hl=en&q=installing+IIS+windows&meta=>

Unpack

Assuming you have a default installation of IIS your inetpub directory is likely to be located at c:\inetpub (will shall assume that is the case)

Extract SwitchMap to the following location on your machine:

c:\inetpub\wwwroot\switchmap

When you extract SwitchMap, you will likely find it has extracted into a folder named something like “switchmap-11.12”. If this is the case, I recommend you rename the folder to “switchmap”, as it should make future upgrades more intuitive.

Perl

Having got the SwitchMap files ready to go, we next need to install Perl.

The easiest way to get Perl running on your windows system is to download the windows binaries from ActiveState. Locate the ActivePerl download (currently:

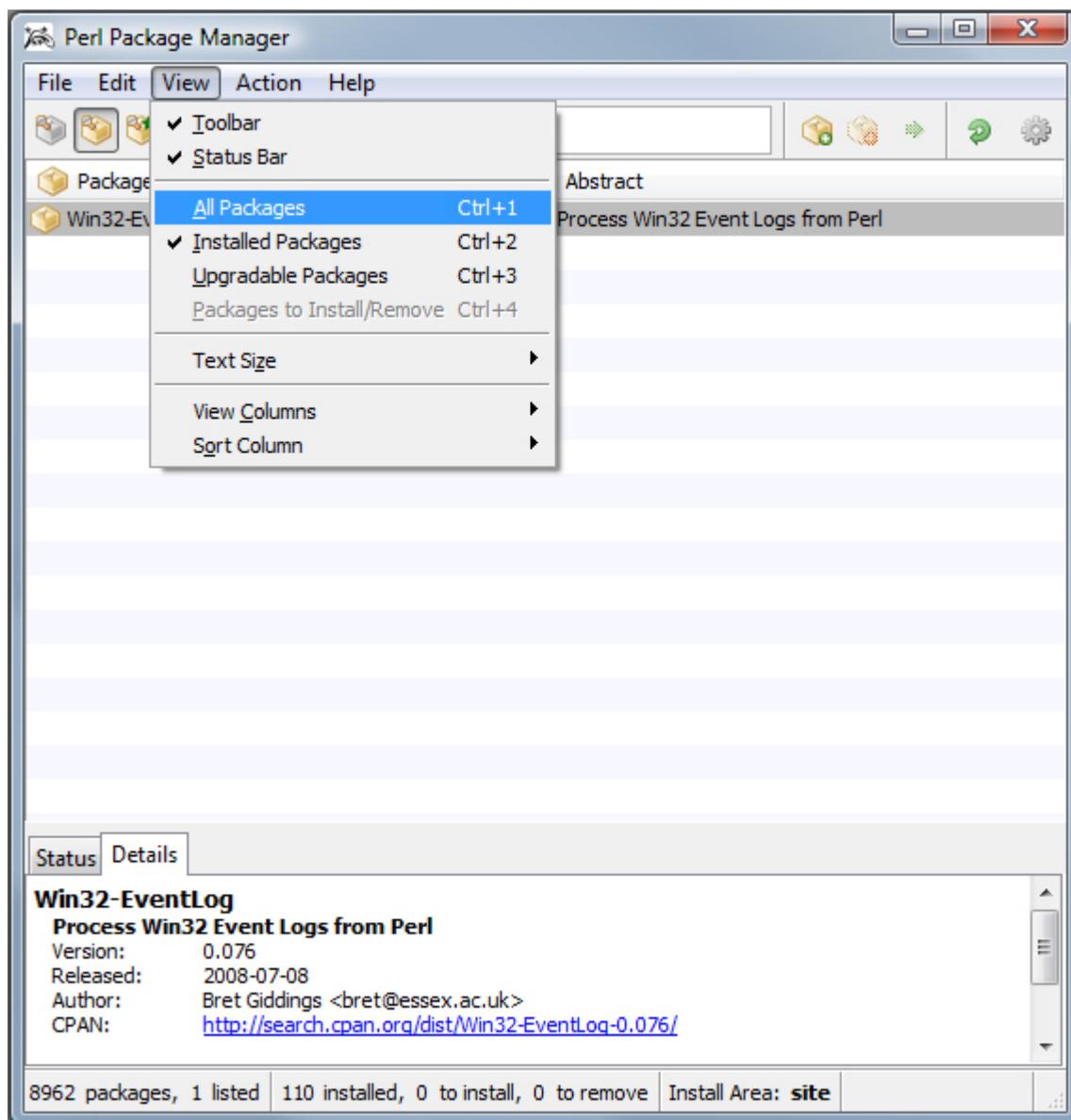
<http://www.activestate.com/Products/activeperl/index.mhtml> , and run through the install.

This guide will assume you accepted all defaults during the install process, and that Perl was installed at c:\Perl (if not, you will need to make modifications for your environment accordingly)

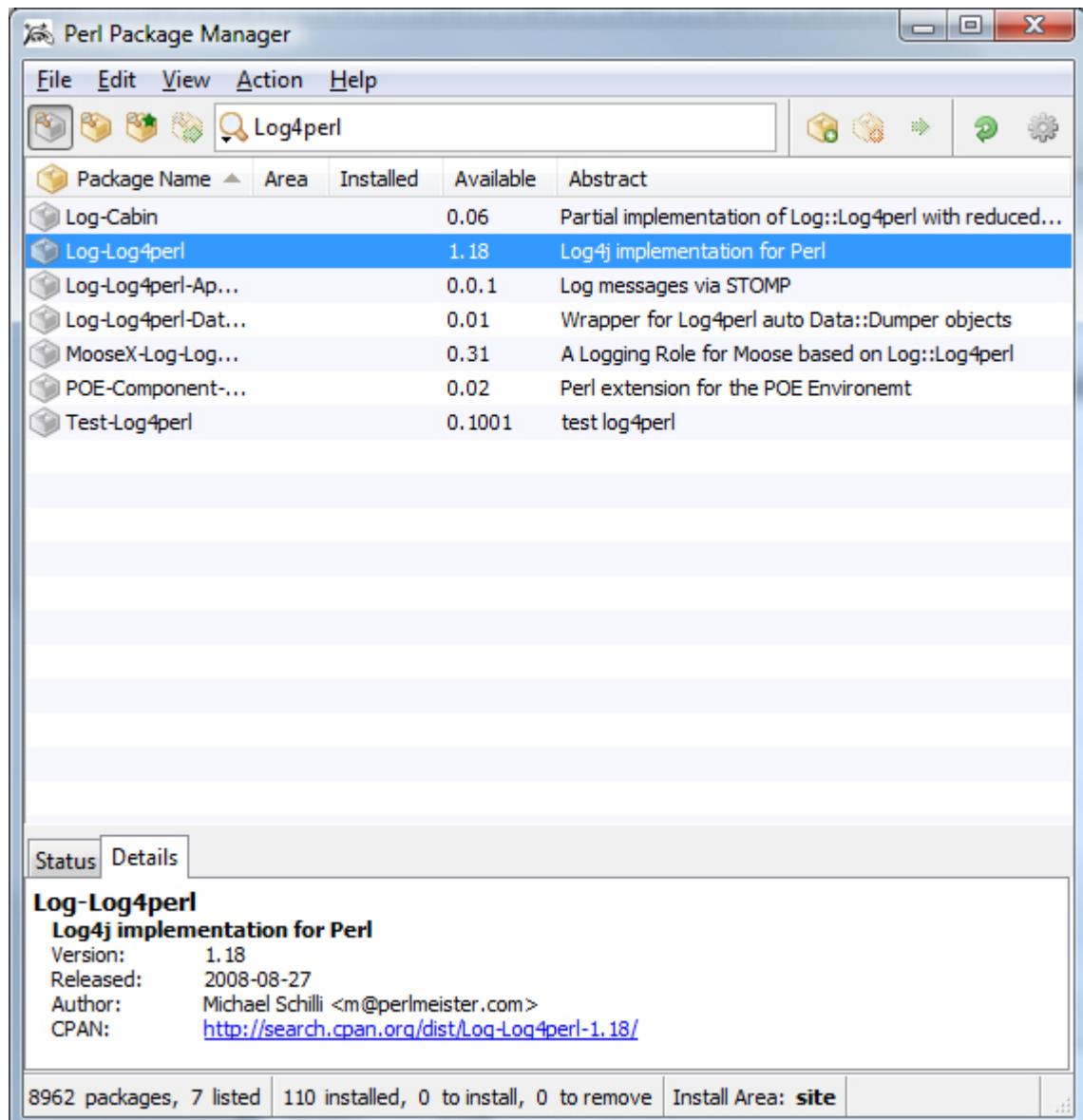
From the start menu select the ActivePerl program folder and run Perl Package Manager (PPM) note in previous versions PPM was a command line tool. The later versions of ActivePerl include a GUI version of PPM which this document will concentrate on.

Allow a few moments for PPM to sync its database.

Once PPM has populated the window with the list of packages, select 'All Packages' from the view menu.



In the search box enter Log-Log4perl



Right Click on Log-Log4perl, and click install.

Repeat the above process for “net-SNMP”, and “Log-Dispatch” and select both for install

From the file menu, select “Run Marked Actions” and the three modules (plus dependencies) will be downloaded and installed.

After this process has completed you can close PPM

This Site.pm

Next we need to edit some variables for your network, so open ThisSite.pm in your editor.

SwitchMap was designed to acquire much of its information from HP OpenView, but if you don't have OV its not a problem, and we will assume that in your environment you do not have this. If you are lucky enough to have OpenView you will need to read the Readme for information on how to configure SwitchMap for your environment.

There are a few sections you need to configure in this file. Scroll down to 'routers' and add the address of your routers as follows (you can add as many lines as you have routers):

```
@routers = ();
push @routers, 'your_router_a';
push @routers, 'your_router_b';
```

Scroll down to the 'LocalSwitches' section, and add a list of the switches you want SwitchMap to monitor as above. To start with, just add a few. Once everything is working come back and add the rest.

```
@LocalSwitches = ();
push @LocalSwitches, 'your_switch_a';
push @LocalSwitches, 'your_switch_b';
```

You should check that the community string is set correctly in the section:

```
$Community = 'public';
```

Change the domain variable to your domain:

```
$DNSDomain = 'sourceforge.net';
```

Set your destination directory as follows:

```
$DestinationDirectory = 'c:\inetpub\switchmap';
```

Note that this folder is above your wwwroot folder, and thus is not accessible from a browser. – we'll come back to this in a second.

Set your state file directory as follows:

```
$StateFileDirectory = 'c:\inetpub\switchmap\statefiles';
```

Finally set the CGI variable so we don't have to come back to it later, set it as follows:

```
$CgiDir = '/cgi-bin/';
```

Save and close ThisSite.pm

Create the folder 'switchmap' at c:\inetpub\switchmap, and then a sub folder 'statefiles' at c:\inetpub\switchmap\statefiles

Give the local iUSR account modify permissions to the c:\inetpub\switchmap folder (the 'statefiles' folder should inherit this permission)

Testing

Open a command window, and change to the SwitchMap folder (c:\inetpub\wwwroot\switchmap\)

Run the following command:

```
C:\perl\bin\perl GetArp.pl
```

If everything is correct you should have noticed a message about a MacList file being created. Check in the SwitchMap folder to check the MacList file is there.

Assuming you got no errors, you can now run:

```
C:\perl\bin\perl ScanSwitch.pl
```

Again, if you don't receive any errors, you're all set to run SwitchMap. If you have had problems, go back over the steps above and check everything is correct, then try again.

Now let's run SwitchMap

```
C:\perl\bin\perl SwitchMap.pl -d 5
```

Depending on the size of your network this may take some time, so be patient.

If SwitchMap worked you should now have a number of new folders in your SwitchMap folder, and an index.html file

You can now open SwitchMap in your browser:

<http://localhost/switchmap/index.html>

If everything looks good, go back and add any other Switches you want to monitor.

Update the Search Paths and URLs

Some of the web pages have hardcoded urls and paths in them, we need to change these to reflect the file paths on our windows system, so open up 'FindOffice.pl' in your editor, and look for:

```
use lib '/usr/web/nets/internal/portlists';
```

change it to:

```
use lib 'c:\inetpub\switchmap';
```

Now 'FindOffice.pl' knows where to look for the data files, now we need to give the search page the correct URL to the 'FindOffice.pl' file.

Open 'SearchPortLists.html' in your editor, and look for:

```
<form method=GET action="/nets/cgi/internal/FindOffice.pl">
```

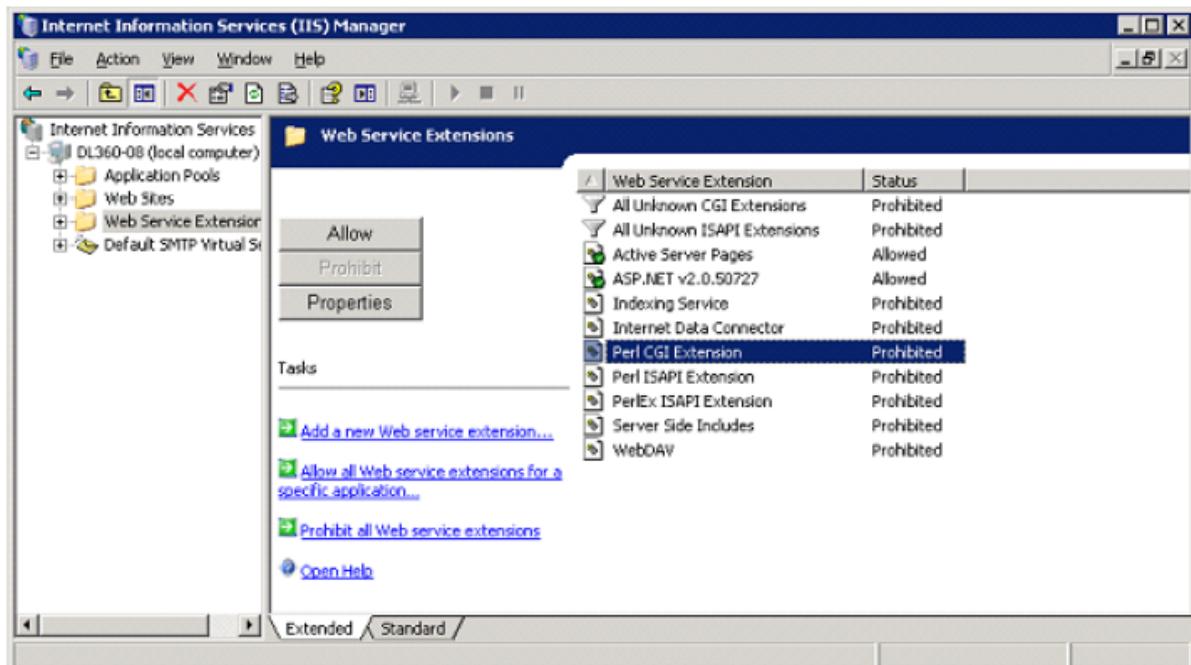
Change it to: <form method=GET action="/cgi-bin/FindOffice.pl">

CGI

We need to configure IIS to allow the CGI scripts to run. If you are using windows 2000, XP or 2003 you will likely be using IIS6, Vista and 2008 users will have IIS7. The differences between IIS6 and IIS7 are extensive, so both examples are shown below.

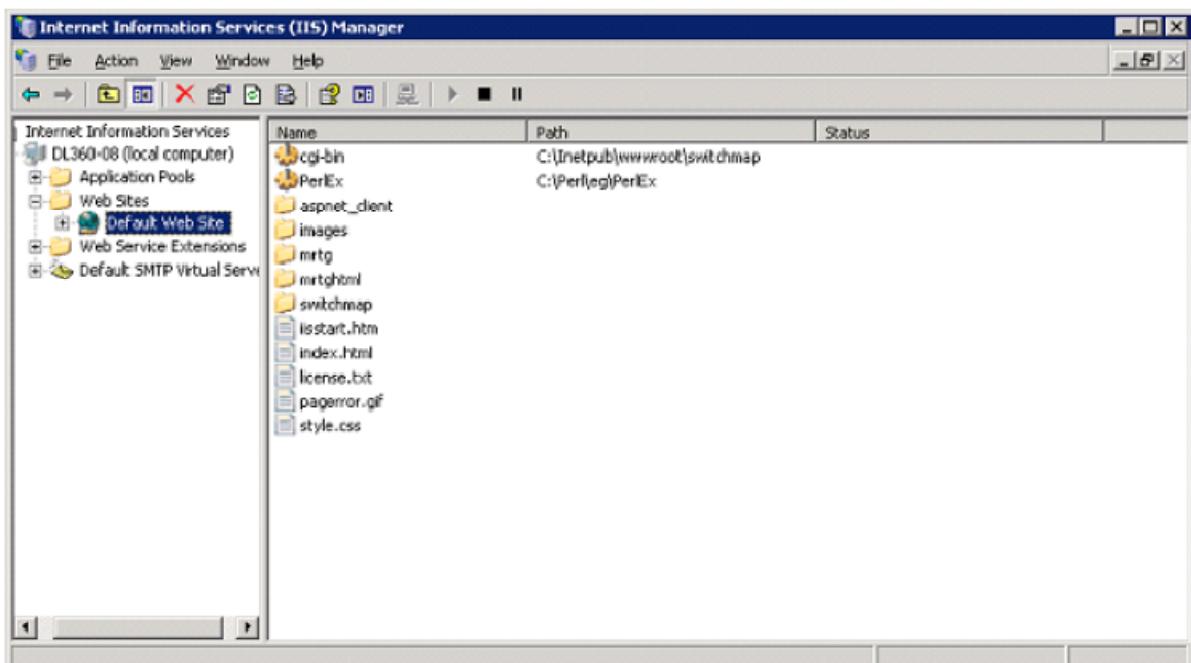
IIS6

Open the IIS Manager, and select web Service Extensions:



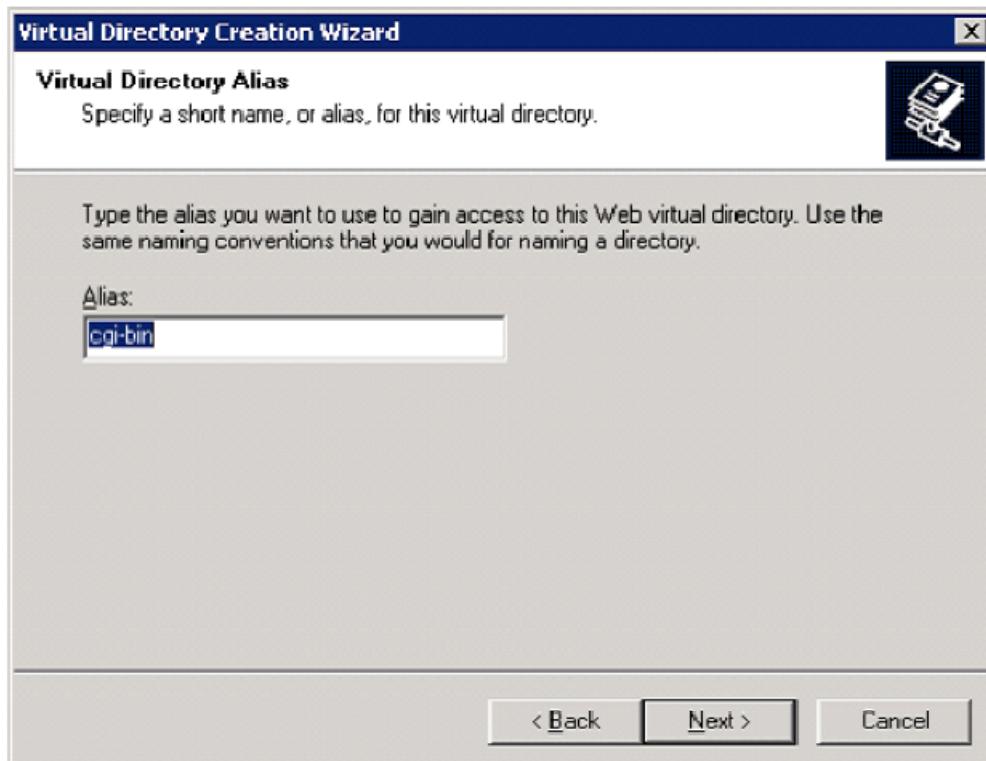
Notice that Perl CGI Extensions are prohibited. Right click on Perl CGI Extensions, and click 'Allow'.

Now expand Web Sites, and select your default web site (unless configured otherwise)

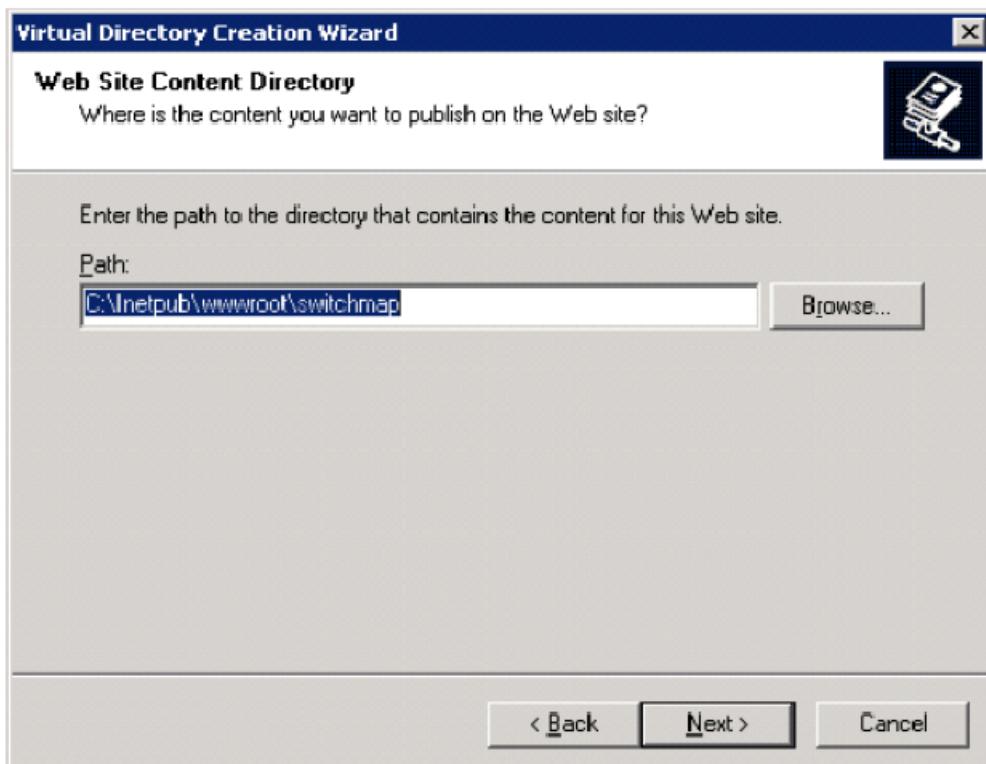


Right click and select 'New'->'Virtual Directory'.

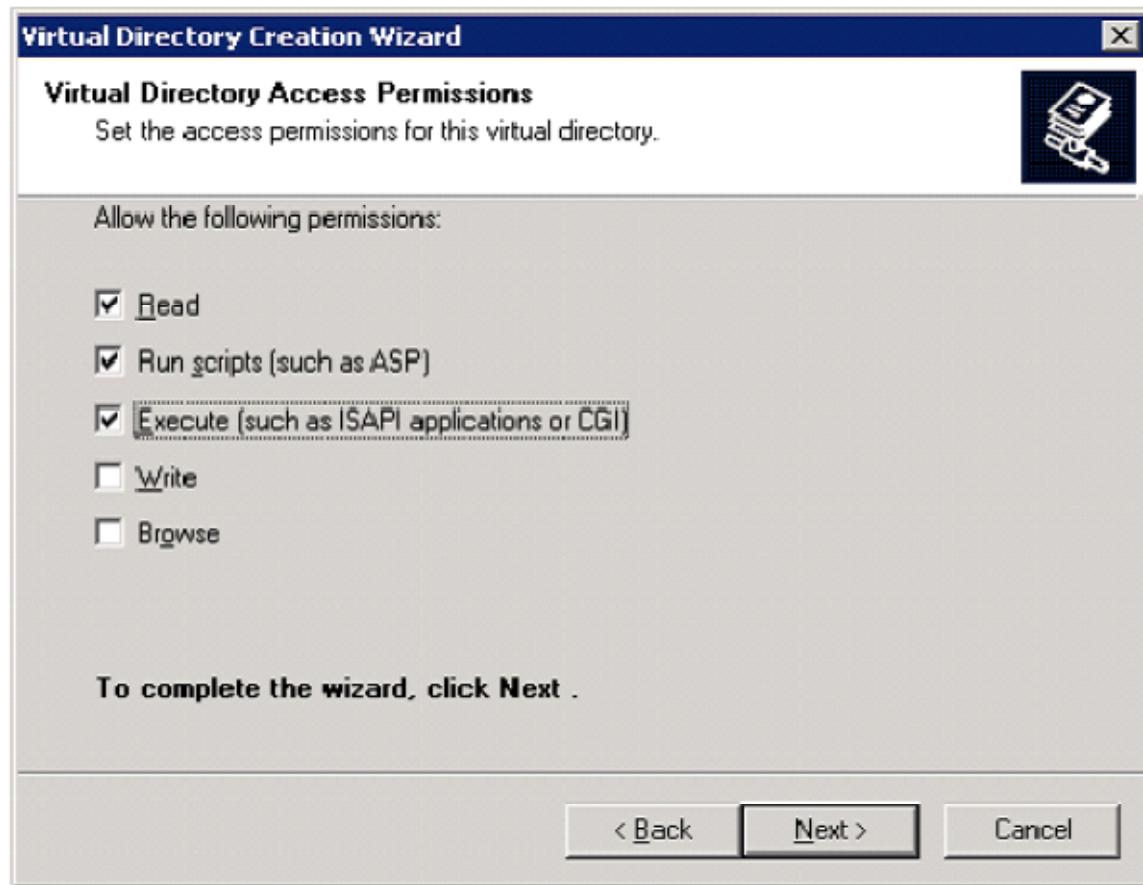
Run through the wizard using 'cgi-bin' as the alias



Use the path to the SwitchMap folder as the source.



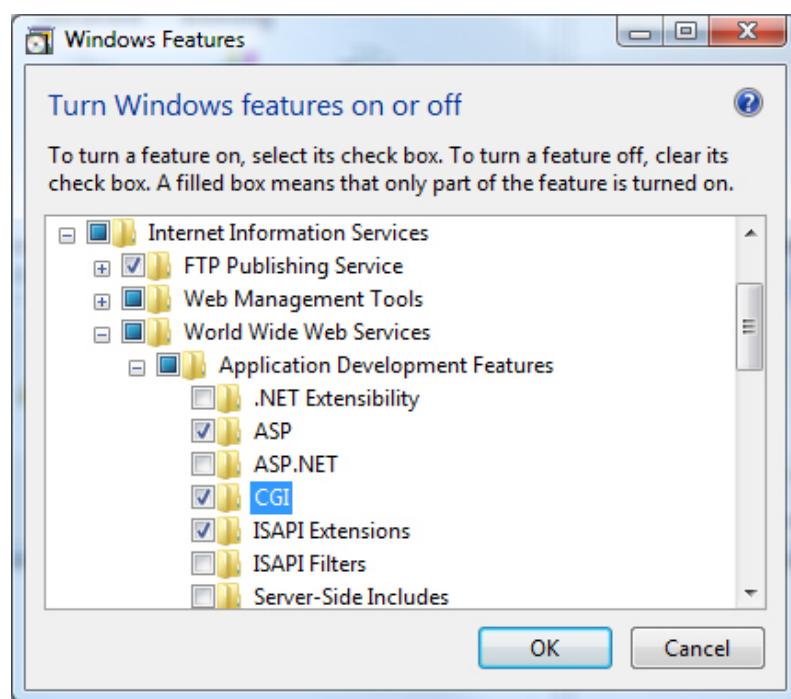
Select read, run & execute



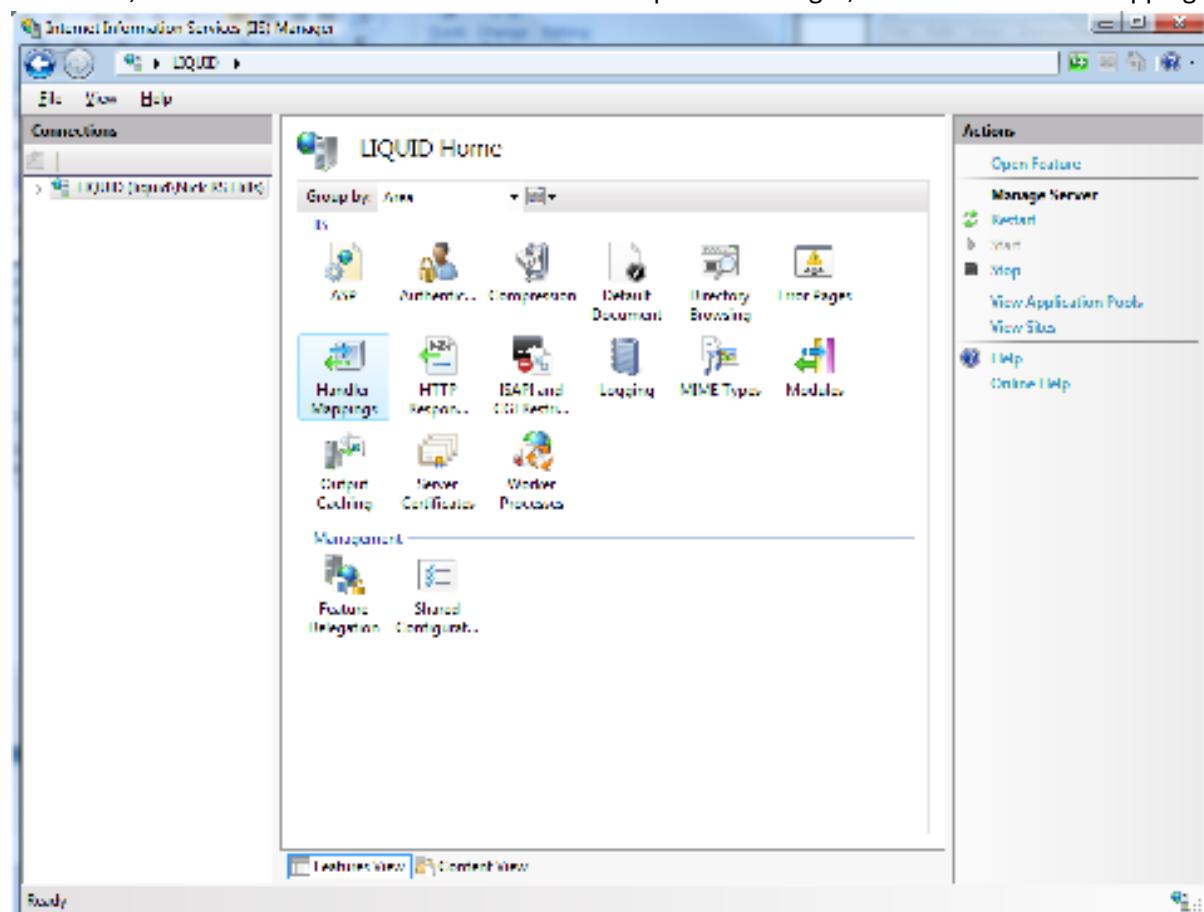
And then finish

IIS7

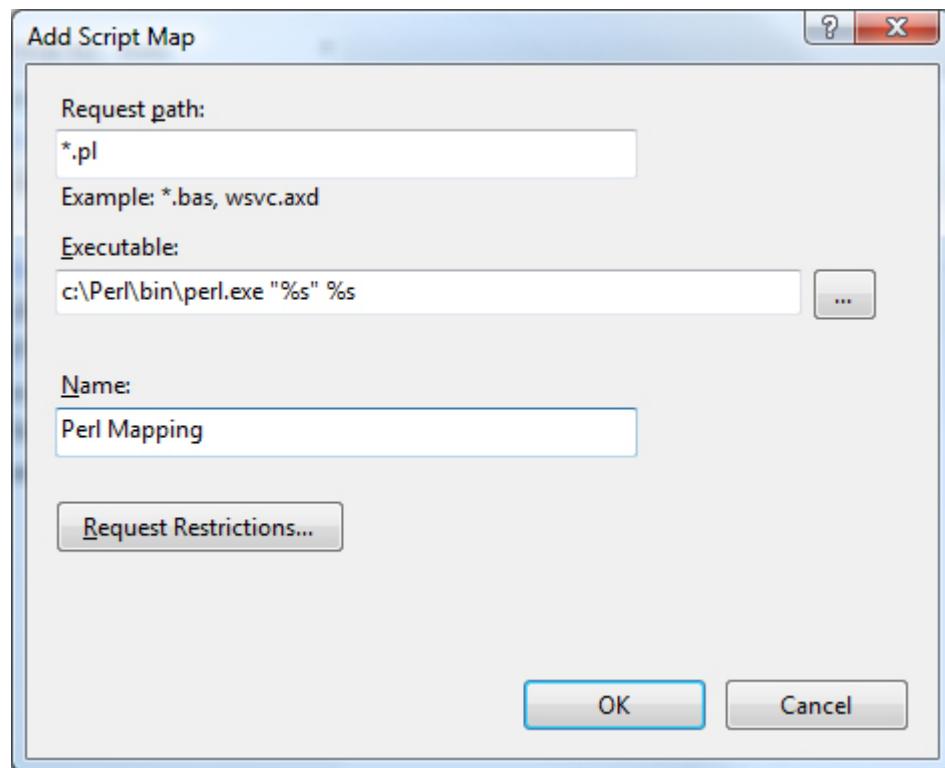
Chances are when you installed IIS you might not have enabled CGI.(I forgot), so go to control panel and open Programs and Features, and select 'Turn Windows Features On or Off'



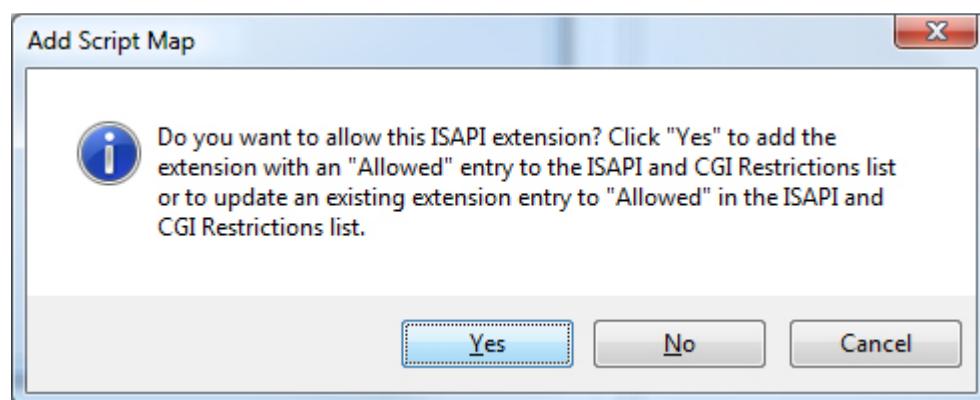
Drill down, and select CGI to install the CGI modules. Open IIS Manager, and select Handler Mappings



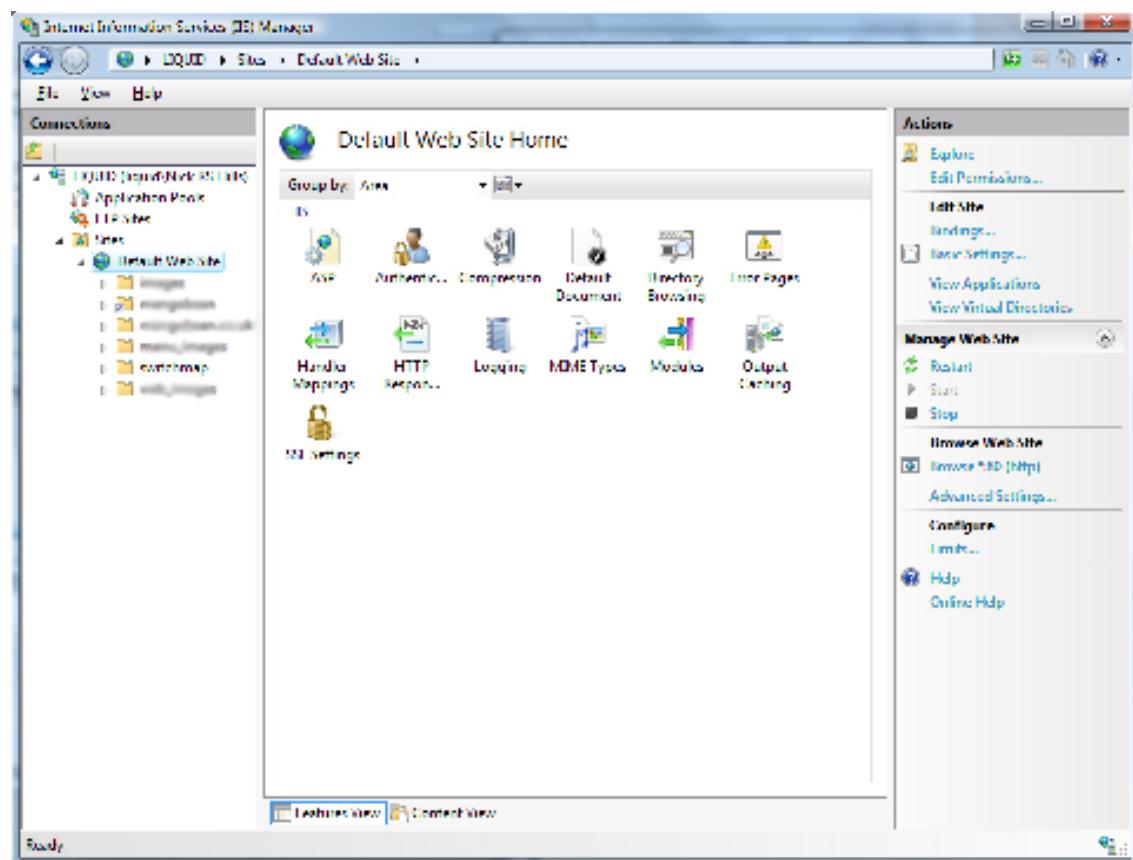
Add a Script Map as follows



Select yes to the following message

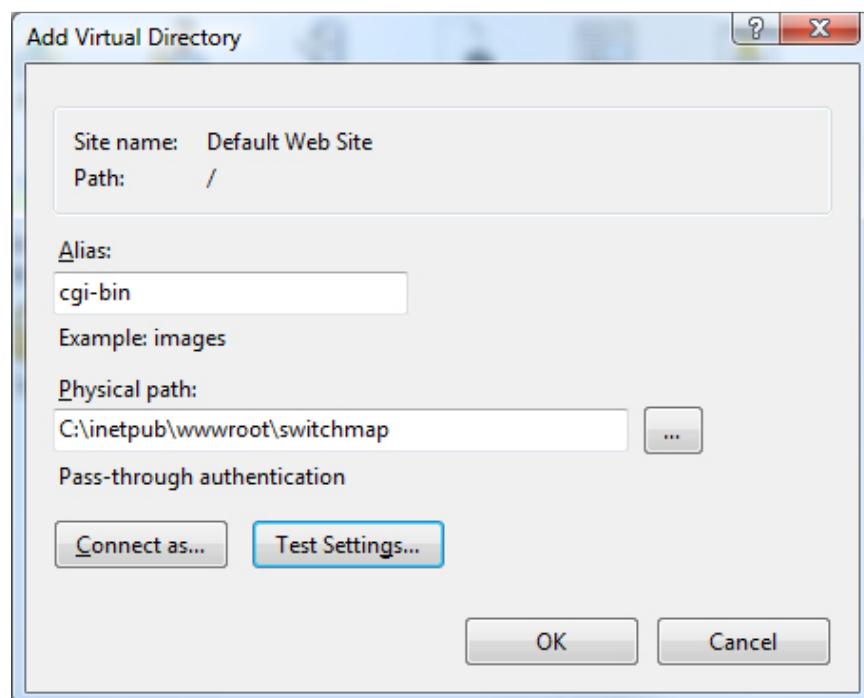


Go back to IIS Manager, and Expand Sites, and Default Website



Right click on default Website, and Click Add Virtual Directory

Complete the form as follows



Close IIS Manager

A note on security.

The above IIS configuration is bad practice. In simple terms we have allowed an un authenticated user permission to execute scripts on your webserver, and switchmap folder. Whilst this would be a very bad idea on a public facing webserver, this risk is mitigated if your switchmap installation is on a private network (why wouldn't it be).

If security is a major concern for this system, you should research CGI security and implement a stronger form of CGI configuration. If you do so, please let us know via the forums, and we can add it to future documentation.

Running the Scripts

Finally we need to schedule the 3 SwitchMap components to run.

GetArp.pl connects to your router, and creates an MAC Address to IP Address lookup table which is used by SwitchMap to determine what is connected to each switchport. GetArp only takes a few seconds to run, so you could schedule this to run every 2 hours or so.

ScanSwitch connects to each of your switches, and gets status information from each device and records it in the idlesince folder. ScanSwitch is also quite lightweight, and we run it every 2 hours (15 minutes behind GetArp)

SwitchMap is the main module, and can take from a few minutes for a small network, to over an hour for very large infrastructures. You probably don't want to run this more than once or twice a day. In our environment it runs at 10am, and then again at 4pm.

How you schedule these applications is up to you, but the easiest way is to create 3 batch files in the SwitchMap folder named, run_getArp.bat, run_ScanSwitch.bat, run_SwitchMap.bat In each file, enter the following command:

Run_GetArp.bat contains: c:\perl\bin\perl.exe

```
c:\inetpub\wwwroot\switchmap\GetArp.pl
```

Run_ScanSwitch.bat contains c:\perl\bin\perl.exe

```
c:\inetpub\wwwroot\switchmap\ScanSwitch.pl
```

Run_SwitchMap.bat contains c:\perl\bin\perl.exe

```
c:\inetpub\wwwroot\switchmap\SwitchMap.pl
```

Now use windows task scheduler to run 'run_getArp.bat' and 'run_ScanSwitch.bat' every 2 hours (15 minutes apart), and 'run_SwitchMap.bat' no less than 6 hours apart. (Once a day would probably suffice)

From task scheduler, once you have added your tasks, give them a test run to make sure all the modules and paths can be resolved.

All that remains is to add your remaining switches to ThisSite.pm, and visit the SourceForge

SwitchMap forums, and let us know how you got on and get help if you have any problems.