

Configuring Proxy Settings

Produced By:	John Chapman
Reviewed By:	Lee Brandrith
Team:	ICT Technical Services
Date:	24 th July 2007
Version	1.3

Summary

This document is intended to provide information to technical teams in educational establishments in Cambridgeshire to allow correct configuration of devices to use the Protex filtering system.

Does this affect me?

Any person using a network connected device that uses network infrastructure within Cambridgeshire schools or other educational establishments who wishes to access the Internet will be using the [Protex Filtering](#) system.

This filtering system uses 4 levels, or profiles, of filtering, which allow or deny access to WWW based resources based on content.

If you are using the WWW within a school, you need to ensure your browser is configured to use the Protex system.

Please note systems hosted within CCN – i.e. Sophos updates – are NOT affected.

However, SOLUS updates ARE affected and you must follow the instructions in the [SOLUS update](#) section.

What are PAC Files?

Although we will give a summary here, probably the best place to go to find out more information on Proxy Auto-Configuration (PAC) files is [Wikipedia](#).

PAC files, as the name suggests, allow autoconfiguration of proxy settings by using a small file hosted on a web server which can perform a number of checks, for example to find out what network you are connected to, and from these queries help your system automatically decide whether WWW traffic should be passed through a particular proxy (i.e. Protex) or directly onto the Internet (i.e. when you are at home).

Where are they hosted?

The PAC files are hosted on the E2B Network. There are 4 files as follows:

<http://proxy.cambsed.net/staff.pac>

<http://proxy.cambsed.net/secondary.pac>

<http://proxy.cambsed.net/middle.pac>

<http://proxy.cambsed.net/primary.pac>

Why can we not host them on our own network?

Hosting these files centrally means that any changes to core systems can be easily updated into the files with no impact on end users.

Any additional caching or Protex servers installed either centrally or in schools can then easily be configured in the correct PAC file to ensure the right level of filtering and caching is achieved.

Essentially this is the most seamless method of ensuring users are adequately protected at the correct filtering levels within CCN.

Why are we doing this?

1. The current transparent proxy will not be available from end July 2007.
2. The transparent proxy hardware is end of life and may well contribute to poor performance in the medium term.
3. If you are still setup to use transparent proxy after the above date, then you will not be able to gain access to the Internet for WWW browsing after this time.
4. We are using PAC files as it means there is a single method of configuring all devices, which still allows them to be used no matter what network they connect on.
5. Network-based PAC files are centrally administered, and easy to update.
6. Updates are seamlessly updated to end users
7. The PAC standard has support for load balancing and failover. These features can make your browsing experience faster and more reliable. This is not possible with a manual configuration.
8. If schools purchase a [local caching server](#) the same PAC files are used.
9. Any changes to centralised resources can easily be entered into the PAC files with no detrimental effect on the end device; therefore no reconfiguration needs to be made on PCs or laptops.

Limitations

Internet Explorer uses something called Automatic Proxy Result Cache (APR Cache) which has occasionally caused problems when using PAC files. The workaround is included in the content of this document

What systems are supported?

Whilst Education ICT Service only supports Internet Explorer, Proxy Auto-Configuration is an open standard originally developed by Netscape.

The instructions in this document are only intended for use on Windows networks using Internet Explorer although the settings illustrated at the [beginning](#) of this document show the PAC file addresses which can be used on any system supporting PAC files.

How do I do it?

We will show two main methods for configuring your browser settings.

The process for standalone devices need only be carried out once, although if you have multiple users accessing the same device, you will need to ensure you login as each individual user and run the script to ensure settings are correct.

SOLUS Update

When attempting to run, SOLUS will pause at "Checking for updates - please wait" before giving the error:

"Unable to contact the CES network. Please check your proxy settings".

- Click "close".
- On the following screen select "I have a proxy server and I am unable to use SOLUS to upgrade SIMS" (third option)
- Select : "I need to specify a different proxy server name" (top option).
- In the box below enter "c99.cache.e2bn.org:8084" –

Secondary schools will have to set the address of their cache, replacing c99 for the school's own DB code.

Standalone

A standalone device is one which never connects to a Windows domain. For example, smaller establishments such as CIMA may never connect their schools' facing devices to a Windows domain.

This section will therefore instruct you on how to configure each end user device separately.

The next section entitled [Windows Network](#) will instruct on how to configure all of your networked systems in one go.

This section of the document serves two purposes:

1. To give precise instructions on how to configure your standalone device
2. To give an overview of the way the PAC system is configured within Cambridgeshire

Instructions

Your browser needs to be configured depending upon the type of end user you are. The "type" of user will correspond to one of the 4 Protex levels, i.e. Primary, Middle, Secondary, Staff.

To make this easy, we have provided a script available online to Staff members of any educational establishment.

You will need to login to Digitalbrain to gain access to this resource.

To do this now you need to be in front of the device you wish to configure.

If your device is used by both members of Staff and Pupils, you will need to run through this section for each user account configured on the device. So, for example if I, Mark Smithson, a Hearing Support Teacher, am the principle user of the device, but it is also used unsupervised by Pupils at a Primary school level, I need to run through it with the device logged in as me, then as the Pupil.

The script, when run, will prompt for the level of filtering required

Note please this script will only work on Windows devices running Internet Explorer. Manual configuration instructions are at the end of this section.

Click here to download and run the config tool.

<http://c9s.e2bn.net/e2bn/leas/c99/schools/c9s/web/private/files/internetexp/proxy-auto.exe>

Clicking on this link will start a script which will walk you through the configuration of your browser.

*If you have problems reaching this URL
please visit <http://ccceducation.net> and
search for resource id: 3673*

Depending on the version of your browser, you may be prompted to Open or Run the file, ensure you accept this and the file will run for you.

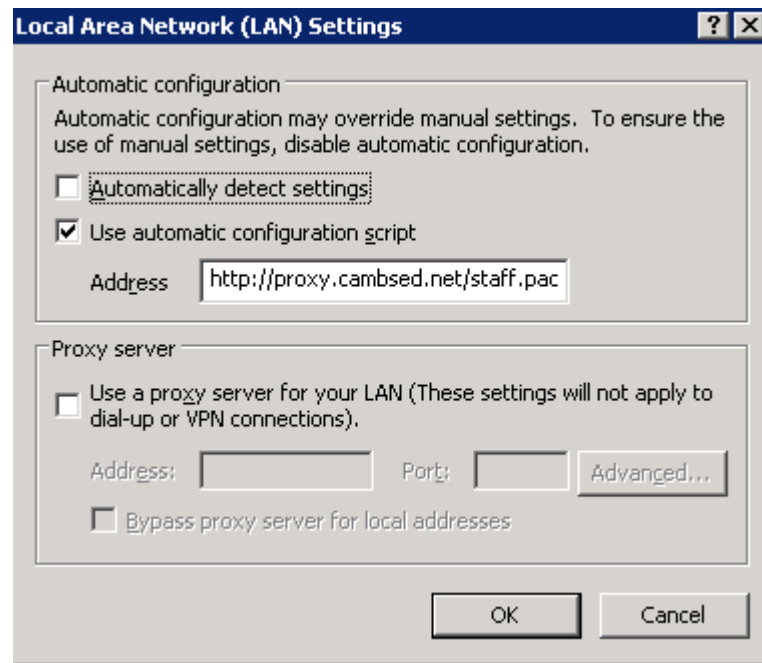
This will now have set up your Internet Explorer browser to use the hosted autoconfiguration file.

You need not take any further action.

Manual Process

If the automatic process fails please follow these manual instructions:

1. Open Internet Explorer
2. Go to Tools, Internet Options, Connections
3. Click on LAN Settings
4. Fill in the dialog box as per the following screenshot:



Note: the only part of the string you need to change is the “staff.pac” part which should be changed according to the type of user logging in to the device; according to the following list:

staff.pac
secondary.pac
middle.pac
primary.pac

5. Click OK
6. Click OK again to return to Internet Explorer.

Windows Network

This section of the document is intended for Systems Administrators only.

Prerequisites:
Windows 2003 Server with [Group Policy Management Console](#) installed

The two subsections here should give enough information to allow you to either:

1. Import pre-created Group Policy Objects (GPO)
2. Manually create GPOs

Import pre-created Group Policy Objects (GPO)

This subsection gives detailed instructions on how to import and test relevant Group Policy objects which you can then link to Organisational Units within your Active Directory infrastructure.

Download the ImportToolset

This Toolset contains predefined Group Policy Objects which you can then link to chosen organisational units within your Active Directory infrastructure.

If you are concerned about the policies being created please check the Manual Process section below which shows exactly what is being configured within these three group policies

The Toolset can be downloaded from [HERE](#)

*Note: If you cannot access the hyperlink above, go to <http://ccceducation.net> and search for resource id: **3751***

Download and run this file on your Server. You can then double-click on this file to extract and create the Group Policy objects.

The utility will create a temporary folder, run through the creation of the Group Policy objects, and delete any temporary files created.

Note this applet will extract and create Group Policy Objects but will NOT make any changes to your setup – no links will be made to the GPOs at this stage.

If you now go into Group Policy Management console you will see you have 3 additional policies which you can then link to the relevant Organisational Units in your Active Directory.

Manual Process

The manual process is a case of configuring a group policy for each level of filtering you require in your school as follows:

User Configuration (Enabled)

Windows Settings

Internet Explorer Maintenance

Connection/Automatic Browser Configuration

Policy	Setting
Automatically detect configuration settings	Enabled
Automatic Browser Configuration	Enabled
Auto-proxy URL (.JS, .JVS, or .PAC file)	http://proxy.cambsed.net/ staff.pac

Administrative Templates

Windows Components/Internet Explorer

Policy	Setting
Disable caching of Auto-Proxy scripts	Enabled

Note: The only change per filtering level is the red highlighted “staff.pac” which should be replaced with the appropriate level from the following list:

staff.pac
secondary.pac
middle.pac
primary.pac

Important Note:

Our advice on administrative users based in the built-in Users container in Active Directory is that NO GROUP POLICY should be assigned. This reduces the likelihood of misconfigured GPOs causing accessibility problems for administrators on your network. Therefore any Web proxy or autoconfiguration settings required for any server should be manually applied through your Browser, i.e. Internet Explorer.