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1 Introduction

To ensure optimal performance from the NHS e-Referral Service (e-RS), it is important that users have the correct IT infrastructure in place. The purpose of this document is to provide a consolidated set of instructions/guidelines relating to e-RS installation, performance and troubleshooting.

This document contains the following sections:

- **Desktop Setup** – how to configure desktop PCs to enable optimum access to the NHS e-Referral Service
- **Connection Troubleshooting** - a checklist to identify and correct problems with the local configuration settings that may be preventing connectivity to the NHS e-Referral Service.

Any subsequent updates to this Technical Installation and Troubleshooting guidance found on e-RS website within the Document Library

Please note that the definitive information relating to the Identity Agent installation process is available at [http://nww.hscic.gov.uk/dir/downloads](http://nww.hscic.gov.uk/dir/downloads)

2 Desktop setup: requirements and configuration

To successfully use the NHS e-Referral Service application, the following installation and configuration steps should be followed:

**Step 1: Log onto a Windows PC**

The NHS e-Referral Service should only be run on a Windows PC with the latest supported operating system (currently Windows 7 or Windows 10). The e-RS application may work on earlier versions of Windows (e.g. Windows XP), but these do not meet the minimum security and support requirements, specified by NHS Digital.

To set up the NHS e-Referral Service application, you will need an account on the PC that has local administrator privileges. This may require assistance from your IT support team. To access and use e-RS needs only a standard PC user account with N3/HSCN internet access.

**Step 2: Ensure PC meets minimum hardware requirements**

The NHS e-Referral Service is a web-based application that does not have a minimum specification hardware requirement, over and above that of the Windows operating system on which it is running. The more memory (RAM) that a system has, the more applications/data it can load at the same time. Additional memory may therefore be required if running multiple applications on the same PC and users of the e-RS application should work with their local IT providers and support staff to ensure their memory is adequate, especially if experiencing any slow response times.
The e-Referral Service is dependent on an N3/HSCN (Health and Social Care Network) connection. More info on HSCN can be found here:

https://digital.nhs.uk/services/health-and-social-care-network

Users should work with their suppliers to ensure that the N3/HSCN network provision is optimised for their needs, as this will vary between different sites.

**Step 3: Ensure PC meets browser requirements**

Although access to e-RS may be possible using other browsers (for example Internet Explorer 8, 9 and 10), use of the following browsers is recommended, as they have been tested to ensure that performance and behaviour are optimised:

- Microsoft Internet Explorer 11
- Google Chrome (latest)

NB: Ensure that Internet Explorer is **not** set to compatibility mode (see Step 11: below):

**Step 4: Ensure PC meets minimum Acrobat Reader requirements**

- Adobe Acrobat Reader 9 (or later)

**Step 5: Connect Smart Card reader and install driver if required**

**Step 6: Install NHS Identity Agent**


- The NHS e-Referral Service is compatible with all supported versions of the Identity Agent (version 10.00.05a onwards), so, unless local policy dictates otherwise, it is recommended that the latest version of the Identity Agent is installed on the end-user device.
- Installation instructions are provided via the link above, along with detailed troubleshooting guides.
- For any IA Client issues/questions that cannot be resolved via these sources, please contact the NHS Digital Deployment Issue Resolution Team at dir@hscic.gov.uk
- NB: Local Service Provider (LSP) clients should approach their LSP for the correct version of the IA Client and should not use the versions provided here unless recommended by the LSP

**Step 7: Install Chrome Extension if required**

If intending to use the Google Chrome browser, follow the instructions found at [http://nww.hscic.gov.uk/dir/downloads/chrome-extension/](http://nww.hscic.gov.uk/dir/downloads/chrome-extension/).

Note that you are likely to require local administrator privileges on the PC in order to make the necessary changes.

Google Chrome versions 44 or lower are not supported.
Step 8: Manually reboot PC

Step 9: Verify that the local firewall configuration allows access to e-RS

- Firewalls must allow TCP traffic to 155.231.80.10 on ports 443 and 80.

Step 10: Verify that the NHS e-Referral Service URL is in the “Trusted sites” security zone

The NHS e-Referral Service has been designed and tested to run in the “Trusted sites” zone within Internet Explorer, using “Low” security settings for that zone. This can be configured either manually, or through desktop management software, and is the responsibility of local IT support teams.

Both HTTP and HTTPS traffic must be included in the “Trusted sites” zone.

To verify that the NHS e-Referral Service is correctly configured in the “Trusted sites” zone, navigate to the NHS e-Referral Service URL (https://nww.ebs.ncrs.nhs.uk) – and ensure that Zone is displayed as “Trusted sites” (as shown on Page 6); you can view this in Internet Explorer 11 by right clicking on the page and selecting Properties, or alternatively pressing the Alt and F keys together, releasing, then pressing the R key. This is illustrated in the following screen shots:

![Internet Options](image1.png)

![Properties](image2.png)

Should the zone display “Unknown Zone (Mixed)” (as below) this is because only HTTP or HTTPS traffic (but not both) has been configured to be in the “Trusted sites” zone.
When manually configuring the NHS e-Referral Service URL to be in the Trusted sites zone ensure that the “Require server verification…” checkbox is unchecked

IT administrators can add the NHS e-Referral Service URL to the Trusted Sites zone using a simple registry entry:

```
[HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Internet Settings\ZoneMap\Domains\nhs.uk\nww.ebs.ncrs\] "*"=dword:00000002
```

**Step 11: Check Browser Compatibility mode is not set**

Compatibility View settings in Internet Explorer are maintained by selecting the **Compatibility View settings** command in the **Tools** menu. Note that if the menu bar is not shown by default, it can be made visible by pressing the **Alt** key.

Ensure that the NHS e-Referral Service domain or any parent domain (such as ncrs.nhs.uk) is **not listed** in the “Websites you’ve added to Compatibility View” section.

**Note** – Compatibility View settings can be set by Group Policy, so may need to be revised by IT administrators.
3 Connection/Installation Troubleshooting

To identify the cause of problems experienced trying to access the NHS e-Referral Service, please complete checks 1-4 below.

If any of the checkpoints fail, then follow the guidance within the relevant subheading to resolve the problem. If you run through all the checks and have ruled out all potential local issues and are still unable to access the NHS e-Referral Service, please call the NHS Digital National Service Desk on: 08453 665 665

3.1 Check 1: Insert a smart card and expect to be prompted for a passcode

After inserting a smartcard, the Identity Agent software should immediately become active with the blue and white icon bottom right of the screen flashing. After a few seconds you should be presented with a prompt to enter your passcode, which will look similar to one of the following (depending on which version of Identity Agent is installed):

-if successful go to Check 2
Symptom 1. Nothing Happens

**Resolution 1. Check the card has been inserted correctly**

Most card readers require the card to be inserted with the picture facing up and visible when inserted. One exception is the Fujitsu Siemens card reader keyboard which requires the card to be inserted facing down.

**Resolution 2. Check the physical connections to the PC**

The cable should be securely connected to the smart card reader and at the other end a USB port in the PC. If using a USB hub, check that there is power (if required) and that the hub in turn is connected to the PC.

**Resolution 3. Check the USB port is working**

When a USB device is plugged in, the PC should check for valid drivers, test the port with a USB drive or other device. If the port is not functioning check within device manager to ensure it is installed.

**Resolution 4. Check the network availability**

Test that the PC has Internet access and can access NHS web sites such as https://nww.ebs.ncrs.nhs.uk/ers-help/ If not speak to the local IT administrator to get valid IP details for the PC. Ensure network availability is available before proceeding.

**Resolution 5. Check the Identity Agent software is active**

Gem software

When the card is inserted the GEM icon should start flashing blue and if the mouse pointer is placed on it the pop-up window should describe it as GemAuthenticate: WORKING, as shown in the following example:

![GemAuthenticate: WORKING](image)

If this does not happen right click on the icon and select ‘quit’ then restart the Gemplus application from the start menu and begin again.

HSCIC Identity Agent software

If you have HSCIC Identity Agent v2 (or later) installed, then the icon in the system tray will look as follows:

![HSCIC Identity Agent 2.0](image)
By right clicking on the icon, you will be able to get the Status of the Identity Agent or to Exit (quit the application), as shown below:

If you had quit the Identity Agent application, it can be started via the Windows Start button by navigating to the Identity Agent icon:

**Symptom 2. Gemplus brings up a “Connection failed” error**

When the card is inserted, a message box (see examples below) appears in the bottom right saying you cannot connect to the server.
Resolution: Check the authentication page

Open a browser window and navigate to: https://gas.national.ncrs.nhs.uk/login/authactivate you should see an XML page similar to the examples below.

If not, check the local network settings to ensure there is connectivity to the URL above.

Further troubleshooting information on this issue can be found in the Identity Agent documentation using the link below (HSCN/N3 access required)


```xml
<?xml version="1.0" encoding="UTF-8" ?>
<!DOCTYPE USER (View Source for full doctype... )>

<gpOBJECT>
   <gpPARAM name="error_code">7601</gpPARAM>
   <gpPARAM name="server_ip">172.16.132.67</gpPARAM>
   <gpPARAM name="error_message">[XML] Invalid input request.</gpPARAM>
   <gpPARAM name="error_reporter">com.gemplus.gemauth.services.servlets.AuthActivate</gpPARAM>
   <gpPARAM name="log_session_id">-INTERNAL-</gpPARAM>
</gpOBJECT>
```
Symptom 3. Smart card software brings up a “No card reader” error

When the card is inserted, a message-box appears in the bottom right saying there is no smartcard reader available. An example is provided here for the Gemplus software. The user PC, however, may have a different type of smart card software installed and so the exact message may differ.

**Resolution:** Check the card reader is connected and working correctly.

Please complete the following checks to verify the card reader is working correctly:

- Check the card has been inserted correctly
- Check the physical connections to the PC
- Check the USB port is working

### 3.2 Check 2: Is logging onto the Spine successful?

After entering a valid passcode and successful authentication by the identity agent software, a role selection pop-up screen will be displayed. Depending on the authorised smart card roles, there will be one or more available for the card holder to choose
If there is only one role available, the Gemplus icon (see below) should show a steady blue highlight and the pop up, which appears when the mouse pointer is placed over the icon, should describe it as “GemAuthenticate : Active” (see below).

A pop-up window confirming your name and authorized role should be visible for a few seconds:

➤ If successful go to Check 3

Symptom 1. Login fails

Resolution: Check the card is valid

Confirm with another PC that the card you are using has been correctly configured and will give access to the Spine.
3.3 Check 3: Does the NHS e-Referral role selection page appear?

If the card used has multiple business function roles, then the NHS e-Referral Service displays a drop-down list of possible login roles, for the user to choose from:

Alternatively, if the user has only one business function, the system will automatically log in to the user’s homepage with the patient selection screen displayed:

- If successful go to Check 4

Symptom 1. - A blank screen is displayed

Resolution: Ensure ‘Enable Meta Refresh’ is set

Ensure that the ‘Allow Meta Refresh’ variable in the trusted sites’ security settings is set to “enable”. This should be set to “enable” if the Trusted sites’ security level is set to the default (Low) level.

Symptom 2. - A “Page Cannot be Displayed” Error occurs

Resolution: Check Network availability

Please check network availability as covered in Resolution 4 above on page 89. Network availability should be confirmed before proceeding.

Symptom 3. - The NHS e-Referral Service window “hangs”

The NHS e-Referral Service starts to load displaying the text “Checking Authentication please wait…” but does not proceed to a login screen. The screen will look similar to this:
Resolution 1.  **Check that the NHS e-Referral Service ActiveX control is installed**

The NHS e-Referral Service uses an ActiveX control as the primary mechanism for logon in Internet Explorer. When the Internet Explorer Add-on window pops up, check that the Name (of the ActiveX control) is `IdentityAgent.dll` and that the Publisher is BJSS Ltd. Click on the Install button to install the ActiveX control. Note that administrator privileges are required to complete this installation.

Resolution 2.  **Resolution Check 2 - Check Chrome Extension is installed**

If using Google Chrome browser, ensure that Chrome Extension has been installed (see Installation Step 7: above).

Resolution 3.  **Check if the PC is running through a proxy server**

Some proxy servers can be configured to deny access to JavaScripts. Check the internet settings to see if a proxy server is being used and if so ensure that the NHS e-Referral Service website has been set up as an exclusion, either explicitly (as in the screenshot on the left) or by use of wildcards (*.nhs.uk)

Note: Local support may be preventing users bypassing the proxy server. If in doubt, please contact your local administrator

Resolution 4.  **Check that Windows updates are installed**

It is possible the Windows hotfixes are not up to the required level. Go to [http://windowsupdate.microsoft.com](http://windowsupdate.microsoft.com) to download all the latest critical updates.
Resolution 5. Register mshtml.dll

It is possible that the version of mshtml.dll on the machine does not match its COM Interface registry entries, which results in the Checking Authentication page hanging. Re-registering this dll may resolve this login issue. To re-register the dll, type the following line into the command prompt:

“regsvr32 c:\windows\system32\mshtml.dll”

Note that local administrator privileges are required to successfully execute this command.

Symptom 4. The NHS e-Referral Service displays an error in the centre of the screen

After the checking for authentication dialogue, the following error is returned:

You do not have permission to login to this resource. Please contact your system administrator.

Resolution 1. Check that the NHS e-Referral Service ActiveX control is installed

The NHS e-Referral Service uses an ActiveX control as the primary mechanism for logon. Follow the instructions in Resolution 1 above (on page 14) to ensure that the NHS e-Referral Service ActiveX Control is installed and operating correctly.

Resolution 2. Check the environment settings

Check the Environment variable by right clicking "My computer" or “Computer” or “This PC” (depending on the Windows version on your PC), then select "System Properties" or “Properties”, then “Advanced System Settings” (if running Windows 7 or Windows 10), then "Environment Variables".

Ensure the "Path" contains “C:\TicketAPI” or “C:\Program Files\Gemplus\GAC” (for early versions of the Identity Agent) or “C:\Program Files\Gemalto\GAC” or “C:\Program Files\Gemalto\Classic Client\bin” (for recent versions of the Identity Agent).

If the Path does not contain any of the above directories, reinstall the card reader software (See installation Step 5: above).

Resolution 3. Check the directory

Check that the directory C:\TicketAPI or relevant GAC directory (described in the previous Resolution section) is present and that the TicketApiDll.dll file is present within it. Note that if a Windows Search is used, multiple copies of TicketApiDll.dll may be found. If so, ensure that all copies are of the same size and same version. The size and version can be viewed by right clicking on the file, selecting Properties, then selecting the General and Details tabs.

Resolution 4. Check the JAR file

Search for the file name GATicket.jar on the local drive and ensure there is a copy of the file within C:\Program Files\Java\<latest JRE directory>\lib\applet or
C:\Program Files (x86)\HSCIC\Identity Agent directory, and that all other instances are removed.

Resolution 5. Check the location of the TicketApiDll.dll file

See Resolution 3 above on page 15 to verify that the relevant directory is present for the TicketApiDll.dll file, and that the file is present in it.

Complete a search within Windows Explorer to ascertain if there are any other files with the name TicketApiDll.dll. If multiple files are found, ensure they are of the same size and have the same version. If not, delete any older files found with caution.

Note that some GP system suppliers deploy a version of the TicketApiDll.dll file to the network drive. If present the version of this file should be checked (see Resolution 6 below).

Resolution 6. Check the version of the TicketApiDll.dll file

The version of the TicketApiDll.dll file should either be 4.0.0.0 (for Identity Agent 10.x) or 5.0.0.0 (for Identity Agent 11.x) (right-click the file and select Properties from the menu). If you have installed the new HSCIC Identity Agent (v2.0 or later), then the TicketApiDll.dll version will be 1.0.1.0 or later, as shown here:
Symptom 5. Earlier versions of the TicketApiDll.dll file (specifically versions earlier than 3.9.1.3) are not compatible with the NHS e-Referral Service ActiveX control and are no longer supported.

If you find that this is the case, then the recommended approach is to reinstall the Identity Agent to ensure the correct versions are installed rather than deleting or replacing manually. The NHS e-Referral Service displays a “Login Failed” screen

After the checking for authentication dialogue, the following error is returned: *The system is unable to process at this time. To access again click “log in”:*

![Login Failed Screen](image)

**Resolution:**  **Check the NHS e-Referral Service Business Functions**

It is necessary for the NHS e-Referral Service to synchronise with the Spine Directory Service (SDS) to pick up any new users. This synchronisation can take up to an hour. Therefore, a user will need to allow for this period to elapse *after* their RA Manager has issued their smart card, prior to logging on to the NHS e-Referral Service for the first time. In addition, the user's details will only be picked up from SDS if they have a valid role profile. A legitimate role profile consists of:

- An applicable Organisation
- An NHS e-Referral Service Business Function that is valid for the organisation type

If this error is displayed, the user should go back to their RA Manager to verify their NHS e-Referral Service Business Function. A list of valid Business Functions for each organisation type is available at:


A summary has also been provided in Appendix 3.
3.4 Check 4: Does the NHS e-Referral Service homepage appear?

The NHS e-Referral Service has successfully loaded and a screen similar to the one shown below is displayed, depending on the role profile of the user:

![NHS e-Referral Service homepage](image)

**Symptom 1. Home Page does not display**

If the home page does not display, you may see a screen similar to the following:
Resolution 1. Try Logging in Again

This issue can be caused if the NHS e-Referral Service experiences a problem with the token. Please allow a few minutes for this information to refresh, and then press the Login button which will return you to the role profile screen. Try logging in again.

Resolution 2. Re-authenticate to the Spine

This issue can be caused if the Spine session has expired (tokens are only valid for a period of 10 hours from initial logon). Remove the smartcard from the reader and then re-insert, enter login credentials and then log in to the NHS e-Referral Service again.

Resolution 3. Check for valid NHS e-Referral Service Roles

Ensure that at least one role on the user’s card is valid for access to the NHS e-Referral Service. Please check with your RA Manager that this is the case. A list of valid business functions for use in the NHS e-Referral Service is available at https://digital.nhs.uk/services/registration-authorities-and-smartcards.

A summary has also been provided in Appendix 3 below.

Symptom 2. - Home Page is blank

If the Home Page is blank you may see a screen similar to the following:
Resolution 1.  **Ensure the NHS e-Referral Service application is in the “Trusted Sites” zone**

When the NHS e-Referral Service application is running, the zone it belongs to is shown in the bottom right corner of Internet Explorer. If the NHS e-Referral Service is not running in the “Trusted Sites” zone, then the NHS e-Referral Service URL (nww.ebs.ncrs.nhs.uk) should be added to the “Trusted sites” zone either manually or via local IT desktop management software. (Both HTTP and HTTPS traffic from the NHS e-Referral Service should be included in the “Trusted sites” zone – see installation Step 10: above)

Resolution 2.  **Ensure the “Trusted sites” zone allows for navigation of sub-frames across domains**

The Trusted Sites zone should be set to “Low” security, which allows for navigation of sub-frames across domains by default. Setting the security level to Low will enable the “Navigate sub-frames across different domains” security setting.
4 Performance

To ensure the NHS e-Referral Service is running at its optimum performance please complete checks 1 to 8 below. These should be reviewed and implemented only if in line with local IT policy and by qualified IT support staff.

4.1 Check 1: Check that the NHS e-Referral Service ActiveX control is installed

Follow the instructions to run the NHS e-Referral Service Browser Configuration Check utility to verify that the NHS e-Referral Service ActiveX Control is installed (see Check 3, Symptom 3, Resolution 1 on page 14).

4.2 Check 2: Check all national updates have been put in place

Check that the latest version of the IA client and any other required national systems are up to the latest levels. Details can be found at:

https://digital.nhs.uk/article/311/Registration-Authorities-and-Smartcards/

4.3 Check 3: Check with your network support team that the site has access to N3 or HSCN network and that the NHS e-Referral Service users have connectivity to it

Note: It is possible to use NHSnet / N2 to access the NHS e-Referral Service however it should be remembered that generally bandwidths deployed as part of previous WAN infrastructure project are considerably lower than the bandwidths used for N3. If using NHSnet, performance checks as per Check 1 must be undertaken.

Check with your network support team that any firewall changes needed for correct NHS e-Referral Service operation have been configured using the appropriate NHS Digital firewall configuration document, the document can be obtained by making a request on the following email address: ncrsfirewalladmin@nhs.net

4.4 Check 4: Check your local network

Check with your network support team for any part of the LAN infrastructure that may potentially be causing network performance issues i.e. over-subscribed LANs / VLANs, Caching engines, Content checkers and Firewalls.

4.5 Check 5: Check your PC is fully up to date with hotfixes

Connect to the web site http://windowsupdate.microsoft.com and follow the instructions to check for any “critical” or “Security” updates. This will ensure that your computer is safe from all known security breaches and that it runs efficiently.

Note: Some updates only appear once others have been installed so it is important to keep running the check until it returns no updates required.
Note: Windows can be set up within Control Panel to automatically install “Critical” updates; however, this may go against recommendations from your clinical system supplier so please check before implementing.

4.6 Check 6: Implement any appropriate performance improvements on your PC

Review each of the following changes and if appropriate apply them to the PC

**Resolution 1. Remove indexing from hard drives**

Indexing provides the function of enabling the user to search for words or phrases within documents. If this functionality is not required, it can be turned off from the hard drive properties page:

![Drive C Properties](image)

Remove the tick from “Allow files on this drive to have contents indexed in addition to file properties” and when prompted select to make the change for all subfolders.
Resolution 2. Ensure Virtual Memory settings are efficient

Note: Sensitive PC configuration (like the one described in this section) should be carried out by a suitably qualified IT staff, as any mistakes could be detrimental to the overall computer performance.

Virtual Memory files are used to improve the efficiency of PC systems by using the hard drive as extra memory. The settings are for a minimum (initial) and maximum size. You should let Windows manage Virtual Memory automatically. However, if you wish to set custom minimum (initial) and maximum sizes, then as a rule, the recommended minimum (initial) size is 1.5 times the size of the amount of RAM installed on your PC, and the maximum size should be set to 3 or 4 times the size of your RAM. If the minimum is set below 1.5 times the size of RAM, then the page file will be continuously resizing and thus causing a performance overhead and fragmentation on the disk.

To change the size of Virtual Memory go to Control Panel > System and Security > System > Advanced System Settings. Then, select the Advanced tab and under Performance section click on the Settings button. Then again go to the Advanced tab and under the Virtual Memory section, click on the Change button.

Note: It is important that the “Set” button is clicked following any changes or they will not be implemented.
Resolution 3.  Defragment the Hard Drive

Over time the arrangement of the files on the hard drive becomes increasingly inefficient. By running the de-fragment utility periodically this can be corrected. The utility can be found in the tools tab of the hard drive properties page.

Note: The utility will analyse the drive first to let you know if it is required.

Resolution 4.  Identify any redundant applications

Check for any applications running on the PC which are not required. This can be checked within Control Panel > Programs > Programs and Features.

Common applications that can be removed are:

- Instant messenger programs
- News alert tickers
- Toolbar utilities such as weather updates
- Internet shopping plug-ins

Resolution 5.  Check for Spyware

Malicious software such as spyware can be loaded onto a PC without the user being aware. Tools can be downloaded to check for and remove such software and should be configured to run periodically.

A number of commercial and shareware products are available on the market for this purpose. Local IT policy may specify a preferred product.
Resolution 6. Check Anti-virus settings

Anti-virus software is often configured to periodically check the local hard drive for viruses. While this check is run the performance of the PC can deteriorate drastically. Check any running anti-virus software for times and reschedule if appropriate for a time when the PC will be switched on but not being used (e.g. between clinics or at lunchtime).

Resolution 7. Disable themes and visual effects

Remove any animated mouse pointers and desktop wallpapers.

Resolution 8. Disable last access timestamp

Whenever Windows reads a file it stamps it with the time and date of the access. If this functionality is not required, it can be removed using the following command from the Command Prompt window:

```
FSUTIL behavior set disablelastaccess 1
```

Note: you can open the Command Prompt window by pressing together the Windows key and the ‘R’ key. When the Run window opens, type cmd.exe in the Open textbox and click on OK.

4.7 Check 7: Implement any appropriate performance improvements to Internet Explorer

Open Internet Explorer properties from the tools menu and review the following changes, implementing them if appropriate.

Resolution 1. Bypass any proxy servers for the NHS e-Referral Service access

From the “Connections” tab select “LAN Settings”. From the resulting window ensure that Automatically detect settings is not ticked.
If you have a tick in the box to use a proxy server click on the “Advanced” button. In the exceptions section of the window add *.nhs.uk
Resolution 2. **Increase the number of concurrent elements IE can download**

Within the Registry Editor add the following entries:

Hive: HKEY_CURRENT_USER

Key: Software\Microsoft\Windows\CurrentVersion\Internet Settings Name: MaxConnectionsPerServer

Type: REG_DWORD

Value: 20

Name: MaxConnectionsPer1_0Server Type: REG_DWORD

Value: 20
Appendix 1.  Example Batch File Content for Trusted Sites Fix

Below is suggested content for a batch file that can be used to add the NHS e-Referral Service application as a trusted site.

```plaintext
reg add "HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Internet Settings\ZoneMap\Domains\nhs.uk" /f

reg add "HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Internet Settings\ZoneMap\Domains\nhs.uk\ww.ebs.ncrs" /f

reg add "HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Internet Settings\ZoneMap\Domains\nhs.uk\portal.national.ncrs" /f

reg add "HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Internet Settings\ZoneMap\Domains\nhs.uk\ww.ebs.ncrs" /v * /t REG_DWORD /D 2 /f

reg add "HKEY_LOCAL_MACHINE\SOFTWARE\Microsoft\Windows\CurrentVersion\Internet Settings\ZoneMap\Domains\nhs.uk\portal.national.ncrs" /v https /t REG_DWORD /D 2 /f pause
```
Appendix 2. Registry Changes re pop-up blockers.

The following are a list of registry changes to enable access to the NHS e-Referral Service if popup blockers are installed.

Execute the commands exactly as written below from the “run” option or command prompt for the relevant software:

4.8 Google

```
reg add HKEY_CURRENT_USER\Software\Google\NavClient\1.1\whitelist /f
reg add HKEY_CURRENT_USER\Software\Google\NavClient\1.1\whitelist /v allow2
   /t REG_SZ /d "|nww.ebs.ncrs.nhs.uk|portal.national.ncrs.nhs.uk|" /f
```

4.9 Yahoo

```
reg add HKEY_CURRENT_USER\Software\Yahoo\PUB\Allow /f
reg add HKEY_CURRENT_USER\Software\Yahoo\PUB\Allow /v 0 /t REG_SZ /d "nww.ebs.ncrs.nhs.uk" /f
reg add HKEY_CURRENT_USER\Software\Yahoo\PUB\Allow /v 1 /t REG_SZ /d "portal.national.ncrs.nhs.uk" /f
```

4.10 MSN

```
reg add "HKEY_CURRENT_USER\Software\Microsoft\MSN Apps\MSN Popup Blocker\Allow" /f
reg add "HKEY_CURRENT_USER\Software\Microsoft\MSN Apps\MSN Popup Blocker\Allow" /v "nww.ebs.ncrs.nhs.uk" /t REG_BINARY /f
reg add "HKEY_CURRENT_USER\Software\Microsoft\MSN Apps\MSN Popup Blocker\Allow" /v "portal.national.ncrs.nhs.uk" /t REG_BINARY /f
```
Appendix 3. Valid Roles By Organisation Type

The roles for an individual can be checked by performing a person search on https://uim.national.ncrs.nhs.uk/urswebapp. You will require a smartcard to access this site.

Instructions for how to use the Spine User Directory within the portal are detailed at http://nww.hscic.gov.uk/demographics/portalaccess

<table>
<thead>
<tr>
<th>Code</th>
<th>NHS e-Referral Service Name</th>
<th>SDS/RBAC/NHS Spine Portal Name</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>GP/Dental Practice:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1101</td>
<td>Referring Clinician</td>
<td>(Initiate Patient Referral)</td>
</tr>
<tr>
<td>B1102</td>
<td>Referring Clinician Admin</td>
<td>(Proxy Initiate Patient Referral)</td>
</tr>
<tr>
<td>B1103</td>
<td>Referring Admin</td>
<td>(Manage Appointment Bookings)</td>
</tr>
<tr>
<td>B1130</td>
<td>Information Analyst</td>
<td>(Perform Reports)</td>
</tr>
<tr>
<td><strong>If the Practice also provides services, the following roles may also be valid:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1107</td>
<td>Service Definer</td>
<td>(Manage Service Definition)</td>
</tr>
<tr>
<td>B1110</td>
<td>Service Provider Clinician</td>
<td>(Manage Service Referrals &amp; Bookings)</td>
</tr>
<tr>
<td>B1115</td>
<td>Service Provider Clinician Admin</td>
<td>(Proxy Manage Service Referrals &amp; Bookings)</td>
</tr>
<tr>
<td>B1120</td>
<td>Service Provider Admin</td>
<td>(Manage Service Bookings)</td>
</tr>
<tr>
<td>B1140</td>
<td>Booking Manager</td>
<td>(Manage Indirect Bookings)</td>
</tr>
<tr>
<td><strong>Clinical Commissioning Group or Area Team</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B1106</td>
<td>Commissioner</td>
<td>(Manage Service Commissioning)</td>
</tr>
<tr>
<td>B1107</td>
<td>Service Definer</td>
<td>(Manage Service Definition)</td>
</tr>
<tr>
<td>Code</td>
<td>NHS e-Referral Service Name</td>
<td>SDS/RBAC/NHS Spine Portal Name</td>
</tr>
<tr>
<td>--------</td>
<td>-----------------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>B1108</td>
<td>Referrer Rights Manager</td>
<td>(Manage Service Selection Booking Guidance)</td>
</tr>
<tr>
<td>B1110</td>
<td>Service Provider Clinician</td>
<td>(Manage Service Referrals &amp; Bookings)</td>
</tr>
<tr>
<td>B1120</td>
<td>Service Provider Admin</td>
<td>(Manage Service Bookings)</td>
</tr>
<tr>
<td>B1130</td>
<td>Information Analyst</td>
<td>(Perform Reports)</td>
</tr>
<tr>
<td>B1140</td>
<td>Booking Manager</td>
<td>(Manage Indirect Bookings)</td>
</tr>
</tbody>
</table>

**Any Service Provider Organisation (For example, Acute Trust, Mental Health Trust or Independent Sector Healthcare Provider)**

<table>
<thead>
<tr>
<th>Code</th>
<th>NHS e-Referral Service Name</th>
<th>SDS/RBAC/NHS Spine Portal Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1107</td>
<td>Service Definer</td>
<td>(Manage Service Definition)</td>
</tr>
<tr>
<td>B1110</td>
<td>Service Provider Clinician</td>
<td>(Manage Service Referrals &amp; Bookings)</td>
</tr>
<tr>
<td>B1120</td>
<td>Service Provider Admin</td>
<td>(Manage Service Bookings)</td>
</tr>
<tr>
<td>B1130</td>
<td>Information Analyst</td>
<td>(Perform Reports)</td>
</tr>
<tr>
<td>B1140</td>
<td>Booking Manager</td>
<td>(Manage Indirect Bookings)</td>
</tr>
<tr>
<td>B1145</td>
<td>Additional Requirements manager</td>
<td>(Manage Additional Requirements)</td>
</tr>
</tbody>
</table>

**BMS Call Centre**

<table>
<thead>
<tr>
<th>Code</th>
<th>NHS e-Referral Service Name</th>
<th>SDS/RBAC/NHS Spine Portal Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>B1105</td>
<td>BMS Admin</td>
<td>(Perform Booking Management Service)</td>
</tr>
<tr>
<td>B1130</td>
<td>Information Analyst</td>
<td>(Perform Reports)</td>
</tr>
</tbody>
</table>
Appendix 4. Using Group Policy Editor

Group Policy Editor is a tool for amending settings for all users on a Windows XP PC. The tool is accessed by running the command “gpedit.msc” which brings up the following window:

Settings useful for the NHS e-Referral Service are accessed by navigating to Internet security (see below) and double clicking on “Security Zones and Content Ratings”
From the resultant window Select Import the current security zones and privacy settings and click “Modify Settings” the settings can then be configured as for a single user but will be replicated to all current and new users of the PC.