ELECTRONIC STAFF RECORD

MM-0100 – Organisation Site IT, Printer and Network Infrastructure Readiness

Information classification: RESTRICTED - IBM ESR Programme Staff & NHS ESR Programme Staff and NHS Employing Organisation ESR Users only

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Document Control

1.1 Change Record

Date	Author	Version	Change Reference
10/04/13	Lucy Trotter	V16.0	New Survey results, updated reviewers, JRE Security Settings added to Appendix B.
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12/06/2016	Bryan Wood	V21.0	Minor updates.
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14/07/2017	Bryan Wood	V24.2	Document updated following review.
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01/08/2024	Oluwaseyi Abolarin	V41.1	Quarterly review
14/08/2024	Kacy Marshall	V41.2	Updated ACT approver
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08/12/2025	Oluwaseyi Abolarin	V45.2	Document updated following review
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1.2 Reviewers

Name	Position
Mark Lambert	IBM ESR Development Manager
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1.3 Distribution / Location

Copy No. / Version	Name	Location
1	Library Master	Project Library

1.4 References

Reference	Name	Location

1.5 Glossary

Term	Definition

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2 Basic Desktop PC Software Requirements

2.1 Supported Software Versions

Software recommended when accessing ESR is listed below. The versions listed are those supported by the ESR Programme. The table below is correct as at ESR Release 65 (June 2025). Future scheduled changes to the supported software are listed in section 7. The table contains all of the software recommended to access all aspects of ESR, however not all users will require all of the software if they only access specific parts of ESR (for example, ESR Self Service users, accessing via the internet, do not require the items indicated with an * in the list).

The supported browsers are Edge and Chrome. ESR is accessible via Edge and Chrome and details of how to configure access for the users in your Organisation is in Appendix G Section 14.

Requirement	Supported	Version
Operating System	Microsoft Windows 11	23H2
Internet Browsers	Microsoft Edge ** Chrome	104
Java Runtime Environment (JRE) *	Oracle JRE	1.8.0_4313
Office Software *	Microsoft Office***	2021
Smartcard Reader Software(smartcard users only) *	NHS Identity Agent	2.3
PDF Reader	Adobe PDF Reader	Latest

2.2 Alternative Versions

NHS Organisations that use ESR are responsible for determining the software deployed across their own IT estate. They will need to balance the software requirements of the systems they deploy within their organisation including ESR, against the requirements for IT security and Information Governance. It is recommended that sites use the latest version of JRE to pass the NHS England Cyber Essentials test. Oracle advise that newer versions of the 1.8 codeline of JRE should be backwards compatible, so running a later version than the one that ESR has been tested against should not present an issue.

Where an organisation chooses to run different software versions to those shown above, they are recommended to run at least one “base” workstation on the current supported versions. The base workstation should then be used to replicate any ESR issues before a related support call is logged with the ESR Service Desk. The ESR Support Team will then

work with the organisation to resolve the issue on the base workstation. Once the reason and resolution of the access issue has been identified, the NHS Organisation can make a judgement on how best to deploy any required change.

2.3 Virtualisation / Thin Clients

On the basis Oracle does not currently certify any of their e-Business suite products to run with virtualisation, the ESR supplier and the NHS central team are unable to support this configuration for ESR. Wherever this configuration is used, the ESR supplier will only provide support on condition the fault can be reproduced outside the virtual environment on a PC specification meeting the ESR requirements.

2.4 JRE Licences

In 2019, Oracle introduced licensing arrangements for Java and JRE for users of non Oracle systems which meant that there is a licence fee for Java. However users of systems that Oracle supplies such as ESR (built on the Oracle HRMS e-Business suite) which uses Java are entitled to a free JRE licence and access to any Oracle Java SE Updates. Please see Appendix D section 10.2 for a further explanation of this and how it works.

3 Addressing

A number of addresses are in use to access ESR and related systems. These are listed in the sections below.

3.1 Production

Address	Ports	Description
https://my.esr.nhs.uk	443	Main access route to ESR including Self Service.
https://servicedesk.esr.nhs.uk	443	ESR service desk
https://esrobia.esr.nhs.uk/analytics/saw.dll?bieehome *for data warehouse users.*	443	ESR BI – users of my.esr.nhs.uk addresses no longer require this url.
https://trustedurl.national.ncrs.nhs.uk/	443	For smartcard users only. It is used for connectivity testing.
https://cdn.esr.nhs.uk	443	for accessing cached static files

3.2 Training / Familiarisation

Address	Ports	Description
https://my-epro.esr.nhs.uk	443	EPRO familiarisation environment.
https://my-training.esr.nhs.uk/	N/A You organisation will need to ensure they are allowing connections on HTTPS to my-training.esr.nhs.uk (194.203.48.171) via HSCN.	TPLY sandbox environment for training purposes.

http://my-train.esr.nhs.uk:8064/OA_HTML/AppsLocalLogin.jsp	9064	Forms traffic

3.3 Other Related Addresses

e-Learning content is hosted by multiple suppliers and these can often change. A list of domains used by national e-Learning suppliers is provided at the address below which is updated in line with changes to e-Learning suppliers or the domains that they use to host e-Learning.

https://my.esr.nhs.uk/dashboard/web/esrweb/e-learning-technical-information

3.4 IP Addressing

ESR is visible to HSCN on the subnet 62.130.47.32/27. The recommended security policy below is designed to allow for changes in the IP addressing of the live service, either for administrative/technical reasons or in the event of a switch to the DR system.

Source Address	Destination Address	Destination Port	Notes
Your network(s)	62.130.47.32/27 194.203.48.0/24 194.203.48.99 194.203.48.100	http, https, tcp high ports greater than 1024 (tcp/>1024)	Allows connections from organisation's chosen network(s) to the ESR hosts at the production and DR sites.
62.130.47.32/27 194.203.48.0/24 10.129.117.0/27 10.129.117.128/27	Your ftp server(s)	ftp	Allows ftp connections for delivery of finance interface files (necessary if you receive these files direct).
62.130.47.32/27 194.203.48.0/24	Your SMART devices	tcp/3001, tcp/9100, tcp/9101	Allows connections from SMART servers back to your site. Used only by organisations that use SMART Time & Attendance and Rostering systems.
194.61.248.0/24	Your ftp server(s)	ftp	Allows ftp connections for delivery of finance interface files (necessary if you receive these files direct).

Alternatively if the firewall policy rules recommended by the ESR supplier do not meet local security standards, then a specific set of TCP ports can be opened for ESR environments. A table of the ESR environments with the associated ports required is

provided in section 2, the table is subject to revision and organisations should consult the latest list issued with each version of this document.

The table below includes port numbers for connections for ESR interfaces.

Environment	Usage	Address	TCP Ports
Inbound from ESR Hosts 62.130.47.32/27 and 194.203.48.0/24			
Secure File Transfer (FTPS)	General Ledger & Other Non Core Interfaces	N/A	21 and 20 -100 contiguous ports within 49152-65535
Secure File Transfer (SFTP)	General Ledger & Other Non Core Interfaces	N/A	22 supported only

4 Browser Properties Configuration

4.1 Security

4.1.1 Security Zones

Internet Properties offers four different security zones to run applications through. The zone used is dependent on how you are accessing your site (Internet or Local Intranet) and set up within the zones themselves (Trusted sites & Restricted sites).

Each zone has its own default security level that may need to be adjusted when accessing ESR.

It is recommended that ESR is run through the 'Trusted Sites' zone, with a 'Medium' Security Setting.

This can be achieved by following the steps below:

Step	Description
1	Type **internet options** in the search box on taskbar and choose **Internet Options** -> Internet Options -> Security tab -> Trusted Sites icon
2	Set the 'Security Level for this Zone' to 'Medium' if it is not set already
3	Select Tools -> Internet Options -> Security tab -> Trusted Sites icon -> Sites button.
4	In the 'Add this Web site to the zone:' field, enter the address for ESR as detailed in section 2.
5	Repeat the above step for each address used

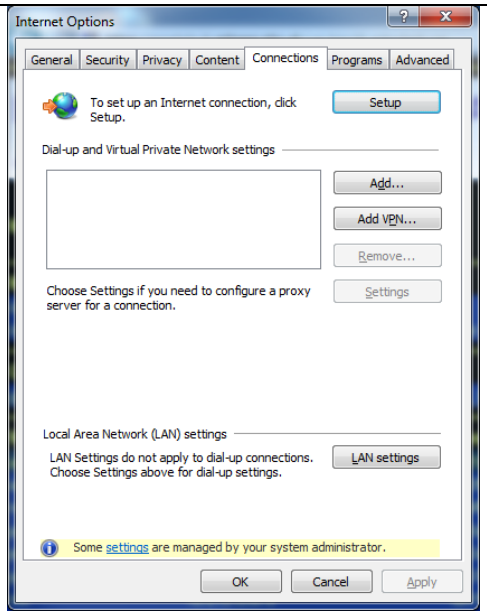
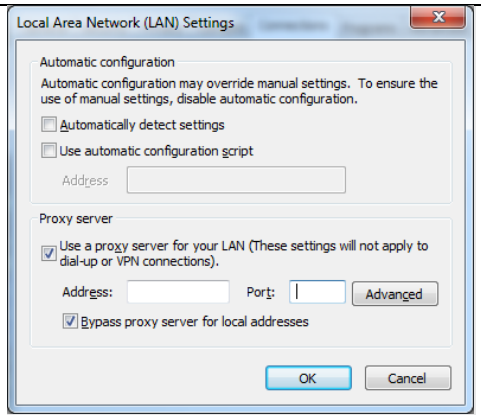
4.2 Popup windows

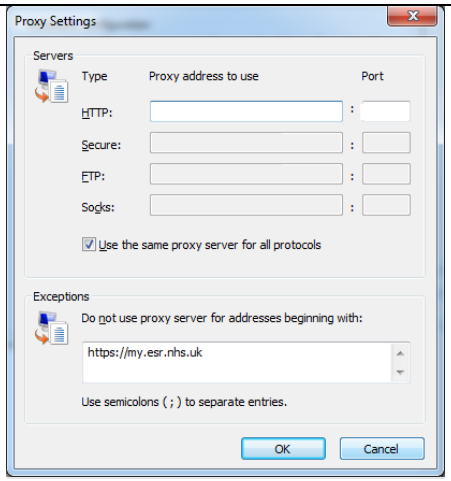
ESR uses popup windows in a number of areas, therefore the popup blocker should be disabled or preferably the ESR addresses listed in section 2 should be added to the exceptions list.

4.3 Proxy Configuration

Depending on configuration, it may be required to update Internet properties settings to ensure ESR addresses are allowed to bypass a proxy server. The example below shows how this might be done. This may be deployed centrally for those organisations who manage settings centrally.

A central policy for user access to e-Learning content is highly recommended as this mitigates against the risk of both incorrect entries being made, and the accidental deletion of existing entries, potentially impacting connectivity to important applications.

Step	Description	Screenshot
1	Type **internet options** in the search box on taskbar and choose **Internet Options** → Internet Options → Connections Tab	
2	Select Lan settings	
3	Ensure the box for “bypass proxy server for local addresses” is checked then select Advanced button	
4	In the Exceptions section, enter the ESR addresses (from section 2) and any additional addresses for the content servers that may be accessed. Depending on the setup and the software used in your organisation, you may also need to enter the addresses for content servers.	

Step	Description	Screenshot
5	Click OK on the remaining screens to exit. Close all browser sessions before testing connectivity to ESR again.	
6	Where JRE does not inherit the proxy server exclusion rules from Internet Options, it is recommended to apply the same settings within JRE explicitly via the Java Control Panel. To access the Java Control Panel follow: Start>Settings>Control Panel>Java>General Tab>Network Settings.	

4.4 Using IE11 Compatibility Mode in Edge

In Edge, IE Compatibility Mode should only be used as a work around where a full deployment of Edge with Java Web Start has not been achieved.

Known issues with Compatibility Mode are:

- Some e-learning content will not play
- The browser will not offer to remember Passwords

The correct solution is to deploy Edge in native mode as set out in Appendix G – Accessing ESR via Microsoft Edge.

4.5 Enterprise Mode

Enterprise Mode should not be used for any addresses used by ESR. If it is used, certain functions may not work correctly.

5 Networks

Access to ESR is provided over the HSCN network; as such organisations will need to have access to an HSCN connection and also make sure that their local network allows access to the domain https://cdn.esr.nhs.uk , which is hosted on internet and not within HSCN network. In addition, ESR self-service users can access ESR over the internet (where agreed) avoiding the need for an HSCN connection, **however** core functionality such as HR and Payroll processing can only be accessed via the HSCN network . NHS organisations requiring connectivity to ESR will need to contact NHS England for advice on the most suitable network solution (https://digital.nhs.uk/health-social-care-network).

5.1 Security

In order to comply with policy on the secure transmission of personal or sensitive data over unsafe networks, encryption of ESR traffic (https using TLS) is employed between the ESR supplier Infrastructure and organisations.

Access to ESR is supported via TLS versions 1.2 only. TLS 1.0 and 1.1 are **not** supported.

Note: Organisations are recommended to disable TLS 1.0 in their browser settings.

5.2 Firewalls and Proxy Servers

The addresses listed in section 2 must be allowed to bypass any proxy servers or firewalls to ensure ESR can communicate successfully with the supplier's servers. Any e-Learning content servers used may want to also bypass any proxy servers depending on configuration. **Note:** Where organisations experience any technical issues with ESR, it is recommended to bypass all proxies and firewalls as part of initial investigation efforts to ensure these are not the cause of the issues. See section 3.3 for IE proxy configuration steps.

5.3 Interfaces

Interface files such as the Finance (General Ledger) Interface are made available to organisations by means of File Transfer. File transfers between organisations and the ESR supplier are encrypted in accordance with security guidelines.

The ESR supplier offers two encrypted file transfer protocols from the supplier Interface Hub:

- FTP over TLS, also known as FTPS, the standard encryption extension to FTP
- SFTP, the Open SSH protocol common on Linux and Unix systems

NOTE:

It is considered the responsibility of the organisation to arrange their method of collecting these files. Organisations are also expected to have in place a disaster recovery alternative method of collecting these files in the event that the primary collection method fails for any reason, alongside their standard disaster recovery plans for connecting to the ESR system.

5.4 Bandwidth

ESR is a web-based application and therefore uses bandwidth in the same way any other website would, with the following highlights:

- An allowance of at least 3KBPS per user should be made.
- Upon first access of the ESR Portal, around 2MB of resources may be downloaded and cached.
- Upon first access of ESR, around 5MB to 9MB may be downloaded and cached.

6 Hosting e-Learning

To enable e-Learning content to communicate with ESR, a set of files called a SCORM adapter is required.

Networks should be configured to enable communication with the national e-Learning servers as detailed in section 2.

When hosting local content, if the organisation wishes to use SCORM adapters, a number of requirements must be met. These are detailed, along with further information and download links here.

6.1 Connectivity

Content servers will need to be able to communicate with:cc

- https://my.esr.nhs.uk (Production)
- https://my-psup.internal.uk.com (Production Support)

If the e-Learning content server cannot communicate with these addresses, progress may not be saved when users play local e-Learning content.

7 Microsoft Office Configuration

Users of Word and Excel will require certain changes to be made to the security settings to enable Web ADI functionality to work. The following settings are required:

- Select File → Options → Trust Center → Trust Center Settings, choose the "Disable all macros with notification" setting (note this is the highest setting for the Letters (Web ADI) functionality to work)
- Select File → Options → Trust Center →Trust Center Settings → Macro Settings, check the check box for "Trust access to VBA project object model" and "Disable all macros with notification".
- Select File → Options → Trust Center →Trust Center Settings → File Block Settings check the check boxes for Open on all "Add-in Files" and "Templates".

8 Appendix A – Scheduled Changes to Supported Software

The following table lists the supported software components and their status for support in previous, current and future releases.	**R66 Sep 25**	**R67 Jan 25**	**R68 Mar 26**	**R69 Jun 26**
Browser	Edge + Chrome	Edge + Chrome	Edge + Chrome	Edge + Chrome
	Firefox, Safari	Firefox, Safari	Firefox, Safari	Firefox, Safari
	TLS 1.2	TLS 1.2	TLS 1.2	TLS 1.2
Operating System	Windows 11 23h2 (64 bit)	Windows 11 24h2 (64 bit)	Windows 11 24h2 (64 bit)	Windows 11 24h2 (64 bit)
	Windows 11 24h2 (64 bit) (TBC)	Windows 11 23h2(64 bit)	Windows 11 23h2(64 bit)	Windows 11 23h2(64 bit)
Java JRE	JRE 1.8.0_451	JRE 1.8.0_461 (TBC)	JRE 1.8.0_471 (TBC)	JRE 1.8.0_481 (TBC)
	JRE 1.8.0_431	JRE 1.8.0_451	JRE 1.8.0_461	JRE 1.8.0_471 (TBC)
MS Office	MS Office 2016	MS Office 2021	MS Office 2021	MS Office 2021
	MS Office 2016	MS Office 2016	MS Office 2021	MS Office 2021
Identity Agent (Smartcard Users only)	NHS IA2.3	NHS IA2.3	NHS IA2.3	NHS IA2.3

8.1 Key

Fully Supported.	ESR at the release shown, has been fully tested and is supported against the software component.
Support is provided on a reasonable endeavour's basis	The relevant ESR release has had limited risk-based testing against the software component and proven to work. Support will be offered on a "reasonable endeavours" basis and is not subject to the usual ESR KPI response times for support calls.
TBC	The version of the relevant software component that will be supported is yet to be confirmed. An updated version of the document will be issued as soon as a decision is made.

9 Appendix B – Workarounds and Alternative Software

9.1 Multi-Factor Authentication (MFA)

Users can register their ESR account to use MFA which adds additional security to their account for internet access and allows them to reset their password via MFA.

The supported method for users to register their account is the Microsoft Authenticator app. Users can download and install this on their own personal mobile device from either the Google Play or the iOS App Store.

9.2 Multiple Sessions in the Browser

For organisations who need the use of multiple sessions:

9.2.1 Chrome

Chrome allows running multiple browsing sessions using multiple user profiles for web based forms. For Java based forms, only a single user session can be launched.

How to create a new profile:

1. Open Google Chrome on desktop
2. Click on the browser profile icon
3. Click on Personnel Management
4. Click on Add User
5. Enter the name of the NEW user
6. Choose an icon for the user
7. Check the Create a desktop shortcut for this user box.
8. Click Add

A new instance of Chrome with an entirely different profile from the current user, so the cookies and the like are not shared. After that, when you launch a new window, you can select a user profile to switch between & hence have multiple sessions.

For professional uses:
If launching professional forms, only one user session can be used.
As a single user, you can launch multiple forms for different responsibilities, but you must go to preferences and enable this option.

Please note: This is more useful for SSC users who manage multiple VPDs under a single user_id. If they have multiple user_ids, then they cannot launch two form sessions simultaneously.

9.2.2 Edge

Similar to Chrome, to create a new profile in Edge, click the profile icon to the right of your address bar and click “Add a profile”. Then, on the consent screen that comes next, just click “Add”.

Switching between profiles You can switch between profiles any time by clicking on the desktop icon or window associated with a profile

9.3 PDF Reader

The following settings may need to be made within Internet Options to enable reports in a PDF format to be viewed

- Select Tools → Internet Options → General, in the Browsing history' zone select the 'Settings' button
- In 'Settings' pop-up window Set 'Check for newer versions of stored pages:' to "Every visit to the page ' (NOT 'Automatically ')

9.4 Google Chrome

Some users have reported issues accessing ESR via Chrome. The issue is related to an existing local policy to block all third-party cookies configured in Chrome. To solve this:

- Open Chrome.
- At the top right, click “More” ⋮ and then “Settings”.
- Check that cookies are not blocked for the 3rd party websites “@esr.nhs.uk” and “trustedurl.national.ncrs.nhs.uk.

10 Appendix C - Troubleshooting

10.1 Networking

Common problems encountered during connectivity

1) Web Browser settings where use of proxy server is made compulsory will give problems.
2) Inability of the site to resolve hosts in the ".cdn.esr.nhs.uk" or "my.esr.nhs.uk " domain i.e. this should be achieved through the main BT DNS's on HSCN. Alternatively an entry for the ".cdn.esr.nhs.uk" or "my.esr.nhs.uk " can be made in the local NHS Organisation's DNS's using BT DNS's on HSCN as forwarders.
3) Ensure BTN3SP has provisioned the required routing entry to gain connectivity to the ESR supplier network. This is pertinent to sites that have not used the ESR supplier's services before.

10.2 Remote (VPN) Smartcard Access to ESR

NHS England have confirmed that users are able to authenticate onto NHS CRS (Care Records Service) via VPN. If users can authenticate onto NHS CRS within the workplace, but are unable to do so when connecting via a VPN, the VPN is a probable cause.

The NHS England Deployment Issue Resolution (DIR) Team have confirmed that DNS name resolution, firewall rules and routing are common problems that may prevent remote authentication onto NHS CRS via a VPN. Further details below have been provided by the NHS England DIR team:

DNS: Users will need to be able to resolve the DNS names of the relevant SPINE interfaces to IP addresses while on the VPN. Local IT teams should ensure users can resolve gas.national.ncrs.nhs.uk and sbapi.national.ncrs.nhs.uk . Organisations should ensure that any local DNS are resolving the address using the HSCN IP address, and not the W3 address.

1) Firewall rules: Organisations need to ensure that access is available to https://gas.national.ncrs.nhs.uk/ and https://sbapi.national.ncrs.nhs.uk/ on port 443.
2) Routing: Organisations need to ensure the SPINE servers are able to route traffic back to the VPN endpoint. If Network Address Translation (NAT) is performed on the inbound connections traffic may not get back. Consideration should also be given to where the VPN breaks out within the local network versus where the HSCN connection is

Organisations should direct queries regarding VPN configuration to allow remote authentication onto NHS CRS to the NHS England DIR Team via dst@nhs.digital.nhs.uk.

The NHS England 'remote access good practice guidelines' should also be considered when providing users with remote access to the HSCN network.

The NHS England Technology Office have also issued the following steps to troubleshoot the ‘Page cannot be displayed’ screen when attempting to authenticate.

1) DNS: Organisations need to be able to resolve the DNS names of the relevant SPINE interfaces (below) to IP addresses while on the VPN. This will either mean static host file entries, or you will need to enable split DNS or fully tunnel all DNS to an internal DNS server that can resolve these addresses. Ensure you can resolve gas.national.ncrs.nhs.uk and sbapi.national.ncrs.nhs.uk.

2) Firewall rules: Organisations need to ensure that access is available to https://gas.national.ncrs.nhs.uk/ and https://sbapi.national.ncrs.nhs.uk/. That will mean opening port 443 to these addresses at least. There may be others, and you may have to do a bit of trial and error (using the firewall logs) to find out what else they are accessing. You can’t ping these addresses but can check access easily by using ‘telnet 155.231.48.140 443’ to see if you get a connection (which will look like a black screen with a flashing cursor)

3) Routing. The SPINE servers will need to be able to route traffic back to the VPN endpoint. Unless you are doing some kind of NAT on the inbound connections (or assigning a local address via an IP-POOL) the traffic may not be getting back. You’ll need to think about where your VPN breaks out into the local network, vs where your HSCN Connection is. Use ‘tracert 155.231.48.140 -d’ from the VPN endpoint and see how far your traffic is getting. If it stops at a router you own, there may be an issue with your configuration.

11 Appendix D – JRE Deployment

11.1 JRE Conflicts

Newer versions of JRE are normally backwards compatible with applications requiring older JRE versions. However there may be certain applications where a specific version of JRE is required to ensure correct operation. Whenever a change to the supported version for ESR is announced, organisations are encouraged to test the newer version against business critical applications in advance of the ESR implementation.

11.2 JRE Licensing

In 2019, Oracle introduced new licensing arrangements for Java and JRE for users of non Oracle systems, there is now a licence fee for Java.

However, the ESR service is built on the Oracle HRMS e-Business suite product. That Oracle product requires the end user device to have JRE installed. As stated in the excerpt below which is taken from the following webpage :-

https://www.oracle.com/technetwork/java/javase/overview/oracle-jdk-faqs.html,

users of systems that Oracle supplies such as ESR (Oracle HRMS) are entitled to a free JRE licence.

> "I am a customer of an Oracle Product that uses Java. Does Oracle Java remain free for me?
>
> *If you are a customer who has a current support entitlement to any Oracle Product that includes Java, you continue to have free access to any Oracle Java SE updates for use with that Oracle Product."*

11.3 Essential Installation Considerations

11.3.1 Java

For normal running of ESR the PC user must have write permissions to the JRE cache. To check this:

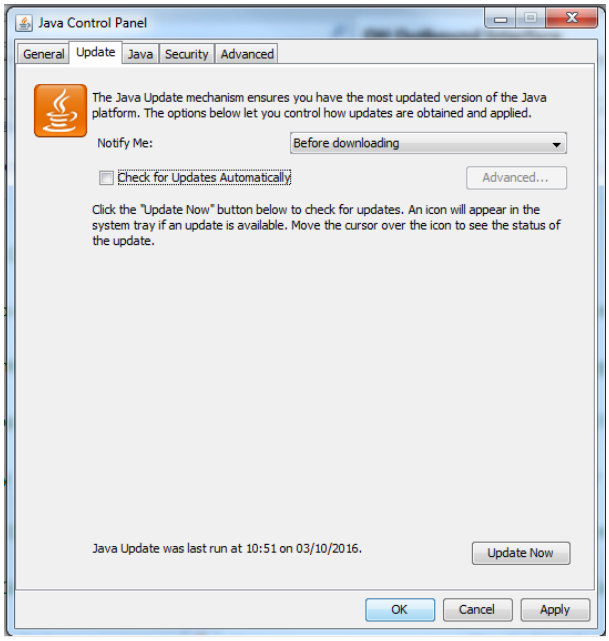
- Select Java icon in control panel -> Select General tab.
- Select settings in the Temporary Internet Files section.
- This path must be writable to the user.

11.3.2 JRE Auto-Download

By default Java is configured to download the latest version of JRE to the desktop. To ensure no higher than the recommended version of JRE is used, it is recommended that

the automated download of higher JRE versions is disabled. This can be achieved by following the steps below.

1) Click Start => Control Panel and double click on the java control panel.
2) Within the Update tab unset the Check for Updates Automatically option (Figure 9).
3) Click Apply to save the setting.



11.4 Mechanisms to upgrade desktops

JRE can be distributed in many ways and this will vary greatly from organisation to organisation, details are given below on suggested methods. This list is not exhaustive and local IT departments may choose to use the advice given here or to integrate with existing software deployment technologies or procedures.

Please note: admin rights will be required on a client in order to install JRE.

For each option below, reference must also be made to the “Essential Installation Considerations” section.

11.4.1 Manual Installation

It is possible to visit each PC and manually install JRE by simply copying the installer to the PC and following the suggested instructions.

11.4.2 Automated Distribution Tools

Many organisations will have existing desktop management and deployment tools and JRE lends itself well to inclusion in such methods.

11.4.3 Logon Scripts

It is possible that any organisations using windows logon scripts to include the download and installation of JRE (from a local server) into the logon script as a one-time option.

12 Appendix E – FTP Protocols

ESR recommends FTP over TLS.

FTPS

This is the standard encryption extension for FTP, defined by RFC 4217.

ESR supports:

- passive FTP transfers compliant with RFC 4217 encryption;
- FTP over TLS;
- encryption for both authentication and data;
- use of self-certification on your FTP server.

ESR does not support:

- implicit FTPS ('port 990') - this is non-standard and obsolete;
- FTPS without passive connections.

To use FTPS an Organisation will need:

- an FTP server that supports RFC 4217;
- an FTP server configured for FTPS transfers;
- firewall access from the ESR supplier systems to the Organisations FTP server on port 21 for control connections;
- firewall access from the ESR supplier systems to the passive port range defined on the Organisations FTP server.

Typical Windows Products that support FTPS:

- Windows 2008 Server with IIS7 (commercial product from Microsoft)
- zFTPServer (commercial version available from http://www.zftpserver.com)
- FileZilla-Server (GPL licensed)

Typical Linux and Unix Products that support FTPS:

- Red Hat Enterprise Linux 9.3, 8.9 and 7.9 (commercial product from Red Hat)
- CentOS 8 (Community supported Linux)
- Fedora 38 (Community supported Linux)
- Any Linux or Unix system that can run the vsftpd or proFTPd FTP server

Please note that software created before 2006 is unlikely to have any viable support for FTPS.

SFTP

This is a sub-protocol of the OpenSSH software found on almost all modern Linux and Unix systems. There are a few implementations for Windows.

ESR supports:

- sftp transfers transfer using keys;
- file conversion to simulate FTP ASCII mode;
- encryption for both authentication and data.

ESR does not support:

- sftp transfers using password fallback method.

To use sftp an Organisation will need:

- the OpenSSH software or software that incorporates support for it;
- firewall access from the ESR supplier systems to port 22 on the Organisations server.

Typical Products:

- Any modern Linux or Unix system

Network Security

The ESR source addresses are from network 62.130.47.32/27 and these should be allowed through any firewalls.

For FTPS, firewall access to the following ports is required:

- port 21 on the Organisations FTP server system;
- the passive port range as defined on the Organisations FTP server

The passive port range should be in the IANA ephemeral port range 49152 to 65535 - a range of 20-100 ports is typical for a moderately used FTP server.

For sftp, firewall access to the following port is required:

- port 22 on the Organisations sftp server system

13 Appendix F – Deciding on Supported Versions

13.1 How the decision is made on which versions to support

Given the size and complexity of testing ESR, it is not feasible to test ESR against all versions of software whilst maintaining the current level of change to the functionality in ESR. Ahead of each quarterly development and testing cycle, the supported software to be used during the development and test is agreed. On successful conclusion of the development and testing cycle for an ESR release, the development and test platform will become the supported platform for ESR at the point that the release is deployed into production.

To support the decision process and in order to reduce the impact of change on the NHS, a yearly survey of ESR users is carried out to understand current software deployments and planned software upgrades across the NHS. The results of the survey form a significant factor in deciding the supported versions, as wherever possible they will be set to reflect the versions most commonly in use across the NHS.

The current table of software requirements is based on data received from the last ESR IT System Survey carried out.

The next survey will be carried out during the last quarter of the calendar year.

13.2 ESR Portal tested devices

The following table lists the platforms that were used for the development and test of the ESR Portal and associated ESS/MSS functionality which are now supported against ESR.

Platform	Format	Device	Browser
Android	Tablet	Samsung Galaxy Tablet	Default Browser
Android	Phone	Samsung Galaxy S10	Default Browser
Android	Phone	Samsung Galaxy S23	Default Browser
iOS	Tablet	iPad Air	Safari
iOS	Tablet	iPad	Safari
iOS	Phone	iPhone 13	Safari
iOS	Phone	iPhone 6s	Safari
Windows	Desktop	N/A	Microsoft Edge
Windows	Desktop	N/A	Firefox
Windows	Desktop	N/A	Chrome
Windows	Desktop	N/A	Safari

14 Appendix G – Accessing ESR via Microsoft Edge

14.1 Introduction

14.1.1 Scope and Purpose

This section aims to detail the changes required to enable ESR and related smartcard reader software to work together to authenticate users using modern browsers.

14.1.2 Background

Prior to ESR Release 53 (March 2022), the only browser that is a supported method of either accessing ESR professional forms, and/or authenticating with a smartcard is Microsoft Internet Explorer

This is because both ESR and the NHS Identity Agent use Java Applets (via the NPAPI plugin) to launch the required functionality.

Most modern browsers no longer support Java applets and applets were completely removed from Java in later versions. In addition, Microsoft announced in 2021 that support for Internet Explorer 11 would come to an end on 15th June 2022.

Therefore, a number of changes were progressed to ensure both Smartcard Authentication and ESR Professional forms can launch successfully on browsers other than IE11, specifically Edge (Chromium) and Chrome. The two largest changes are:

- NHS England development of NHS Credential Management (to allow authentication without Java applets using a locally hosted web server instead)
- Enablement of Java Web Start in ESR (to allow Java forms to be launched without a Java applet).

14.1.3 NHS Credential Management

The NHS Credential Manager developed by NHS England is an alternative method of communicating with a smartcard in order to authenticate a user. NHS England decided to create an application which creates a self hosted local web server in order for other systems (e.g. ESR) to communicate with it. This application is called NHS Credential Management and replaces all Java applets currently used by the NHS for authentication. Installed along with NHS Credential Management application (in the same installer) is the NHS Port Service, which allows NHS Credential Management to be used on machines with multiple users logged in at once (ie: Terminal Services, Citrix, fast user switching scenarios etc).

Further details of NHS Credential Management can be found in the user guidance available alongside the download link in the required software section later in this document.

14.1.4 Java Web Start

Java Web Start (JWS) is an alternative method of initiating Oracle Java Forms which has been enabled in ESR. Previously a Java applet was executed within the browser, and from there the full Java application was launched.

Java Web Start works differently – when the user wishes to launch a Java Form in ESR, a file will be downloaded in their browser with the extension .jlnp. By default, .jnlp files are associated with Java when Java is installed on the client machine. Therefore, when the user opens the .jnlp file, it will launch the Java application – in this instance, an ESR professional Java based form.

From ESR Release 55, JWS is now the default method of launching Java forms.

14.2 Security Considerations

14.2.1 Private Browsing

Users should be aware that private browsing may not work with Microsoft Edge.

14.2.2 Removal of Smartcard during a session

Users should be aware that the removal of the smartcard from the device does not close the active session in ESR. Users need to log out of ESR before removing the smartcard.

14.3 Software / Network Requirements

14.3.1 Summary

The following high level steps are required in order to ensure the client machines are able to read a smartcard to communicate with ESR, as well as launch forms in ESR using a browser other than IE11. Organisations should ensure:

1) Identity Agent v2.3 or above is installed and configured (Section 14.3.2 below)

2) Trusted URLs are allowed through any proxy or firewall software (Section 14.3.4.1 below)

3) A minimum of Java JRE version 1.8.0_261 is installed

4) Configuration is applied to browsers to ensure jnlp files are automatically downloaded and executed when accessed from ESR (Section 14.3.4.2 below)

14.3.2 Smartcard Reader

The following software is required to ensure ESR can communicate with the smartcard reader:

1) NHS Credential Management (this includes the NHS Port service)

2) NHS Identity Agent v2.3 or above

Both of these can be downloaded alongside user guidance from NHS England here.

14.3.3 Professional Forms

No other additional software is required to ensure ESR professional forms will launch correctly from browsers other than IE11, however JRE version 1.8.0_261 is the supported version tested to ensure compatibility as per the MM-0100 document (available on the ESR Hub).

14.3.4 Configuration

14.3.4.1 Networks

Organisations should ensure that the following address is allowed through any local firewall or proxy services:

trustedurl.national.ncrs.nhs.uk

If this address is blocked, this may be evident in the file at the address below:
C:\ProgramData\HSCIC\NHS Port Service\NHSPortService.log

To test, organisations can attempt to access the following address which should initiate a file download: https://trustedurl.national.ncrs.nhs.uk/api/versioninfo

The file that is downloaded can be ignored, but a successful download means that the connection was established."

14.3.4.2 Browsers

Rather than requiring the user to open the downloaded .jnlp file from the browser, it is possible to configure the browser to automatically open these files.

Microsoft Edge has the registry entries below that control the behaviour:

[HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Edge\AutoOpenFileTypes]

[HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Edge\AutoOpenAllowedForURLs]

[HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Edge\ExemptDomainFileTypePairsFromFileTypeDownloadWarnings]

These can be set as below to ensure the jnlp files are opened automatically to make it easier for users to launch the Java forms:

[HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Edge\AutoOpenFileTypes\ Value Name: 1

Value: jnlp
[HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Edge\AutoOpenAllowedForURLs] Value Name: 1

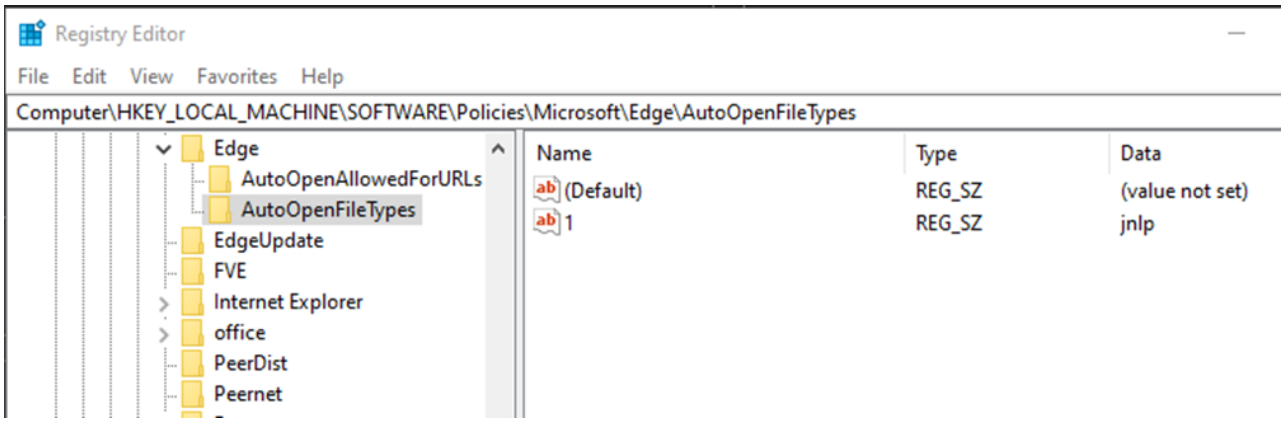
Value: my.esr.nhs.uk

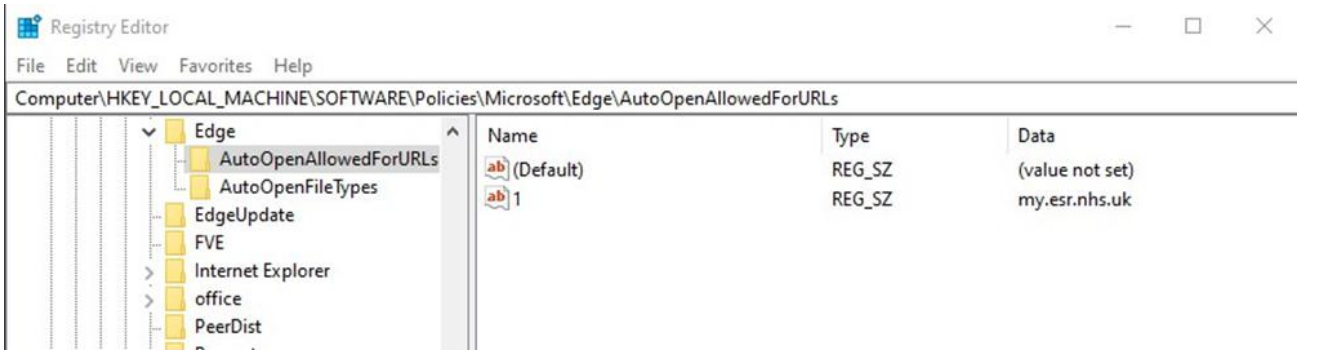
[HKEY_LOCAL_MACHINE\SOFTWARE\Policies\Microsoft\Edge\ExemptDomainFileTypePairsFromFileTypeDownloadWarnings]

Value Name: 1

Value: {"domains": ["my.esr.nhs.uk"], "file_extension": "jnlp"}

Screenshot examples:

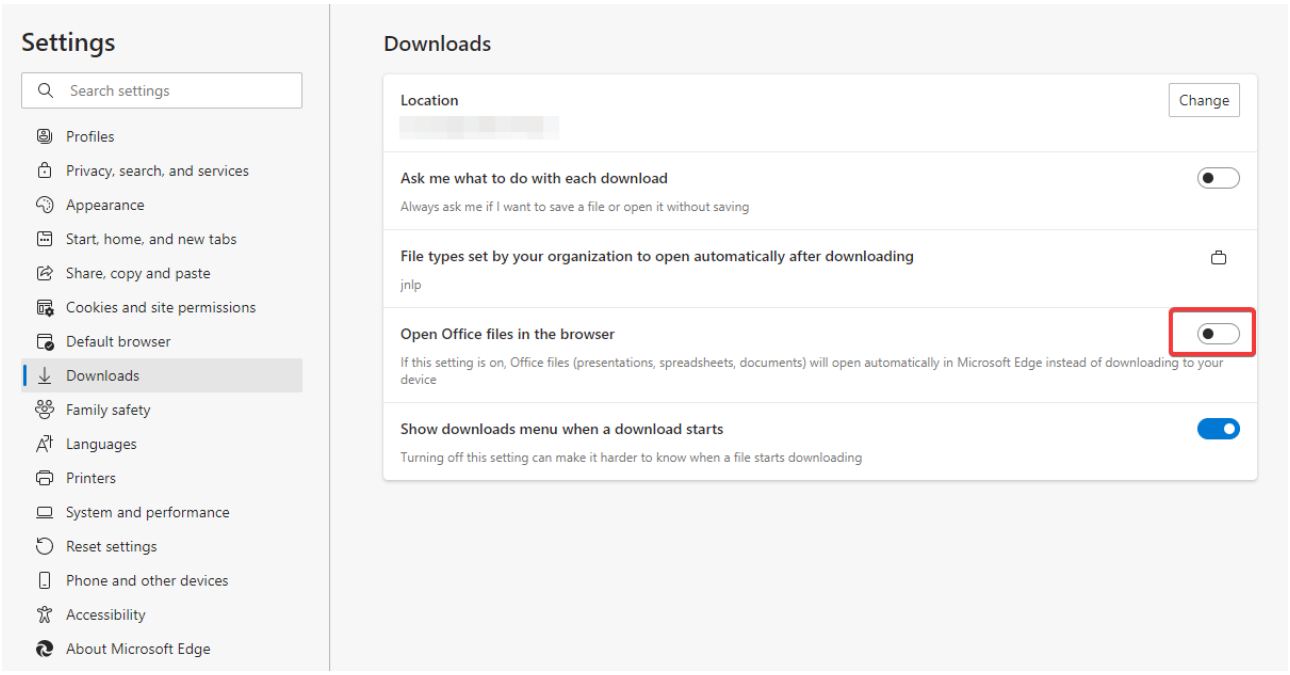




You can check these policies are being applied in Microsoft Edge by opening the address “edge://policy/” within edge itself. You should then see the policies in place:

14.3.4.3 Downloading Reports

When downloading reports from ESR Professional Forms (not via ESR BI) users may get an 'Authentication Failed' message. This is due to a setting in Edge which tries to open any MS Office object in the browser rather than in the native Office application. The 'Open Office files in the browser' setting below in Edge must be disabled to allow these reports to be opened correctly:



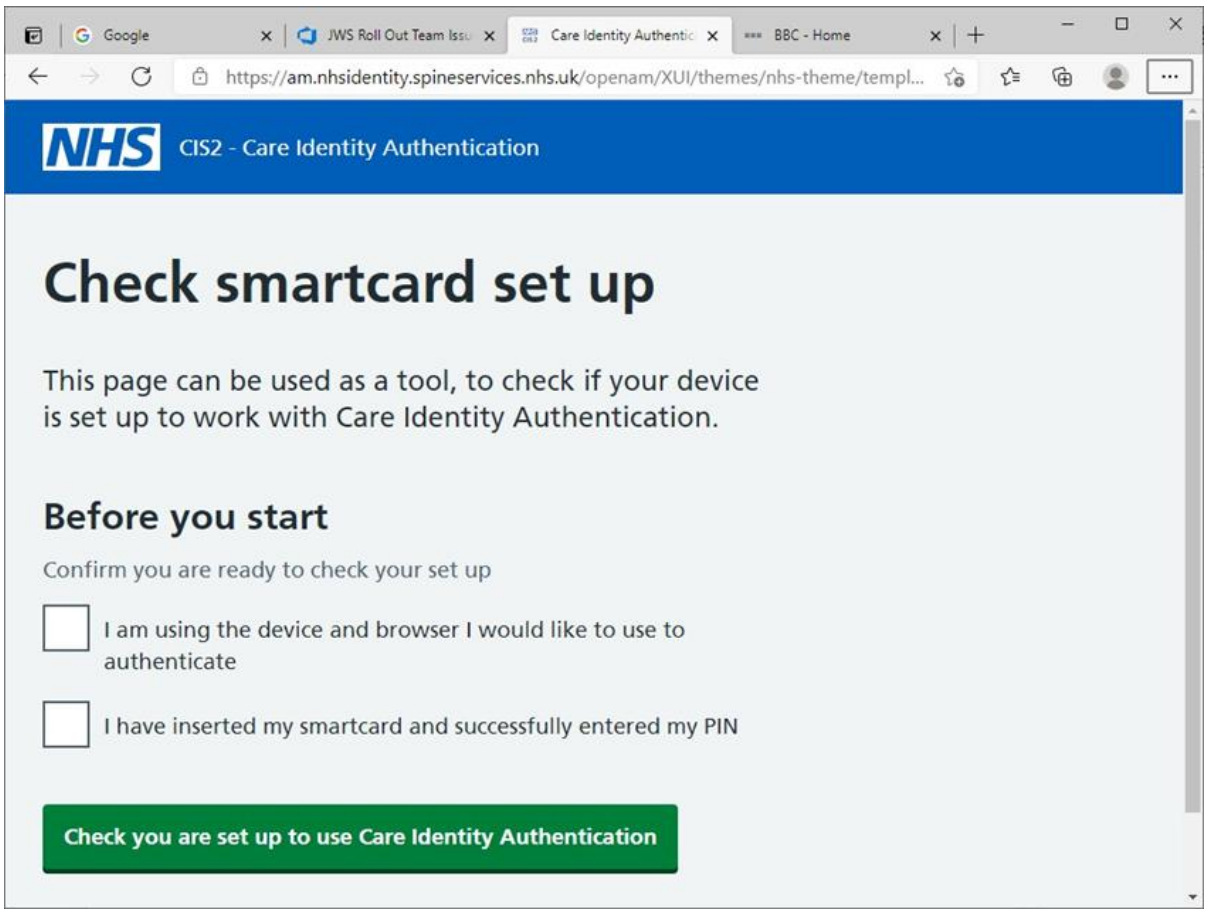
14.3.5 Testing

In order to authenticate a user using their smartcard using a browser other than IE11, you must have the following installed and running:

1. NHS Port Service
2. NHS Credential Management Software
3. NHS Identity Agent

To test whether the authentication is working correctly, the address below can be used.

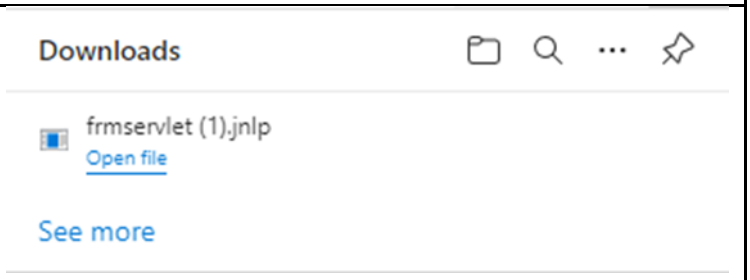
Care Identity Authentication (spineservices.nhs.uk)

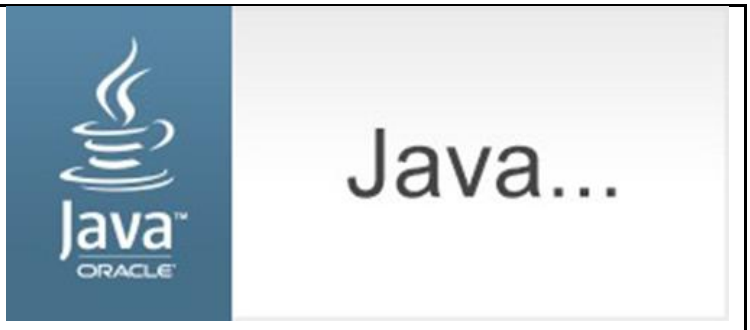


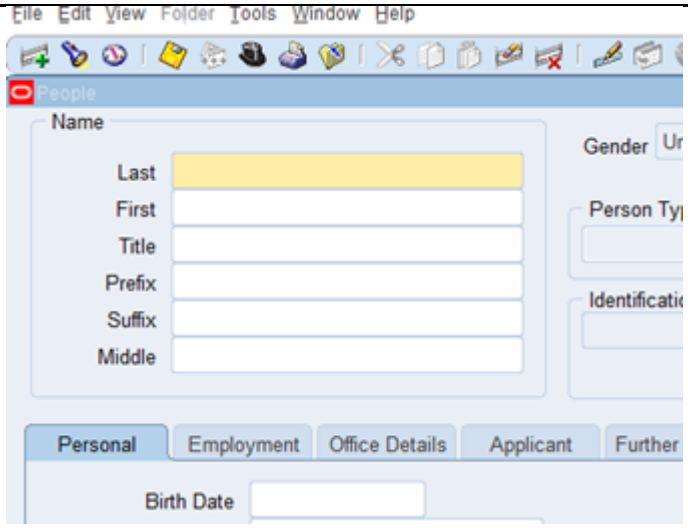
14.3.6 Launching Java Forms

Since ESR Release 55, ESR uses a method of launching Java Forms by downloading a file. The following table shows the process the user will follow to launch the forms.

Step	Description	Screenshot
1	Navigate to the required form (Enter & Maintain in this example)	

2	A file will be downloaded with the extension .jlnp. This will occur **every time** a Java form is launched, therefore it is preferable to implement the changes in section 2.3.2. to ensure the download is opened automatically. Note: Depending on the browser, this may be blocked. As in this example, you may need to click 'See more' and select 'Keep File'	
3	Open the file	

4	A Java window is displayed	

5	The form is then displayed	

14.4 Backwards Compatibility

14.4.1 Smartcard Software

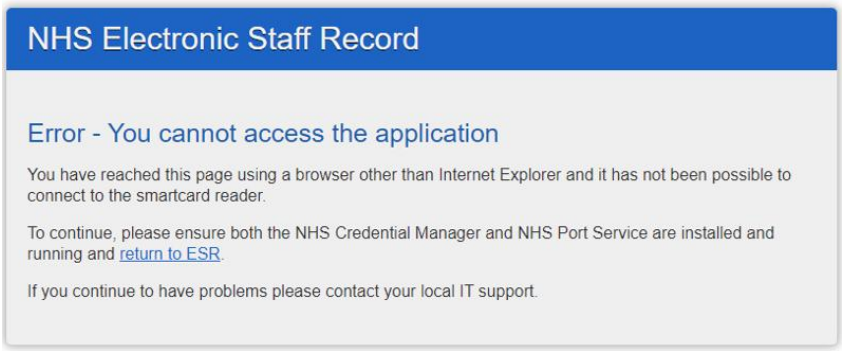
NHS Identity Agent v2.3 is backwards compatible with IE11 as well as working with non-IE browsers such as Edge and Chrome, therefore this may be installed in readiness for using the new Java forms launcher without any impact on the user's ability to access the forms.

The new Java forms launcher itself is expected to work with IE11 (although this configuration is not supported).

14.5 Troubleshooting

14.5.1 Common Resolutions

The following issues have been seen previously with suggested resolutions.



1) NHS Port Service will not start

Should this occur, stop the Credential Manager and Port Services, try deleting the files below from this directory: "C:\Program Files (x86)\NHS Digital\NHS Port Service"

- PortStore.txt
- DomainList.txt

Restart the services and try again.

2) Users receive an ‘Authentication Failed’ message when attempting to download a report from ESR Professional Forms.

Please see the Configuration section above with sub-section ‘Downloading Reports’.

14.5.2 Support and Feedback

Should you have any issues with implementing the changes required as detailed above, please raise a service request (SR) with the ESR Service Desk, fully detailing the problem and ensuring you take a note of the SR number.

14.5.3 Accessing the Portal Staging environment via Edge

Some users have reported that they are unable to access the Portal Staging Environment via Edge running in Compatibility Mode. Edge should be used in native mode to access the staging environment.

End of Document