

Client proctored – appointment required

Advanced Technical Requirements for ITS exams

These advanced technical requirements apply to any Internet Based Testing (IBT) exams delivered using the Pearson VUE Browser Lock product with the ITS test driver for the Client proctored – appointment required delivery model.



Note

Most candidates will not be required to make any changes to successfully take exams using Pearson VUE Browser Lock secure browser.

This document describes a full set of technical requirements and configuration settings necessary for the **Pearson VUE Browser Lock product with the ITS test driver**. The configuration settings and technical requirements described are targeted at an audience of mid to higher level technical skill. This is a full set of technical requirements that can assist the user in troubleshooting problems associated with exam delivery.

These configuration settings and requirements should only be implemented if you are confident that you understand and can implement these settings and configuration changes. If you do not understand these configuration settings and requirements **DO NOT make changes without first consulting with the local Technology Professional**.

Delivering an exam in a virtual environment of any form is strictly prohibited!



Note

Most exam delivery scenarios will not require any of the listed configuration changes and in most cases, it will not be necessary to make all the configuration changes in this document.

The following items are known to disrupt Pearson IBT exam delivery:

- ❖ Proxy Servers
- ❖ Network Packet Inspection / Filtering
- ❖ Strict Network Security Configurations

Exam delivery machine

Pearson strongly recommends using equipment that meets or exceeds the Recommended Specifications.

RECOMMENDED SPECIFICATIONS	
Operating System	Window 11 & 10 (64-bit) Live Tiles disabled Mac 10.15
Windows Operating System languages	Pearson VUE Browser Lock is supported on a variety of Windows OS languages and continues to expand its offering. Installation has been certified for English, German and Japanese Windows OS. More will be coming soon.
RAM	4 GB of RAM or more
Display	Minimum Resolution: 1024 x 768 in 16-bit color . Recommended Resolution: 1920 x 1080 or higher in 32-bit color .
Mouse & keyboard	<ul style="list-style-type: none"> English QWERTY Keyboard 2-button Wheel Mouse
USB ports	2 available USB 2.0 ports for: <ul style="list-style-type: none"> Keyboard Mouse

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RECOMMENDED SPECIFICATIONS	
Network connection	Pearson Strongly Recommends using a wired network rather than a wireless network as it provides better exam delivery performance.
Internet connection	<p>Broadband (DSL, cable, or LAN/WAN). 40 Mbps down / up</p> <p>Required: For each simultaneous exam delivery beyond the first, an additional 256 Kbps down/up is required.</p> <p>Required: Run System Test to ensure you have adequate bandwidth to conduct test delivery for the expected number of test takers.</p> <p>Note: With 1 Mbps down/up it will take approximately 2 minutes to launch Pearson VUE Browser Lock (150 MB application). Incremental Mbps will launch PVBL faster.</p>
Internet browser	Latest versions of Edge, Chrome, Firefox , and Safari + two versions back for web registrations or downloading the secure browser.
Browser settings	<p>Internet Cookies must be enabled.</p> <p>This is unnecessary for delivery on Windows machines but accepting them provides a better user experience.</p>
Firewalls	Corporate firewalls (including VPNs) often cause this delivery method to fail. Please take your exam in a setting without a corporate firewall.

Internet Based Testing (IBT) configuration



Caution

Pearson VUE does not support the following:

- **Virtual machines** in any form are prohibited

Effective **September 1, 2023**, the following technical requirements and configuration settings may be necessary to ensure successful delivery of **IBT Exams using the ITS test driver**. Candidates may experience decreased exam delivery performance if these requirements are not met. You may be asked to make changes to the exam delivery workstation and the local network configuration to comply with these requirements as part of problem resolution.

Internet bandwidth

Exam deliveries require an internet connection. For Internet Based Tests (IBT) see the table below for details.

BASE NETWORK BANDWIDTH + 256 Kbps FOR EACH EXAM DELIVERY WORKSTATION	
1 – 15 delivery workstations	5.0 Mbps down/ 3.0 Mbps up base and 256 Kbps for each workstation
16 – 50 delivery workstations	10.0 Mbps down/ 5.0 Mbps up base and 256 Kbps for each workstation
50 – 100 delivery workstations	20.0 Mbps down/ 10.0 Mbps up base and 256 Kbps for each workstation
For IBT exam deliveries, latency should not exceed 150 ms	

Internet connection

For IBT exams, a base connection speed of **40 Mbps down/up** is required. For optimal delivery of IBT exams, **50 Mbps is strongly recommended**.



Warning

If more than one exam is being delivered simultaneously, then an additional **256 Kbps down/Kbps up** is required for each simultaneous exam delivery beyond the first.

Before beginning an exam

All computers that will be used to deliver exams using Pearson VUE Browser Lock with the ITS test driver **must run a System Check prior to exam testing**. This test ensures your computer is configured correctly to deliver an exam.

- Proctor's [System Check](#)
- Candidate's [System Check](#)

Local delivery machine configuration settings

This section describes configuration settings necessary on the IBT exam delivery workstation. A moderate level of technical skill may be necessary to comply with these settings. **DO NOT make changes that you do not understand** without first consulting a Technology Professional.

- **Save** any **open files** and **close all open windows** before launching Pearson VUE Browser Lock
- You may want to install a printer so that test takers may print their score report upon completion of the exam
- Please be aware of the following keyboard shortcuts:
 - **Ctrl+R** refreshes the Browser Lock
 - **Alt+P** takes you the **Previous** item
 - **Alt+N** takes you the **Next** item
- **Cookies**—Apple's Safari does not distinguish between session and persistent cookies. Proctor and administrator workstations must be configured to support session cookies. Internet Explorer permits you to allow session cookies while blocking all other cookies. No configuration is required for test delivery on Microsoft Windows.

The privacy of test takers, their personal information, and the test materials are extremely important. Session cookies are used to track the current test run by each test taker. A session cookie is a special type of cookie that is only stored in memory and is automatically deleted when the user closes the browser. Session cookies are used to track a user's current state during their visit and require that session cookies are enabled to use the site. These cookies are automatically removed when the browser is closed. We do not use or support cookies that in any way track an individual's Internet usage outside of our own web site.
- To enable cookies, you must access your internet browsing privacy options. For example, in **Internet Explorer**, click on the **Tools** menu, choose **Internet Options**, and then select the **Privacy** Tab. Open the list of web sites allowed to use cookies. Add ***.starttest.com** to the list of allowed sites.
- Ensure any security software will not block the execution of **JavaScript**

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- Ensure the following IP Addresses do not have communication restrictions due to any security software:
 - 64.27.100.27
 - 64.27.64.232
 - 64.106.193.0
 - 64.106.220.0
 - 206.188.17.0
 - 159.182.0.0
- The following URL's may need to be added as trusted sites under Internet Settings. This can be done by going to the **Control Panel | Internet Options | Security** tab. Select **Trusted Sites**. Click the **Sites** button and add the following items to the list of websites. You may need to deselect the **Require server verification (https:) for all sites in this zone** option.
 - https://*.pearson.com
 - https://*.pearsonvue.com
 - 159.182.0.**0/16**
Note: If your system does not accept the IP Range '**0/16**', then try using just '**0**' at the end.
 - https://*.pvue1.com
 - https://*.pvue2.com
 - https://*.programworkshop.com
 - https://*.programworkshop2.com
 - https://*.starttest.com
 - https://*.starttest2.com
 - https://*.startpractice.com
 - https://*.gettesting.com
 - https://*.verifyreadiness.com



Note

Sometimes it works better on certain systems if you add them in one of these fashions:

- (1) <https://starttest.com>, (2) *.starttest.com*,
- (3) *.programworkshop.com*

Network & domain level configuration settings

This section describes the configuration settings necessary on the LAN / WAN used for IBT exam delivery. A moderate to high level of technical skill may be necessary to comply with these settings. **DO NOT make changes that you do not understand** without first consulting a Technology Professional.

LAN

The following LAN settings are known to cause disruptions to exam testing both individually and in combination. Adhering to these configuration changes drastically reduces the chances of exam delivery disruption during event testing. **Pearson strongly recommends the following configuration settings:**

- Use a **wired network** rather than a wireless network, as it provides better exam delivery performance.
- Avoid network configurations involving **Proxy Servers, Advanced Firewall Security Configurations**, and other network security measures such as but not limited to **Packet Filtering or Packet Inspection**. These advanced security configurations are known to cause moderate to severe degradation in exam delivery performance.
- Ensure **DHCP** is set to **lease IP Addresses** for a minimum of **2 days**.
- Ensure all exam delivery machines are on a single dedicated VLAN.
- Ensure all other critical Networking services are in order: DNS, TCP/IP, etc.

WAN / Internet connection

- Do not use IP pool for NAT, use single Public IP only.
- For **Pearson IBT Exams** Port **80** (HTTP) and Port **443** (HTTPS) must have sustained continuous connections. It is **strongly recommended** that traffic on these ports is completely unrestricted.
- Ensure WAN / Internet traffic is not subject to limits or allocation caps, such as a Cellular Wireless Hotspot or network enforced bandwidth limitations.

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- The following settings can be very resource intensive if not turned off, as it decrypts and encrypts every packet. These settings are usually turned on by default with most firewalls, so it is important to check before testing.
 - **Ensure HTTPS Inspection is turned OFF.**
 - **Ensure any form of Web Filtering is turned OFF.**
- For **Pearson IBT Exams** Port **443** (HTTPS) must have sustained continuous connections. It is **strongly recommended** that traffic on these ports is completely unrestricted.
- The following IP Addresses must be set as approved / unblocked / or given the highest priority.

Note: The last 3 are IP Ranges, but if your system does not accept '0/24' or '0/16', then try using just '0' at the end.

○ 64.27.100.27	○ 64.106.220.0/24
○ 64.27.64.232	○ 206.188.17.0/24
○ 64.106.193.0/24	○ 159.182.0.0/16
- The following URL's **may require** unrestricted communication.
 - https://*.pearson.com
 - https://*.pearsonvue.com
 - https://*.pvue1.com & https://*.pvue2.com
 - https://*.starttest.com
 - https://*.programworkshop.com
 - https://*.startpractice.com
 - https://*.getttesting.com
 - https://*.verifyreadiness.com



Note

Sometimes it works better on certain systems if you add them in one of these fashions:

- (1) <http://starttest.com>
- (2) *.starttest.com*
- (3) *.programworkshop.com*

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- For exam traffic traversing WAN segments, use VPN connection or tunneling across the Internet. Pearson has realized performance enhancements of exam traffic by setting IP MTU to 1400 bytes, and TCP Max Segment Size to 1360 bytes. This is not a requirement but does have the effect of limiting packet fragmentation and potential reassembly issues in transmission.
- Rather than allowlisting our specific IP address ranges, **we are asking that you use DNS allowlisting**. This allows ITS to handle future IP address changes, including changes in cloud infrastructure and scaling to manage load, without the need for configuration updates. Use this link <https://testconnection.starttest.com> to check the DNS automatically for you.

Troubleshooting tips

- If you are having performance issues or your exam will not launch, do the following:
 - Stop active Anti-virus scanning while taking an exam. Some anti-virus software can cause performance issues.
– or –
 - Contact your program manager to discuss having an exception made to your Pearson VUE Browser Lock process action list to allow your internet security or antivirus software used by your organization and/or candidates

Prohibited



Caution

If it is not found on the requirements below or in the Advanced Requirements list, then it should be considered '**Not Supported**'.

EXAM DELIVERY MUST ADHERE TO THE FOLLOWING RESTRICTIONS	
Portable computing devices	<p>Touch screen laptops, tablets and smartphones are strictly prohibited.</p> <p>Note: Examples of prohibited portable computing devices include, but are not limited to: Surface Pro, Chromebooks, Android and iOS phones, and tablets.</p>
Processor	Devices running Ultra Mobile Processors are strictly prohibited. This includes but is not limited to Intel Atom, AMD NEO CPU lines, and ARM CPUs.
RAM	Less than 4 GB on any workstation
Operating System	<ul style="list-style-type: none"> Windows 8.1/8/7, XP & Vista are strictly prohibited. Windows Server Operating System strictly prohibited on the exam delivery workstations. Virtual environments are strictly prohibited for exam delivery. All Linux/Unix based Operating Systems are strictly prohibited.
Display	<p>Touch screen monitors are strictly prohibited for exam delivery.</p> <p>Display resolution less than 1024 x 768 in 16-bit color is strictly prohibited.</p>
Network connection	Pearson Strongly Recommends avoiding network configurations that involve Proxy Servers , Advanced Firewall Security Configurations and other network security measures such as but not limited to Packet Filtering or Packet Inspection .
Internet connection	<p>VPN connections are strongly discouraged and will result in disruption to exam delivery.</p> <p>SSL VPNs are strictly prohibited (e.g., Hotspot Shield).</p>

Administration workstation (Proctor)

	MINIMUM REQUIRED	RECOMMENDED SPECIFICATIONS
Operating System	Windows 11 & 10 (64-bit)	Live Tiles disabled
Processor	Intel: i5 Generation 4 or higher AMD: Ryzen 3 Generation 5 or higher	Intel: i7 Generation 2 or higher AMD: Ryzen 5 or higher
RAM	4 GB of RAM or more	8 GB of RAM or more
Display	Recommended Resolution: 1920 x 1080 or higher in 32-bit color .	
Mouse & keyboard	<ul style="list-style-type: none"> English QWERTY Keyboard 2 Button Wheel Mouse 	
USB ports	2 available USB 2.0 ports for: <ul style="list-style-type: none"> English QWERTY Keyboard 2 Button Wheel Mouse 	
Network connection	Pearson Strongly Recommends using a wired network rather than a wireless network as it provides better exam delivery performance.	
Internet connection	See Internet bandwidth requirement above.	
Internet browsers	Latest versions of Microsoft Edge, Chrome, Firefox and Safari	
Browser settings	Internet Cookies must be enabled. All Pop-Up blockers must be disabled .	
Firewalls	Corporate firewalls (including VPNs) often cause this delivery method to fail. Please take your exam in a setting without a corporate firewall.	