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1.0 Introduction

eMeasurement™ Services Proctor Caching product provides a tool to accelerate the delivery of test content to students and to reduce the amount of bandwidth required for electronic testing. To ensure the best possible network performance and testing experience within schools, we highly recommend you use Proctor Caching.

This guide provides instructions for installing, configuring, and using Proctor Caching in Windows and Macintosh environments.

---

Proctor Caching does not require server hardware

2.0 Proctor Caching Components

Proctor Caching consists of two primary components:

- **The Proctor Caching Computer:** A software package that is installed on a workstation within a school to provide caching for the TestNav™ test delivery engine. This workstation functions as the Proctor Caching server.

- **Test Content Pre-Caching:** The Test Session Management module on your program’s eMeasurement Services website includes functionality that allows proctors to populate a Proctor Caching Computer with test content prior to administering a test.

3.0 Proctor Caching Overview

The diagram below gives a high level overview of the steps involved in implementing eMeasurement Services Proctor Caching. Each step represented in the diagram is described in detail in this guide.

Proctor Caching Implementation Steps

3.1 Proctor Caching Computer Placement

Proctor Caching Computers accelerate the delivery of test content by placing a cached copy of the test content on the network closer to the computers used for testing. Proctor caching can be implemented anywhere within the LAN.

The machine selected to run Proctor Caching should be located as close as possible on the network to the TestNav clients. Intermediate network devices (routers, bridges, etc.) may become...
bottlenecks and reduce the effectiveness of the Proctor Caching Computer. Current minimum requirements for Proctor Caching workstations are listed in the *Infrastructure Guidelines*. In many cases schools can install and configure the Proctor Caching Computer using existing hardware.

For Proctor Caching to function, TestNav clients must be able to communicate with the Proctor Caching Computer using HTTP/HTTPS on ports 80, 443, and 4480.

The diagram below is an example that illustrates the recommended lab- and school-level placements for the Proctor Caching Computer.

**Placement of Proxy Caching Computers**

We recommend that upstream proxy servers (i.e., the parent proxy server) be configured to expire test content every four hours. Content placed on upstream proxy servers should not exceed four hours.
Note: The software installed on the Proctor Caching Computer expires test content every four hours. However, once the Proctor Caching Computer has been pre-populated with test items for a given test session it is not necessary to re-run Proctor Caching for the test session because the Proctor Caching software will update the cache the next time the item is presented to a student.

3.2 Proctor Caching Computer

Please review the hardware and software recommendations for Proctor Caching workstations in the Infrastructure Guidelines (available on the Resources page of your program’s eMeasurement Services website).

3.2.1 Network Connectivity

If possible, Proctor Caching workstations should have a network connection of 100 Mbps full-duplex (or higher). The minimum network connection is 10/100.

3.2.2 Media Testing (Audio, Video, Flash®) Considerations

Media files (audio, video, and Flash®-based items) are very large content elements and must be staged to the school prior to the test beginning. We recommend that you use a separate computer as the Proctor Caching Computer dedicated to caching media test content.

As a rule of thumb, assume that the Proctor Caching Computer for media content can support up to 40 concurrent users.

The variables that impact the number of media tests that can be delivered from a single caching computer include the size of the test itself. Because media tests vary in size dramatically, the 40-students-to-Proctor Caching-computer ratio is a guideline. It is expected that for traditional audio tests with relatively small audio clips or for video tests that have a limited number of clips, this number can be exceeded.
4.0 Implementing Proctor Caching in a Windows Environment

Proctor caching runs successfully on JRE 1.6.0_06 or lower. Higher versions of JREs may cause the Java applet to not run successfully.

4.1 Installing Proctor Caching on Windows Platforms

Links for downloading the necessary components for Proctor Caching are located on your program’s eMeasurement Services website. A link for downloading to the Proctor Caching software typically is located on the Resources screen or the Session Management screen. (You may need a Login ID/Password to download Proctor Caching software.)

► To install Proctor Caching

1. Go to your program’s Resources or Session Management screen and click the Proctor Caching software or Download Installer link. (Note that the link may appear slightly different, depending on the customer program.)

2. Read the instructions, and then click Download.

3. Download the Proctor Caching software to your computer.
   If you are using a Firefox browser, click Save File.
   If you are using an Internet Explorer browser, click Save, select the location to save the file, and then click Save again.

4. Double-click the downloaded Proctor_Caching.exe file to open the installer screen.

5. Click Install.

6. Click Next after reading the overview and minimum requirements on your screen.

Note: Current minimum requirements for Proctor Caching workstations are listed in the Infrastructures Guidelines.
7. Enter the path to the directory in which you would like the Proctor Caching Computer to be installed. Click Next.

8. If the Proctor Caching Computer will need to use an upstream proxy server to access the Internet, enter that proxy’s hostname and port information, then click Next.

9. Click Install to begin copying files.

10. Click Continue once the installation has completed.
Tips on Windows Proctor Caching

Proctor Caching Admin Interface

If you need to enter or change the parent proxy server settings, you can do this via the Proctor Caching administrative interface (Windows only). To access the administrative interface:

1. Ensure that Proctor Caching is running. (A small console window with the title “eMeasurement Services – Proctor Caching” will be visible on your computer and this process will be displayed on your desktop taskbar.)

2. Open an IE or Firefox browser and enter http://127.0.0.1:4400 in the address field.

3. At the prompt, enter user name emadmin and password t35t1n6.

4. Click Settings > Cascading > Parent proxy computer.

5. Enter (or change) the IP address and port for the parent proxy computer, and then click Save.

11. Change the administration password to protect the security of the test content.

   Note: Be sure to note the new password for future administrative and support needs.

12. Click Finish after reading the instructions for using Proctor Caching

13. The Proctor Caching Installation is now complete.

14. Go to Start > Programs > Proctor Caching > Proctor_Caching to start the Proctor Caching software

15. A small window displays indicating that Proctor Caching is running.

4.2 Configuring TestNav Clients to Use Proctor Caching

For the Proctor Caching Computer to receive requests for test content, TestNav must be configured to use the Proctor Caching Computer as a proxy server. TestNav typically is configured during installation to use a Proctor Caching Computer as a proxy server. If it was not configured during installation, follow these steps:
To configure TestNav to use Proctor Caching

1. Using a text editor, such as Notepad, open the “proxysettings.properties” file located in the same directory in which TestNav is installed.
2. On the “Proxy_Host=” line, enter the IP address of the Proctor Caching Computer.
3. On the “Proxy_Port=” line, enter 4480.

4.3 Specific for Windows 7 Users

For the Proctor Caching Computer to receive requests for test content, the user needs to launch Proctor Caching under either of the following conditions:

- The “Run as administrator” option is on.
- The Users group (and any other appropriate group) must have permissions updated for both the Proctor Caching directory and sub-directories to allow writes and edits to those directories.

Without using one of the two conditions, Proctor Caching will appear to work correctly, but will not cache any content on that computer.

4.4 Pre-Caching Test Content

To get the maximum benefit from a Proctor Caching Computer, test content should be pre-cached so that it is locally available on the Proctor Caching Computer when students begin testing. Your program’s eMeasurement Services website includes “pre-fetch” functionality to enable test proctors to load the Proctor Caching Computer with content.

The “pre-fetch” functionality can be accessed by clicking on the Proctor Caching button on the Session Roster screen within Test Session Management.

---

Before navigating to the Session Roster page and pre-caching test content:

1) The Proctor Caching software must be enabled and running.
2) The web browser must be configured (see below).
3) Java version 1.4.2_, 1.5.0_x, or 1.6.0_x must be installed. (A pre-caching applet requires a Sun-compatible Java Plug-in to run. Go to http://java.sun.com for a free download.)
4) Pop-ups must be enabled for etest.pearson.com.
5) https://www8.etest.pearson.com should be added to the list of Trusted Sites in your browser.

To pre-cache test content for a test session

1. The web browser on the machine you use to pre-cache test content must always be configured to use the Proctor Caching Computer as its proxy server. (Make note of the original proxy settings within the web browser; these settings should be re-configured once the pre-cache process is complete.)
Configuring a web browser to pre-cache test content

Internet Explorer
1. Go to Tools > Internet Options.
2. Select the Connections tab and click the LAN Settings button.
3. In the area labeled “Proxy Server,” check the box to enable the use of a proxy server.
4. Enter the IP address and port of the Proctor Caching Computer (port = 4480).
5. Click OK to close all dialogue boxes.

Firefox
1. For Firefox 1.5, go to Tools > Options. For Firefox 2.0, go to Tools > Options > Advanced. For Firefox 3.0, go to Tools > Options > Advanced > Network tab.
2. Click the Connection Settings button.
4. Enter the IP address and port of the Proctor Caching Computer (port = 4480).

2. Close all browser windows then restart your browser for the changes to take effect.
3. On your program’s eMeasurement Services website, navigate to the Session Roster screen (within Test Session Management) for the test you want to pre-cache.
4. Click on the Proctor Caching button to begin the pre-cache process.
5. Confirm the test information at the top of the screen and read the directions, then click **Next**.

6. Select the check box for all forms that you would like pre-cached.

7. Click **Next**. An applet begins the pre-caching process, displaying the status as it progresses. (This applet requires a Sun-compatible Java Plug-in to run. Java version **1.4.2_x, 1.5.0_x, or 1.6.0_x** must be installed. (Go to [http://java.sun.com](http://java.sun.com) for a free download.)
8. Verify that you are pre-caching test content onto your Proctor Caching Computer by maximizing the Proctor Caching console on the task bar at the bottom of screen (assuming that you are on the Proctor Caching Computer). Make sure that the “objects” and “hits” running counts are updating rapidly as the test content is being downloaded.

The Proctor Caching Console window appears indicating that Proctor Caching is running.

![Proctor Caching Console](image)

If your web browser is not configured to use a Proctor Caching Computer for a proxy, the message shown below will be displayed. (See the table “Configuring a web browser to pre-cache test content” in section 4.3 Pre-Caching Test Content, above.)

![Message](image)

9. After all test items have been retrieved, the status page will display a confirmation message. At this point, the Proctor Caching Computer should be ready for students to begin testing. Click the View Roster button to go to the Session Roster screen.

![Session Roster](image)
Note: The software installed on the Proctor Caching Computer expires test content every four (4) hours. However, once the Proctor Caching Computer has been pre-populated with test items for a given test session it is not necessary to re-run Proctor Caching for the test session. The Proctor Caching software will update the cache the next time the item is presented to a student.

### 4.5 Purging Test Content from the Proctor Caching Computer

Pearson strongly recommends that test content be purged from the Proctor Caching Computer after each testing session.

The Proctor Caching Computer includes functionality to remove all cached test content from the Windows computer it is running on.

► **To purge test content**

1. Go to Start > Programs > Proctor Caching > Purge Cache.
2. Click **Delete** to confirm that you would like to purge the contents of the cache.

If the Proctor Caching Computer is not currently running, the cached items will not be removed until the next time it is started.

### 4.6 Uninstalling Proctor Caching on Windows Platforms

► **To uninstall Proctor Caching**

1. Go to Start > Settings > Control Panel > Add or Remove Programs.
2. Within the Add or Remove Programs applet, select eMeasurement Services Proctor Caching and click the **Change/Remove** button.

3. Place a checkmark in the box next to all components to remove the entire product. Click **Next** to continue.
4. A screen will confirm the items to be removed. Click **Next**.

5. Click **Uninstall**.

6. Click **Finish** to remove the Proctor Caching software.
5.0 Implementing Proctor Caching in a Macintosh Environment

5.1 Installing Proctor Caching for Macintosh Platforms

Links for downloading the necessary components for Proctor Caching are contained on your program’s eMeasurement Services website. A link to the Proctor Caching download page typically is located on both the Session Management main menu page and on the Session Roster screen within the Session Management module. (You may need a Login ID/Password to download Proctor Caching software.)

Proctor Caching in a Macintosh environment uses the native proxy server that is built into the OS X operating system. To configure this proxy server to perform Proctor Caching functions, follow the steps listed below. (Note: Administrator level access is required to perform these steps.)

To install Proctor Caching on the Mac, you must first download two files – the Configuration Settings and the Configuration Script.

► To download the configuration settings and script

1. Click the appropriate Download Configuration Setting and Download Configuration Script links to download these files to your OS X desktop.

   If the files open in your web browser instead of being saved to your disk, use the File > Save As command to save the file to your desktop.

2. For 10.4 and higher, open a terminal window and run the following command to enable the script file to execute:

   ```
   chmod +x ~/desktop/config_proctor_caching_10_2.command
   ```
3. Double-click on the `config_proctor_caching.command` icon on your desktop to launch the script.

4. When prompted, enter your password, then select **Option #1 – Install Proctor Caching Server**.

5. If this Proctor Caching Computer must go through an upstream proxy server to get to the Internet, enter the IP address and port number of the upstream proxy server when prompted.

6. Once the script has finished configuring Proctor Caching, it will display a confirmation message.

7. The Proctor Caching installation is now complete.

---

### Tips on Mac OS X 10.4 Proctor Caching

#### Mac OS X Script Fix
To execute the script for Proctor Caching on Mac workstations, you may need to CHMOD it first. Download the script to your desktop, then open up Utilities:Terminal and type the following:

```
chmod +x ~/desktop/config_proctor_caching_10_2.command
```

#### Mac OS X Server Mod
Because OS X Server does not have a users folder, you need to create the folder.

1. Open Terminal
2. Type `cd /private/etc/httpd` and enter.
3. Type `sudo mkdir users` and enter.
4. Enter the password and then you can rerun the script.
**Tips on Mac OS X 10.5 and 10.6 Proctor Caching**

**Mac OS X Script Fix**
To execute the script for Proctor Caching on Mac workstations, you may need to CHMOD it first. Download the script to your desktop, then open up Utilities: Terminal and type the following:
```
chmod +x ~/desktop/config_proctor_caching_10_5.command
```

**Mac OS X Server Mod**
Because OS X Server does not have a user’s folder, you need to create the folder.
1. Open Terminal.
2. Type `cd /private/etc/apache2` and enter.
3. Type `sudo mkdir users` and enter.
4. Enter the password; you then can rerun the script.

To verify that proctor caching is working, from the Proctor Caching Computer, type in `netstat -an | grep 4480` and hit the Return/Enter key. You should see the word “LISTEN” that shows Proctor Caching is working (listening).

### 5.2 Configuring TestNav Clients to Use Proctor Caching

For the Proctor Caching Computer to receive requests for test content, TestNav must be configured to use the Proctor Caching Computer as a proxy server. TestNav typically is configured during installation to use Proctor Caching Computer as a proxy server. If it was not configured during installation, follow these steps:

► **To configure TestNav to use Proctor Caching**
1. Using a text editor, open the “proxysettings.properties” file located in the same directory in which TestNav is installed.
2. On the “Proxy_Host=” line, enter the IP address of the Proctor Caching Computer.
3. On the “Proxy_Port=” line, enter 4480.

### 5.3 Pre-Caching Test Content

To get the maximum benefit from Proctor Caching test content should be pre-cached so that it is locally available on the Proctor Caching Computer when students begin testing. Your program’s eMeasurement Services website includes “pre-fetch” functionality to enable test proctors to load the Proctor Caching Computer with content.

The “pre-fetch” functionality can be accessed by clicking on the Proctor Caching button on the Session Roster screen within Test Session Management.

**Before navigating to the Session Roster page and pre-caching test content:**
1) The Proctor Caching software must be enabled and running.
2) The web browser must be configured (see below).
3) Pop-ups must be enabled for etest.pearson.com.
4) [https://www8.etest.pearson.com](https://www8.etest.pearson.com) should be added to the list of Trusted Sites in your browser.
To pre-cache test content for a test session

1. Ensure that the web browser on the machine you use to pre-cache test content is configured to use the Proctor Caching Computer as its proxy server. (Make note of the original proxy settings within the web browser; these settings should be re-configured once the pre-cache process is complete.)

<table>
<thead>
<tr>
<th>Configuring a web browser to pre-cache test content</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Firefox</strong></td>
</tr>
<tr>
<td>1. For Firefox 1.5, go to Tools &gt; Options.</td>
</tr>
<tr>
<td>For Firefox 2.0, go to Tools &gt; Options &gt; Advanced.</td>
</tr>
<tr>
<td>For Firefox 3.0, go to Tools &gt; Options &gt; Advanced &gt; Network tab</td>
</tr>
<tr>
<td>2. Click the Connection Settings button.</td>
</tr>
<tr>
<td>4. Enter the IP address and port of the Proctor Caching Computer (port = 4480).</td>
</tr>
<tr>
<td>5. Close Firefox Preferences.</td>
</tr>
<tr>
<td>6. Open the System Preferences window.</td>
</tr>
<tr>
<td>7. Click on Network.</td>
</tr>
<tr>
<td>8. Click on Ethernet.</td>
</tr>
<tr>
<td>9. Click on the Advanced button.</td>
</tr>
<tr>
<td>10. Click on Proxies.</td>
</tr>
<tr>
<td>11. Check the box next to Web Proxy.</td>
</tr>
<tr>
<td>12. Enter the IP address and port of the Proctor Caching Computer (port = 4480) in the Web Proxy Server text boxes.</td>
</tr>
<tr>
<td>13. Click OK.</td>
</tr>
<tr>
<td>14. Click Apply.</td>
</tr>
<tr>
<td>15. Close the System Preferences window.</td>
</tr>
<tr>
<td>NOTE: If you are using Mac OS X 10.4.11 and Firefox 2.0.14, you do not need to update your browser settings.</td>
</tr>
</tbody>
</table>

| **Safari**                                          |
| 1. Go to Safari > Preferences.                     |
| 2. Select the Advanced tab and click the Proxies: Change Settings button. |
| 3. Select the “Web Proxy (HTTP)” checkbox.         |
| 4. Enter the IP address and port of the Proctor Caching Computer (port = 4480) in the Web Proxy Server text boxes. |
| 5. Click the Apply Now button.                      |
| 6. Close the System Preferences window.            |
| 7. Close the Safari Preferences window.            |
| 8. After making changes, shut down all instances of Safari, and then restart Safari to make the changes effective. |

2. Close all browser windows then restart your browser for the changes to take effect.

3. On your program’s eMeasurement Services website, go to the Session Roster screen (within Test Session Management) for the test you want to pre-cache.

4. Click the **Proctor Caching** button at the bottom of the screen to begin the pre-cache process.
5. Confirm the test information at the top of the screen and read the directions. Click **Next**.

6. Select the check box for all forms that you would like pre-cached. Click **Next**.

If your web browser is not configured to use Proctor Caching for a proxy, the message shown below will be displayed. (See “Configuring a web browser to pre-cache test content” in section 5.3 above.)
7. After all test items have been retrieved, the status page will display a confirmation message. At this point, the Proctor Caching Computer should be ready for students to begin testing. Click the View Roster button to return to the session roster page.

Note: The software installed on the Proctor Caching Computer expires test content every four (4) hours. However, once the Proctor Caching Computer has been pre-populated with test items for a given test session it is not necessary to re-run Proctor Caching for the test session. The Proctor Caching software will update the cache the next time the item is presented to a student.

5.4 Purging Test Content from the Proctor Caching Computer

The Proctor Caching Computer includes functionality to purge all content from cache. This can be used to ensure that test content does not exist on the Proctor Caching Computer after it is no longer needed for testing purposes.

To purge the cache on a Macintosh, use the same script that was used to install the Proctor Caching Computer. Note: Administrator level access is required to perform these steps.
To purge test content
1. Double-click on the `config_proctor_caching.command` icon located on the desktop.
2. Enter your password (if prompted).
3. When presented a list of options, select **Option #2 – Purge Proxy Cache**.

```
Welcome to Darwin!
/Users/kealbr/Desktop/config_proctor_caching.command; exit
[localhost:1] kealbr@/Users/kealbr/Desktop/config_proctor_caching.command; exit
Please select one of the following options.
1) Install Proctor Caching Server
2) Purge Proxy Cache
3) Uninstall Proctor Caching Server
Enter your choice [1]: 2
Clearing cache...
Done.
[Process completed]
```

5.5 Uninstalling Proctor Caching on Macintosh Platforms

To uninstall the Proctor Caching on Macintosh Platforms, use the same script used to install Proctor Caching. **Note:** Administrator level access is required to perform these steps.

To uninstall Proctor Caching
1. Double-click on the `config_proctor_caching.command` icon located on the desktop.
2. Enter your password (if prompted).
3. When presented a list of options, select **Option #3 – Uninstall Proctor Caching Server**.

```
Welcome to Darwin!
/Users/kealbr/Desktop/config_proctor_caching.command; exit
[localhost:1] kealbr@/Users/kealbr/Desktop/config_proctor_caching.command; exit
Please select one of the following options.
1) Install Proctor Caching Server
2) Purge Proxy Cache
3) Uninstall Proctor Caching Server
Enter your choice [1]: 3
Restoring original configuration...
Stopping Apache...
/Users/bin/apachectl stops: httpd stopped
Done.
[Process completed]
```
6.0 Configuration for Specific Proxy Environments

The most commonly encountered issues when implementing Proctor Caching are related to authentication with a school’s existing proxy server. The table below outlines symptoms and solutions for using Proctor Caching in a Symantec Web Security environment and in a Microsoft ISA environment (this applies to all ISA based solutions, such as N2H2, CyberPatrol, etc.).

<table>
<thead>
<tr>
<th>Proctor Caching Environment</th>
<th>TestNav Error Message</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>PC w/ Web Security</td>
<td># 20040</td>
<td>User must authenticate with Web Security through the Proctor Caching Computer (see section 6.1 below).</td>
</tr>
<tr>
<td>PC w/ ISA</td>
<td># 20040</td>
<td>Proctor Caching Computer must be configured with a valid NT domain ID and password (see section 6.2 below).</td>
</tr>
<tr>
<td>Mac w/ Web Security</td>
<td># 20040</td>
<td>User must authenticate with Web Security through the Proctor Caching Computer (see section 6.1 below).</td>
</tr>
<tr>
<td>Mac w/ ISA</td>
<td># 20040</td>
<td>ISA server must be set to not “ask unauthenticated users for identification” on the outgoing web requests tab (see section 6.2 below).</td>
</tr>
</tbody>
</table>

6.1 Symantec Web Security

Authentication – If your Web Security server requires users to authenticate prior to accessing the Internet, one user must authenticate with the Web Security server through the Proctor Caching Computer. This is achieved by temporarily setting one machine’s web browser proxy settings to use the Proctor Caching Computer and then authenticating with the parent proxy server.

Pearson recommends that the timeout period for logins within Web Security be set to a value high enough to ensure that users will not be logged off during a test session.

If it is desirable for a given environment, Web Security can be configured to allow all requests that come through the Proctor Caching Computer to be granted access to the Internet without authentication.

To configure Web Security

1. Add the IP address of your Proctor Caching Computer (s) as a client within Web Security.
2. Under the Client > Schedule page within the Web Security admin pages, select the Proctor Caching Computer IP address and set defaults.
3. Set the default login mode to “Guest Mode.”

Browser Comforting – By default, Web Security implements a feature called “browser comforting.” This feature sends “please wait” messages to web browsers while Web Security is scanning Internet content for viruses. Browser comforting is not compatible with eMeasurement Services products and must be disabled in order for Proctor Caching and TestNav to function correctly.

(For instructions on disabling browser comforting within Web Security, please refer to the Web Security User’s guide, or go to www.symantec.com.)
6.2 Microsoft ISA Server

Authentication – The Microsoft ISA server is often configured to use Windows NT domain accounts to authenticate users. If ISA is also configured to ask unauthenticated users for identification, the ISA server must be configured to allow “basic” and a valid NT user ID and password must be entered into the Proctor Caching Computer configuration.

Contact the Pearson Call Center to obtain the login ID and password necessary to access the Proctor Caching administrative interface.

► To configure the PC version of the Proctor Caching to use an NT domain account:

1. Confirm that the Proctor Caching is running.
2. Using a web browser, go to the IP address of the Proctor Caching Computer on port 4400 (i.e., http://10.25.97.15:4400).
3. When prompted to log in to the Proctor Caching Server Admin Site, enter the login ID and password provided by the eMeasurement Services Helpdesk.
4. Within the Proctor Caching Server administration site, click on Proxies… > Cascading > Parent Proxy Server.
5. Enter a valid NT domain user ID and password in the fields provided. The ID should be entered in the following format: domain\username.
6. Click Save to save your changes.
7. Restart the Proctor Caching Computer software to enable the changes.

The Macintosh version of Proctor Caching is not capable of authenticating with an ISA server. If the Macintosh version is used in conjunction with an ISA server, the ISA server must be configured not to ask unauthenticated users for identification.

7.0 Proctor Caching Security

The Proctor Caching Computer stores a copy of live test content on the local hard drive of the machine on which it runs. This test content is encrypted prior to being sent across the Internet from the eMeasurement Services web servers. At no time in the test delivery process does the Proctor Caching Computer un-encrypt the test items. All data transmitted and stored by the Proctor Caching Computer are in an encrypted format.

The Proctor Caching includes a “purge cache” function that deletes all encrypted test content from the hard drive of the Proctor Caching Computer.

Pearson strongly recommends that test content be purged from the Proctor Caching Computer after each testing session.
8.0 Recent Document Updates

This list shows the recent updates to the Proctor Caching User’s Guide. (The most recent updates are listed first.)

<table>
<thead>
<tr>
<th>Date</th>
<th>Updates</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 29, 2010</td>
<td>• When running Windows 7, Proctor Caching must be launched either as an administrator or by changing the “users” groups to allow writes and edits to the affected directories.</td>
</tr>
<tr>
<td>November 13, 2009</td>
<td>• Added a note to section 4 to state that proctor caching runs on version JRE 1.6.0_06 or lower.</td>
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<tr>
<td></td>
<td>• Added a reference to Mac OS X 10.6 in section 5.1.</td>
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<tr>
<td>September 11, 2009</td>
<td>• Updated browser versions.</td>
</tr>
<tr>
<td></td>
<td>• Changed Proctor Caching Server to Proctor Caching Computer.</td>
</tr>
<tr>
<td>October 9, 2008</td>
<td>• Added recommendations to set upstream proxy servers to expire test content every 4 hours.</td>
</tr>
<tr>
<td></td>
<td>• Added details regarding test content expiration.</td>
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<tr>
<td>July 10, 2008</td>
<td>• Updated screenshot content for PII (no change in functionality).</td>
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<tr>
<td></td>
<td>• Updated steps for configuring a web browser in the Windows and Mac environments.</td>
</tr>
<tr>
<td></td>
<td>• Added tips for Proctor Caching on Mac OS X 10.5.</td>
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</tbody>
</table>