Proctor Caching User Guide

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What is Proctor Caching?

Proctor caching accelerates the delivery of test content to students and reduces the amount of bandwidth required for electronic testing. The computer running proctor caching should be located as close as possible on the network to the TestNav clients. Proctor caching can be implemented at the school or lab level. Administrator level access is required to install the software.

As represented in the following diagram, Proctor Caching pulls and stores test content from Pearson to a local Proctor Caching computer. This stored or "cached" test content is then distributed to TestNav clients as testing sessions are started.
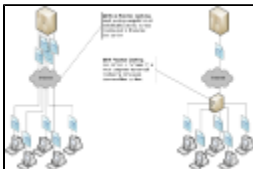
Proctor Caching improves the online testing experience for students and test administrators by providing the following key benefits:

- Students experience fewer testing delays due to network congestion.
- Test content will be available even when the Internet connection is lost because test content is precached.

Hardware and Software Requirements

See the http://www.pearsononlinetesting.com/TestNav/8/index.html to find the full list of requirements for your release version.

Pre-Installation Planning

- Place Proctor Caching computers as close as possible on the network to the students' testing computers,

preferably in the same room.
- If Proctor Caching takes place at the district level, then any lower-level Proctor Caching computers should be configured to use the district-level computer as an upstream proxy.
- If the Proctor Caching software was previously installed on a computer that needs to be updated to a more recent version, you must uninstall the previous version, reboot the computer, and then install the more recent version. You can uninstall the Proctor Caching software using the normal software removal process for your operating system.

If you don't have direct physical access to the designated proctor caching computer(s) and/or you need to deploy proctor caching remotely to multiple machines, you may choose to use the silent install method described here: http://kb.flexerasoftware.com/doc/Helpnet/IA2011/Content/helplibrary/ia_response_files_silent.htm

- Proctor Caching does not require special hardware or server equipment.
- You should not install Proctor Caching on the same computer that is being used for testing.
- A typical installation takes approximately 10 minutes per Proctor Caching computer.
- If you are not a network administrator, the following are needed to install Proctor Caching:
  - Full local administrator permissions
  - Working knowledge of your network
- Even if you consider your network to be very fast and with a lot of bandwidth, you should still use Proctor Caching for the following reasons:
  - Large test files with enhanced content (e.g., animated graphics or calculators) may take longer to load without Proctor Caching enabled.
  - Your network will experience download redundancy if each student downloads an independent copy of an online test.
  - Students will be able to complete the test they are taking even if the Internet connection fails.
- Refer to the *System Check User Guide* to assist you in determining the number of students that can be served.

Network Connectivity

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

Your network must be set up to use IPv4 DNS (Domain Name System) servers. If you have not made any explicit changes to use only IPv6 for DNS, you should not have any issues. You will know if this is properly configured because your TestNav and Proctor Cache machines will communicate properly with one another. If you do not have any network issues between these machines, no action is required. If there are problems, contact your network administrator.

Currently, IPv4 is the standard method for how computers communicate with each other. Because there are a finite number of IP addresses that can be used with IPv4, a newer version, called IPv6, was developed. An example of an IPv4 address is 192.168.1.1 and an example of an IPv6 address is 2012:0db8:85a3:0000:0000:8a2e:0370:7334.

Multimedia Testing Considerations

Multimedia files are very large content elements and must be cached to the school prior to the test beginning. We recommend that you use a separate computer as the Proctor Caching computer dedicated only to caching media test content.
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, use the System Check tool for TestNav capacity planning. It is expected that for traditional audio tests with relatively small audio clips or for video tests that have a limited number of clips, the ratio of students to Proctor Caching computers can be increased.

Install Proctor Caching Software - Macintosh

1. Locate and download the proctor caching software.

2. Double-click the install file, then double-click the installproctorcache file to open the installer screen.
3. Double-click the installproctorcache icon to open the installer screen.
4. You will be prompted with a security message. Click **Next** to launch the installer.
5. Proxy information displays. Verify that the Proxy Server Information is correct or enter the correct value. Click **Next**.
6. Accept default destination folder and click **Next**. If you want to install in a location other than the default, make sure the location has no spaces in its name.
    - If the Proctor Caching computer uses an upstream proxy computer to access the Internet, refer to the information below.
7. Select the locations to create the TestNav Proctor Cache aliases (e.g., icon). If you do not want the icon to appear when all users log in to the computer, select the **Don't create aliases** option button, and then click **Next**.
8. Review the pre-installation summary, and then click **Install**.
9. You will see a progress bar and status information indicating that Proctor Caching is installing.
10. When the software is installed, click **Done** to close the installation. You will need to restart your computer before launching the software.

Tips on Proctor Caching

If you need to make further changes to the proctor caching computer settings, you can do this via the following files

- <install_dir>/squid/etc/squid.conf
- <install_dir>/jetty/etc/jetty.xml
- <install_dir>/jetty/etc/proctorcache.properties

Virtual machines can be used as the proctor caching computer. Java must be installed on the virtual machine in order for proctor caching to work successfully.

The Proctor Caching service must be running in order for content to be successfully cached. If the service is stopped, content will not cache.

If the Proctor Caching Computer uses an upstream proxy computer to access the Internet and and the upstream proxy is authenticated, make the following changes to the <install_dir>squidetcsquid.conf file:

Original Values	New Values
##cache_peer address parent port 0 login=user:pass default no-query http11 http11	cache_peer <proxy server IP address> parent port <proxy server port number> default no-query http11
##never_direct allow all	never_direct allow all

> If the Proctor Caching Computer uses an upstream proxy computer to access the Internet and the upstream proxy is unauthenticated, make the following changes to the <install_dir>squidetcsquid.conf file:
>
> | Original Values | New Values |
> | --- | --- |
> | ##cache_peer address parent port 0 login=user:pass default no-query http11 | cache_peer <proxy server IP address> parent port <proxy server port number> default no-query http11 |
> | ##never_direct allow all | never_direct allow all |

Install Proctor Caching Software - Windows

1. Locate and download the proctor caching software.
2. Double-click the file you downloaded to open the installer screen.
3. You will be prompted with a security message. Click **Yes** to launch the installer.
4. After the software loads, read the introduction, and then click **Next**.
5. Proxy information displays. Verify that the Proxy Server Information is correct or enter the correct value, and then click **Next.**
6. Accept default destination folder and click **Next**. If you want to install in a location other than the default, make sure the location has no spaces in its name.
    - If the Proctor Caching computer uses an upstream proxy computer to access the Internet, refer to the Tips on Proctor Caching section.
7. Select the locations to create the Proctor Cache icon(s). If you would like the icon to appear when all users log in to the computer, select the **Create Icons for All Users** check box, and then click Next.
8. Leave the check box selected and click **Next**.
9. Review the summary, and then click **Install**.
10. You will see a progress bar and status information indicating that the software is installing.
11. When the software is installed, click **Done** to close the installation. You will need to restart your computer before launching the software.

Tips on Proctor Caching

> If you need to make further changes to the proctor caching computer settings, you can do this via the following files}
>
> - <install_dir>\squid\etc\squid.conf
> - <install_dir>\jetty\etc\jetty.xml
> - <install_dir>\jetty\etc\proctorcache.properties

> Virtual machines can be used as the proctor caching computer. Java must be installed on the virtual machine in order for proctor caching to work successfully.

> The proctor caching service must be running in order for content to successfully cache. Find the shortcut to **Start Proctor Caching** and open it. If the service is stopped, content will not cache.

If the Proctor Caching Computer uses an upstream proxy computer to access the Internet and if the upstream proxy is authenticated, make the following changes to the <install_dir>squidetcsquid.conf file:

Original Values	New Values
##cache_peer address parent port 0 login=user:pass default no-query http11	cache_peer <proxy server IP address> parent port <proxy server port number> login=<user ID>:<password> default no-query http11
##never_direct allow all	never_direct allow all

If the Proctor Caching Computer uses an upstream proxy computer to access the Internet and if the upstream proxy is unauthenticated, make the following changes to the <install_dir>squidetcsquid.conf file:

Original Values	New Values
##cache_peer address parent port 0 login=user:pass default no-query http11	cache_peer <proxy server IP address> parent port <proxy server port number> default no-query http11
##never_direct allow all	never_direct allow all

Monitor Proctor Caching

You can monitor Proctor Caching activity from the Proctor Caching Diagnostics screen. This interface:

- provides visibility to the test caching process by item in a test form (content)
- monitors the Proctor Caching computer connectivity (client).

The **Contents** tab provides a high level list of the test content downloaded by test form and last cache date. The Status column indicates whether the test content was successfully cached for the test form. The number of content entries successfully cached is also displayed with the date the content was last cached. If test content is successfully cached, a green status icon displays. If test content is not successfully cached, a yellow or red icon displays.

The **Client List** tab provides a list of all clients by name, IP address, and platform, who have recently requested test content. The Status column indicates time elapsed since the client was last active.

To View the Status of Cached Test Content

1. Find the shortcut to Proctor Caching and open it.

2. On the **Home** tab, click **Go to Content List** tab or click the **Contents** tab.

3. Click the test or form name.
4. Review the caching status of all items in the test form. Each URL represents item content, along with the number of hits, which can provide some indication of the number of students who have accessed the item.
    - Content Status are as follows:
        - Green OK – content is successfully cached.
        - Yellow Not Loaded – content is not cached.
        - Yellow Waiting... – content is waiting to be loaded.
        - Yellow Loading... – content is currently loading.
        - Red Failed to load content – caching content failed.

- Red MD5 Check Invalid – MD5 comparison failed.
- Red MD5 Mismatch – MD5 comparison succeeded, but files did not match.

To View the Status of Content Caching by Computer

1. Find the shortcut to Proctor Caching and open it.

2. On the **Home** tab, click **Go to Content List** tab or click the **Contents** tab.

3. Click the computer name.
4. Review information about an individual client that has recently requested test content. The Status field indicates client activity.
   - Client Status are as follows:
     - Green OK – client is active.
     - Yellow Idle - 5 to 30 minutes since client was active.
     - Yellow Long Idle - 30 minutes to 12 hours since last activity.

Clients are removed after 12 hours of inactivity.

To Refresh Downloaded Content from the Proctor Caching Computer

If a newer version of test content is detected on the Pearson server, it is downloaded to the Proctor Caching computer.

1. Find the shortcut to Proctor Caching and open it.

2. On the **Home** tab, click **Go to Content List** tab or click the **Contents** tab.

   - To filter your list, enter search criteria and select a value from the drop-down list. Click **Clear** to reset your search criteria.

3. Select the test content to refresh.
4. Click **Refresh Downloaded Content**.

5. Enter the following proctor password in the popup window: t35t1n6

6. Click **Yes – Update All Tests**.

Downloaded content is refreshed.

To Reload Test Content from the Proctor Caching Computer

If test content is reloaded, all cached test content from the Pearson server is deleted and reloaded.

1. Find the shortcut to Proctor Caching and open it.

2. On the **Home** tab, click **Go to Content List** tab or click the **Contents** tab.

   - To filter your list, enter search criteria and select a value from the drop-down list. Click **Clear** to reset your search criteria.

3. Select the test content to reload.
4. Click **Reload Content**.

5. Enter the following proctor password in the popup window: t35t1n6

Test content is reloaded.

To Purge Test Content from the Proctor Caching Computer

All cached test content is removed from the computer.

1. Find the shortcut to Proctor Caching and open it.

2. On the **Home** tab, click **Go to Content List** tab or click the **Contents** tab.

   - To filter your list, enter search criteria and select a value from the drop-down list. Click Clear to reset your search criteria.
3. Select the test to purge.
4. Click **Purge Content**.

5. Enter the following proctor password in the popup window: t35t1n6

Test content is purged. Test content should be purged from the Proctor Caching computer after each test administration.

To Purge Client from the Proctor Caching Computer

1. Find the shortcut to Proctor Caching and open it.

2. On the **Home** tab, click **Go to Content List** tab or click the **Contents** tab.

   - To filter your list, enter search criteria and select a value from the drop-down list. Click **Clear** to reset your search criteria.

3. Select the clients to purge.
4. Click **Purge Client**.

5. Enter the following proctor password in the popup window: t35t1n6

Client list is purged.

Technical Support

For technical support, please contact the Pearson Support Center using the information given to you by your program.