



iTester TestMonitor Installation Guide

Maryland High School Assessments 2019-2020



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Version Control

Version	Date	Author	Change Description
1.0	8/13/2019	eMetric	Created support documentation per 2019-2020 requirements discussion with Cognia and MSDE

About this Guide

The iTester platform, called the HSA Kiosk in Maryland, has been fine-tuned to account for many of the unique technology environments and constraints that exist in many schools. iTester’s design ensures a seamless testing experience for all students, despite bandwidth limitations. To account for the various bandwidth conditions that exist in some schools, iTester offers an optional caching service. This user guide describes the requirements and process of installing and maintaining the optional caching module, iTester TestMonitor, at your school. The caching module helps to alleviate bandwidth issues in network conditions by utilizing the local network which translates into substantially lower downstream usage of the external internet connection.

When deciding whether to use TestMonitor, there are several things to consider. Will the school be testing other online tests simultaneously with HSA? If so, there could be competition for bandwidth that would justify the need to use TestMonitor. However, if a school staggers HSA and other tests, and does not assess them concurrently there may not be an issue. Will the schools’ teachers and students be using bandwidth for learning during testing time? If so, TestMonitor may be needed for HSA. The pros and cons of using TestMonitor are listed in the table below.

Table 1: iTester TestMonitor Pros and Cons

Pros	Cons
TestMonitor reduces the risk of possible bandwidth related issues.	Some additional tasks for technology coordinators and STCs/LACs will be required.
	Additional devices will be required, specifically Windows® devices.
	TestMonitor must be running in the background at all times during the testing window.

System Requirements

iTester TestMonitor, is required to be installed on a dedicated device that adheres to the technology guidelines outlined in the iTester TestMonitor Server Requirements table listed below. TestMonitor is designed to run on the local area network and **should not** be set up using a Wi-Fi IP Address. The dedicated device can be a virtual machine as long the VM is configured to start automatically and student testing devices can reach it by the activated IP address. When TestMonitor is installed on a device, it is expected to always be on with very minimal applications running in the background during the operational testing window. Multiple instances of TestMonitor **cannot** be installed on the same device and Network Location based installation of TestMonitor is **NOT** supported.

TestMonitor is developed to be installed and run on Windows devices only. TestMonitor cannot be installed on Mac, Linux, iOS, or Chrome devices. Note that once TestMonitor is installed on the Windows device, students testing with Windows, Mac, iOS, and Chrome devices will be able to connect to TestMonitor. Students testing with Linux devices cannot connect to TestMonitor.

Table 2: iTester TestMonitor Server Requirements

System Requirements	Minimum Requirements	Recommended Requirements
Operating Systems	Windows® 7 or higher	Windows Server® 2008 or higher (64-bit)
Browsers	Chrome™ 76 or newer Firefox® 68 or newer Microsoft Edge 44.17 or newer Safari® 12 or newer	Chrome™ 76 or newer
CPU	1.3 GHz	1.3 GHz
Memory	2 GB RAM	4 GB RAM
Disk Space ^a	10 GB available	10 GB available
Connectivity	Wired connection on same local network and accessible by all testing students. 100Mbps (local network connection) IP address where TestMonitor is installed must be a static IP address. Firewalls on the machine where TestMonitor is installed and on the local network must allow connectivity on port 31337.	Wired connection on same local network and accessible by all testing students. 1Gbps (local network connection) IP address where TestMonitor is installed must be a static IP address. Firewalls on the machine where TestMonitor is installed and on the local network must allow connectivity on port 31337.

Windows is a registered trademark of Microsoft Corporation. Firefox is a registered trademark of the Mozilla Foundation. Safari is a registered trademark of Apple Inc. Chrome is a registered trademark of Google Inc.

a. Disk space of 10 GB is to run TestMonitor not to install TestMonitor.

Note: If you need to change the port used for TestMonitor, you can do this by following the steps listed below. We do not recommend making any changes unless required or the port is already in use by another application. Default port settings (i.e. port 31337) function properly for TestMonitor.

1. Modify the env.json file and change the value for "port."
2. Restart the TestMonitor service (through Windows services).
3. If TestMonitor is already activated, then you need to deactivate it and re-activate to register the new port. It's recommended to change ports prior to performing activation (or deactivate first).

Roles and Responsibilities

iTester TestMonitor recognizes three user roles. Each role has a separate set of responsibilities, which determine the user's level of access to the components available within TestMonitor; see Table 3 for more information.

Table 3: iTester TestMonitor Roles and Responsibilities

Role	Responsibilities
Local Accountability Coordinator (LAC)	<ul style="list-style-type: none"> • Confirm TestMonitor activation requests in Administration Portal • Can deactivate TestMonitor in the Administration portal
School Test Coordinator (STC)	<ul style="list-style-type: none"> • Confirm TestMonitor activation requests in Administration Portal • Can deactivate TestMonitor in the Administration portal
Technology Coordinator (TC)	<ul style="list-style-type: none"> • Download TestMonitor from Administration Portal • Install TestMonitor • Request Activation of TestMonitor • Verify Content Synchronization of TestMonitor • Manage and Maintain TestMonitor

Installation

iTester TestMonitor is designed to provide a seamless and simple installation, done in a two-step download and install process.

The network administrator of the organization should ensure that the Windows server hosting TestMonitor can reach the eMetric server endpoints, and that these endpoints are not blocked by a proxy or firewall.

Whitelist the following sites on ports 80 and 443 in content filtering proxies or other locally used proxy software:

- hsaportal.measuredprogress.org

- hsapRACTICetest.measuredprogress.org
- fonts.googleapis.com/
- themes.googleusercontent.com/
- googleusercontent.com/
- *.amazonaws.com
- app.getsentry.com
- dc.services.visualstudio.com
- az416426.vo.msecnd.net

TestMonitor is installed as a Windows service. After installation, the service is launched automatically on system reboots or crashes. Software which either interrupts, restarts, or blocks these services/processes must whitelist them in order for TestMonitor to function.

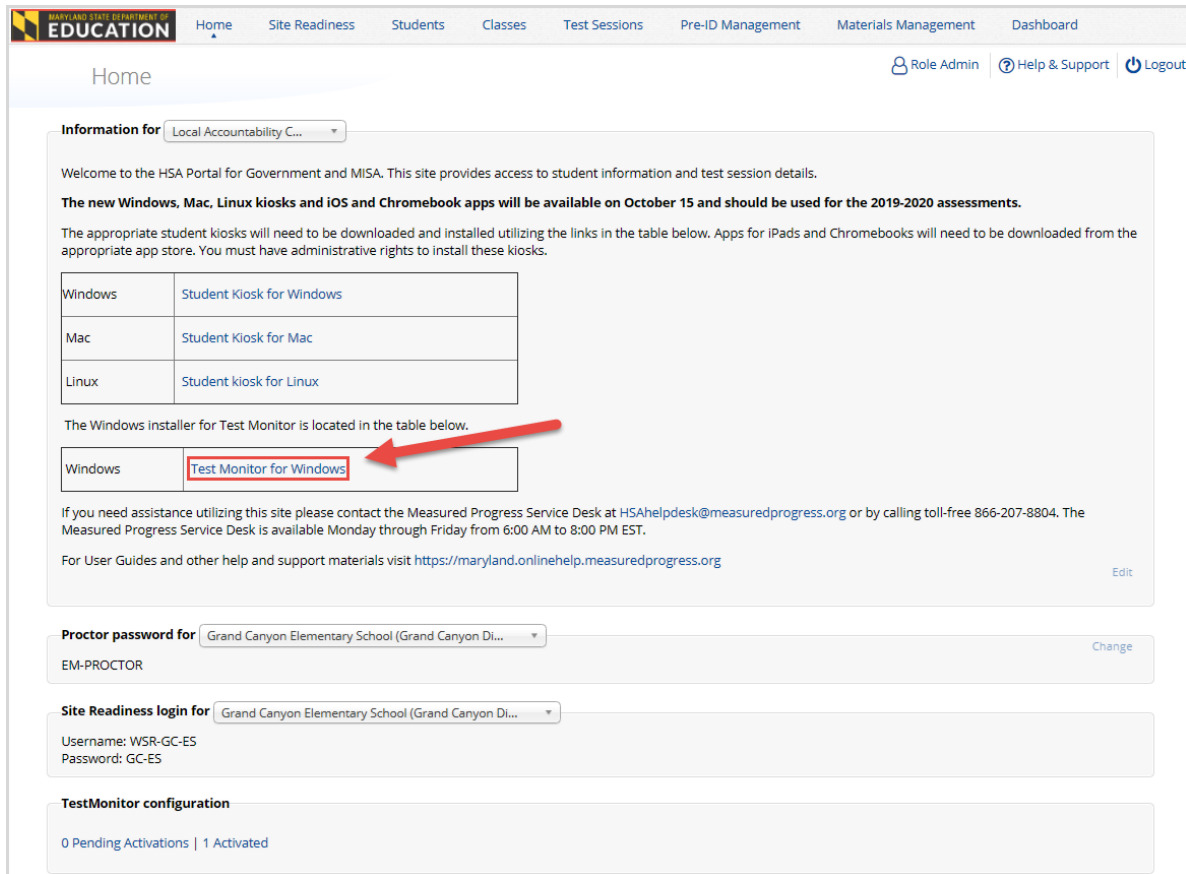
Download iTester TestMonitor

After your Local Accountability Coordinator sets up your Technology Coordinator account in the Maryland HSA Portal, you will receive your user account information via email.

Note: If you do not have a dedicated Technology Coordinator, a School Test Coordinator will need to create a Technology Coordinator user account within the portal to complete all TestMonitor installation tasks.

Once you have your login credentials, you are ready to download TestMonitor:

1. Go to the HSA Portal at <https://hsaportal.measuredprogress.org/> and log in with your user name and password.
2. On the portal home page, click **Administration**. The Administration home page appears.
3. Click the **Windows installer for TestMonitor** link. You will see a download progress bar at the bottom of the page.



Home Site Readiness Students Classes Test Sessions Pre-ID Management Materials Management Dashboard

Role Admin Help & Support Logout

Home

Information for Local Accountability C...

Welcome to the HSA Portal for Government and MISA. This site provides access to student information and test session details.

The new Windows, Mac, Linux kiosks and iOS and Chromebook apps will be available on October 15 and should be used for the 2019-2020 assessments.

The appropriate student kiosks will need to be downloaded and installed utilizing the links in the table below. Apps for iPads and Chromebooks will need to be downloaded from the appropriate app store. You must have administrative rights to install these kiosks.

Windows	Student Kiosk for Windows
Mac	Student Kiosk for Mac
Linux	Student kiosk for Linux

The Windows installer for Test Monitor is located in the table below.

Windows	Test Monitor for Windows
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If you need assistance utilizing this site please contact the Measured Progress Service Desk at HSAhelpdesk@measuredprogress.org or by calling toll-free 866-207-8804. The Measured Progress Service Desk is available Monday through Friday from 6:00 AM to 8:00 PM EST.

For User Guides and other help and support materials visit <https://maryland.onlinehelp.measuredprogress.org>

Proctor password for Grand Canyon Elementary School (Grand Canyon Di... Change

EM-PROCTOR

Site Readiness login for Grand Canyon Elementary School (Grand Canyon Di...

Username: WSR-GC-ES
Password: GC-ES

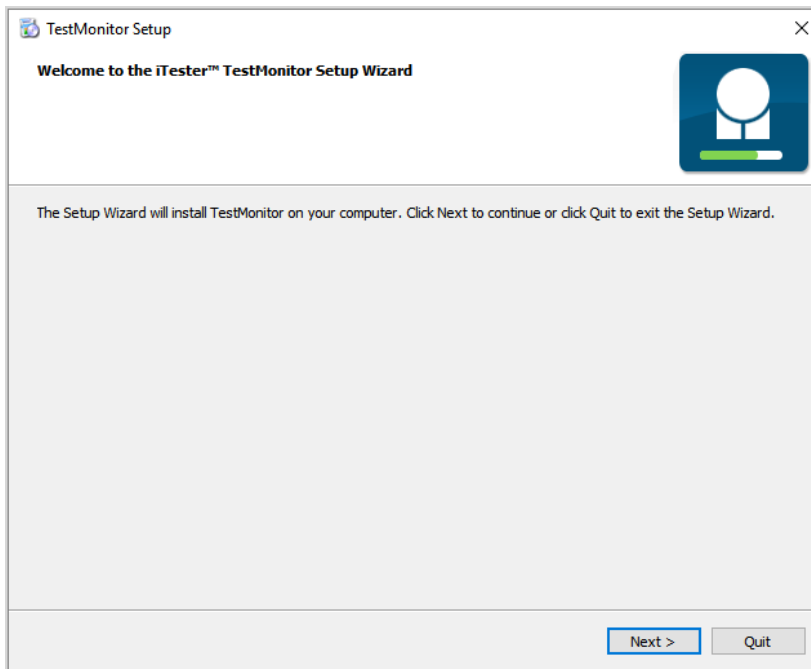
TestMonitor configuration

0 Pending Activations | 1 Activated

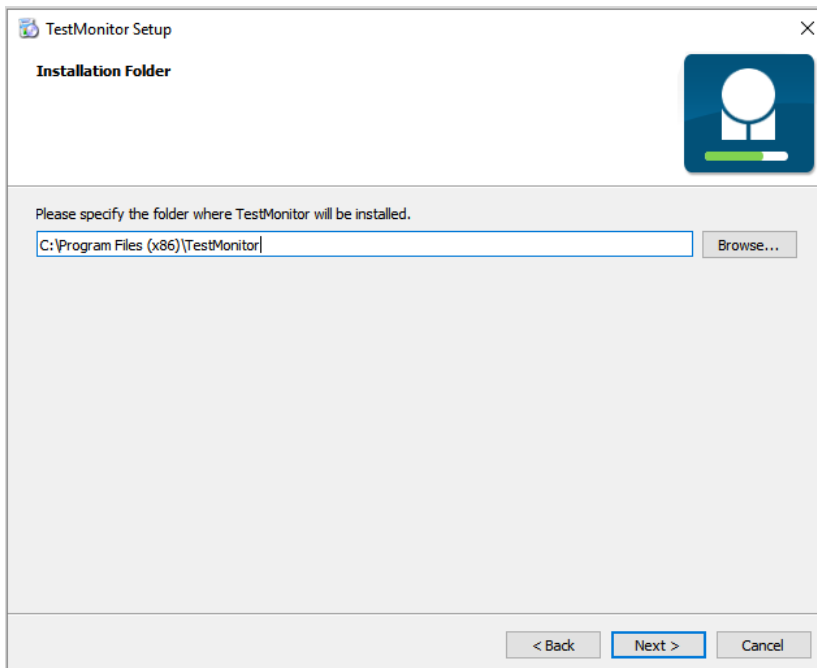
Install iTester TestMonitor

When the download completes:

1. Double-click on the downloaded executable file to launch the installer.
2. Read the TestMonitor Setup prompt and click **Next** to continue.



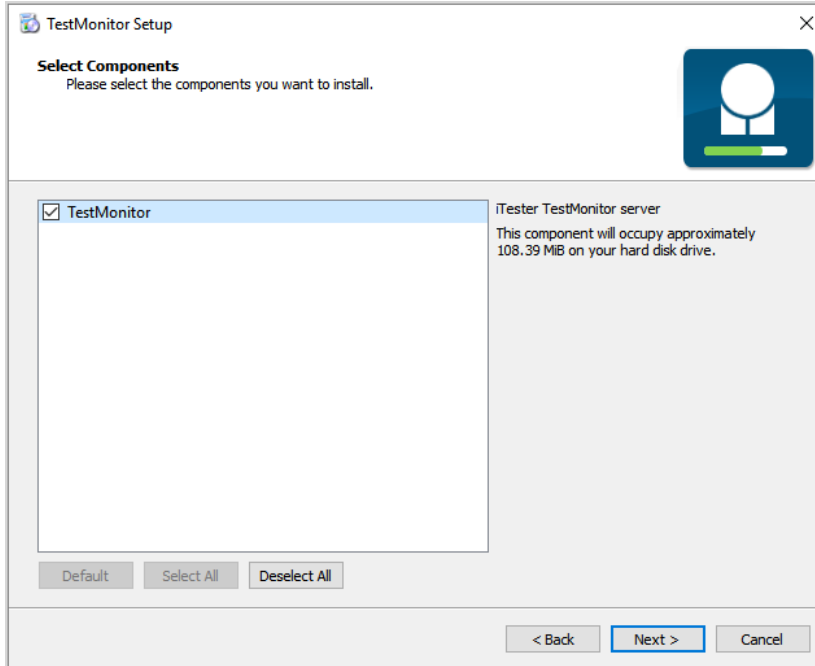
3. Type the destination folder in the space provided and click **Next** to continue. The default install path is prepopulated for you.



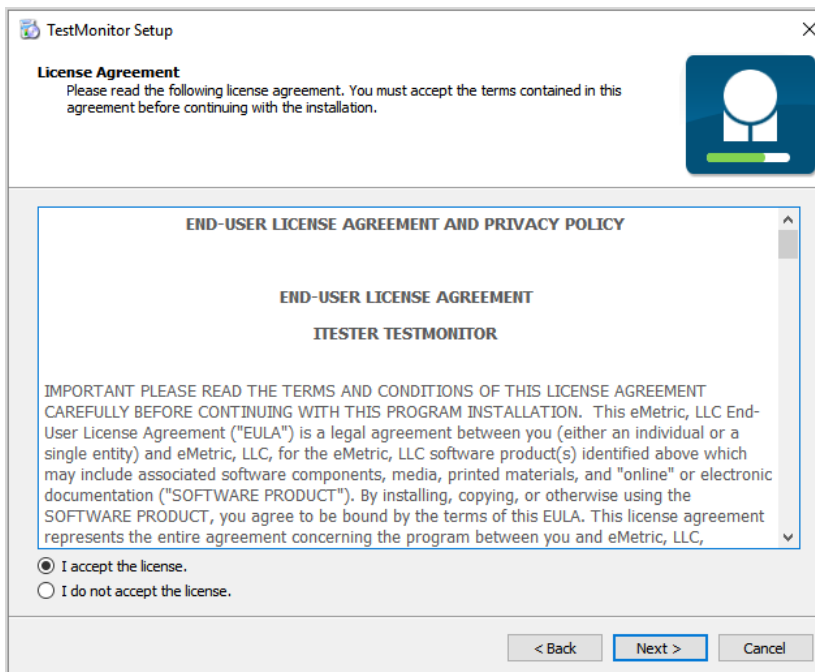
Note: Network Location based installation of TestMonitor is **NOT** supported. The installation location chosen at install-time must retain full read/write permission for the same user context as the "TestMonitor" service (which typically defaults to SYSTEM); be white-listed on any

filesystem integrity monitoring/restoration software, such as DeepFreeze or SteadyState; and must not be overwritten or moved once installed. It must have the ability to execute nodejs-based application code in the desired directory.

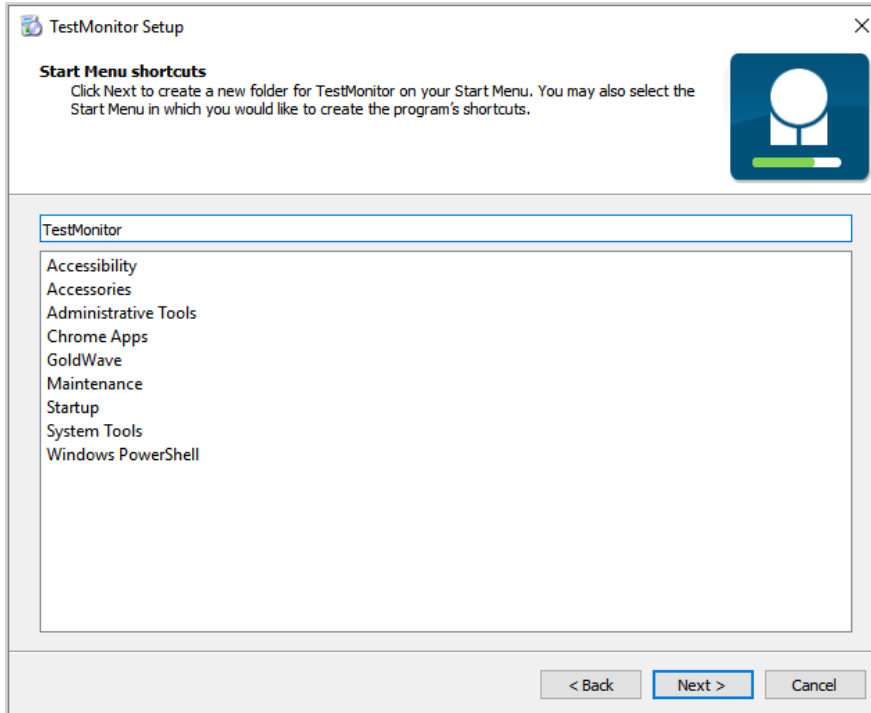
4. Select the components you are installing, verify TestMonitor is selected, then click **Next**.



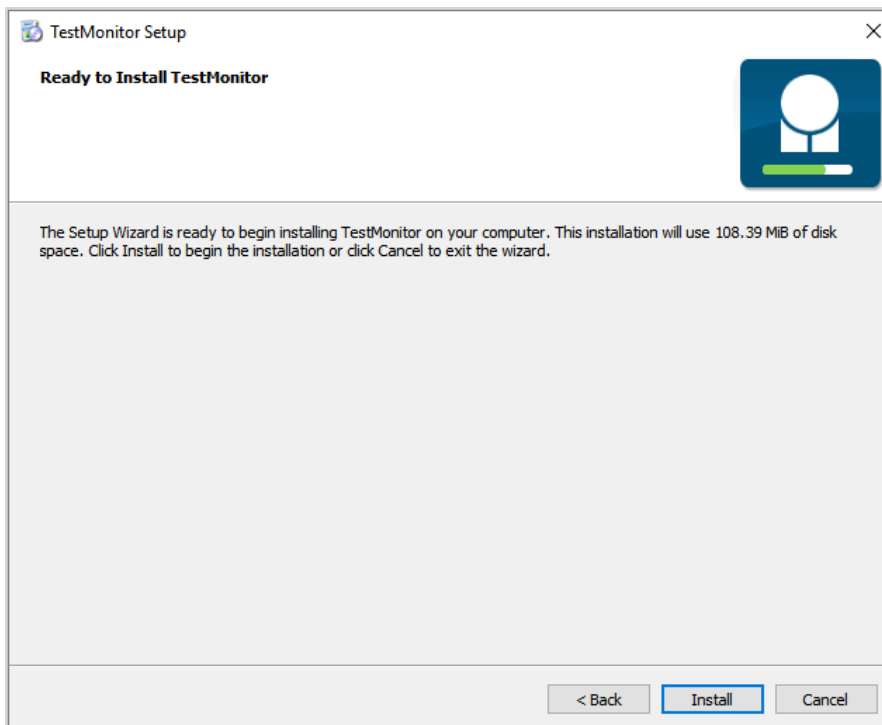
5. Read the End-User License Agreement and select **I agree to the license terms and conditions**. Click **Next** to continue.



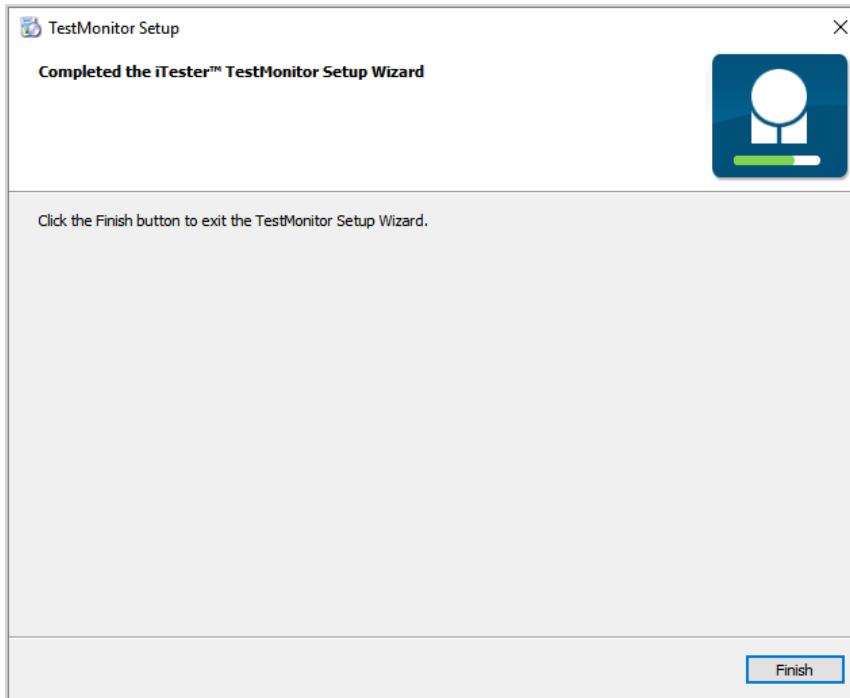
6. Select the Start Menu in which you would like to create the program's shortcuts the click **Next**.



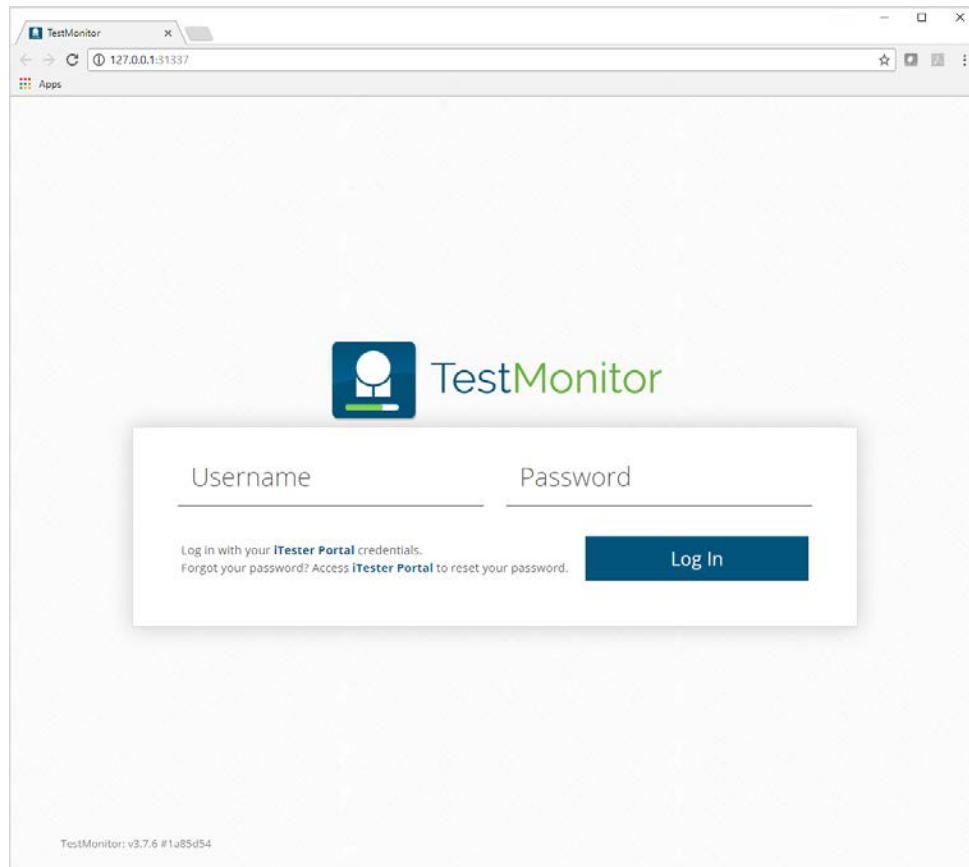
7. Confirm you are ready to install TestMonitor, and click **Install**.



8. Click **Finish** to complete the installation.



9. On successful installation, TestMonitor's login screen is opened in your default browser window. The TestMonitor interface is also accessible from any other machine on your local network by using a browser.



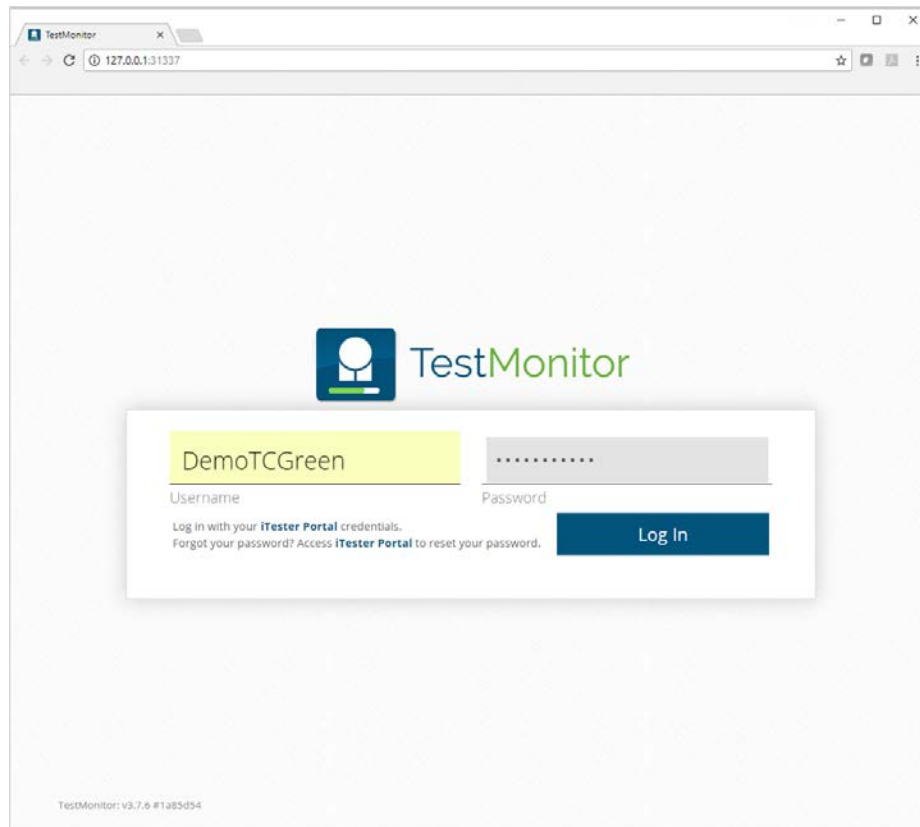
Important Note: Multiple instances of TestMonitor cannot be installed on a single device.

Log In & Activation

Log In

Log in to TestMonitor with your Maryland HSA Portal user name and password. You will not receive separate login credentials for TestMonitor.

Note: Access to TestMonitor is based on user roles, only authorized users will be able to log in to TestMonitor and users will only have access to schools they are assigned to.



Activation

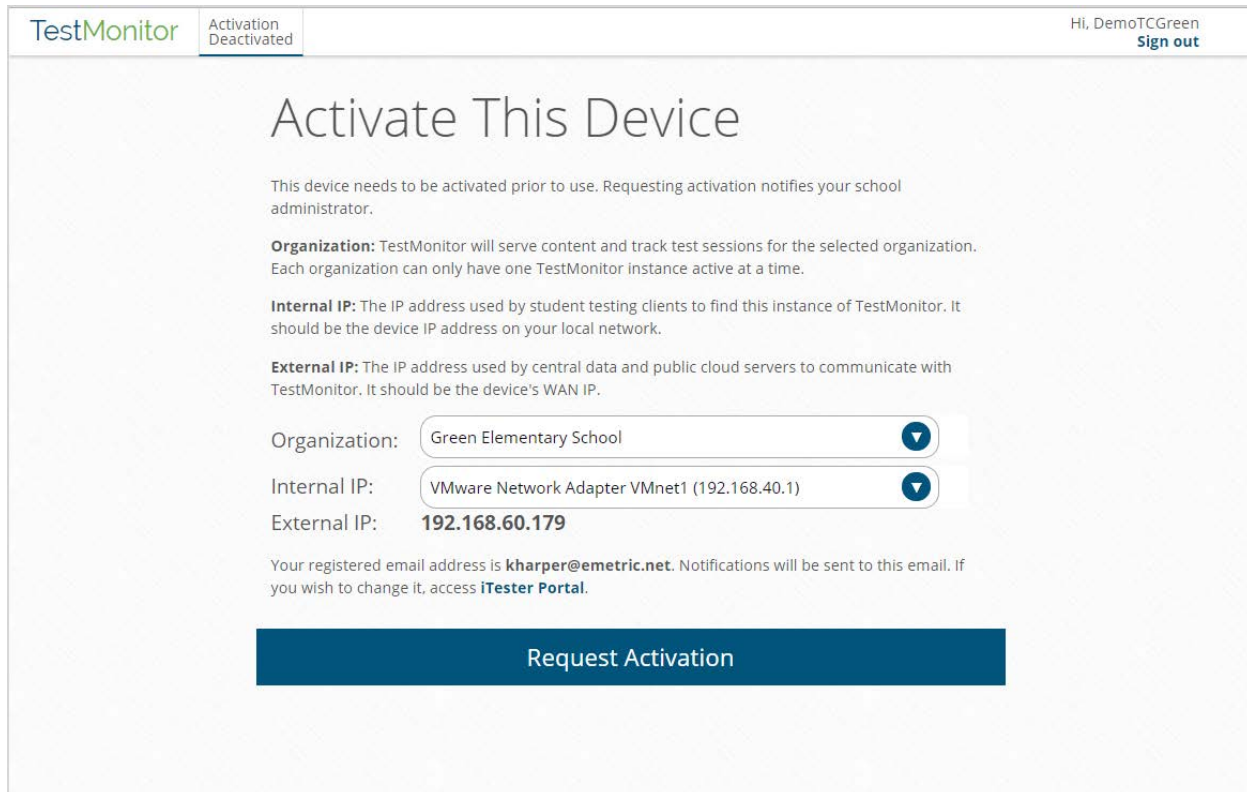
Once installed, TestMonitor must be activated for your school or LEA so test content can synchronize and cache onto the machine. The activation process involves two steps: (1) you will be required to make an activation request where you will specify Organization (school) and IP address to activate and (2) your Local Accountability Coordinator or School Test Coordinator will be required to confirm or reject the activation request within the HSA Portal.

LEA-Level Activation rules:

- a. When TestMonitor is activated for an LEA, all of the schools within that LEA will use that instance of TestMonitor.
- b. When a request for TestMonitor to be activated at the LEA level is submitted, but TestMonitor is already activated at one or more schools within that LEA, then LEA-level activation is

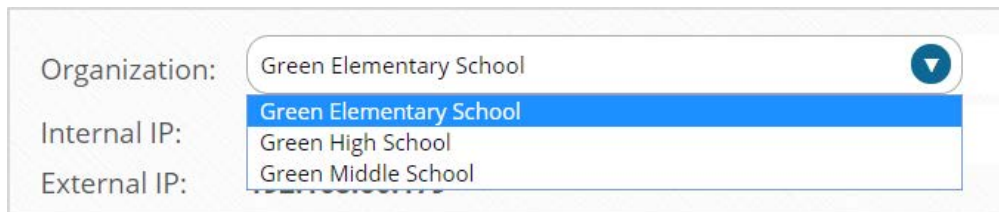
- prohibited. Users will need to deactivate all instances of TestMonitor at the school-level to be able to activate for an LEA.
- c. When TestMonitor is activated for an LEA, schools within that LEA will be prohibited from activating TestMonitor at the school level.

After logging in to TestMonitor you arrive at the **Activate this Device** screen.



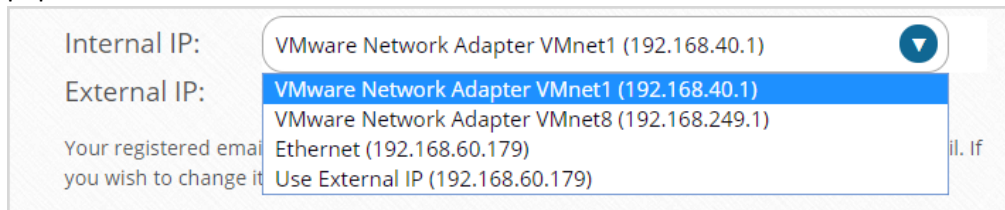
Technology Coordinator's Steps:

1. **Select** an organization. If you belong to multiple schools you will use the drop down box to select the school you are activating for this TestMonitor.



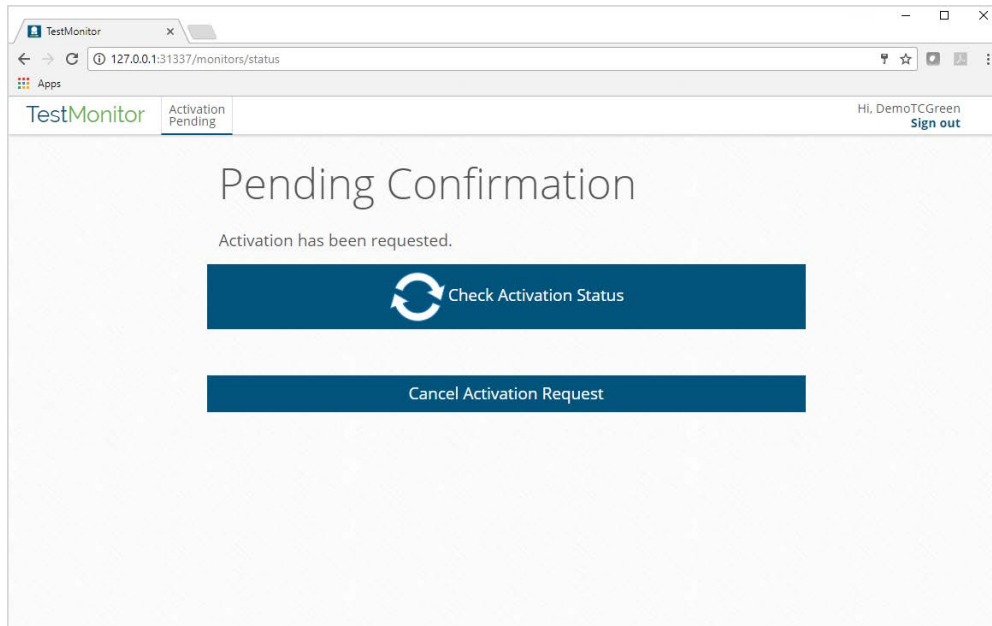
2. **Select** the Internal IP address for the TestMonitor device, this is required as it is used by students testing kiosks to find TestMonitor instance on the local network. The internal IP should be the TestMonitor device's private LAN IP address on the local network. TestMonitor activation request will show both Wi-Fi and LAN IPs in this drop down, TestMonitor should **never** be used on the Wi-Fi IP.

External IP address is required for tracking purposes to ensure the TestMonitor is created at expected location, it should be the TestMonitor device's public WAN IP address and will auto populate.



The screenshot shows a configuration form with two IP address fields. The 'Internal IP:' field is set to 'VMware Network Adapter VMnet1 (192.168.40.1)'. The 'External IP:' field has a dropdown menu open, showing several options: 'VMware Network Adapter VMnet1 (192.168.40.1)', 'VMware Network Adapter VMnet8 (192.168.249.1)', 'Ethernet (192.168.60.179)', and 'Use External IP (192.168.60.179)'. Below the fields, there is a partially visible text prompt: 'Your registered email you wish to change it'.

3. Click **Request Activation**. TestMonitor is now put in a pending activation status. If you log out and log back in you will still see that it is pending activation.



4. An email will be sent to you after the LAC or STC has **confirmed** the TestMonitor activation request. You can also check on the status by:
 - a. Clicking the **Check Activation Status** button on the Pending Confirmation screen.
 - b. Refreshing the browser in which the TestMonitor interface is open.
 - c. Logging into TestMonitor.
 - d. By polling mechanism: TestMonitor runs a poll in the background every hour to detect and save the activation status (i.e. activated, deactivated or pending).

At any given time, TestMonitor can have one of the three status:

- Not Activated (which also means Deactivated)

- Pending Confirmation
- Activated

Note: The IP Address that is registered during activation needs to remain the same for the duration of the testing window.

Local Accountability Coordinator or School Test Coordinator’s Steps:

1. Log in to the Maryland HSA Portal.
2. Click **Administration**.
3. Scroll to the TestMonitor section of the Administration page. You will see all TestMonitor instances pending activation, including the organization, machine name, both internal and external IP addresses, host name and MAC Address. You will need to verify the information as correct.



TestMonitor configuration

1 Pending Activations | 8 Activated

Organization	Machine Name	Internal IP Address	External IP Address	Host Name	MAC Address	
Green High School	Emetric-5053/00:50:56:c0:00:01	192.168.40.1:31337	192.168.60.179	Emetric-5053	00:50:56:c0:00:01	<input type="button" value="Confirm"/> <input type="button" value="Reject"/>

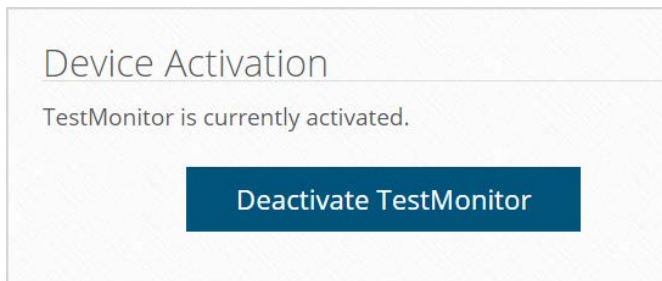
s244 v3.7.6 Copyright © 2017 eMetric LLC [Contact Us](#) 877-829-7769

4. After the TestMonitor information has been verified, click **Confirm** to activate TestMonitor. If the information is incorrect, click **Reject**. Activation requests will stay in pending status until they are confirmed or rejected.
5. The Technology Coordinator will receive an email that TestMonitor was activated.

Deactivation

An active instance of TestMonitor can be deactivated in one of four ways.

1. When logged in to TestMonitor you can deactivate by clicking the **Deactivate This Device** button from the Device is Active screen.



Device Activation

TestMonitor is currently activated.

2. A Local Accountability Coordinator or School Test Coordinator can deactivate test monitor by logging in to the Maryland High School Assessments Portal, clicking **Administration**, scrolling to the TestMonitor section on the Admin Home Screen, then clicking the **Deactivate** button next to the TestMonitor instance to be deactivated.

TestMonitor configuration						
0 Pending Activations 9 Activated						
Organization	Machine Name	Internal IP Address	External IP Address	Host Name	MAC Address	
Hartshorne JHS-610	emetric-93/18:66:da:23:74:7c	192.168.60.155:31337	192.168.60.155	emetric-93	18:66:da:23:74:7c	Deactivate
Green High School	Emetric-5053/00:50:56:c0:00:01	192.168.40.1:31337	192.168.60.179	Emetric-5053	00:50:56:c0:00:01	Deactivate

3. Uninstalling TestMonitor will also deactivate it.
4. It can also be deactivated through a back end process by end of administration. All instances of TestMonitor will be deactivated at the end of each administration.

All test content synchronized on TestMonitor is purged when deactivated or uninstalled.

Note: An email notification is sent to the Technology Coordinator's email address registered in the Maryland HSA Portal for any critical event that occurs on your school's TestMonitor such as activation status changes. This helps a Technology Coordinator take corrective action. Without this there is a possibility of the issues going unnoticed and may further impact student testing as TestMonitor runs as a background service.

Synchronization

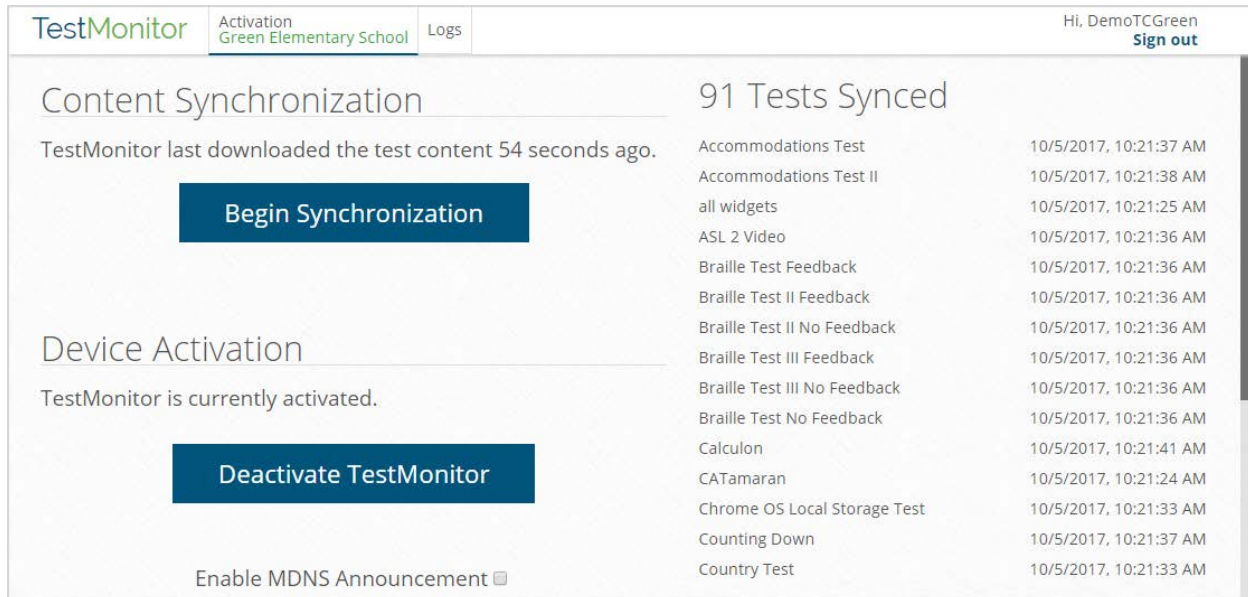
Once TestMonitor has been installed and activated, you will need to ensure the test content is synced to TestMonitor. Content synchronization on an activated TestMonitor happens automatically or can also be synced on-demand.

1) Automatic synchronization

- a) TestMonitor routinely checks hourly for updated activation and synchronization status. Upon becoming activated it will immediately begin synchronization.
- b) The routine checks will automatically detect updated content and immediately synchronize.

2) On-demand synchronization

- a) Click the **Begin Synchronization** button to get new test content from the eMetric servers and sync that data to TestMonitor.



The screenshot shows the TestMonitor web interface. At the top, there is a navigation bar with the TestMonitor logo, a dropdown menu for 'Activation Green Elementary School', a 'Logs' link, and a user profile 'Hi, DemoTCGreen' with a 'Sign out' link. The main content area is divided into two sections. The left section, titled 'Content Synchronization', shows 'TestMonitor last downloaded the test content 54 seconds ago.' and a large blue button labeled 'Begin Synchronization'. Below this is a 'Device Activation' section stating 'TestMonitor is currently activated.' with a blue button labeled 'Deactivate TestMonitor' and a checkbox for 'Enable MDNS Announcement'. The right section, titled '91 Tests Synced', displays a list of tests with their sync times:

Accommodations Test	10/5/2017, 10:21:37 AM
Accommodations Test II	10/5/2017, 10:21:38 AM
all widgets	10/5/2017, 10:21:25 AM
ASL 2 Video	10/5/2017, 10:21:36 AM
Braille Test Feedback	10/5/2017, 10:21:36 AM
Braille Test II Feedback	10/5/2017, 10:21:36 AM
Braille Test II No Feedback	10/5/2017, 10:21:36 AM
Braille Test III Feedback	10/5/2017, 10:21:36 AM
Braille Test III No Feedback	10/5/2017, 10:21:36 AM
Braille Test No Feedback	10/5/2017, 10:21:36 AM
Calculus	10/5/2017, 10:21:41 AM
CATamaran	10/5/2017, 10:21:24 AM
Chrome OS Local Storage Test	10/5/2017, 10:21:33 AM
Counting Down	10/5/2017, 10:21:37 AM
Country Test	10/5/2017, 10:21:33 AM

Important Note: All tests that are published to the state will be synced to TestMonitor independent of the course, grade or school level.

Content Download

Once the test content is synchronized on TestMonitor, student testing devices are ready to fetch the content. When a student logs in to HSA Kiosk, the kiosk will verify if there is an active TestMonitor. If TestMonitor is activated for the student's organization, the service will return the IP address of the activated TestMonitor. The student's test taking device will then find the TestMonitor on the local network by using the IP address. Once connected, the kiosk then starts downloading content from TestMonitor instead of downloading it from the eMetric servers. The downloading of test content happens on the directions page after a session is selected from the Student Profile page. After the test content is downloaded to the student's device, they will continue with their test session.

Important Information About Content Download:

- You do not have to set up the IP Address on the student's device; it is automatically returned to the student within the service.
- Before downloading content from TestMonitor, a verification check is in place to ensure the content to be downloaded from TestMonitor is the current version. If the verification fails and the TestMonitor content is out of date, the current version of test content will then be downloaded from the eMetric servers.
- If the student's device cannot connect to TestMonitor, the kiosk will automatically begin downloading content from eMetric servers.

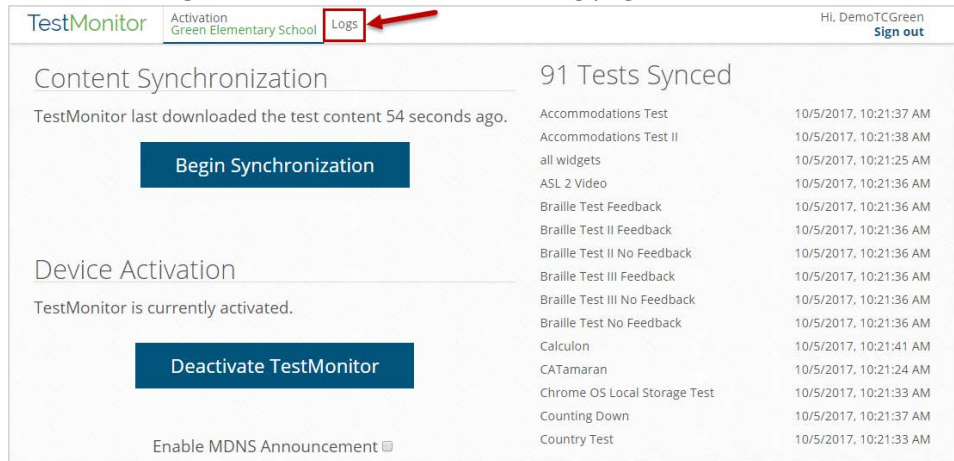
- ASL videos are not synchronized on TestMonitor. Therefore, these files are streamed from the eMetric servers using network optimized adaptive bandwidth.
- Practice test content will not be synced to TestMonitor. Students taking the practice test will download content directly from the eMetric servers.
- Test content for the site readiness test, certification window tests, and operational tests will be synced with TestMonitor.

Content Fetch Log

A content fetch log is generated and displayed for a Technology Coordinator any time a student connects to and uses TestMonitor.

To view the Content Fetch Logs:

1. Log in to TestMonitor.
2. Click on the **Logs** tab on the TestMonitor landing page.



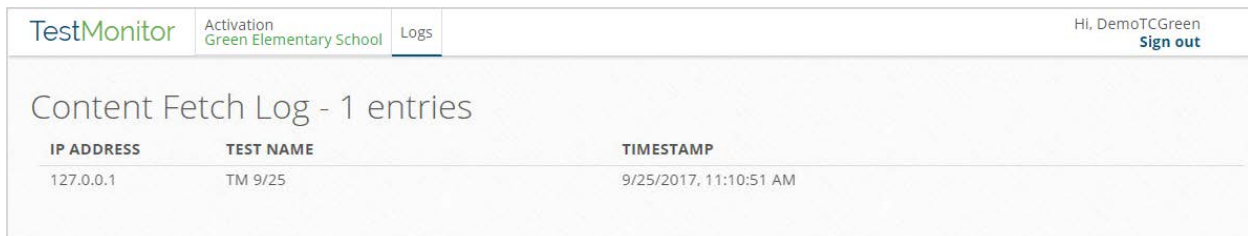
The screenshot shows the TestMonitor interface for 'Activation Green Elementary School'. The 'Logs' tab is highlighted with a red box and arrow. The interface is divided into three main sections:

- Content Synchronization:** Shows 'TestMonitor last downloaded the test content 54 seconds ago.' and a 'Begin Synchronization' button.
- Device Activation:** Shows 'TestMonitor is currently activated.' and a 'Deactivate TestMonitor' button.
- 91 Tests Synced:** A list of tests with their respective timestamps.

Test Name	Timestamp
Accommodations Test	10/5/2017, 10:21:37 AM
Accommodations Test II	10/5/2017, 10:21:38 AM
all widgets	10/5/2017, 10:21:25 AM
ASL 2 Video	10/5/2017, 10:21:36 AM
Braille Test Feedback	10/5/2017, 10:21:36 AM
Braille Test II Feedback	10/5/2017, 10:21:36 AM
Braille Test II No Feedback	10/5/2017, 10:21:36 AM
Braille Test III Feedback	10/5/2017, 10:21:36 AM
Braille Test III No Feedback	10/5/2017, 10:21:36 AM
Braille Test No Feedback	10/5/2017, 10:21:36 AM
Calculon	10/5/2017, 10:21:41 AM
CATamaran	10/5/2017, 10:21:24 AM
Chrome OS Local Storage Test	10/5/2017, 10:21:33 AM
Counting Down	10/5/2017, 10:21:37 AM
Country Test	10/5/2017, 10:21:33 AM

The Content Fetch Log displays information as listed below and as shown in the screenshot below:

1. Student's IP address
2. Test Name
3. Time stamp in CST



The screenshot shows the 'Content Fetch Log - 1 entries' section of the TestMonitor interface. It contains a table with the following data:

IP ADDRESS	TEST NAME	TIMESTAMP
127.0.0.1	TM 9/25	9/25/2017, 11:10:51 AM

TestMonitor Installation Questions and Potential Issues

Below are a few common installation questions or potential issues. If you experience technical issues during installation and setup of TestMonitor please contact Cognia Service Desk toll-free at:

(866) 207-8804 or email at HSAhelpdesk@cognia.org.

I can access TestMonitor from the physical server, but cannot access from another device on the local network. Why is that?

This is caused by a firewall blocking incoming TCP connections to the server's port 31337. The firewall will need to be reconfigured to allow incoming TCP connections on port 31337. How to do this exactly depends on which firewall is being used. For assistance, please contact Cognia Service Desk toll-free at:

(866) 207-8804 or email at HSAhelpdesk@cognia.org.

Launching TestMonitor brings up some other application, what happened?

Some other application is already listening to port 31337. When the other application is stopped, launching TestMonitor suddenly brings up the TestMonitor interface, as expected. To resolve this issue TestMonitor can be uninstalled and reinstalled on a different port. We do not recommend making any changes unless required or the port is already in use by another application. Default port settings (i.e. port 31337) function properly for TestMonitor.

1. Modify the env.json file and change the value for "port."
2. Restart the TestMonitor service (through Windows services).
3. If TestMonitor is already activated, then you need to deactivate it and re-activate to register the new port. It's recommended to change ports prior to performing activation (or deactivate first).

Installation completed successfully, but TestMonitor never finishes "Loading..."

This can happen when the default browser on the device TestMonitor is being installed on is using an older browser and version such as IE9 or older versions of Firefox. For browser requirements please refer to the [iTester TestMonitor Server Requirements Table](#).

Logging in with valid credentials (or invalid) shows "Internal Server Error"

TestMonitor is unable to communicate with the eMetric server. For example, the device may not be connected to the internet or the machine does not have whitelisted access to eMetric servers. Verify that TestMonitor is able to connect to the network and the internet.

Logging into an activated TestMonitor shows the request activation screen

This happens when the TestMonitor server's external MAC address is changed from the one it was activated with. In this state, deactivation is not detected, so content is not purged. If the external MAC address changes back to the one it was originally activated with, the problem will be remedied.

During installation process, system-daemon refuses to install (Windows 32-bit)

This will occur when you attempt to install the 64-bit installer on a 32-bit system, because the 32-bit operating system cannot run 64-bit executables.