

Appendix N
Technology Requirements for Online Testing Webinar Module



Technology Requirements for Online Testing

Training Webinar
2020 - 2021

By the end of this presentation, you should be able to:

- Prepare for online tests at your school by completing the four steps to set up technology for online testing
- Install the Secure Browser
- Troubleshoot technical problems during the tests

Topics Covered in This Module

To set up online testing technology in your schools, complete these four steps:

- Step 1: Set up Test Administrator (TA) workstations
- Step 2: Set up student workstations
- Step 3: Configure your network
- Step 4: Configure assistive technologies

Test Delivery System Overview

Cambium Assessment's Test Delivery System (TDS) has two components:

1. Test Administrator (TA) Interface

2. Student Interface

- Test administrators (TAs) use the TA Interface to create and manage test sessions from any web browser utilizing a school-owned device.
- Students access and complete their tests through the Student Interface via the Secure Browser installed on the student testing device.
- Smart phones are not permitted to be used to administer tests.

Setting Up the Test Administrator Workstation

- TA workstations must be connected to a printer in order for TAs to be able to print test session information or if a student has the Print on Demand accommodation.
- If your school uses a firewall or other networking equipment that blocks access to public websites, you may need to add CAI websites to your allowlist.

Setting Up Student Workstations

- This year's Secure Browser version must be installed on each student testing device. Last year's version cannot be utilized.



- The Secure Browser is CAI's customized web browser designed to keep tests secure by locking down the student device and preventing the students from accessing anything except their tests.
- The Secure Browser displays the student application in full-screen mode with no user interface to the browser itself. It has no *back* button, *next* button, *refresh* button, or URL bar.

System Requirements

To get started setting up your student workstations, you should make sure your devices are supported.



System Requirements: Desktops and Laptops

System Requirements: Desktops and Laptops

Supported Operating Systems	Minimum Requirements	Recommended Specifications
Windows 8, 8.1 (Professional & Enterprise) 10 (Educational, Professional, & Enterprise) (Versions 1809-2004 ^a) Server 2012 R2, 2016 R2 (thin client)	1 GHZ Processor 1 GB RAM (32-bit) 2 GB RAM (64-bit) 16 GB hard drive (32-bit) 20 GB hard drive (64-bit)	1.4 GHZ Processor 2+ GB RAM 20+ GB hard drive space
macOS X 10.11–10.16 ^a	1 GHZ Processor 1 GB RAM (32-bit) 2 GB RAM (64-bit) 16 GB hard drive (32-bit) 20 GB hard drive (64-bit)	1.4 GHZ Processor 2+ GB RAM 20+ GB hard drive space

^a Support for this version is anticipated upon the completion of testing following its release.

System Requirements: Desktops and Laptops

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Supported Operating Systems	Minimum Requirements	Recommended Specifications
Linux (64-bit or 32-bit) ^b Fedora 30-31 ^a LTS (Gnome) Ubuntu 16.04 LTS (Gnome)	1 GHZ Processor 1 GB RAM (32-bit) 2 GB RAM (64-bit) 16 GB hard drive (32-bit) 20 GB hard drive (64-bit) Required libraries/packages: GTK+ 2.18 or higher GLib 2.22 or higher Pango 1.14 or higher X.Org 1.0 or higher (1.7+ recommended) libstdc++ 4.3 or higher libreadline6:i386 (required for Ubuntu only) GNOME 2.16 or higher	1.4 GHZ Processor 2+ GB RAM 20+ GB hard drive space Recommended libraries/packages: In addition to the required libraries listed under minimum requirements, the following should be installed: NetworkManager 0.7 or higher DBus 1.0 or higher HAL 0.5.8 or higher
Linux (64-bit only) ^b Ubuntu 18.04, 20.04 ^a LTS (Gnome)	1 GHZ Processor 2 GB RAM 20 GB hard drive Ubuntu 18.04 LTS (Gnome) also requires the following libraries: Sox Net-tools	1.4 GHZ Processor 2+ GB RAM 20+ GB hard drive space

^a Support for this version is anticipated upon the completion of testing following its release.

^b ARM-powered devices such as the Raspberry Pi are not supported for online testing.

System Requirements: Tablets and Chromebooks

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Supported Operating Systems	Supported Tablets
iOS (iPads) ^b 12.4, 13.4, 14 ^a	All 9.7” or larger iPads running a supported version of iOS/iPadOS.
Windows 8, 8.1 (Professional & Enterprise) 10 (Educational, Professional, & Enterprise)	CAI supports any tablet running these versions of Windows, but has done extensive testing only on Surface Pro, Surface Pro 3, Asus Transformer, and Dell Venue.
^a Support for this version is anticipated upon the completion of testing following its release.	
^b When using iOS, ensure the English keyboard is installed and set as the default.	

System Requirements: Tablets and Chromebooks

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Supported Operating Systems	Supported Tablets
Chrome OS 84+	<p>For a full list of supported Chromebooks, see https://support.google.com/chrome/a/answer/6220366.</p> <p>Chromebooks manufactured in 2017 or later must have an Enterprise or Education license to run in kiosk mode, which is necessary to run the Secure Browser.</p> <p>Chromebooks running in Tablet Mode and tablets running Chrome OS are not supported. Touchscreen features can be used on Chromebooks when available.</p> <p>CAI only supports versions of Chrome OS released on Google's stable channel.</p>

Supported Browsers: iOS

Operating System	Supported Devices	Browsers	TA Interface, Released Item Repository	TIDE, ORS
iOS (iPads) 12.4	All 9.7" or larger iPads running a supported version of iOS/iPadOS.	Safari 12	✓	
13.4	Same device models noted above.	Safari 13	✓	
4 ^a	Same device models noted above.	Safari 14 ^a	✓	
^a Support for this version is anticipated upon the completion of testing following its release.				

Supported Browsers: Windows and Chrome

Operating System	Supported Devices	Browsers	TA Interface, Released Item Repository	TIDE, ORS
Windows 8, 8.1 (Professional & Enterprise) Server 2012 R2, 2016 R2 (thin client)	Desktops and Laptops	Chrome 84+ Firefox 60+	✓	✓
Windows 10 (Educational, Professional, & Enterprise) (Versions 1809-2004 ^a)	Desktops and Laptops	Chrome 84+ Firefox 60+ Edge 17+	✓	✓
Chrome OS 84+	See https://support.google.com/chrome/a/answer/6220366 for a full list of supported Chromebooks.	Chrome 84+	✓	
^a Support for this version is anticipated upon the completion of testing following its release.				

Supported Browsers: Mac and Linux

Operating System	Supported Devices	Browsers	TA Interface, Released Item Repository	TIDE, ORS
macOS X 10.11-10.16 ^a	Desktops and Laptops	Chrome 84+ Firefox 60+ Safari 11+	✓	✓
Linux (64-bit or 32-bit) ^b Fedora 30-31 ^a LTS (Gnome) Ubuntu 16.04 LTS (Gnome)	Desktops and Laptops	Chrome 84+ Firefox 60+	✓	✓
Linux (64-bit only) ^b Ubuntu 18.04, 20.04 ^a LTS (Gnome)	Desktops and Laptops	Chrome 84+ Firefox 60+	✓	✓

^a Support for this version is anticipated upon the completion of testing following its release.

^b ARM-powered devices such as the Raspberry Pi are not supported for online testing.

Appropriate Monitor Displays

- Monitor settings may need to be adjusted if test items with shaded images are very light or cannot be seen
- The larger the monitor, the more “real estate” students have
- Minimum resolution for desktops, laptops, and tablets: 1024 x 768 or better
- Students must not take online tests on computers connected to more than one monitor.



Secure Browser Installation Methods

- Download and install the Secure Browser from the Indiana Assessment Portal.
 - <https://indiana.portal.cambiumast.com/secure-browsers.shtml>
- Download and save the Secure Browser onto a media device (such as a flash drive) and copy and install the files on each computer.
- Download and save the Secure Browser to a network folder and copy and install the files on each computer.

Note: Running the Secure Browser application from a shared network location is strongly discouraged.

Where Can I Download the Secure Browser?

- Download installation instructions and the Secure Browser from the Indiana Assessment Portal: <https://indiana.portal.cambiumast.com/>
 - Select an assessment program (*ILEARN/IREAD-3/ISTEP+/I AM*)
 - Select the “Secure Browsers” icon to the right to access basic Secure Browser installation instructions and download links.

System Requirements: Secure Browser	
Computer/Device	Secure Browser Location
Windows, Mac, and Linux computers	https://indiana.portal.cambiumast.com/secure-browsers.stml
iPad tablets	Apple App Store
Chromebooks	Chrome Web Store

Installing the Secure Browser

- If you manage a large number of machines across your corporation or school, you can likely use the same tools with which you are already familiar to push the Secure Browser out to all of your machines at scale.
 - For example, the Secure Browser ships as an MSI package which enables use of MSIEXEC.
- If you manage the technology at a small school, you can follow the basic installation instructions on the Indiana Assessment Portal to install the Secure Browser.
- The Secure Browser is installed the same way as most other software.

Secure Browser Installation: Windows

MSI file type enables deployment using a number of tools:

- Active Directory Group Policy
- Microsoft SMS
- Microsoft SCCM
- Microsoft WSUS
- Windows NT Batch

Secure Browser Installation: macOS and Linux

macOS

DMG file type enables deployment using Apple Remote Desktop.

- Munki
- Filewave

Linux

TAR file type enables deployment using a number of tools including the following:

- Shell Scripts
- Puppet

Installing the Mobile Secure Browser

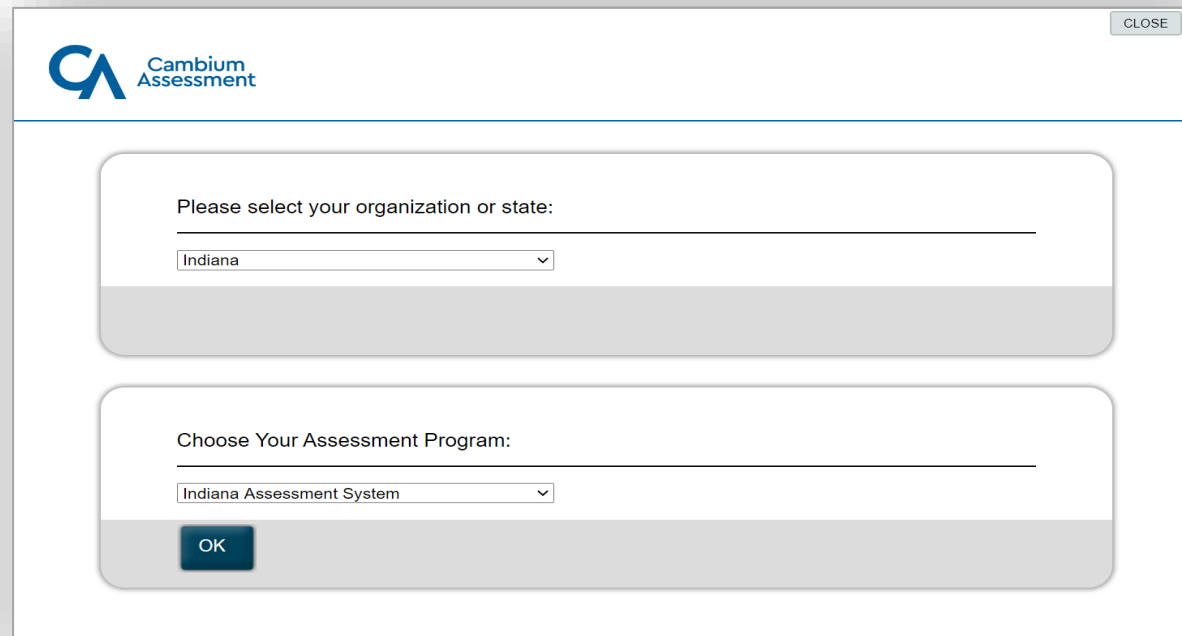
For iPads and Chromebooks, the SecureTestBrowser (formerly AIRSecureTest) app is CAI's mobile version of the Secure Browser.

- Secure Test (formerly AIRSecureTest) is available in each app store to download and install.
- You can also use any mobile device management utility to install the Secure Browser on multiple managed devices and configure those devices.



Installing the Mobile Secure Browser

- The first time you open this app, it will ask you to choose your state and assessment program. Your choice will be saved and the Mobile Secure Browser will perform like the desktop version, allowing you to access operational tests, practice tests, and the network diagnostic tool through the RIR



The screenshot shows a mobile application interface for 'Cambium Assessment'. At the top left is the logo, and at the top right is a 'CLOSE' button. The main content area has two sections. The first section is titled 'Please select your organization or state:' and contains a dropdown menu with 'Indiana' selected. The second section is titled 'Choose Your Assessment Program:' and contains a dropdown menu with 'Indiana Assessment System' selected. At the bottom left of the second section is an 'OK' button.

Additional Installation Instructions

For corporations and schools seeking advanced installation instructions for Windows, Mac, or Chrome OS, including instructions on how to install the Secure Browser on multiple devices, see the following document for your operating system:

- *Configurations, Troubleshooting, and Advanced Secure Browser Installation for Windows*
- *Configurations, Troubleshooting, and Advanced Secure Browser Installation for Mac*
- *Configurations, Troubleshooting, and Advanced Secure Browser Installation for Chrome OS*

Configuring Student Workstations

Operating System	Additional Configuration
Windows	Disable Fast User Switching
macOS	Install Secure Profile, Third-Party App Updates, iTunes Updates, and Fast User Switching
Linux	Disable On-Screen Keyboard Enable Verdana Font
Chrome OS	Manage Chrome OS Auto Updates
iOS	A feature in iOS called Assessment Mode works with CAI's Secure Browser to prepare an iPad for online testing. In addition to Assessment Mode, Disable VoiceOver, Voice Control, and the emoji keyboard.

Configuring Student Workstations

Ensure that all scheduled tasks take place outside of testing hours:

- Virus scans
- Software updates
- Operating system updates (e.g., Windows updates)

Installing the Secure Profile for macOS

The Mac Secure Profile helps to configure Mac workstations for online testing by automatically disabling the following features:

- Hot keys for enabling Dictation, Mission Control, Screenshots, and Spaces
- Trackpad gestures for accessing Lookup, App Expose, Launchpad, and Show Desktop
- Menu pop-up that appears when triple-tapping the power button on Touch Bar-enabled devices

The Secure Profile also sets function keys to standard functions.

Download the Secure Profile from the Indiana Assessment Portal, install it, and restart your computer.

Configuring Your Network: Performance Factors

Performance Factors in Online Testing

The response time of systems used for online testing depends on a number of factors, including:

- Network bandwidth
- Number of students simultaneously testing
- Wireless networking configuration
- Secure Browser

Configuring Your Network: Network Bandwidth

- Ensure at least 20 Kbps bandwidth per student being tested.
- Network bandwidth can be affected by both Local Area Network (LAN) traffic and Internet traffic from the router.
- LAN should always be analyzed to determine potential traffic bottlenecks.

Number of Students Simultaneously Testing

- Network performance may slow when large numbers of students are testing at the same time.
- Multiply the number of students being tested by 20 Kbps to get an estimate of bandwidth needed, and compare that estimate with the network speed test.
- Perform network analyses at different times to ensure adequate capacity.

Diagnostic Tool


Please Sign In

ON

Guest User
Toggle to sign in as yourself

ON

Guest Session
Toggle to join an active session

 Run Diagnostics

Browser: Chrome v68

Diagnostic Screen

This page allows you to check the **current** bandwidth of your network. Select a test from the drop-down list and enter the maximum number of students likely to test at one time, then click [Run Network Diagnostics Tests].

Your Operating System:
Windows 10

Your Browser Version:
Chrome v68

Secure Browser:
false

Network Diagnostics:

Select Test:

ELA

Enter the total number of students you would like to test at one time:

7

Run Network Diagnostics Tests

Download Results:
724.034 Mbps download.

Upload Results:
79.208 Mbps upload.

Bandwidth Summary:

Given the current load on your system, you should be able to test the requested number of students at this location.(Please note: The throughput estimates include the encryption/decryption overhead for data transfer. Throughput estimates change as the network conditions change and can vary from run to run.)

Return to Login

TTS Check

Configuring Your Network: Proxy Servers

- Session time outs on proxy servers and other devices should be set to values greater than the typically scheduled testing time. For example, if test sessions are scheduled for 60 minutes, consider session time outs of 65–70 minutes.
- Web proxy servers must be configured to NOT cache data received from servers.
- For any device that performs traffic shaping, packet prioritization, or quality of service, the URLs to be used for testing should be given a high priority to ensure the best performance.

Configuring Your Network: Network Requirements

System	URL to Add to your Allowlist	
Non-Testing Sites Portal and Secure Browser Installation Files Single Sign-On System Test Information Distribution Engine Online Reporting System	https://indiana.portal.cambiumast.com https://sso1.cambiumast.com/auth/realms/indiana/account https://in.tide.cambiumast.com/ https://in.reports.cambiumast.com/	
TA and Student Testing Sites	*.cambiumast.com *.tds.cambiumast.com *.cloud1.tds.cambiumast.com *.cloud2.tds.cambiumast.com	*.airast.org *.tds.airast.org *.cloud1.tds.airast.org *.cloud2.tds.airast.org
Online Dictionary and Thesaurus	Domain: media.merriam-webster.com www.dictionaryapi.com	IP Address: 64.124.231.250 64.124.231.250

Wireless Network Configuration

Wireless traffic must use encryption.

- Wi-Fi Protected Access II (WPA2)
- Advanced Encryption Standard (AES)

Wireless access points have limits on total bandwidth and number of simultaneous devices in use.

To ensure sufficient capacity, test wireless access points while all testing devices are turned on and connected to the wireless access point simultaneously.

Configuring Assistive Technologies

- TDS is a website visible through a customized web browser.
- Students who use assistive technologies with a standard web browser should be able to use those same technologies with TDS.
- The best way to test compatibility with assistive technologies is by taking RIR and practice tests with those technologies turned on.

Text-to-Speech

- Voice technology must be available and functioning for students who require this accommodation.
- For Windows, Mac, and iOS, default voice packs are generally pre-installed. Linux users will find a voice pack included with the Linux Secure Browser installation file.

Operating System	Recommended Voice Packs when using TTS
Windows	Default “Microsoft David”
macOS	Alex
Linux	A voice pack is included with the Linux Secure Browser installation file
Chrome OS	Default Chrome OS US English
iOS	Samantha Enhanced

Text-to-Speech on Mobile Devices

- iPad users have full Text-to-Speech (TTS) functionality with voice packs that ship out of the box.
- The Secure Browser recognizes voice packs that ship out of the box for Chrome OS devices for playback and stop, but the audio pause feature is not available on these devices.
- On any device or OS, a student can select a portion of text and have TTS read the selected text aloud.

Text-to-Speech Check

Text-to-Speech Sound Check

Make sure text-to-speech is working.



Press the speaker button. You should hear a voice speak the following sentence: "This text is being read aloud."

Sound Settings

Current Voice Pack: Microsoft Anna - English (United States) ▼

Use the sliders to adjust the available text-to-speech settings.

Volume



Pitch



Next Step:

If you heard the voice clearly, choose **I heard the voice**. If not, choose **I did not hear the voice**. To continue testing without checking text-to-speech, choose **Skip TTS Check**.

I heard the voice

I did not hear the voice

Skip TTS Check

Screen Readers

Screen readers allow students to read text displayed on a screen with a speech synthesizer or braille display.

Required software for student workstation	Required software for TA workstation
JAWS (only supported screen reader for ELA)	Duxbury Braille Translation (used to emboss braille test content)
Most refreshable braille displays	Other embossing software may also work and should be tested in a practice test.
	To emboss tactile graphics, CAI supports ViewPlus embossers using the Tiger Software Suite (Tiger Designer and Tiger Viewer).

Speech-to-Text

Speech-to-text (STT) allows a student to speak into a headset and have their speech converted into text that becomes the response that is entered into the TDS.

- Available for Windows and macOS through Dragon Naturally Speaking or other similar software.
- Unavailable for Linux or Chrome OS.

Thank You!

Additional Information:

- Indiana Assessment Portal: <https://indiana.portal.cambiumast.com/>
- CAI's Indiana Assessment Help Desk
- Toll-free phone number: 1-866-298-4256
- Email: indianahelpdesk@cambiumassessment.com
- Chat: <https://indiana.portal.cambiumast.com/chat.shtml>