

Quick Guide for Setting Up Your Online Testing Technology

CAI's Test Delivery System (TDS) has two components: the **Test Administrator (TA) Interface** and the **Student Interface**.

- Test administrators use the TA Interface to create and manage test sessions from any web browser.
- Students access and complete their tests through the Student Interface via the Secure Browser.

This document explains in 4 steps how to set up technology in your schools and district:

Step 1. Setting up the test administrator workstation

Step 2. Setting up student workstations

Step 3. Configuring your network for online testing

Step 4. Configuring assistive technologies

STEP 1: SETTING UP THE TEST ADMINISTRATOR WORKSTATION

It is unlikely that any setup is required for your test administrator workstations. Nearly any modern device, including mobile devices like tablets and phones, with any modern browser can be used to access the TA Interface and administer a testing session. The TA Interface is a website. Any device you already use to check your email, browse Facebook, read news articles, or watch YouTube should be capable of administering tests.

If your school uses a firewall or other networking equipment that blocks access to public websites, you may need to add Cambium Assessment (CAI) and AIR websites to your allowlist. For a list of websites you should add to your allowlist, see the "Resources to Add to your Allowlist for Online Testing" section in the configuration guide for your operating system.

Test administrators can print test session information. To be able to print, test administrator workstations must be connected to a printer.

STEP 2: SETTING UP STUDENT WORKSTATIONS

In order for students to access online tests, each student workstation needs CAI's Secure Browser installed on it. The Secure Browser is CAI's customized web browser designed to keep tests secure by locking down the student desktop and preventing the student from accessing anything except their test. Unlike conventional web browsers, 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. Students open the Secure Browser and are taken exactly where they need to go.

To get started setting up your student workstations, you should first make sure your device is supported. Please note the Secure Browser is not supported for use within a virtual machine.

For a list of supported desktops and laptops and related hardware requirements, see the following table:

Desktops & Laptops		
Supported Operating Systems	Minimum Requirements	Recommended Specifications
Windows 8, 8.1 (Professional and Enterprise) 10, 10 in S Mode (Educational, Professional, and 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 or more GB RAM 20 or more GB hard drive space
Mac OS X/macOS 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 or more GB RAM 20 or more GB hard drive space
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 or more GB RAM 20 or more 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 LTS (Gnome)	1 GHZ Processor 2 GB RAM 20 GB hard drive space In addition to all libraries and packages listed above, Ubuntu 18.04 LTS (Gnome) also requires the following libraries: Sox Net-tools	1.4 GHZ Processor 2 or more GB RAM 20 or more 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.

For a list of supported tablets and Chromebooks, see the following table:

Tablets and Chromebooks	
Supported Operating Systems	Supported Tablets
iOS/iPadOS (iPads) 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.
Chrome OS 83+	For a full list of supported Chromebooks, see https://support.google.com/chrome/a/answer/6220366 . 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. Chromebooks running in Tablet Mode and tablets running Chrome OS are not supported. Touchscreen features can be used on Chromebooks when available. CAI only supports versions of Chrome OS released on Google's stable channel.

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

For a list of supported NComputing solutions for Windows, see the following table:






NComputing		
Supported Server Host	Supported Server Software	Supported Terminal
Windows Server 2012 R2 Windows Server 2016 R2 Windows 10	vSpace PRO 10	L300, L350, firmware version 1.13.xx

For a list of supported terminal servers for Windows, see the following table:

Terminal Servers	
Supported Terminal Server	Supported Thin Client
Windows Server 2012 R2, 2016 R2	Any thin client that supports a Windows server. Thin clients allow access only to the program running on the host machine. Zero clients, which allow access to other programs on the client machine, are not supported. Please note using a terminal services or remote desktop connection to access a Windows Server or workstation that has the Secure Browser installed is typically not a secure test environment.

Devices running CloudReady NeverWare are also supported. For information on supported devices and installation instructions, please visit <https://www.neverware.com>.

All supported computers, laptops, tablets, and approved testing devices must meet the following requirements:

Testing Device	Requirement
Screen Dimensions 	Screen dimensions must be 10" or larger (iPads with a 9.7" display are included).
Monitors & Displays 	<p>All devices must meet the minimum resolution of 1024 x 768. Larger resolutions can be applied as appropriate for the monitor or screen being used.</p> <p>For the best experience, your device's display scale should be set to 100% to keep the amount of usable screen real estate within the 1024x768 minimum resolution for TDS.</p> <p>A secure testing environment can only be guaranteed when using a single display. A multi-monitor configuration is not supported.</p>
Keyboards 	The use of external keyboards is highly recommended for tablets that will be used for testing.
Mice 	Wired two- or three-button mice can be used on desktops or laptops. Mice with "browser back" buttons should not be used.
Headphones & Headsets 	Wired headphones or headsets with a 3.5 mm connector or USB headphones.

Installing the Secure Browser

Once you have made sure your device is supported, you are ready to download and install the Secure Browser. This section explains where you can go to download the Secure Browser and how to install it.

The Secure Browser is available for all major operating systems listed above. You can download the Secure Browser from your portal. Your portal also contains basic installation instructions.

If you are a Technology Coordinator and it is your responsibility to manage a large number of machines across your school or district, you can likely use the same tools you are already familiar with 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 are from a small school, you can follow the basic installation instructions on your portal to install the Secure Browser. The Secure Browser is installed the same way as most other software. You will be asked to download a file, open that file, and follow prompts along the way to install the Secure Browser. If you are familiar with installing software, install the Secure Browser the same way.

For iPads and Chromebooks, the SecureTestBrowser (formerly AIRSecureTest) app is CAI's mobile version of the Secure Browser. It is available in each app store to download and install. The first time you open this app, it will ask you to choose your state and assessment program. Your choice is saved and from then on, the Mobile Secure Browser works just like the desktop version, allowing you to access operational tests, practice tests, and the network diagnostic tool. You can

also use any mobile device management utility to install the Secure Browser on multiple managed devices and configure those devices.

Windows 10 and Windows 10 in S Mode come with Microsoft's Take a Test app, which enforces a locked-down, secure testing environment identical to CAI's Secure Browser. Users of the Take a Test app do not need to install the CAI Secure Browser on the testing machine. Instructions for configuring the Take a Test app can be found on your portal.

For schools and districts seeking advanced installation instructions, including instructions on how to install the Secure Browser on multiple devices, see the following document for your operating system located [here](#):

- *Technology Guide for Windows*
- *Technology Guide for Mac*
- *Technology Guide for Chrome OS*
- *Technology Guide for Linux*
- *Technology Guide for iPads*

Other Configurations

For devices running Windows, Mac, Linux, iOS, or Chrome OS, there are a few additional configurations that need to be made before secure testing can begin.

Several necessary configurations for Mac workstations can be performed by installing the Mac Secure Profile. For more information, see the section titled "Installing the Mac Secure Profile."

A feature built into iOS/iPadOS called Assessment Mode (AM) (formerly known as Automatic Assessment Configuration (AAC)) handles many necessary configurations to prepare iPads for online testing. For more information on AM, including a list of features it disables, please visit <https://support.apple.com/en-us/HT204775>. In addition to AM disabling features listed at the URL above, there are a few additional features in iOS/iPadOS that must be disabled prior to the administration of online testing. These features, which are listed below, should not be available to students without an accommodation and AM does not currently block them.

Disabling Fast User Switching for Windows

Fast User Switching is a feature in Windows 8, 8.1, and 10 that allows for more than one user to be logged in at the same time. If Fast User Switching is not disabled and students try to access another user account during a test, the Secure Browser will pause the test.

Fast User Switching can be disabled using the Local Group Policy Editor or Registry Editor. For instructions on how to disable Fast User Switching, see the "How to Disable Fast User Switching" section in the document titled *Technology Guide for Windows*.

Disabling App Pre-launching for Windows

Application Prelaunch is a feature in Windows 10 that allows Universal Windows Platform apps, such as the Photos app or Edge web browser, to prelaunch and run in the background even if a user didn't open the apps themselves. Users will be unable to start the Take a Test app with these apps running in the background and will be kicked out of a test if the apps launch while the user is running the Take a Test app. This does not affect users running the CAI Secure Browser.

App pre-launching can be disabled by using a PowerShell command and editing the registry. For instructions on how to disable app pre-launching, see this [page](#) from Microsoft's Online Windows Support.

■ Installing the Mac Secure Profile

To configure Mac workstations, begin by downloading the Mac Secure Profile from your portal and then install it. The profile, upon installation, disables the hot keys for enabling Mission Control, Spaces, Screenshots, and Dictation and the trackpad gestures for accessing Lookup, App Exposé, Launchpad, and Show Desktop. It also sets function keys to standard functions for all users of the Mac to which it is deployed, disables Voice Control, and disables the menu pop-up that appears when triple-tapping the power button on Touch Bar-enabled devices. Upon installing the profile, the Mac should immediately be restarted so that all settings can take effect. The Secure Profile has been updated for 2020-2021. If you have previously installed an older version of the Secure Profile, you must download and install the new version from the link on your portal. Instructions for installing the Secure Profile are in the document titled *Technology Guide for Mac*.

■ Disabling Third-party App Updates for Mac

Updates to third-party apps may include components that compromise the testing environment. These updates can be disabled through System Preferences. For instructions on how to disable updates to third-party apps, see the “How to Disable Updates to Third-Party Apps” section in the document titled *Technology Guide for Mac*.

■ Disabling iTunes Updates for Mac

Updates to iTunes may pop up during a test. If updates to iTunes are not disabled and they pop up during a test, the Secure Browser will pause the test.

Updates to iTunes can be disabled through System Preferences. For instructions on how to disable updates to iTunes, see the “How to Disable Updates to iTunes” section in the document titled *Configurations, Technology Guide for Mac*.

■ Disabling Fast User Switching for Mac

Fast User Switching is a feature in Mac OS X 10.11 and higher that allows for more than one user to be logged in at the same time. If Fast User Switching is not disabled and students try to access another user account during a test, the Secure Browser will pause the test.

Fast User Switching can be disabled through System Preferences. For instructions on how to disable Fast User Switching, see the “How to Disable Fast User Switching” section in the document titled *Configurations, technology Guide for Mac*.

■ Disabling On-Screen Keyboard for Linux

Ubuntu and Fedora feature an on-screen keyboard that should be disabled before you administer online tests. If the on-screen keyboard is not disabled, the keyboard might pop up on a touchscreen device and, if it does, it may provoke the Secure Browser to pause the test.

The on-screen keyboard can be disabled through System Settings. For instructions on how to disable the on-screen keyboard, see the “How to Disable On-Screen Keyboard” section in the document titled *Technology Guide for Linux*.

■ Adding Verdana Font for Linux

Some test content requires the Verdana TrueType font, which is not included in builds of Fedora or Ubuntu. For instructions on how to add the Verdana font, see the “How to Add Verdana Font” section in the document titled *Technology Guide for Linux*.

Disabling Voice Control for iPads

iPads running any supported version of iOS/iPadOS have access to a feature called Voice Control that is not automatically disabled by Assessment Mode (AM) (formerly known as Automatic Assessment Configuration (AAC)). Voice Control allows iPad users to control an iPad using voice commands. If this feature is enabled on iPads that are used for testing, students may be able to access unwanted apps, such as web browsers, during a test.

Voice Control is disabled by default. If it has never been enabled on an iPad, you have nothing to do. If it has been enabled, you must disable it before a student takes a test. Voice Control can be disabled through accessibility settings. For instructions on how to disable Voice Control, see the “How to Disable Voice Control” section in the document titled *Technology Guide for iPads*.

Disabling VoiceOver for iPads

iPads running any supported version of iOS/iPadOS have access to a feature called VoiceOver that is not automatically disabled by Assessment Mode (AM) (formerly known as Automatic Assessment Configuration (AAC)). VoiceOver is a gesture-based screen reader that allows users to receive audible descriptions of what is on the screen of their iPad. VoiceOver also changes touchscreen gestures to have different effects and adds additional gestures that allow users to move around the screen and control their iPads. If VoiceOver is not disabled on iPads, students may be able to access unwanted apps during a test. This feature should not be available to students without an accommodation.

VoiceOver can be disabled through

accessibility settings. For instructions on how to disable VoiceOver, see the “How to Disable VoiceOver” section in the document titled *Technology Guide for iPads*.

Disabling Emoji Keyboard for iPads

iPads running any supported version of iOS/iPadOS have an emoji keyboard enabled by default. If the emoji keyboard is not disabled, students will be able to enter emoticons into a test, which can be confusing for scorers.

The emoji keyboard can be disabled through keyboard settings. For instructions on how to disable the emoji keyboard, see the “How to Disable the Emoji Keyboard” section in the document titled *Technology Guide for iPads*.

Managing Chrome OS Auto-Updates

New versions of Chrome OS are released regularly and tested by CAI to ensure no new features pose a risk for online testing. However, bugs or unintentional features do sometimes show up in the latest release. Because of this, CAI recommends disabling Chrome OS auto-updates or limiting auto-updates to a version used successfully before summative testing begins to ensure Chromebooks remain stable during testing season.

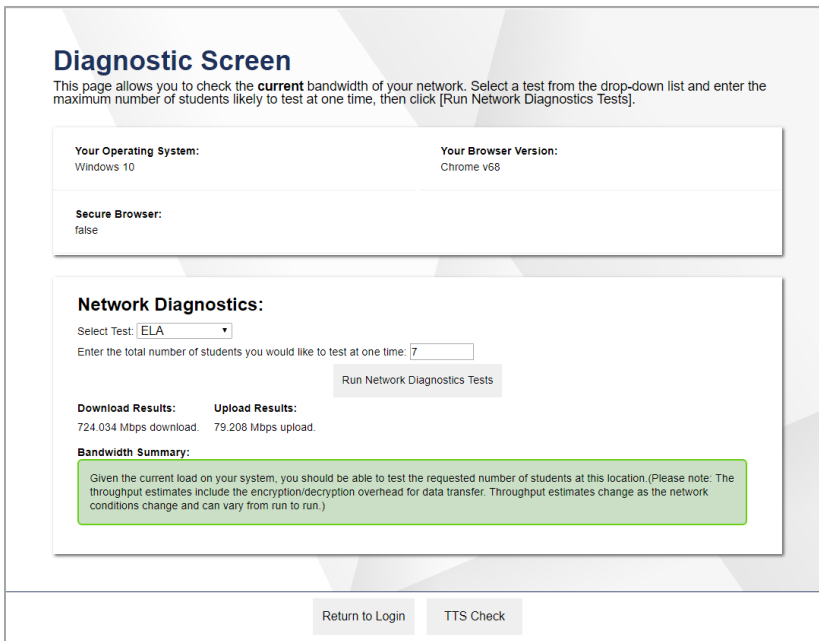
You can disable or limit Chrome OS updates through the Device Settings page on your Chromebook. From this page, you can stop auto-updates or allow auto-updates but only to a specific version. For more detailed instructions on how to disable or limit Chrome OS auto-updates, see the “How to Manage Chrome OS Auto-Updates” section in the document titled *Technology Guide for Chrome OS*.

STEP 3: CONFIGURING YOUR NETWORK FOR ONLINE TESTING

In this section, we provide some tools and recommendations to help configure your network for online testing. To ensure a smooth administration, CAI recommends network bandwidth of at least 20 kilobits per second for each student being concurrently tested.

The Network Diagnostic Tool

CAI provides a network diagnostic tool to test your network's bandwidth to ensure it can handle administering online tests. The network diagnostic tool can be accessed through the Secure Browser or from your portal or practice test site through a conventional browser.



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
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Secure Browser:
false

Network Diagnostics:
Select Test:
Enter the total number of students you would like to test at one time:

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.)

Once you are in the network diagnostic tool, enter the number of students you will test at peak volume and the tool will indicate if your network can handle testing. The goal of the network diagnostic tool is to determine if your network bandwidth can handle the number of students you hope to test at peak volume. If the tool indicates you should test with fewer students, try running a third-party network speed test like speedtest.net. If a third-party tool also indicates you lack proper bandwidth, determine if other activity on your network is drawing bandwidth away from the machine attempting to take the test. If it is, try to prioritize bandwidth for CAI's websites during online testing.

Proxy Servers

If your Technology Coordinator has set up a proxy server at your school, you may need to configure the Secure Browser's proxy settings. For instructions on how to configure the Secure Browser's proxy settings, see the "How to Configure the Secure Browser for Proxy Servers" section in the configuration guide for your operating system.

Proxy servers must be configured to not cache data received from servers.

Session timeouts 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 timeouts of 65–70 minutes.

Traffic Shaping, Packet Prioritization, & Quality of Service

If your testing network includes devices that perform traffic shaping, packet prioritization, or Quality of Service, ensure CAI URLs have

high priority. For a list of websites you should give high priority, see the “Which Resources to Add to your Allowlist for Online Testing” section in the configuration guide for your operating system.

STEP 4: CONFIGURING ASSISTIVE TECHNOLOGIES

CAI’s Test Delivery System is a website that is accessed through a Secure Browser.

Students who use assistive technologies with a standard web browser should be able to use those same technologies with the Test Delivery System. The best way to test compatibility with assistive technologies is by taking a practice test with those technologies turned on. For a list of supported technologies and configuration instructions, see the document titled *Assistive Technology Manual*.

Assistive technologies must be launched on student workstations prior to launching the Secure Browser.

Supported Embedded Features

Embedded features are built into the Test Delivery System and can be accessed through settings. They can be accessed without additional third-party software. To use these embedded features, students need an accommodation.

Text-to-Speech

Text-to-speech (TTS) reads text on the screen aloud. Using TTS requires at least one voice pack to be installed on the student workstation. Voice packs that ship with the operating systems out of the box for Windows, Mac, and iOS/iPadOS are fully compatible with the Secure Browser. The Secure Browser works with voice packs that ship out of the box for Chrome OS devices, but the pause feature does not work properly on these devices. For students who need the use of TTS, CAI recommends using a desktop, laptop, or tablet running Windows, OS X/macOS, or iOS/iPadOS. If a Chromebook is being used, there is a workaround that allows students to highlight a passage of text and have TTS read just that passage, eliminating the need for the pause feature.

For a full list of voice packs that have been tested and are allowed by the Secure Browser and for instructions about configuring

TTS settings, see the document titled *Assistive Technology Manual*.

Supported Non-Embedded Features

Non-embedded features require the use of other hardware and/or software to make certain functionality available to students within the Test Delivery System. Non-embedded features require settings be set to permissive mode. This mode, found in TIDE as a student test setting, temporarily lowers the security settings of the Secure Browser so that the student can interoperate with other software on the device, like JAWS or ZoomText, while they are taking the test. Permissive mode is supported on Windows and Mac. Permissive mode is not available for Linux, iPads, or Chromebooks. Users of these devices who need assistive technology supports should use CAI’s embedded tools.

Screen Readers

Screen readers allow students to read text displayed on a screen with a speech synthesizer and a refreshable braille display. Screen reading requires software to be installed on the student workstation. For a list of supported screen readers and configuration instructions, see the document titled *Assistive Technology Manual*.

Word Prediction

Word prediction software predicts words as a student types. Currently, CAI does not offer an embedded word prediction feature. Word prediction is available for Windows and Mac through the use of third-party apps like Read&Write and other similar software. For more information about supported third-party apps, see the document titled *Assistive Technology Manual*.

Alternative Computer Inputs

Alternative Computer Input (ACI) tools allow students to interact with a computer without using a traditional mouse and keyboard setup. CAI does not include any embedded alternative computer input tools, but it supports several third-party alternative computer input technologies. For more information about supported third-party alternative computer inputs, see the document titled *Assistive Technology Manual*.

Assistive Keyboard and Mouse Input

Assistive Keyboard and Mouse Input tools provide additional support to students who need to use a keyboard and mouse in order to respond to test items. CAI does not include any embedded assistive keyboard and mouse input tools, as these tools typically involve the use of special hardware, but TDS does support several third-party assistive keyboard and mouse input tools. For more information about supported third-party assistive keyboard and mouse input solutions, see the document titled *Assistive Technology Manual*.

Screen Magnification

Screen magnifier assistive technology enlarges the content displayed on the computer screen in order to assist students who need the content magnified. Although TDS supports some non-embedded screen magnifier tools from third parties, it is recommended that students use the embedded zoom tools in TDS. For more information about screen magnifier assistive technology, see the document titled *Assistive Technology Manual*.

ADMINISTERING ONLINE TESTS

Before administering an operational test, get comfortable with the system by administering a practice test. Practice tests can be administered on supported devices via the Secure Browser or through modern conventional browsers like Chrome or Firefox.

ADMINISTERING PRACTICE TESTS

To administer a practice test, complete the following steps:

1. Test administrators should open a web browser, go to the TA Practice Site, and choose a practice test to administer.
2. Students should launch the Secure Browser and click the link for practice tests.
3. Test administrators should give the students the Session ID.
4. Students should click through the login pages. Students can log in anonymously as a guest or with their real account. In either case, they should use a Session ID from the test administrator.

For more information about administering practice tests, see the *Test Administrator User Guide*.

When test administrators and students are comfortable using the system, you are ready to administer an operational test.

ADMINISTERING OPERATIONAL TESTS

The steps for administering an operational test are nearly identical to administering a practice test.

1. Test administrators should open a web browser and go to the TA Site.
2. Students should launch the Secure Browser.
3. Test administrators should give students the Session ID.
4. Students should enter the Session ID, their first name, and their Student ID.

For more information about administering operational tests, see the *Test Administrator User Guide*.

Revision History

Date	Section	Description
8/3/20	Step 2: Setting Up Student Work Stations, Page 3	Updated version of Chrome 84+ to Chrome 83+
8/3/20	Step 2: Setting Up Student Work Stations, Page 4	Updated "SecureTest" to "SecureTestBrowser"