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 3 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 1: SETTING UP THE TEST ADMINISTRATOR WORKSTATION

It is unlikely that any setup is required for your TA 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 AIR and CAI 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. These are available on your state's portal.

TAs can print test session information or test items for students with the print-on-request accommodation (if this is made available for your state assessment). To be able to print, TA 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 8.1 (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 Error! Reference source not found. 2 GB RAM 20 GB hard drive	1.4 GHZ Processor 2 or more GB RAM 20 or more GB hard drive space
macOS 10.13-10.15,11.4, 12[a]	1 GHZ Processor[c] 2 GB RAM 20 GB hard drive	1.4 GHZ Processor 2 or more GB RAM 20 or more GB hard drive space
Linux[d] Fedora 32-32[a] LTS (Gnome) Ubuntu 18.04, 20.04 LTS (Gnome)	1 GHZ Processor 2 GB RAM 20 GB hard drive Required libraries/packages: • GTK+ 3.14 or higher • X.Org 1.0 or higher (1.7+ recommended) • libstdc++ 4.8.1 or higher • glibc 2.17 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 • GNOME 2.16 or higher • PulseAudio

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

b 64-bit Intel, AMD, and ARM devices are supported. ARM devices require x64 emulation.

c 64-bit Intel and Apple silicon devices are supported. Apple silicon devices require Rosetta 2.

d Raspberry Pi and other similar single-board computers are not supported for testing.

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

Tablets and Chromebooks	
Supported Operating Systems	**Supported Tablets**
iPadOS13.7, 14.5, 15[a]	All 9.7" or larger iPads running a supported version of iPadOS.
Windows 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[b] 91+	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.

b A known issue with Chrome OS 91 sometimes prevents text-to-speech (TTS) from working properly the first time it is invoked. Users who encounter this issue should reinvoke TTS. A known issue with Chrome OS 91 allows students testing on Chromebooks with touchscreens to access the Chrome OS context menu while taking a test. This presents no security concerns with the test being taken.

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 	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. 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. A secure testing environment can only be guaranteed when using a single display. A multi-monitor configuration is not supported.
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.

If you are running the Secure Browser on Apple silicon devices, you must first install Rosetta 2. Rosetta 2 may already be installed on your Apple silicon device if you needed it to run another Intel-based application. If it not already installed, a prompt to install it will appear the first time you launch the Secure Browser. Rosetta 2 can also be deployed to multiple devices at once through scripting or mobile device management (MDM). For more information about Rosetta 2, including

instructions to install it, please see https://support.apple.com/en-us/HT211861.

For iPads and Chromebooks, the Secure Test 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 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*

Other Configurations

For devices running Windows, macOS, Linux, iPadOS, 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 running macOS 10.13-10.15 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 macOS 11.4 and all supported versions of iPadOS called Assessment Mode (AM) (formerly known as Automatic Assessment Configuration (AAC)) handles many necessary configurations to prepare Mac workstations and 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 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 all supported versions of Windows 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. If you plan to use the Take a Test app on a dedicated test account on a Windows 10 device, do not disable fast user switching, as it causes the machine to enter an infinite loop when rebooted.

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 *Configurations, Troubleshooting, and Advanced Secure Browser Installation for Windows*.

Disabling Screen Edge Swipe for Windows 10 Tablets & Laptops in Tablet Mode

Swiping inward from the edge of the display on Windows 10 tablets and laptops in tablet mode

opens the Windows notification center. If this swiping gesture is not disabled and students taking a test in the Secure Browser on a Windows 10 tablet or laptop in tablet mode swipe from the edge of the screen during a test, the notification center will open, displaying any notifications that might appear there and pausing the test.

The Screen Edge Swipe gesture can be disabled using the Local Group Policy Editor or Registry Editor. For instructions on how to disable the Screen Edge Swipe gesture, see the "How to Disable Screen Edge Swipe" section in the document titled *Configurations, Troubleshooting, and Advanced Secure Browser Installation 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 running macOS 10.13-10.15, 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 and disables the menu pop-up that appears when triple-tapping the power button on Touch Bar-enabled devices. It also prevents the device from receiving files via AirDrop and the ability to have your Mac identify items under the pointer. Upon installing the profile, the Mac should immediately be restarted so that all settings can take effect. The Secure Profile was last updated for Spring 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 *Configurations, Troubleshooting, and Advanced Secure Browser Installation 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 *Configurations, Troubleshooting, and Advanced Secure Browser Installation for Mac*.

Disabling Fast User Switching for Mac

Fast User Switching is a feature in all supported versions of macOS 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, Troubleshooting, and Advanced Secure Browser Installation 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 *Configurations and Troubleshooting 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 *Configurations and Troubleshooting for Linux*.

Disabling Voice Control for iPads

iPads running any supported version of 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 *Configurations for iPads*.

Disabling VoiceOver for iPads

iPads running any supported version of 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 *Configurations for iPads*.

Disabling Emoji Keyboard for iPads

iPads running any supported version of 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 *Configurations 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.

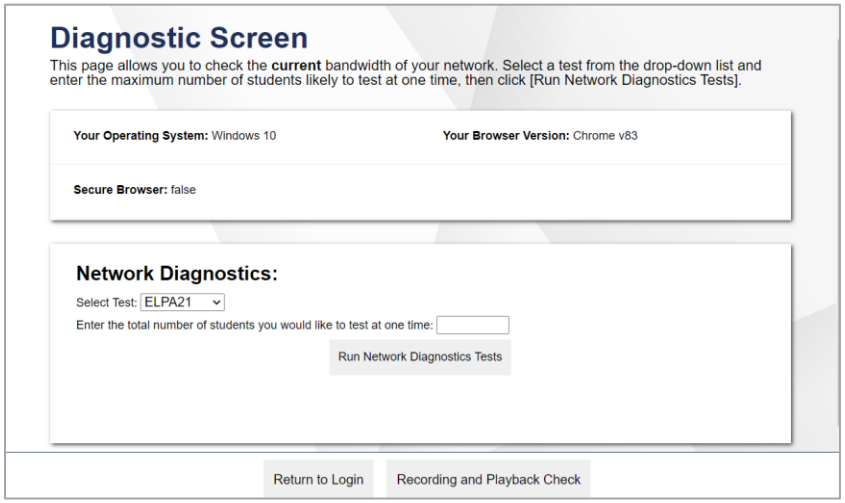
You can disable or limit Chrome OS updates through the Device Settings page on your Chromebook. From this page, you can stop auto-updates or allow auto-updates but only to a specific version. For more detailed instructions on how to disable or limit Chrome OS auto-updates, see the "How to Manage Chrome OS Auto-Updates" section in the document titled *Configurations, Troubleshooting, and Advanced Secure Browser Installation 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.



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.

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. TAs 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. TAs 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 TA.

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

When TAs 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. TAs should open a web browser and go to the TA Site.
2. Students should launch the Secure Browser.
3. TAs 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 *TA User Guide*.

Contact the Help Desk for any additional assistance.

CHANGE LOG

Location	Change	Date
Step 2: Setting Up Student Workstations	Updated supported OS. Added section on "Disabling Screen Edge Swipe for Windows 10 Tablets & Laptops in Tablet Mode"	06/21/21