

CALIFORNIA

Assessment of Student Performance and Progress

Technical Specifications and Configuration Guide for CAASPP Online Testing

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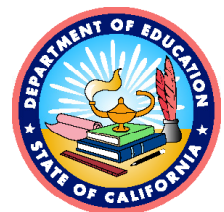
Test Operations Management System

Online Reporting System

Interim Assessment Hand Scoring System



California Assessment of
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Chapter 1. System Requirements

Supported Operating Systems for Student Testing

This section describes the supported operating systems for secure online testing. A secure online testing environment is a state in which a device is restricted from accessing prohibited computer applications (local or Internet-based), or copying and/or sharing test data. The purpose of this environment is to maintain test security and provide a stable testing experience for students across multiple platforms.



Warning: Support for New Desktop Operating Systems

Operating systems that become available but do not appear in the following tables are not supported. Do not upgrade to new operating systems on devices that will be used to administer online assessments without ensuring the updates meet the required specifications. **The exception to this rule are versions of Google Chrome OS for which there is presumed support—updates to Google Chrome OS are presumed to be compatible with California Assessment of Student Performance and Progress (CAASPP) systems and may be used.** See [Appendix A](#) for the operating system support plan.

Desktops and Laptops

Table 2 lists the operating systems and devices required for student testing in 2016–17. Online testing functions effectively with the minimum requirements listed. However, the recommended specifications provide improved performance.

Table 2. Supported Desktop Operating Systems

Supported Operating Systems	Minimum Requirements	Recommended Specifications
Windows Vista, 7, 8.0 (Professional), 8.1, 10 (and hypothetical 10.x or 11, dependent upon release date) (Educational and Professional) Server 2008, 2012 (thin client)	Pentium 4 or newer processor that supports SSE2 512 MB of RAM 200 MB hard drive space	Pentium 4 or newer processor that supports SSE2 2 GB+ RAM 80 GB+ hard drive
Mac OS X 10.7–10.12 (10.12 dependent upon release date)	Intel x86 processor 512 MB of RAM 200 MB hard drive space	Pentium 4 or newer processor 2+ GB RAM 80+ GB hard drive

Supported Operating Systems	Minimum Requirements	Recommended Specifications
Linux Fedora 23, 24 (25, dependent upon release date) openSUSE 13.1, 13.2 Red Hat Enterprise Linux 6.5 Ubuntu (LTS) 12.04, 14.04, 16.04 LTS	Intel x86 processor 512 MB of RAM 200 MB hard drive space Required libraries/packages: <ul style="list-style-type: none"> • 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 	Pentium 4 or newer processor 2 GB RAM 80 GB hard drive Recommended libraries/packages: In addition to the required libraries listed under minimum requirements, the following should be installed: <ul style="list-style-type: none"> • NetworkManager 0.7 or higher • DBus 1.0 or higher • HAL 0.5.8 or higher

Tablets

Table 3 lists the supported tablets, operating systems, and related requirements. See [Chapter 3, Hardware Configuration](#), for information about configuring these devices for online testing.

Table 3. Supported Tablets and Operating Systems

Supported Operating Systems	Supported Tablets
iOS (iPads) 8.0-8.2 9.2–9.3 (10.0, dependent upon release)	iPad 2 iPad 3 Fourth-generation (Retina Display) iPad Air iPad Air 2
Android 4.4, 5.0, 5.1	Google Nexus 10 Motorola Xoom Samsung Galaxy Note (2014 edition) Samsung Galaxy Tab 3 and 4 LearnPad Quarto
Windows Vista 7 8.0 (Professional), 8.1, 10 (Educational and Professional) (11, dependent upon release date)	Any tablet running Windows 8.0 Pro, 8.1, and 10 is supported, but extensive testing has been done only on Surface Pro, Surface Pro 3, Asus Transformer, and Dell Venue. Screen dimensions must be 10" or larger (iPads with a 9.7" display are included). This means the following devices are not supported: Apple iPad Mini Google Nexus 7 and similar-sized Android tablets Netbooks with screen dimensions smaller than 10"

Chromebooks and Chromebases

Table 4 lists the supported operating systems for Chromebooks and Chromebases.

Table 4. Supported Chromebooks

Supported Operating Systems	Related Requirements
Chrome OS 51 and up	See Chapter 4, Secure Browser Configuration , for information about installing the secure browser in kiosk mode, a requirement for online testing.

Thin Clients: NComputing and Terminal Servers for Windows

NComputing

Table 5 lists the supported hardware and software for NComputing solutions.

Table 5. Supported NComputing solutions

Supported Server Host	Supported Server Software	Supported Terminals
Windows 2008 R2	vSpace Server 8	L300

Terminal Servers

Table 6 lists the supported terminal servers for use with a thin client device.

Table 6. Supported terminal servers

Supported Terminal Servers	Supported Thin Client
Windows Server 2008, 2012	Any thin client that supports a Windows Server.



Warning: Security Issues with Terminal Services or Remote Desktop Connections to Servers

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 because students can use their local devices to search for answers. Therefore, this installation scenario **is not recommended for testing**. See the “[Installing the Secure Browser on a Terminal Server or Windows Server](#)” section of [Chapter 4, Secure Browser Configuration](#), for more information.

Supported Web Browsers for Online Systems Associated with Testing

This section lists the supported Web browsers for the 2016–17 CAASPP administration functions. These are the non–test-taking functions associated with student testing such as assigning student test settings and accessing the Test Administrator Interface. **The only type of browser students use to take online assessments is the secure browser.**

Supported Web Browsers by Operating System

Table 7 lists the supported operating systems and corresponding Web browsers for each application. It is recommended that you use recent versions of supported Web browsers. Each application requires disabling pop-up blocking software and enabling JavaScript. Be sure to use the correct combination of operating system and Web browser; for example, Windows 8 requires Internet Explorer 10 and up and Windows Vista requires a non–Internet Explorer browser such as Chrome or Firefox.

Table 7. Supported Web Browsers by Operating System

		<i>ORS</i> = “Online Reporting System” <i>Comp Stat</i> = “Completion Status System” <i>TA Sites</i> = “Test Administrator Sites” <i>TOMS</i> = “Test Operations Management System” <i>IAHSS</i> = “Interim Assessment Hand Scoring System”						
Operating Systems	Accepted Web Browsers	TA Sites	Student Practice Test	TOMS	ORS	Comp Stat	Appeals	IAHSS
Windows								
Vista	Chrome 51 and up	✓	✓	✓	✓	✓	✓	✓
	Firefox 45 and up	✓	✓	✓	✓	✓	✓	✓
7	Chrome 51 and up	✓	✓	✓	✓	✓	✓	✓
	Firefox 45 and up	✓	✓	✓	✓	✓	✓	✓
	Internet Explorer 11	✓	✓	✓	✓	✓	✓	✓
8.0	Chrome 51 and up	✓	✓	✓	✓	✓	✓	✓
	Firefox 45 and up	✓	✓	✓	✓	✓	✓	✓
	Internet Explorer 11	✓	✓	✓	✓	✓	✓	✓
8.0 Pro, 8.0 RT	Internet Explorer 11	✓	✓					✓
8.1	Chrome 51 and up	✓	✓	✓	✓	✓	✓	✓
	Firefox 45 and up	✓	✓	✓	✓	✓	✓	✓
	Internet Explorer 11	✓	✓	✓	✓	✓	✓	✓
10	Chrome 51 and up	✓	✓	✓	✓	✓	✓	✓
	Firefox 45 and up	✓	✓	✓	✓	✓	✓	✓
	Internet Explorer 11	✓	✓	✓	✓	✓	✓	✓
	Edge	✓	✓	✓	✓	✓	✓	✓
10 RT	Chrome 51 and up	✓	✓	✓	✓	✓	✓	✓
	Firefox 45 and up	✓	✓	✓	✓	✓	✓	✓
	Internet Explorer 11	✓	✓	✓	✓	✓	✓	✓

		ORS = "Online Reporting System" Comp Stat = "Completion Status System" IAHSS = "Interim Assessment Hand Scoring System"						
TA Sites = "Test Administrator Sites" TOMS = "Test Operations Management System"		TA Sites	Student Practice Test	TOMS	ORS	Comp Stat	Appeals	IAHSS
Operating Systems	Accepted Web Browsers							
Mac OS X								
10.7	Chrome 51 and up	✓	✓	✓	✓	✓	✓	✓
	Firefox 45 and up	✓	✓	✓	✓	✓	✓	✓
10.8	Chrome 51 and up	✓	✓	✓	✓	✓	✓	✓
	Firefox 45 and up	✓	✓	✓	✓	✓	✓	✓
10.9	Chrome 51 and up	✓	✓	✓	✓	✓	✓	✓
	Firefox 45 and up	✓	✓	✓	✓	✓	✓	✓
	Safari 7	✓	✓	✓	✓	✓	✓	✓
10.10	Chrome 51 and up	✓	✓	✓	✓	✓	✓	✓
	Firefox 45 and up	✓	✓	✓	✓	✓	✓	✓
	Safari 8	✓	✓	✓	✓	✓	✓	✓
10.11 (10.12, dependent upon release date)	Chrome 51 and up	✓	✓	✓	✓	✓	✓	✓
	Firefox 45 and up	✓	✓	✓	✓	✓	✓	✓
	Safari 9	✓	✓	✓	✓	✓	✓	✓
Linux								
Fedora 23–25	Chrome 51 and up	✓	✓	✓	✓	✓	✓	✓
	Firefox 45 and up	✓	✓	✓	✓	✓	✓	✓
openSUSE 13.1, 13.2	Chrome 51 and up	✓	✓	✓	✓	✓	✓	✓
	Firefox 45 and up	✓	✓	✓	✓	✓	✓	✓
Red Hat Enterprise 6.5	Chrome 51 and up	✓	✓	✓	✓	✓	✓	✓
	Firefox 45 and up	✓	✓	✓	✓	✓	✓	✓
Ubuntu (LTS) 12.04, 14.04, 16.04	Chrome 51 and up	✓	✓	✓	✓	✓	✓	✓
	Firefox 45 and up	✓	✓	✓	✓	✓	✓	✓
iOS								
8.0–8.2	Safari 8	✓	✓			✓	✓	✓
9.2–9.3	Safari 9	✓	✓			✓	✓	✓
10.0 (upon release)	Safari 10	✓	✓			✓	✓	✓
Android								
4.4, 5.0, 5.1, 6.0	Chrome 51 and up	✓	✓			✓	✓	✓
Chrome OS								
48–52	Chrome 51 and up	✓	✓			✓	✓	✓

Available Audio Settings by Web Browser

Some test items play audio files; some students have the text-to-speech (TTS) accommodation. In either case, the student should be able to adjust the audio settings for those items. Table 8 lists the browsers—secure and Web—and their associated capability to modify such settings. (In some cases, the audio files for practice tests will be accessible using a Web browser.) Use Table 8 to ensure that you deploy a browser with the required capability.

Table 8. Available Audio Settings by Browser

Operating System	Browser	System Volume	TTS Volume	TTS Pitch	TTS Rate	Pause	Resume
Windows	Secure browser	Y	Y	Y	Y	Y	Y
	Internet Explorer 11 Web browser	N	N	N	N	N	N
	Edge Web Browser	N	N	N	N	N	N
	Chrome Web browser ^a	Y	Y	Y	Y	N	N
	Firefox Web browser	N	N	N	N	N	N
OS X	Secure browser	Y	Y	Y	Y	Y	Y
	Safari Web browser	N	N	N	N	N	N
	Chrome Web browser ^a	Y	Y	Y	Y	N	N
Linux	Secure browser	Y	Y	Y	Y	Y	Y
	Firefox Web browser	N	N	N	N	N	N
	Chrome Web browser ^a	Y	Y	Y	Y	N	N
iOS	Mobile secure browser	N	Y ^b	Y ^b	Y*	N	N
	Safari Web browser	N	N	N	N	N	N
*Available for mobile secure browser version 3.1 or later.							
Android	Mobile secure browser	N	N	N	N	N	N
	Chrome Web browser ^a	Y	Y	Y	Y	N	N
Chromebook	Secure browser	N	Y	Y	Y	N	N
	Chrome Web browser ^a	Y	Y	Y	Y	N	N
^a TTS features for practice tests are available on Chrome if explicitly enabled.							
^b Available for mobile secure browser version 3.1 or later.							

Requirements for Peripheral Equipment

This section describes the requirements for peripheral equipment: monitors, screens, keyboards, and headphones.

Monitors and Screen Display Requirements

All supported computers, laptops, netbooks, and tablets must meet the following requirements.

Screen Dimensions

Screen dimensions must be 10" or larger (iPads with a 9.7" display are included). This means the following devices are **not** supported:

- Apple iPad Mini
- Google Nexus 7 and similar-sized Android tablets
- Netbooks with screen dimensions smaller than 10"

Screen Resolution

All devices must meet the following minimum resolution. Larger resolutions can be applied as appropriate for the monitor or screen being used.

- Desktops, laptops, and tablets: 1024 x 768
- Netbooks: 1024 x 600

Depending on the screen size, students may need to use vertical or horizontal scroll bars to view all test-related information. Students may also use the Zoom tool in the online test to enlarge the content on the screen.

Keyboards

External Keyboards

External keyboards must be used with tablets used for testing. The intent of this requirement is to ensure the required display area is available to allow students to read multiple sources of complex item text and respond to source evidence for analytical purposes. Students may use mechanical, manual, and Bluetooth-based keyboards. Some external keyboards have additional "shortcut" buttons that can create security issues. These buttons may allow students to open another application or the tablet's default on-screen keyboard. You are strongly cautioned against using keyboards that have these shortcut buttons.

Wireless Keyboards

While wireless keyboards are permissible, local educational agencies should be aware that high-density deployments of wireless keyboards and mice might interfere with each other or with the wireless network. Therefore, they should test the room configuration before the examination date and consider wired alternatives.

Android Keyboards

The Android mobile secure browser requires the secure browser keyboard to disable predictive text.



Alert: Any external keyboard that has a shortcut button to open the tablet's default keyboard is not permitted, as this default keyboard will override the mobile secure browser keyboard. For example, the EZOWare Slim Full Size Keyboard contains a shortcut button that opens the default keyboard and should NOT be used with Android tablets during testing.

Headsets and Headphones

Students need headphones to listen to audio in online assessments and may use headsets to record answers to tests. What follows are some scenarios that require headphones or headsets.

- The English language arts/literacy assessments contain audio (recorded and/or device-based read-aloud), and students must be provided with headphones so they have the option to clearly listen to the audio in these tests.
- Students with the text-to-speech test setting can use headphones to listen to stimuli or test items being read aloud. For more information about text-to speech and other test settings, refer to one of the following resources:
 - Matrix One, available on the California Department of Education Student Accessibility Supports Web page at <http://www.cde.ca.gov/ta/tq/ca/accesssupport.asp>
 - The forthcoming *Accessibility Guide for CAASPP Testing*, to be linked on the CAASPP Student Accessibility Resources and Test Settings Web page at <http://www.caaspp.org/administration/accessibility/>
- Students with the enhanced accessibility accommodation can use headphones along with Job Access with Speech® or other screen-reading software to complete online tests.
- Each NComputing terminal used for testing must have a USB headphone or headset.

CAASPP test site coordinators should determine how many students will need headphones to ensure that there are enough available at the time of a test.

Table 9 lists the supported headphones and headsets.

Table 9. Supported Headphones and Headsets

Model	Connector	Microphone Included	Hardware
Logitech 390	USB (wired)	Yes	All supported desktops, laptops, and Chromebases with USB port
Panasonic RP-HT21	XBS	No	All supported desktops, laptops, and Chromebases with XBS port
Logitech analog	3.5 mm	No	iOS, Android tablets with 3.5 mm port

Model	Connector	Microphone Included	Hardware
Plantronics 326	3.5 mm	Yes	All supported desktops, laptops, and Chromebases with 3.5 mm port—except NComputing terminals
Sennheiser PC 151	3.5 mm	Yes	All supported desktops, laptops, and Chromebases with 3.5 mm port—except NComputing terminals.
Plantronics 355	3.5 mm	Yes	All supported desktops, laptops, and Chromebases with 3.5 mm port—except NComputing terminals
Generic headphones	3.5 mm	No	All supported desktops, laptops, and Chromebases with 3.5 mm port—except NComputing terminals
Generic headphones	USB (wired)	No	All supported desktops, laptops, and Chromebases with USB port

Mice

Mice on mobile devices are not supported. Wireless or wired mice on desktops and laptops that are compatible with the operating system are supported.