



# System Requirements for Online Testing 2017–2018

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## Section I. Introduction

This document contains basic technology requirements for online testing using American Institutes for Research's (AIR) systems for the Spring 2018 field test administration.

### Organization of this Manual

This document contains the following sections:

- [Supported Operating Systems for Student Testing](#)
- [Supported Web Browsers for Online Systems](#)
- [Requirements for Peripheral Equipment](#)

### Other Resources

The following publications provide additional information:

- For information about installing secure browsers, refer to the *Secure Browser Installation Manual*.
- For information about network and Internet requirements, general peripheral and software requirements, and configuring text-to-speech settings, see the *Technical Specifications Manual for Online Testing*.
- For information about securing a computer before a test session, see the *Test Administrator User Guide*.

The above resources, as well as secure browsers and user guides for other systems, are available on the SHAPE America Health and Physical Education Assessments portal (<http://shape.portal.airast.org/>).

## Section II. Supported Operating Systems for Student Testing

This section describes the supported operating systems for online testing. For optimal performance, AIR expects all systems to have the latest minor updates and patches installed. Major updates including new versions require review and testing.

### Timing of Secure Browser Updates

A supported operating system is one for which American Institutes for Research (AIR) provides updates to the secure browser for that operating system. AIR provides these updates as the supported operating systems are updated or as bugs in the secure browser are detected and fixed.

For major version upgrades to a desktop operating system released before May 1, 2017, AIR will provide a secure browser update for that operating system version for the upcoming school year. For example, if an upgrade is released in April 2017, AIR will provide a secure browser that works on that upgrade for the 2017–2018 school year.

For major version upgrades to a desktop operating system released after May 1, AIR will not provide a secure browser update until the following school year, and the existing secure browser may or may not be compatible with the upgrade. For example, if an upgrade is released in June 2018, AIR will not provide a secure browser that works on that upgrade until the 2019–2020 school year. Exceptions may be made on a case-by-case basis.

For minor version upgrades to iOS, Android, or Chrome operating systems, AIR will provide mobile secure browser updates to ensure compatibility.



#### **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 computers that will be used to administer online assessments without ensuring the updates meet the required specifications.

## Desktops and Laptops

[Table 1](#) lists the operating systems and hardware required for student testing. Online testing functions effectively with the minimum requirements listed. However, the recommended specifications provide improved performance.

Table 1. Supported Desktop Operating Systems

Supported Operating Systems	Minimum Requirements	Recommended Specifications
<b>Windows</b> 7 (Professional and Enterprise) 8 (Professional and Enterprise) 8.1 (Professional and Enterprise) 10 (Professional, Educational, and Enterprise) Server 2008 R2, 2012 R2, 2016 R2 (thin client)	1.1 GHZ Processor 512 MB of RAM 200 MB hard drive space	1.4 GHZ Processor 2 or more GB RAM 16 or more GB hard drive space
<b>Mac OS</b> 10.9–10.13 <sup>a</sup>	1.1 GHZ Processor 512 MB of RAM 200 MB hard drive space	1.4 GHZ Processor 2 or more GB RAM 16 or more GB hard drive space

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

## Tablets

[Table 2](#) lists the supported tablets, operating systems, and related requirements. See the *Technical Specifications Manual for Online Testing* for information about configuring these devices for online testing.

Table 2. Supported Tablets and Operating Systems

Supported Operating Systems	Supported Tablets
<b>iOS (iPads)</b> 9.3, 10.3, 11.2	iPad 2 iPad 3 4 <sup>th</sup> Generation (Retina Display) 5 <sup>th</sup> Generation (Retina Display) iPad Air iPad Air 2

Supported Operating Systems	Supported Tablets
<b>Windows</b> 8 (Professional and Enterprise) 8.1 (Professional and Enterprise) 10 (Professional, Educational, and Enterprise)	AIR 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.

## Chromebooks and Chromebases

[Table 3](#) lists the supported operating systems for Chromebooks and Chromebases.



### About Chrome OS and Automatic Updates

While AIR actively works to support new versions of the Chrome operating system as they come out, we recommend disabling automatic updates until new versions are listed as supported. Disabling automatic updates allows AIR to review changes and address any updates that pose a potential risk to student testing.

Automatic update settings are configured in Google's admin console.

Table 3. Supported Chromebooks

Supported Operating Systems	Supported Chromebooks
<b>Chrome OS</b> 60+	AIR will support any device that Google actively supports for auto-update. AIR will not support any device that Google does not support for auto-update. Information on Google's auto-update policy, including currently supported devices, can be found at <a href="https://support.google.com/edu/android/answer/6220366">https://support.google.com/edu/android/answer/6220366</a> .



### Chromebooks Manufactured in 2017 or later

Due to recent changes by Google, users with Chromebooks manufactured in 2017 or later who do not have an Enterprise or Education license **will not** be able to use those machines for assessments. Google no longer allows users without these licenses to set up kiosk mode, which is necessary to run the AIR Secure Browser.

This change restricting kiosk mode does not affect the Chrome operating system. You can still use any version of Chrome OS on hardware manufactured in 2016 or earlier.

## Thin Clients: NComputing and Terminal Servers for Windows

### NComputing

[Table 4](#) lists the supported hardware and software for NComputing solutions.

Table 4. Supported NComputing solutions

Supported Server Host	Supported Server Software	Supported Terminal
Windows Server 2008 R2	vSpace Server 8.4	L300, firmware version 1.11.xx
Windows Server 2012 R2	vSpace PRO 10	
Windows Server 2016 R2		
Windows 10		

### Terminal Servers

[Table 5](#) lists the supported terminal servers for use with a thin client machine.

Table 5. Supported terminal servers

Supported Terminal Servers	Supported Thin Client
Windows Server 2008 R2, 2012 R2, 2016 R2	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.



## Section III. Supported Web Browsers for Online Systems

This section lists the supported web browsers for the 2017–2018 test year. It also addresses AIR’s secure browsers for student testing.

### Supported Web Browsers by Operating System

[Table 6](#) lists the supported operating systems and corresponding web browsers for each AIR application. AIR recommends using 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 10 requires Internet Explorer 11 or Edge.

Table 6. Supported Web Browsers by Operating System

Operating Systems	Browsers	TA Sites, Practice Tests	Test Information Distribution Engine (TIDE)
<b>Windows</b>			
7 (Professional and Enterprise)	Chrome 60+	✓	✓
	Firefox 52+	✓	✓
	Internet Explorer 11	✓	✓
8 (Professional and Enterprise) 8.1 (Professional and Enterprise)	Chrome 60+	✓	✓
	Firefox 52+	✓	✓
	Internet Explorer 11	✓	✓
8 RT	Internet Explorer 11	✓	
10 (Professional, Educational, and Enterprise)	Chrome 60+	✓	✓
	Firefox 52+	✓	✓
	Internet Explorer 11, Edge	✓	✓
<b>Mac</b>			
10.9-10.13 <sup>a</sup>	Chrome 60+	✓	
	Firefox 52+	✓	
	Safari 7+	✓	
<b>iOS</b>			
9.3	Safari 9	✓	
10.3	Safari 10	✓	

Operating Systems	Browsers	TA Sites, Practice Tests	Test Information Distribution Engine (TIDE)
11.2	Safari 11	✓	
<b>Chrome OS</b>			
60+	Chrome 60+	✓	

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

## Secure Browsers for Online Testing

[Table 7](#) lists the AIR secure browsers for each operating system. A secure browser must be downloaded and installed on each computer used for student testing. Districts that installed a secure browser with a version older than the versions listed below must uninstall it before installing the secure browser for the 2017–2018 school year. For instructions on downloading and installing the secure browsers, refer to the *Secure Browser Installation Manual*.

Table 7. Secure Browsers by Operating System

Operating Systems	Secure Browser
<b>Windows</b> 7 (Professional and Enterprise) 8 (Professional and Enterprise) 8.1 (Professional and Enterprise) 10 (Professional, Educational, and Enterprise) Server 2008 R2, 2012 R2, 2016 R2 (thin client)	10
<b>Mac OS</b> 10.9–10.12 <sup>a</sup>	10
<b>Mac OS</b> 10.13	10.2
<b>iOS (iPads)</b> 9.3 10.3 11.2	AIRSecureTest Mobile Secure Browser
<b>Chrome OS</b> 60+	AIRSecureTest Kiosk Application

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

## Delaying Firefox Updates

AIR conducts quality assurance on the most recent Firefox versions for each system except the Student Testing Site (which requires the secure browser). You should wait before installing new versions of Firefox, which could impact system performance. Delaying updates allows AIR time to review changes and verify each system works correctly with the new version.

To learn how to disable auto-updates for Firefox, see <https://support.mozilla.org/en-US/kb/forum-response-turning-auto-update>. You may need to disable auto-updates again after installing a newer version.

## Available Audio Settings by Browser

Some test items play audio files. In that case, the student should be able to adjust the audio settings for those items. [Table 8](#) lists the browsers and their associated capability to modify such settings. 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	Pause	Resume
Windows	Secure browser	Y	Y	Y
	IE 11	N	N	N
	Edge	N	N	N
	Chrome	Y	N	N
	Firefox	N	N	N
OS	Secure browser	Y	Y	Y
	Safari	N	N	N
	Chrome	Y	N	N
iOS	Mobile secure browser <sup>a</sup>	N	N	N
	Safari	N	N	N
Chromebook	Secure browser	N	N	N
	Chrome	Y	N	N

<sup>a</sup>Available for mobile secure browser version 3.4 or later.

## Section IV. 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 × 768
- Netbooks: 1024 × 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 are strongly recommended for tablets used for testing, and some states require external keyboards for such devices. 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. AIR strongly cautions against using keyboards that have these shortcut buttons.

## Headsets and Headphones

Students may need headphones to listen to audio in online assessments. Below are some scenarios that require headphones or headsets.

- Each NComputing terminal must have a USB headphone or headset when used for tests that require students to use audio.

Test 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	Hardware
Logitech 390	USB (wired)	All supported desktops, laptops, and Chromebases with USB port.
Panasonic RP-HT21	XBS	All supported desktops, laptops, and Chromebases with XBS port.
Logitech analog	3.5 mm	iOS
Plantronics 326	3.5 mm*	All supported desktops, laptops, and Chromebases with 3.5 mm port—except NComputing terminals.
Sennheiser PC 151	3.5 mm*	All supported desktops, laptops, and Chromebases with 3.5 mm port—except NComputing terminals.
Plantronics 355	3.5 mm*	All supported desktops, laptops, and Chromebases with 3.5 mm port—except NComputing terminals.
Generic headphones	3.5 mm	All supported desktops, laptops, and Chromebases with 3.5 mm port—except NComputing terminals.
Generic headphones	USB (wired)	All supported desktops, laptops, and Chromebases with USB port.

\*These models have two connectors, one each for headphone and microphone. They require a 3.5 mm headphone splitter when used with a computer having a single speaker-microphone port.

## Mice

Mice on mobile devices are not supported. Wireless or wired two- or three-buttoned mice that are compatible with the operating system on desktops and laptops are supported. No other mice should be used, especially mice equipped with a “browser back” button that could potentially kick users out of a test.

## Appendix A. Change Log

Section	Description	Date
<a href="#">Appendix A</a>	Added section	01/12/2018
<a href="#">Chromebooks and Chromebases</a>	Changed Chrome OS minimum support from 59 to 60.	
<a href="#">Timing of Secure Browser Updates</a>	Added section	
<a href="#">Table 1. Supported Desktop Operating Systems</a> <a href="#">Table 6. Supported Web Browsers by Operating System</a> <a href="#">Table 7. Secure Browsers by Operating System</a>	Added 10.12 support	01/25/2018
<a href="#">Table 6. Supported Web Browsers by Operating System</a>	Added TIDE	
<a href="#">Desktops and Laptops</a>	Removed Windows 10S.	