Private School Application to Administer

2019–20 Florida Statewide Assessments

Attachment H: System Requirements and Minimum Specifications for Computer-Based Testing

- Documents regarding the system requirements and minimum specifications for both assessment vendors, AIR and Pearson.
- Updated system requirements and specifications should be accessed through the FDOE website prior to test administration.
- Refer to statement number 25 in the 2019–20 application.
- Sign and return the signature page at the end of this attachment.

System Requirements for Online Testing
2018–2019

Overview

This document was developed by the American Institutes for Research (AIR) and the Florida Department of Education (FDOE) and contains technology requirements to help Florida districts and schools prepare for online testing using AIR's Test Delivery System. In the 2018–19 school year, the following Florida Standards Assessments (FSA) will be delivered online using AIR's systems:

- **ELA Writing:** Grades 7–10 & Retake

- **ELA Reading:** Grades 7–10 & Retake

- **Mathematics:** Grades 7–8, Algebra 1 EOC Retake, Algebra 1 EOC, and Geometry EOC

This document includes the following sections:

- [Supported Operating Systems and Devices](#)

- [Supported Web Browsers for Online Systems](#)

- [Secure Browsers for Online Testing](#)

- [Requirements for Peripheral Equipment](#)

Supported Operating Systems and Devices

This section lists the system requirements for administering computer-based assessments. Please refer to the [Secure Browser page](#) on the FSA Portal for the most up-to-date supported operating systems and devices.

> ⚠️ **Warning: Support for New Major Versions of Supported Operating Systems and Devices**
>
> New major versions of supported operating systems must be tested by AIR before they can be used for online testing. Do not upgrade to new major versions before support is officially announced. AIR also recommends you disable auto-updates to keep systems from upgrading automatically. Support for operating systems or devices may be added or dropped throughout the year, so be sure to check what is supported before making any changes to your computers or devices.

Only the listed operating systems are supported. Versions not listed in this document are not supported.

Desktops, Laptops, and Netbooks

Computers used for testing must meet the specifications for each supported operating system as shown in the table below. To ensure optimal student experiences for online testing, any computer that takes a noticeably long time (for example, 10 seconds or more) to start and run applications should be avoided for use with online testing.

Supported Operating Systems	Minimum Requirements for Current Computers**
Windows 7 SP1 (Professional and Enterprise) 8 (Professional and Enterprise) 8.1 (Professional and Enterprise) 10, 10 in S mode (Professional, Educational, and Enterprise) (Versions 1507–1803)	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)
Mac OS X (Intel) 10.9–10.13	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)
Linux* (64-bit or 32-bit) Fedora 27, 28 Ubuntu 14.04, 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 (Ubuntu only) • GNOME 2.16 or higher
Linux* (64-bit only) Ubuntu 18.04 LTS (Gnome)	1 GHZ Processor 2 GB RAM 20 GB hard drive In addition to all libraries and packages listed above, Ubuntu 18.04 LTS (Gnome) also requires the following libraries: • Sox • Net-tools

* Text-to-speech (TTS) tracking does not function correctly on Linux OS. If students require the use of this accommodation (TTS with tracking), they must use a different operating system.

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

Tablets

While the specifications for computers, laptops, and netbooks are more general, only supported tablets running a supported operating system are permitted. These supported tablets have been tested for use with AIR's Test Delivery System and may be used for student testing.

Supported Operating Systems	Supported Tablets	Related Requirements
iOS (iPads) 10.2, 10.3 11.4 12.0, 12.1	4th Generation (Retina Display) 5th Generation (Retina Display) 6th Generation iPad Air iPad Air 2 iPad Pro	With iOS 10.2 and later, the AIRSecureTest app supports Autonomous Single App Mode (ASAM) and Single App Mode (SAM). For more information, refer to the *Technical Specifications Manual*.
Android[a] 7.1, 8.1	Lenovo Yoga Tab 3 10 Samsung Galaxy Tab S3 Asus ZenPad Z10	The secure browser keyboard must be enabled after installation of the mobile secure browser. For more information, refer to the *Secure Browser Installation Manual*.
Windows 8 (Professional & Enterprise) 8.1 (Professional & Enterprise) 10 (Educational, Professional, & Enterprise)	AIR supports any tablet running these versions of Windows (Educational and Professional) but has done extensive testing only on Surface Pro, Surface Pro 3, Asus Transformer, and Dell Venue.	N/A

[a] Amazon Fire tablets are not supported for online testing.

Chromebooks and Chromebases

All Chromebooks running a supported Chrome OS may be used for student testing. 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 https://support.google.com/chrome/a/answer/6220366.

> **Note**: For Chrome OS and automatic updates, AIR recommends turning off or delaying automatic updates of the Chrome operating system. Doing so will allow AIR to review changes from Google and address any updates that pose a potential risk to student testing.
>
> Automatic update settings are configured in Google's admin console.

Supported Operating Systems	Supported Devices	Related Requirements
Chrome OS 67–69	All Chromebooks	Kiosk mode must be enabled. For more information, refer to the *Secure Browser Installation Manual*.

Chromebooks Manufactured in 2017 or later

Due to 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.

Warning: Chrome OS Tablet Mode

Chrome OS includes a feature called tablet mode, which offers a touchscreen environment for supported Chromebooks and for Chrome OS tablets. Tablet mode cannot be blocked and AIR does not support tablet mode for use in testing.

Thin Clients: NComputing for Windows

The following table lists the supported hardware and software for NComputing solutions.

Supported Server Host	Supported Server Software	Supported Terminals
Windows Server 2008 R2	vSpace Server 8.4	L300, firmware version 1.12.xx
Windows Server 2012 R2 Windows Server 2016 R2 Windows 10	vSpace PRO 10	L300, L350, M300, firmware version 1.13.xx

Supported Web Browsers for Online Systems

This section lists the supported web browsers for 2018–2019. It also provides information regarding AIR's secure browsers for student testing. Frequent browser updates occur throughout the year.

Supported Web Browsers by Operating System

The table below lists the supported operating systems and corresponding web browsers for each AIR application. Each application requires disabling pop-up blocking software and enabling JavaScript. Be sure to use the correct combination of operating system and web browser.

Supported Operating Systems	Supported Devices	Supported Browsers	TA Sites	Student Practice Test	AVA	TIDE	FSA-R
Windows[a]							
7 SP1 (Professional and Enterprise)	Desktops, laptops	Chrome 67–69	✓	✓	✓	✓	✓
		Firefox 52–60	✓	✓	✓	✓	✓
		Internet Explorer 11	✓					
Windows[a]							
8 (Professional and Enterprise) 8.1 (Professional and Enterprise)	Desktops, laptops	Chrome 67–69	✓	✓	✓	✓	✓
		Firefox 52–60	✓	✓	✓	✓	✓
		Internet Explorer 11	✓					
8 RT	Surface Pro Surface Pro 3 Asus Transformer Dell Venue	Internet Explorer 11	✓					
10 (Professional, Educational, and Enterprise) (Versions 1507-1803)	Desktops, laptops	Chrome 67–69	✓	✓	✓	✓	✓
		Firefox 52–60	✓	✓	✓	✓	✓
		Internet Explorer 11	✓					
		Edge	✓	✓	✓	✓	✓
10 in S mode (Professional, Educational, and Enterprise) (Versions 1507-1803)	Desktops, laptops	Edge	✓	✓	✓	✓	✓

System Requirements for Online Testing

Supported Operating Systems	Supported Devices	Supported Browsers	TA Sites	Student Practice Test	AVA	TIDE	FSA-R
Mac OS X							
10.9–10.13	Desktops, laptops	Chrome 67–69	✓	✓	✓	✓	✓
		Firefox 52–60	✓	✓	✓	✓	✓
		Safari 9–11	✓	✓		✓	✓
Linux[b]							
Fedora 27, 28	Desktops, laptops	Chrome 67–69	✓	✓	✓	✓	✓
		Firefox 52–60	✓	✓	✓	✓	✓
Ubuntu 14.04, 16.04, 18.04 LTS (Gnome)	Desktops, laptops	Chrome 67–69	✓	✓	✓	✓	✓
		Firefox 52–60	✓	✓	✓	✓	✓
iOS							
10.2, 10.3	Supported iPads	Safari 10	✓	✓	✓		✓
11.4	Supported iPads	Safari 11	✓	✓	✓		✓
12.0, 12.1	Supported iPads	Safari 12	✓	✓	✓		✓
Android							
7.1, 8.1	Supported tablets	Chrome 67–69	✓	✓	✓		
Chrome OS							
67–69	Chromebooks	Chrome 67–69	✓	✓	✓		✓

[a] AIR supports any tablet running Windows 8 and 8.1 Pro, and Windows 10 (Educational and Professional) but has done extensive testing only on Surface Pro, Surface Pro 3, Asus Transformer, and Dell Venue.

[b] Text-to-speech (TTS) tracking does not function correctly on Linux OS. If students require the use of this accommodation (TTS with tracking), they must use a different operating system.

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). AIR recommends you delay installation of new versions of Firefox that could impact system performance. Postponing updates allows AIR time to review changes and verify that each system works correctly with the new version.

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

Secure Browsers for Online Testing

The secure browser must be downloaded and installed on all computers that will be 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 2018–2019 school year. For instructions on downloading and installing the secure browsers, refer to the *Secure Browser Installation Manual*. All secure browsers can be downloaded from the FSA Portal (www.FSAssessments.org).

Supported Operating Systems	Supported Devices	Supported Secure Browser
Windows 7 SP1 (Professional and Enterprise) 8 (Professional and Enterprise) 8.1 (Professional and Enterprise) 8 RT 10, (Professional, Educational, and Enterprise) (Versions 1507–1803)	Desktops/Laptops/Netbooks	10.5
Windows 10, 10 in S mode (Educational, Professional, & Enterprise) (Versions 1507–1803)	Desktops/Laptops/Netbooks	Take a Test app
Mac OS X 10.9–10.13	Desktops/Laptops	10.6
Linux[a] Fedora 27, 28 Ubuntu 14.04, 16.04, 18.04 LTS (Gnome)	Desktops/Laptops/Netbooks	10.5

Supported Operating Systems	Supported Devices	Supported Secure Browser
iOS (iPads) 10.2, 10.3 11.4 12.0, 12.1	4th Generation (Retina Display) 5th Generation (Retina Display) 6th Generation iPad Air iPad Air 2 iPad Pro	AIRSecureTest Mobile Secure Browser 5
Android 7.1, 8.1	Lenovo Yoga Tab 3 10 Samsung Galaxy Tab S3 Asus ZenPad Z10	AIRSecureTest Mobile Secure Browser 5
Chrome OS 67–69	Chromebooks	AIRSecureTest kiosk application 5

[a] Text-to-speech (TTS) tracking does not function correctly on Linux OS. If students require the use of this accommodation (TTS with tracking), they must use a different operating system.

Requirements for Peripheral Equipment

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 (with the exception of iPads with a 9.7" display, which 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.

Headphones/Earbuds

Students may need headphones/earbuds to listen to audio during the test.

- Students with the text-to-speech accommodation on computer based assessments require headphones/earbuds.

- Grades 7–10 and Retake ELA Reading assessments (both computer-based and paper-based) require headphones for listening and/or animation items.

School assessment coordinators should determine how many students will need headphones/earbuds prior to testing to ensure that there is an adequate supply on hand.

The following headphones/earbuds are supported:

- Wired headphones/earbuds with a 3.5 mm connector.

- USB headphones/earbuds with a wired or wireless connection.

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

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 log students out of a test.

Keyboards

External keyboards are strongly recommended for tablets used for testing. Students may use mechanical, manual, or 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.

Keyboards with the Android Operating System

Testing on an Android mobile device requires installation of the secure browser keyboard to disable predictive text. Any external keyboard that has a shortcut button to open the tablet's default keyboard is not permitted as the default keyboard will override the mobile secure browser keyboard.

AIR has determined that the EZOWare Slim Full Size Keyboard contains a shortcut button that opens the default keyboard and should NOT be used with Android tablets.

Change Log

Location	Change	Date
Overview	Updated information	8/1/18
Desktops, Laptops, and Netbooks, Tablets, Chromebooks and Chromebases, Supported Web Browsers for Online Systems, Secure Browsers for Online Testing	Updated information on system and device support	8/1/18
Headphones/Earbuds	Updated information	8/1/18
Secure Browsers for Online Testing	Updated Linux Secure Browser version	8/23/18
Chromebooks and Chromebases, Supported Web Browsers for Online Systems, Secure Browsers for Online Testing	Updated Chrome support	8/24/18
Chromebooks and Chromebases, Supported Web Browsers for Online Systems, Secure Browsers for Online Testing	Updated Chrome support	10/5/18
Tablets, Supported Web Browsers for Online Systems, Secure Browsers for Online Testing	Updated iOS support	11/1/18
Secure Browsers for Online Testing	Updated Secure Browser Version	11/1/18
Secure Browsers for Online Testing	Updated Mac OS X Secure Browser Version	11/13/18
Tablets, Supported Web Browsers for Online Systems, Secure Browsers for Online Testing	Updated iOS support	11/13/18

TestNav System Requirements

The information in this document is taken from https://support.assessment.pearson.com/display/TN/TestNav+System+Requirements. Check the website for the most up-to-date information.

Refer to the requirements on this page to install TestNav.

> ✅ Do not use devices that take 10 seconds or more to start/run applications.

Hardware Requirements[1]

Specifications	Windows	OS X, macOS	Linux	iOS	Chrome OS
Supported devices	Desktops Laptops Tablets	Desktops Laptops	Desktops Laptops	iPads	Chromebooks Chromeboxes
Processor	x86/x32 and x64	Intel-based™	x86/x32 and x64	any	any
Memory	**Recommended** 4 GB RAM **Minimum** 2 GB RAM	**Recommended** 4 GB RAM **Minimum** 2 GB RAM	**Recommended** 2 GB RAM **Minimum** 1 GB RAM	**Recommended** 2 GB RAM **Minimum** 1 GB Ram	**Recommended** 4 GB RAM **Minimum** 2 GB RAM
Minimum screen size	9.5-in	9.5-in	9.5-in	9.5-in	9.5-in
Minimum screen solution	1024 x 768	1024 x 768	1024 x 768	1024 x 768	1024 x 768
Other	• External keyboard and mouse (or touchpad) for touchscreen devices *required* • Local File access to home directory • Wired keyboards *recommended*	• Local File access to home directory • Wired keyboards *recommended*	Wired keyboards *recommended*	• External keyboard and mouse (or touchpad) for touchscreen devices *recommended* • Wired keyboards *recommended*	• Convertible Chromebooks cannot be used in tablet mode • Wired keyboards *recommended*

Software Requirements

Secure Testing (TestNav Apps Only)

*TestNav apps run in **kiosk mode** to prevent students from accessing any other web pages or applications while testing.*

Installable TestNav

Use the links below to download and set up the app for your supported OS.

Operating System	Download Installable TestNav	Setup Instructions
Chrome OS 66 - 69	From Chrome Web Store	Set Up TestNav on Chromebook

iOS 10.3.1 – 10.3.3, 11..2.5, 11.2.6, 11.4, 11.4.1, 12, 12.1 ***For information on iOS 11.0, see technical bulletin, TestNav – iOS 11 and TestNav***	From the App Store	Set Up TestNav on iPad
Linux Fedora 24 (64-bit); Ubuntu 18.04 (64-bit)	From TestNav downloads	Set Up TestNav Desktop on Linux
OS X/macOS 10.11, 10.12, 10.13, 10.14	From TestNav downloads	Set Up TestNav Desktop on OS X
Windows: 7, 8.1, 10 (includes Windows Store app)	From TestNav downloads	Set Up TestNav Desktop on Windows

Non-Secure (Practice) Testing

For practice tests, *you can use the TestNav apps* or the browsers in the table below:

OS	Versions and Corresponding Browsers
Chrome OS	66-69 → Google Chrome 66-69
iOS	• 10.3.1 -10.3.3 → Safari 10.x • 11.2.5, 11.2.6, 11.4, 11.4.1 → Safari 11.x • 12, 12.1 → Safari 12
OS X/macOS	• 10.11, 10.12, 10.13, 10.14 → Safari 11.x, • 12; Firefox 61
Windows	• 7, 8, 8.1 → Firefox 61 • 7, 8.1, 10 → Google Chrome 66-69; IE 11 • 10 → Microsoft Edge

Private School Application to Administer

2019–20 Florida Statewide Assessments

Attachment H: System Requirements and Minimum Specifications for Computer-Based Testing

SIGNATURE PAGE

I hereby confirm that I have read and will abide by Attachment H: System Requirements and Minimum Specifications for Computer-Based Testing.

_____   _____

Signature   Name – Please Print

_____   _____

Position   Date