Private School Application to Administer

2017-18 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 item number 24 in the 2017-18 application.
- Sign and return the signature page at the end of this attachment.

System Requirements for Online Testing
2016–2017

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 2016–17 school year, the following Florida Standards Assessments (FSA) will be delivered online using AIR's systems:

- Grades 8–10/Retake ELA Writing
- Grades 4–10/Retake ELA Reading
- Grades 3–8 Mathematics
- Algebra 1 Retake (Spring 2017 only)
- Algebra 1 EOC
- Geometry EOC
- Algebra 2 EOC

This document includes the following sections:

- Supported Operating Systems and Devices
- Supported 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 Desktop Operating Systems**
> Operating systems that become available but do not appear on the portal or 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, 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, 8.0 (Pro), 8.1, 10	Pentium 4 or newer processor that supports SSE2 1 GB RAM or greater memory 200 MB hard drive space
Mac OS X (Intel) 10.7–10.11	Intel x86 processor 1 GB RAM or greater memory 200 MB hard drive space
Linux Fedora 23, 24, 25 openSUSE 13.1, 13.2 Red Hat Enterprise Linux 6.5 Ubuntu (LTS) 12.04, 14.04, 16.04	Intel x86 processor 512 MB of RAM 200 MB hard drive space 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

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) 7.0, 7.1 8.0–8.2 9.x	iPad 2 iPad 3 Fourth generation (Retina Display) iPad Air iPad Air 2	With iOS 7 and later, the AIRSecureTest app supports Autonomous Single App Mode (ASAM) and Single App Mode (SAM). If ASAM or SAM is not utilized for testing, then Guided Access must be enabled. For more information, refer to the *Technical Specifications Manual*.
Android 4.4, 5.0, 5.1	Google Nexus 10 Motorola Xoom Samsung Galaxy Note 2014 Samsung Galaxy Tab 3, 4 LearnPad Quarto	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 8.0, 8.1, 10	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

Chromebooks

All Chromebooks running a supported Chrome OS may be used for student testing.

> **About 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 50–53	All Chromebooks	Kiosk mode must be enabled. For more information, refer to the *Secure Browser Installation Manual*.

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 2008 R2	vSpace Server 8	L300

Supported Browsers for Online Systems

This section lists the supported web browsers for 2016–2017. 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. 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 8.1 requires Internet Explorer 11.

Supported Operating Systems	Supported Devices	Supported Browsers	TA Sites	Student Practice Test	AVA	TIDE	FSA-R
Windows							
7	Desktops, laptops	Chrome 50, 51, 52, & 53	✓	✓	✓	✓	✓
		Firefox 45 & 46	✓	✓	✓	✓	✓
		Internet Explorer 11	✓	✓	✓	✓	✓
8.0 RT	Surface Pro [a] Surface Pro 3 [a] Asus Transformer [a] Dell Venue [a]	Internet Explorer 11	✓	✓	✓		✓
8.0 Pro, 8.1	Desktops, laptops	Chrome 50, 51, 52, & 53	✓	✓	✓	✓	✓
		Firefox 45 & 46	✓	✓	✓	✓	✓
		Internet Explorer 11	✓	✓	✓	✓	✓

Supported Operating Systems	Supported Devices	Supported Browsers	TA Sites	Student Practice Test	AVA	TIDE	FSA-R
Windows							
10 (Educational and Professional)	Desktops, laptops	Chrome 50, 51, 52, & 53	✓	✓	✓	✓	✓
		Firefox 45 & 46	✓	✓	✓	✓	✓
		Internet Explorer 11, Edge	✓	✓	✓	✓	✓
Mac OS X							
10.7	Desktops, laptops	Chrome 50, 51, 52, & 53	✓	✓	✓	✓	✓
		Firefox 45 & 46	✓	✓	✓	✓	✓
10.8	Desktops, laptops	Chrome 50, 51, 52, & 53	✓	✓	✓	✓	✓
		Firefox 45 & 46	✓	✓	✓	✓	✓
		Safari 6	✓	✓	✓	✓	✓
10.9	Desktops, laptops	Chrome 50, 51, 52, & 53	✓	✓	✓	✓	✓
		Firefox 45 & 46	✓	✓	✓	✓	✓
		Safari 7	✓	✓	✓	✓	✓
10.10	Desktops, laptops	Chrome 50, 51, 52, & 53	✓	✓	✓	✓	✓
		Firefox 45 & 46	✓	✓	✓	✓	✓
		Safari 8	✓	✓	✓	✓	✓
10.11, 10.12	Desktops, laptops	Chrome 50, 51, 52, & 53	✓	✓	✓	✓	✓
		Firefox 45 & 46	✓	✓	✓	✓	✓
		Safari 9	✓	✓	✓	✓	✓
Linux							
Fedora 23–25	Desktops, laptops	Chrome 50, 51, 52, & 53	✓	✓	✓	✓	✓
		Firefox 45 & 46	✓	✓	✓	✓	✓
openSUSE 13.1, 13.2	Desktops, laptops	Chrome 50, 51, 52, & 53	✓	✓	✓	✓	✓
		Firefox 45 & 46	✓	✓	✓	✓	✓

Supported Operating Systems	Supported Devices	Supported Browsers	TA Sites	Student Practice Test	AVA	TIDE	FSA-R
Linux							
Red Hat Enterprise 6.5	Desktops, laptops	Chrome 50, 51, 52, & 53	✓	✓	✓	✓	✓
		Firefox 45 & 46	✓	✓	✓	✓	✓
Ubuntu (LTS) 12.04, 14.04, 16.04	Desktops, laptops	Chrome 50, 51, 52, & 53	✓	✓	✓	✓	✓
		Firefox 45 & 46	✓	✓	✓	✓	✓
iOS							
7.0, 7.1[b]	Supported iPads	Safari 7	✓	✓	✓		✓
8.0–8.2	Supported iPads	Safari 8	✓	✓	✓		✓
9.x	Supported iPads	Safari 9	✓	✓	✓		✓
Android							
4.4, 5.0, 5.1	Supported tablets	Chrome 50, 51, 52, & 53	✓	✓	✓		✓
Chrome OS							
50–53	Chromebooks	Chrome 50, 51, 52, & 53	✓	✓	✓		✓

[a] AIR supports any tablet running Windows 8.0 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] Schools testing students requiring TTS for the ELA Reading test on iOS devices should upgrade to MSB 3.3. Schools not using TTS on iOS devices may use 3.2 or 3.3.

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. All secure browsers can be downloaded from the FSA Portal (www.FSAssessments.org).

Supported Operating Systems	Supported Devices	Supported Secure Browser
Windows 7, 8.0, 8.1, 10 (Educational and Professional)	Desktops/Laptops/Netbooks	9.0
Mac OS X (Intel) 10.7–10.11	Desktops/Laptops	9.0
Linux Fedora 23–25 openSUSE 13.1, 13.2 Red Hat Enterprise 6.5 Ubuntu (LTS) 12.04, 14.04, 16.04	Desktops/Laptops/Netbooks	9.0
iOS (iPads) 7.0, 7.1[b] 8.0–8.2 9.x	iPad 2 iPad 3 Fourth generation (Retina Display) iPad Air iPad Air 2	AIRSecureTest Mobile Secure Browser
Android 4.4–5.1	Google Nexus 10 Motorola Xoom Samsung Galaxy Note (2014) Samsung Galaxy Tab 3, 4	AIRSecureTest Mobile Secure Browser
Chrome OS 50–53	Chromebooks	AIRSecureTest kiosk application

[b] Schools testing students requiring TTS for the ELA Reading test on iOS devices should upgrade to MSB 3.3. Schools not using TTS on iOS devices may use 3.2 or 3.3.

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

Students may need headphones to listen to audio in online assessments.

- Students with the text-to-speech feature can listen to audio files of stimuli or test items.

- All computer-based ELA Reading assessments require headphones for listening items.

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

The following headphones are supported:

- Wired headphones with a 3.5 mm connector.

- USB headphones with a wired or wireless connection.

- The following Bluetooth headphones: Logitech H800, SoundBot SB270, and ECO Sound ECO-V300.

Wired headphones with a 3.5 mm connector or USB headphones (wired or wireless) are recommended over Bluetooth, as they provide better clarity and accuracy.

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.

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

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

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
Chromebooks, Supported Web Browsers by Operating System, Secure Browsers for Online Testing	Added support for Chrome OS version 52	8/29/2016
Chromebooks, Supported Web Browsers by Operating System, Secure Browsers for Online Testing	Added support for Chrome OS version 53	09/26/16
Desktops, Laptops, and Netbooks, Supported Web Browsers by Operating System, Secure Browsers for Online Testing	Removed support for Linux Fedora 22 and added Fedora 25	09/26/16
Chromebooks, Supported Web Browsers by Operating System, Secure Browsers for Online Testing	Removed support for Chrome 49	09/27/16

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.

> ⓘ The requirements in this section reflect TestNav minimum requirements; however, some customers slightly vary requirements for their specific organizations.

Refer to the requirements on this page to set up browser-based TestNav or installable TestNav.

Hardware Requirements[1]

Specifications	Windows	OS X	Linux	iOS	Android	Chrome OS
Supported devices	Desktops Laptops Tablets	Desktops Laptops	Desktops Laptops	iPads	Tablets	Chromebooks
Processor	x86/x32 and x64	Intel-based™	x86/x32 and x64	any	any	any
Memory	**Recommended** 1 GB RAM **Minimum** 512 MB RAM	**Recommended** 2 GB RAM **Minimum** 1 GB RAM	**Recommended** 2 GB RAM **Minimum** 1 GB RAM	**Recommended** 1 GB RAM (iPad 3rd gen +) **Minimum** 512 MB RAM (iPad 2)	**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	9.5-in
Minimum screen solution	1024 x 768	1024 x 768	1024 x 768	1024 x 768	1024 x 768	1024 x 768
Other	• Windows RT tablets are not supported • External keyboard and mouse (or touchpad) for touchscreen devices required *Wired hardware is recommended* • Local File access to home directory	Local File access to home directory		*External (wired) keyboard recommended*	External keyboard required *Wired hardware is recommended*	Convertible Chromebooks can not be used in tablet mode

[1]These requirements do not supersede the minimum requirements of the supported operating systems (OS). Refer to the minimum requirements for the OS.

> ⚠ As a general rule regarding optimal online testing, you should avoid using any computer that takes noticeably long (10 seconds or more) to start and run applications.

Firewall/Proxy Servers/Content Filtering

Open the following URLs and ports in any firewalls, proxy servers, or software used for Internet content filtering:

URL:Port[2]
Your test delivery URL, for example: *.testnav.com:80 *.testnav.com:443
*.pearsontestcontent.com
*.thawte.com
*.usertrust.com
*.comodoca.com
google-analytics.com (optional)

[2]TestNav content is dynamically hosted in the cloud. No static IP addresses or ranges can be provided.

Tests that Require Kiosk Mode

Kiosk mode prevents students from accessing any other web pages or applications besides TestNav while testing.

Installable TestNav

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

> ⊘ Do not update your OS without verifying supported OS(s) in the table below. Only these listed versions will work with TestNav.

OS	Download Installable TestNav	Setup Instructions
Android 5.0 - 7.0	From Google Play	Set Up TestNav on Android Devices
Chrome OS 50 - 54	From Chrome Web Store	Set Up TestNav on Chromebook
iOS 9.3.2 - 9.3.5, 10.2	From the App Store	Set Up TestNav on iPad
Linux Fedora 24 (64-bit); Ubuntu 16.04 (64-bit)	From TestNav downloads	Set Up TestNav Desktop on Linux
OS X: 10.9, 10.10, 10.11	From TestNav downloads	Set Up TestNav Desktop on OS X
Windows: 7, 8.1, 10	From TestNav downloads	Set Up TestNav Desktop on Windows

Browser-based TestNav

If your program requires you to use browser-based TestNav, download Firefox ESR 45. Then, see instructions for each OS.

OS	Download browser	Setup instructions
• **OS X: 10.9, 10.10, 10.11** • **macOS Sierra 10.12**[3]	Firefox ESR 45	Set Up TestNav with Firefox ESR 45
Windows: 7, 8.1, 10	Firefox ESR45 (32-bit)	

[3]Customers may add support for this OS at varying times.

Tests that Do Not Require Kiosk Mode

You can use either installable TestNav apps or the browsers in the table below.

Browser	OS
Firefox 45	Windows: 7, 8, 8.1 OS X: 10.9, 10.10, 10.11 macOS Sierra 10.12
Google Chrome 50 - 54	Windows: 7, 8.1, 10 OS X: 10.9, 10.10, 10.11 Chrome OS 50 - 54 Android 5.0 - 7.0
IE 11	Windows: 7, 8.1, 10
Microsoft Edge	Windows 10
Safari 9.x	OS X: 10.9, 10.10, 10.11 iOS 9.3.2 - 9.3.5., 10.2

Private School Application to Administer

2017-18 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