Technology Requirements
for Online Testing
Topics

- Terminology
- Test the System Day
- Site Readiness
- Secure Browser Installation
- Network Diagnostics and Configuration
- Hardware and Software Requirements
- Network Requirements
**Terminology**

- **User Roles**
  - District Coordinator
  - District Data Reviewer
  - Building Coordinator
  - Test Administrator
  - Proctor
  - Alt Roles

- **TIDE**
  - Test Information Distribution Engine: User and Student Registration/Administrative tasks

- **TDS**
  - Test Delivery System: What the teacher and student interacts with when giving or taking a test
Test the System Day

**Goals**
- Make sure your school/district computers and infrastructure are prepared
- Increase user’s comfort with the system

**Needs**
- Recommended to install the Secure Browser, but not required
- Supported Web Browser
- Internet connection
wyoassessment.org – the portal
Secure Browser

- Required for students to access the Student Testing Site
- Should be downloaded and installed on all devices used for student testing
- Prevents students from accessing other applications during testing
- Can be used to access training tests, as well as with supported web browsers
Secure Browser Installation

Important Information

Technical Resources
- For information about supported operating systems and web browsers, see the System Requirements for Online Testing.
- For information about securing a computer before a test session, see the Test Administrator User Guide.
- 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 supported hardware and software for Braille testing as well as information about configuring JAWS, see the Braille Requirements and Testing Manual.
- For information about installing secure browsers, see the Secure Browser Installation Manual.

About Supported Browsers
The operating system versions listed in the above table are the only ones officially supported.

Warning: Support for New Desktop Operating Systems
Desktop operating systems, in particular new versions of those operating systems, not in the above table are not supported. Do not upgrade to new operating systems on computers used to administer online assessments.

Warning: Support for Updated Mobile Operating Systems
Turn off or delay automatic updates of operating systems for mobile devices. AIR reviews these updates to verify they do not pose a risk to student testing, and will post announcements on this portal accordingly.
Secure Browser Installation Methods

- Download the secure browser from your portal and install.
- Download and save the secure browser onto a media device, such as a flash drive, and copy and install the files on each computer.
- Download and save the secure browser to a network folder, and copy and install the files on each computer.
- Running the Secure Browser application from a shared network location is strongly discouraged.
Secure Browser Installation:

Windows

MSI file type enables deployment using a number of tools:

- Active Directory Group Policy
- Microsoft SMS
- Microsoft SCCM
- Microsoft WSUS
- Windows NT Batch
Secure Browser Installation:
Windows 10 Take a Test App

Windows 10 includes Microsoft’s Take a Test app, which provides a secure testing environment.

Must be used on 10S, can be used on 10
Secure Browser Installation:
Mac and Linux

**Mac**
DMG file type enables deployment using Apple Remote Desktop.
- Munki
- Filewave

**Linux**
TAR file type enables deployment using a number of tools including the following:
- Shell scripts
- Puppet
Disabling OS X Features

- Disable Exposé or Spaces
- Disable application launches from function keys
- Disable updates to third party apps
- Disable updates to iTunes
- Disable dictation and Siri
Scheduling Automated Tasks

Ensure all scheduled tasks take place outside of testing hours:

- Virus Scans
- Software Updates
- Operating System Updates, such as Windows Updates
Bandwidth

- At least 20 Kbps bandwidth per student being tested
- Affected by both Local Area Network (LAN) traffic and Internet traffic from the router
- LAN should always be analyzed to determine potential traffic bottlenecks
Diagnostic Screen
This page allows you to check the current bandwidth of your network. Select a test from the drop-down list and enter the maximum number of students likely to test at one time, then click [Run Network Diagnostics Tests].

Your Operating System: Windows 7

Your Browser Version: Chrome v59

Secure Browser: false

Network Diagnostics:

Select Test: Select Test

Enter the total number of students you would like to test at one time: 

Run Network Diagnostics Tests

Return to Login TTS Check
System Requirements

- Desktops and Laptops
- Monitor Display
- Mobile Devices
<table>
<thead>
<tr>
<th>Supported Operating Systems</th>
<th>Minimum Requirements</th>
<th>Recommended Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Windows</strong> 7 (Professional &amp; Enterprise)</td>
<td>1.1 GHZ Processor 512 MB of RAM 200 MB hard drive space</td>
<td>1.4 GHZ Processor 2+ GB RAM 16+ GB hard drive space</td>
</tr>
<tr>
<td>8.0 (Professional &amp; Enterprise)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.1 (Professional &amp; Enterprise)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10 (Professional, Educational, &amp; Enterprise)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Mac OS X</strong> 10.7–10.12a</td>
<td>1.1 GHZ Processor 512 MB of RAM 200 MB hard drive space</td>
<td>1.4 GHZ Processor 2+ GB RAM 16+ GB hard drive space</td>
</tr>
<tr>
<td>10.13b</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a Support for this version will begin upon its release.
b Support for this version is anticipated upon the completion of testing following its release.
## System Requirements: Desktops and Laptops, cont.

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<th>Supported Operating Systems</th>
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<tbody>
<tr>
<td>Linux</td>
<td>1.1 GHZ Processor</td>
<td>1.4 GHZ Processor</td>
</tr>
<tr>
<td></td>
<td>512 MB of RAM</td>
<td>2+ GB RAM</td>
</tr>
<tr>
<td></td>
<td>200 MB hard drive space</td>
<td>16+ GB hard drive space</td>
</tr>
<tr>
<td>Fedora 25–26(^a) LTS</td>
<td>Required libraries/packages:</td>
<td>Required libraries/packages:</td>
</tr>
<tr>
<td>(Gnome)</td>
<td>• GTK+ 2.18 or higher</td>
<td>In addition to the required libraries listed under minimum</td>
</tr>
<tr>
<td>Ubuntu 14.04, 16.04 LTS</td>
<td>• GLib 2.22 or higher</td>
<td>requirements, the following should be installed:</td>
</tr>
<tr>
<td>(Gnome)</td>
<td>• Pango 1.14 or higher</td>
<td>• NetworkManager 0.7 or higher</td>
</tr>
<tr>
<td></td>
<td>• X.Org 1.0 or higher (1.7+ recommended)</td>
<td>• DBus 1.0 or higher</td>
</tr>
<tr>
<td></td>
<td>• libstdc++ 4.3 or higher</td>
<td>• HAL 0.5.8 or higher</td>
</tr>
<tr>
<td></td>
<td>• libreadline6:i386 (required for Ubuntu only)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• GNOME 2.16 or higher</td>
<td></td>
</tr>
</tbody>
</table>

\(^a\) Support for this version will begin upon its release.
# Supported Mobile Devices: Android and iOS

<table>
<thead>
<tr>
<th>Operating System</th>
<th>Supported Tablets</th>
<th>Browsers for TA Sites</th>
<th>TA Site</th>
<th>Practice Test Site</th>
<th>TIDE, ORS</th>
</tr>
</thead>
</table>
| **Android**<sup>b</sup>  
5.0, 5.1  
6.0  
7.0 (Nougat) | Google Nexus 10  
Asus Transformer Pad  
Asus Memo Pad  
Dell Venue 10  
HP Pro Slate 10  
Samsung Galaxy Tab 4 Education | Chrome 60<sup>a</sup> | ✅ | ✅ |            |
| **iOS (iPads)**  
9.2, 9.3  
10  
11<sup>a</sup> | iPad 2  
iPad 3  
4th-generation (Retina Display)  
5th-generation (Retina Display)  
iPad Air  
iPad Air 2 | Safari 8  
Safari 9  
Safari 10 | ✅ | ✅ |            |

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

<sup>b</sup> For a complete list of supported tablets, go to [https://support.google.com/chrome/a/answer/6220366?hl=en](https://support.google.com/chrome/a/answer/6220366?hl=en)
## Supported Mobile Devices:
**Windows and Chrome**

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<tbody>
<tr>
<td><strong>Windows</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.0 (Professional &amp; Enterprise), 8.1 (Professional &amp; Enterprise), 10 (Professional, Educational, &amp; Enterprise)</td>
<td>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.</td>
<td>Chrome 60+ Firefox 52+ Internet Explorer 11 Edge</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td><strong>Chrome OS</strong></td>
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<td></td>
</tr>
<tr>
<td>50+a</td>
<td>Chromebook</td>
<td>Chrome 60+a</td>
<td>✔</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>

*Support for this version is anticipated upon the completion of testing following its release.*
Pop-ups

Configure Internet browsers on Test Administrator devices to allow pop-ups from your testing websites.
Wireless traffic must use encryption.

- Wi-Fi Protected Access II (WPA2)
- Advanced Encryption Standard (AES)

Wireless access points have limits on total bandwidth and number of simultaneous devices in use.
## Network Performance

<table>
<thead>
<tr>
<th>Testing Device</th>
<th>Ratio of Devices to 802.11g WAP</th>
<th>Ratio of Devices to 802.11n WAP</th>
</tr>
</thead>
<tbody>
<tr>
<td>802.11g</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>802.11n</td>
<td>20</td>
<td>40</td>
</tr>
<tr>
<td>Mix of 802.11g and 802.11n</td>
<td>20</td>
<td>40–50 (depending on the mix of wireless cards used)</td>
</tr>
</tbody>
</table>
Performance Factors

- Network bandwidth
- Number of students simultaneously testing
- Network configuration
Network Configuration

- 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.
- Web proxy servers must be configured to NOT cache data received from servers.
- For any device that performs traffic shaping, packet prioritization, or quality of service, the URLs to be used for testing should be given a high priority to ensure the best performance.
Whitelisting

Content filters, firewalls, and proxy servers should be configured to allow the URLs for testing sites and applicable non-testing sites.

*.airast.org
*.tds.airast.org
*.cloud1.tds.airast.org
*.cloud2.tds.airast.org
Text-to-Speech

- Voice technology must be available and functioning for students who require this accommodation.
- For Windows and Mac operating systems, default voice packs are generally pre-installed.
- Customized voice packs will be available for Windows computers under **General Resources** in the TIDE banner.
- Linux users will find a voice pack included with the Linux secure browser installation file.
Text-to-Speech on Mobile Devices

- iPad users can adjust volume, pitch, and speaking rate.
- Chromebook users can adjust volume and speaking rate.
- These settings are also adjustable in the test.
- Currently, these features are not available on Android devices.
Text-to-Speech Sound Check
Make sure text-to-speech is working.

Press the speaker button. You should hear a voice speak the following sentence: "This text is being read aloud."

Next Step:
If you heard the voice clearly, choose **I heard the voice**. If not, choose **I did not hear the voice**. To continue testing without checking text-to-speech, choose **Skip TTS Check**.

I heard the voice  I did not hear the voice  Skip TTS Check

Sound Settings
Current Voice Pack: eng

Use the sliders to adjust the available text-to-speech settings.

<table>
<thead>
<tr>
<th></th>
<th>Volume</th>
</tr>
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<tbody>
<tr>
<td></td>
<td><img src="image" alt="Volume Slider" /></td>
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</table>

<table>
<thead>
<tr>
<th></th>
<th>Pitch</th>
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<tbody>
<tr>
<td></td>
<td><img src="image" alt="Pitch Slider" /></td>
</tr>
</tbody>
</table>
Thank You!

Further Information

- Wyoming Help Desk
- Tel 888-897-8024
- Fax 877-218-7663
- wyohelpdesk@air.org