The Smarter Balanced Technology Strategy Framework and System Requirements Specifications

EXECUTIVE SUMMARY

Smarter Balanced
Assessment Consortium

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This report presents a framework for collective technology planning among the Smarter Balanced Assessment Consortium member states. The plan emphasizes the critical need for technology to support student learning with the Smarter Balanced Assessment System minimum requirements as context and milestones. Key data was acquired and reviewed from a variety of sources including the Technology Readiness Tool and related survey information, state stakeholder discussions, Smarter Balanced advisory meetings and related research, and district interviews from across the Consortium.

Key Findings:

1. States implementing online, computer-adaptive assessments similar to the proposed Smarter Balanced Assessment System have done so effectively while adhering to tight budgetary provisions and implementation timelines.

2. Districts and educators within states that have made the transition to online, computer-adaptive tests find considerable value in the increased amount and specificity of performance data available, the expediency in which the data is accessible, and the cost-savings associated with online distribution and management of the assessment and the related data.

3. Much of the existing hardware devices currently deployed across school sites will effectively support the Smarter Balanced Assessment System; however, districts must focus on ensuring ample bandwidth provisions to support larger populations of students participating in testing through strategic scheduling and rotations throughout administration windows.

This report, as commissioned by the Smarter Balanced Assessment Consortium, provides minimum recommended hardware specifications and basic bandwidth calculations required to successfully administer the Smarter Balanced assessment solution. Districts are urged to review the following tables along with the full document, as well as reference the Smarter Balanced website (http://www.smarterbalanced.org) regularly for up-to-date information. Taken together, these materials, and the approaches contained within them, will help all districts strategically prepare for a full and successful implementation of the Smarter Balanced assessment.

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Hardware and Software Requirements Overview

Operating System	Minimum Smarter Balanced Requirements for Current Computers[1][2][3]	Recommended Smarter Balanced Minimum for New Purchases
Windows	Windows XP (service pack 3) Pentium 233 MHz processor 128 MB RAM 52 MB hard drive free space	Windows 7+ 1GHz processor 1GB RAM 80 GB hard drive
Mac OS X	Mac OS X 10.4.4 Macintosh computer with Intel x86 or PowerPC G3 (300 MHz) processor, 256 MB RAM, 200 MB hard drive free space	Mac OS X 10.7+ 1 GHz processor 1GB RAM 80 GB hard drive
Linux	Linux (Ubuntu 9-10, Fedora 6) Pentium II or AMD K6-III 233 MHz processor 64 MB RAM 52 MB hard drive free space	Linux (Ubuntu 11.10, Fedora 16) 1 GHz processor 1GB RAM 80 GB hard drive
iOS	iPads 2 and 3 running iOS6	iPads running iOS6
Android	Android-based tablets running Android 4.0+	Android-based tablets running Android 4.0+
Windows	Windows-based tablets running Windows 8+	Windows-based tablets running Windows 8+
Chrome OS	Chromebooks running Chrome OS (v19)+	Chromebooks running Chrome OS (v19)+

Minimum Computer Requirements

Minimum requirements represent a low compliance threshold. Districts should attempt to exceed these requirements as many machines operating at these levels could struggle with sufficient on-board memory and processing to run secure browsers as well as other simultaneous running programs accumulated on the device over time.

[1] The minimum Smarter Balanced requirements are generally equivalent to the minimum requirements of the associated eligible operating system. Users should refer to the minimum requirements of the operating system as a means of resolving any ambiguities in the minimum Smarter Balanced requirements.

[2] These guidelines do not supersede the minimum requirements of the operating systems.

[3] All hardware choices should consider the individual needs of students. Some students may need hardware that exceeds these minimum guidelines, and some students may require qualitatively different hardware.

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Additional Requirements Applicable across Operating Systems:

Device Requirements	Minimum Smarter Balanced Requirements for Current Computers
Screen Size	10'' class or larger 1024 x 768 resolution
Headphones/earphones	Available to students for use during the English language arts test and for students who require text-to-speech features on the mathematics test
Security	The device must have the administrative tools and capabilities to temporarily disable features, functionalities, and applications that could present a security risk during test administration.
Keyboards	Mechanical keyboards must be available unless students use alternative input devices as part of their classroom instruction.
Form Factors	No restriction as long as the device meets the other stated requirements. These forms include desktops, laptops, netbooks, virtual desktops and thin clients[4], tablets (iPad, Windows, Chromebooks, and Android), and hybrid laptop/tablets.
Network	Must connect to the Internet with approximately 10–20 Kbps available per student to be tested simultaneously

Minimum Requirements for Other Devices

Minimum requirements represent a low compliance threshold. Ultimately, districts should attempt to exceed these requirements as many machines operating at these levels could struggle with sufficient on-board memory and processing to run secure browsers as well as other simultaneous running programs accumulated on the device over time.

[4] The resources (e.g., memory and processors) available to each client need to be equivalent or greater to the requirements for standalone hardware.

Additionally, Smarter Balanced anticipates projected dates by which various operating systems will be deemed insufficient support for the Smarter Balanced Assessment System. The table on the next page shows anticipated Smarter Balanced end of support dates for various operating systems in use across districts.

Please refer to the full Smarter Balanced Technology Strategy Framework and Systems Requirements Specifications document on the Smarter Balanced website for a comprehensive reporting of all related information.

http://www.smarterbalanced.org.

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Operating System (OS)	OS Release Date	Anticipated Smarter Balanced End of Support Date
Mac 10.4.4	January 2006	Spring 2015[5]
Mac 10.5	October 2007	Spring 2017
Mac 10.6	August 2009	Spring 2019
Mac 10.7 Mac 10.8	July 2011 July 2012	Spring 2021 Spring 2022
Windows XP (SP 3)	October 2008	Spring 2015[5]
Windows Vista	January 2007	Spring 2017
Windows 7 Windows 8	October 2009 October 2012	Spring 2020 Spring 2022
Windows Server 2003	April 2003	Spring 2015
Windows Server 2008	October 2009	Spring 2019
Linux (Fedora Core 6 (K12LTSP 4.2+))	November 2007	Spring 2017[6]
Linux Ubuntu 9-12	October 2009	Spring 2019[6]
iOS 6	June 2012	TBD[6]
Android 4.x	October 2011	TBD[6]
Windows 8	October 2012	TBD
Chrome OS	Rolling Release	TBD[6]

[5] While the entire end of support plan will be reviewed annually with the Architecture Review Board, these particular OS versions will be emphasized and may require more detailed conversations.

[6] This operating system may have a lower cost to update than do traditional operating systems and will be placed on an expedited end of support cycle until the new operating system version becomes incompatible with legacy hardware that is otherwise considered eligible by Smarter Balanced.