Best Practices for MCAS Computer-Based Testing Set-Up, Administration, and Troubleshooting

The tables below describe some best practices for a successful computer-based test (CBT) administration:

1. Technology set-up
2. Steps for test coordinators and test administrators during test administration
3. Troubleshooting common computer-based testing issues

Further details will be provided in the MCAS *Principal's Administration Manual*. Direct technology questions to the MCAS Service Center at mcas@cognia.org or 800-737-5103 and policy questions to the Department at mcas@doe.mass.edu or 781-338-3625. Contact the MCAS Service Center to report any technology issues that cannot be solved quickly at the local level. Prior to testing, technology coordinators can also set up a call with technology support specialists, as detailed in the table below. During testing, if there is a situation in which a student is waiting for more than 15 minutes, then schedule the student to complete the session at a later time.

New for 2023: All schools should run App Check in TestNav prior to Infrastructure Trials and operational testing. If schools do not run an Infrastructure Trial, a Preliminary System Test is highly recommended. See the table below for additional details on what each of these three components is comprised of, and how to determine whether to conduct an Infrastructure Trial.

Technology Set-Up

Best Practice	Steps to Take	Description
Run "App Check" to test lock down settings on device	1. Open TestNav and navigate to the Massachusetts sign in page, and then click the user icon in the top right and choose "App Check" from the menu. 2. Enter a configuration identifier if testing Proctor Cache or SRF Secondary Save Location connectivity, and select "Run App Check." 3. A success message should display within a few seconds. App Check will return two success messages, Kiosk mode and Connectivity. 4. If there is an error message, review the TestNav 8 User Guide for device setup instructions for the TestNav app and App Check error messages. Contact the MCAS Service Center with additional questions.	All schools should run App Check in TestNav prior to running a Preliminary System Test, Infrastructure Trial, and/or operational testing in order to prevent technology issues during administration. App Check takes only a few seconds per device, and is completed by technology staff.

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	5. If the Configuration Identifier is entered, the App Check will also verify that the device has the appropriate permissions to the primary and, if specified, the secondary save locations. The identifier can be found in PAN on the **Create/Edit TestNav Configuration** page (Setup>TestNav Configurations>Create/Edit TestNav Configurations).	
Preliminary System Test	1. Test coordinators and technology teams should follow the instructions in the Infrastructure Trial Readiness Guide to create PAN Sessions, generate sample students, assign tests, and set up the technology infrastructure. 2. Follow the instructions for a Preliminary System Test in Section I, Part B of the Infrastructure Trial Readiness Guide.	A Preliminary System Test is a small-scale Infrastructure Trial where technology staff log in and click through the practice tests in TestNav instead of students. It is used to ensure that secure test content will be accessed on test day, that local device security settings are correct, and that TestNav can run successfully on student devices. If your school will not conduct a full-scale Infrastructure Trial with students, DESE strongly recommends running a Device Test and Network Trial. If you will conduct an Infrastructure Trial, it is recommended to run a Preliminary System Test prior to the full-scale Infrastructure Trial.
Determine whether to Conduct an Infrastructure Trial.	Review the **Infrastructure Trial Overview** in the Infrastructure Trial Readiness Guide, which provides an overview and the purposes of the Infrastructure Trial. Answer the following questions:	An Infrastructure Trial confirms that TestNav is configured correctly, student devices can successfully run TestNav, participating staff know how to monitor and manage a computer-based MCAS test, students are familiar with the computer-based tools and format, and, if precaching, that the ProctorCache machine is properly configured. An Infrastructure

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	1. Has your school successfully completed computer-based testing in the last year?
	2. Has your school had zero or minimal changes to student devices and network and security settings since the last CBT administration?
	3. Can you confirm the following:
	  • TestNav is configured correctly
	  • If preaching, the ProctorCache machine is properly configured to deliver test content to devices
	  • Devices can successfully run TestNav
	  • Participating staff know how to monitor and manage a computer-based MCAS test
	  • Students are familiar with the computer-based tools and format
	
	If you answer "no" to one or more of the questions above, it is recommended to run an Infrastructure Trial.
		Trial involves the school and/or district test coordinator, technology staff, test administrators, and students.

Determine whether to precache test content based on the school's bandwidth.	Review the *ProctorCache Recommendation for MCAS Computer-Based Testing*	If you determine the need to precache based on the result of the Network Check, download ProctorCache and set it up in PearsonAccess[next] for all test sessions.
Verify that devices and operating systems meet system requirements prior to testing.	• Visit the system requirements page for the most updated information. • Turn off auto-update on Chromebooks to avoid auto-updating to an unsupported OS. See instructions under "Set up all Chromebooks" below.	Operating systems, particularly iOS and ChromeOS, update frequently. Students may not be able to test or may experience interruptions if the testing device/operating system is not supported.
Set up all Chromebooks to suspend OS updates, including peer-to-peer, during testing.	• Sign into the Google Admin console, go to **Device,** click **Chrome,** click **Settings**. Choose the organization you want to update these settings for. Go to **Device,** click **Auto Update Settings,** select **Block Updates,** click **Save.**	If the ChromeOS is set to automatically update, this could take place during testing, which could cause student connectivity or device issues. This ChromeOS feature can be managed by a district or school ChromeOS administrator. Chrome releases a full OS update about every 6 weeks and releases minor updates approximately every 2–3 weeks.

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Disable ChromeOS accessibility settings.	• Sign in to the Google Admin console, go to **Device,** click on **Chrome**, click on **Settings.** Scroll down to **Sign-in screen accessibility** and select **Disable…** for the accessibility features you wish to turn off.	ChromeOS accessibility settings can interfere with accessibility features the student may have in TestNav. Disabling ChromeOS accessibility settings prior to testing allows for the students' accessibility features to work smoothly.
Set up a Secondary Save Location in the TestNav Configuration in PAN.	When in PAN, click **Setup > TestNav Configurations > Create/Edit TestNav Configurations**. On the right-hand side, there are fields to set up a secondary save location on a local server. • Check that the secondary save location is configured correctly by running an App Check in TestNav. Visit the TestNav support page for step-by-step instructions on ensuring the configured file path is valid, and refer to the App Check Error Messages page if the App Check returns any error messages.	Setting up a secondary save location will allow TestNav to write a student response file to both the device as well as the secondary location. It provides a backup in case of a lost response due to a connectivity, power, or device issue, when the primary response on the student device cannot be located. In the case of Chromebooks set to wipe data, this step is necessary to create a backup file of each student response. Chromebooks, iPads, and Android Tablets can **only** use an SFTP server for secondary save locations. These mobile devices cannot use UNC paths or mapped network drives. An example of the required SFTP path format is provided in the TestNav Configurations Menu.
Minimize system impact.	Before testing: 1. Disable low-end wireless protocols that are not being used. 2. Turn off students' cell phones to avoid potential interference during testing. 3. Ask classrooms to stagger logins to minimize initial loading time. For example, in a class of 30 students, the test administrator can have 10 students log in each minute, decreasing the strain on the network.	Taking these steps in advance of testing will reduce the impact of testing on local networks.

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Schedule a call with Technology Support Specialists.	Before testing, schedule a 15-, 30-, or 60- minute call for one-on-one support with Pearson's technology support specialists (i.e., Field Service Engineering).	This is an opportunity for technology coordinators to receive support with the following: • Technology set-up and site readiness • Questions about TestNav • ProctorCache set-up • TestNav Configurations in PearsonAccess[next] • Infrastructure Trials (set-up as well as debriefing)
Review device language settings	Before testing, review student devices to ensure that language settings and keyboard settings are set to English.	Some devices may have previously been set to different language settings or to international keyboard settings. Taking these steps in advance of testing will reduce issues that may arise during testing.

Steps for Test Coordinators and Test Administrators During Test Administration

Best Practice	Steps to Take	Description

Have the following materials available, and confirm if they are in working order: • power cords, power strips, extra batteries, extra computers to serve as back-up devices that can be used if needed • computer mice and wired external keyboards (strongly recommended for students using tablets) • headphones for students with disabilities using the text-to-speech accommodation (See the *Accessibility and Accommodations Manual* for details.) Ensure that devices will be charged prior to each test session.	• Use the device planner to determine the number of devices needed at a given time. • Students who will be using a touchpad (only) should complete practice tests with the touchpad to familiarize themselves with answering the different question types prior to testing. • External keyboards are strongly recommended due to the smaller screen size on a tablet when using the internal keyboard.	Schools have reported that some students had a challenging experience with some of the technology-enhanced test questions when they used a touchpad (only). Schools have reported that students cannot see all the parts in a test question or all the writing space available due to the reduced screen size when the keyboard pops up.
Keep a log of the devices that students will use during testing.	Mark the local device ID number on each student's testing ticket or an internal tracking form, or maintain a spreadsheet.	If a student's device experiences an interruption in testing, responses are saved on that device. If it appears that the student is "missing answers," resume the student's test in PAN and have the student sign back in to TestNav on the **same device** to transmit responses. If the device cannot be located, and there is no secondary save location, there is no way to find a student response file.
If the student is in Resumed Upload status, **do not** skip upload when prompted by TestNav.	Contact the technology coordinator to upload the student response file for the student.	"Skipping upload" tells TestNav that there is no student response file to be found, and the system will then auto-delete any previous student response files and create a new one. If the student had missing responses, there will be no file to locate.