Supported System Requirements for DRC | CTB LAS Links Online Testing

Effective August–September 2017

This document describes the current system requirements for the DRC INSIGHT Online Testing System and Central Office Services (COS). These requirements cover the following items:

- Hardware devices
- Accessories and peripherals
- Operating systems and levels
- Processor, disk space, and memory
- Screen size and resolution

DRC aggressively seeks out, validates, and adopts new technology to offer the best testing solutions to our customers while keeping pace with constantly changing and evolving technology standards. In general, DRC software applications offer Best Effort Support of new versions of an operating system within one month of public availability of the new version and Full Support within three months of public availability of the new version, or by the next release date of the DRC application, whichever duration is greater.

Current Update: August 2017
Next Update: October 2017

This document is updated regularly, usually three times a calendar year.

DRC INSIGHT and Central Office Services (COS) Supported System Requirements

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UPDATE: Support Starting and Ending

The following is an overview of upcoming changes to the hardware and software supported for DRC INSIGHT and/or Central Office Services (COS). For details, see the appropriate section.

Device Support Beginning	**Software Support Beginning**
NA	NA
Device Support Ending	**Software Support Ending**
NA	NA
Device Support Ended	**Software Support Ended**
NA	NA

DRC Device Support Policy

Typically, when a hardware vendor, such as Dell or Lenovo, discontinues a hardware device, the software vendor that provides the operating system support for that device continues supporting the device for a period of time. Therefore, for any device that DRC adds to its fully supported device list, DRC will continue to support the device until the software vendor officially discontinues support for the device.

Device Categories

DRC's approach is to test and certify our software on the devices most commonly used in the classroom. As a result of its testing, DRC groups devices into the three categories described in the table below.

Device Category	Description
Fully Supported	DRC has evaluated and tested the device. It is suitable for testing with DRC INSIGHT and/or Central Office Services (COS)*.
Not Suitable For Online Testing	DRC has evaluated and tested the device. For various reasons, it is unacceptable for testing with DRC INSIGHT and/or COS.
Other	Any device that does not fit into the other categories falls into this category. DRC has neither evaluated nor tested the device—it may or may not be suitable for testing with DRC INSIGHT and/or COS. Device manufacturers use different methods to implement touch-enabled screens for their devices, with the technology evolving over time. DRC typically tests DRC INSIGHT with touch devices made by the most common manufacturers for educational settings. Generally speaking, DRC INSIGHT will operate effectively on similar touch-screen models and DRC will provide best effort support for these models.

*Certain devices, such as iPad devices or Chrome devices, can be used for DRC INSIGHT, but not for COS.

Minimum vs. Recommended

Throughout this document, the Minimum level of requirements represents a low compliance threshold. Districts or schools planning to test more than a minimum number of students should exceed the minimum level of requirements. DRC advises using the Recommended level or above.

DRC INSIGHT Device Requirements for LAS Links Online Testing

The tables that follow indicate the current DRC INSIGHT device requirements, as well as devices that DRC fully supports and devices that are known to be unsuitable for online testing.

Fully Supported Devices	Processor	Available Memory	Unused Disk Space	Screen Size	Resolution
Windows Both touch-screen and non-touch-screen devices that meet the requirements in this table **Mac (OS X and macOS) and Linux** Non-touch-screen devices only	**Minimum** Intel 4th Generation Core i3 4005U (or AMD equivalent) Intel 5th Generation Celeron N3050 (or AMD equivalent) **Recommended** Intel 6th generation product family or greater (or AMD equivalent)	**Minimum** 2 GB RAM **Recommended** 4 GB RAM	**Minimum** 10 GB **Recommended** 20 GB or more	**Minimum** 9.5"	**Minimum** 1024 x 768
Chrome OS Both touch-screen and non-touch-screen devices that meet the requirements in this table	**Minimum** Intel 4th Generation Celeron 2955U (or AMD equivalent) **Recommended** Intel 6th generation product family or greater (or AMD equivalent)	**Minimum** 2 GB RAM or more **Recommended** 4 GB RAM or more	NA—See the **Important Notes** that follow the table		

DRC INSIGHT Device Requirements for LAS Links Online Testing (cont.)

Fully Supported Devices	Processor	Available Memory	Unused Disk Space	Screen Size	Resolution
Apple iOS iPad 4 or newer iPad Air devices iPad Pro Devices: 9.7" and 12.9" **Note:** iPad mini devices **are not** supported.	NA	**Minimum** 1 GB if no other Apps are running and wireless network connectivity is optimized **Recommended** 2 GB See the **Important Notes** that follow the table	NA—See the **Important Notes** that follow the table	9.7" or greater	**Minimum** 1024 x 768

Important Notes

Tablet/Netbook/Chromebook Devices

Because tablet/Netbook/Chromebook devices are not easily configurable for memory and storage (disk space) upgrades, DRC recommends that these devices be streamlined for the DRC INSIGHT App when used for testing.

To achieve this goal, all applications and features that are unnecessary for testing should be disabled, removed, or turned off to ensure that the maximum amount of device memory is available for testing. This includes services such as Bluetooth (unless a Bluetooth keyboard or mouse is needed), GPS, and power saving modes that reduce performance to maximize battery life.

DRC also recommends rebooting these devices before testing.

These activities help free available memory. Devices that lack sufficient memory during testing may experience issues.

IPA Software

Intelligent personal assistant (IPA) software, such as Siri for iOS and macOS, or Cortana for Windows 10, should be disabled during testing for the appropriate devices. In some cases, this functionality can be disabled automatically using administrator controls such as Mobile Device Management (MDM) software.

If IPA software is not disabled, the testing site is responsible for ensuring the security and integrity of the test by actively monitoring that students are not using this capability during the test.

Chrome OS Support and Chrome Devices

DRC will offer the following levels of support for Chrome OS for the 2017–2018 testing season:

- Full Support for the current stable channel level
- Best Effort Support for stable channel levels between level 58 and the current stable channel level
- End of Support (no support) for stable channel levels below 58

Based on these support levels, DRC recommends replacing any Chrome devices that have reached, or will reach, End of Life (EOL) within the 2017-2018 school year. For reference, use the following link to help determine the EOL of a specific Chrome device: https://support.google.com/chrome/a/answer/6220366

Automatic Operating System Updates and Other Background Processes

Operating system vendors such as Google, Microsoft, and Apple are moving to a model where operating system updates occur automatically in the background. Update processes running in the background on testing devices consume CPU and memory, and can affect the testing experience—audio playback may be choppy and Speaking test responses may be distorted. To avoid this situation, verify that no background processes are running on testing devices during testing. Also, if a testing device is set to accept operating system updates automatically, verify that it has the most current version of the operating system *before* the test session starts.

Additional DRC INSIGHT Device Specifications

Supported Accessories	
o Mouse o English language keyboard (internal and external, wired and wireless) o Touchpad	o Stylus for touch devices o Other input devices as supported for accommodations (determined in conjunction with each state department of education)
The input device must allow students to select and deselect; drag items; highlight text, objects, and areas; enter letters, numbers, and symbols; use the Shift, Tab, Return, Delete, and Backspace keys.	

Other
Smart Board interfaces are not supported

Headsets
o Headset with microphone (see the link below) o Recommendations for Headset Specifications (hyperlink coming soon)

Internet Connectivity
Devices must be able to connect to the Internet using wired or wireless networks

Wi-Fi Recommendations
The maximum number of devices a Wireless Access Point (WAP) can support varies depending on the manufacturer and model of the WAP device being used for testing. DRC recommends never exceeding 80% of the maximum capacity of the WAP specified by the manufacturer. For example, for a WAP device with a maximum capacity of 20 concurrently connected devices, DRC recommends that no more than 16 devices be connected concurrently. If the number of concurrently connected devices is expected to exceed this threshold, additional WAPs should be implemented. Note that all other networking hardware must be able to accommodate the maximum number of devices that could potentially be connected to the wireless network concurrently. If you plan to test using a wireless network, complete a wireless site survey to ensure that there is sufficient wireless coverage in testing areas. This survey should address coverage, and verify that students can take the test in the same area of the building at one time (device density). The survey should account for Internet bandwidth and other traffic in the building at the time of testing, including LAN (wireless and wired) traffic, WAN traffic. For more information, see the *Site Technology Readiness Checklist for Deploying LAS Links Online Assessments*. (hyperlink coming soon)

Power Supply	
Minimum	**Recommended**
For battery devices, a fully charged battery with a two-hour life	Device connected to a plugged-in power supply

DRC Central Office Services (COS) Estimated Device Requirements for LAS Links Online Testing

The Central Office Services (COS) specification is currently being finalized, therefore **the information below is for planning purposes only**. The following table lists the supported devices, number of concurrent testers, processor, memory (RAM), LAN bandwidth, and available disk space requirements for COS (64-bit). Note that these requirements apply across all domains of LAS Links testing.

Test	Central Office Services	Supported Devices	Number of Concurrent Testers	Processor	Available Memory	Minimum Available LAN Bandwidth	Available Disk Space
All Domains— Reading, Writing, Listening, and Speaking	64-bit	64-bit Windows, Mac (OS X and macOS), Linux— desktop and laptop devices	1–25	2x dual-core i5 at 2.4 GHz or equivalent	2 GB RAM	50 Mb	20 GB or more
			26–150	2x dual-core i5 at 2.4 GHz or equivalent	4 GB RAM	100 Mb	
			151–400	4x dual-core i5 at 2.4 GHz or equivalent	8 GB RAM	200 Mb	

Important Notes

- The information in the table above is not finalized and should be used for planning purposes only.
- Central Office Services **should not** be installed on mobile or touch-screen devices.
- Central Office Services **should be** connected to the network through a wired connection.

DRC Software Support Policy

When a software vendor, such as Microsoft or Apple, ends support for an operating system (or level), they discontinue free security updates for that software. This can present large and immediate security and support risks to the software's users. As a result, DRC strongly recommends that all clients affected by the end of support process begin the transition as soon as possible to allow sufficient time for the process.

Support Timeline

To accomplish the dual goals of minimizing security risks to DRC clients while making necessary software changes, DRC has established a multi-phase support timeline for the transition from an unsupported operating system or level to a supported operating system or level.

Note: DRC assumes no responsibility or liability for software transition processes at testing sites.

Phases 1 and 3: Best Effort Support

The DRC Support team will help troubleshoot issues reported concerning the operating system or level and DRC software applications as best we can, but DRC cannot guarantee a resolution.

If a problem is uncovered, DRC Support will report the issue to DRC Development. Again, we cannot guarantee a fix, software update, or resolution timeline for software fixes or updates. If DRC determines that an issue is related to a client's network, hardware, or third‑party software, the client must obtain support directly from the software vendor or the hardware manufacturer.

Best Effort Support occurs at both ends of the software lifecycle.

o *Phase 1: After DRC software testing begins and before the software is fully supported by DRC.* DRC offers Best Effort Support for any new version of a supported operating system (OS) product within 30 days of public availability of the OS product version, or by the next planned common or client-specific release date of the DRC application, whichever duration is greater.

o *Phase 3: After the software is no longer supported by the vendor and before the end of DRC support.* Once the OS product version has reached the end of vendor support, DRC offers Best Effort Support until the next planned common or client-specific release date of the DRC application, at which point it is restricted from use unless DRC chooses to extend support.

Phase 2: Fully Supported

When an OS product is on the DRC supported product list, DRC performs application testing for all major versions of the product publicly supported by the product vendor and for all minor versions of the product when DRC deems testing is necessary. Any new version of a supported OS product will be Fully Supported by all DRC applications within 90 days of public availability of the version of the OS product, or by the next planned common or client-specific release date of the DRC application, whichever duration is greater.

Phase 4: End of Support

The next release of DRC software applications will not work with the unsupported operating system or level. It is restricted from use.

The table that follows indicates the current supported operating system levels for DRC INSIGHT and COS. It also provides a timeline for changes in terms of the various support phases.

DRC INSIGHT Software Requirements: Supported Operating System Levels and Support Timeline

Operating System	Level	Incoming/Current		Outgoing/Ending	
		Phase 1: Best Effort Support	Phase 2: Fully Supported[1]	Phase 3: Best Effort Support	Phase 4: End of Support[2]
Windows	Windows 7, SP1		**X**[3]		
	Windows 8.1		**X**		
	Windows 10, latest version for Current Branch (CB) and Current Branch for Business (CBB)[4]		**X**[5]		
	Windows Server 2008, R2 SP1		**X**		
	Windows Server 2012		**X**		
	Windows Server 2012, R2		**X**		
	Windows Server 2016		**X**		

[1] DRC recommends using operating system levels that are Fully Supported.

[2] When End of Support occurs during a typical testing cycle, DRC will continue to provide Best Effort Support until the testing cycle ends. DRC recommends that sites upgrade to a fully supported level before the testing cycle begins.

[3] **X** indicates the current level of support.

[4] DRC currently supports the Home, Pro, Enterprise, and Education editions of Windows 10. We do NOT currently support the Windows 10 S configuration of Windows Pro.

[5] DRC fully supports the most recent version of Windows 10 available for the CB and CBB servicing options within 90 days of public availability of the new version. DRC will offer Best Effort support for previous versions of Windows 10 available for the CB and CBB that Microsoft maintains support for with servicing updates.

DRC INSIGHT Software Requirements: Supported Operating System Levels and Support Timeline (cont.)

Operating System	Level	Incoming/Current		Outgoing/Ending	
		Phase 1: Best Effort Support	Phase 2: Fully Supported[1]	Phase 3: Best Effort Support	Phase 4: End of Support[2]
Mac (OS X) **Note:** Mac server software is not supported.	OS X 10.9				X[3]
	OS X 10.10		X		
	OS X 10.11		X		
	macOS 10.12		X		
Linux **Note:** Linux server software is not supported.	Ubuntu 12.04 LTS version, with 32- and 64-bit Gnome 3.4, Unity Shell				X
	Ubuntu 14.04, LTS version, with 32- and 64-bit Gnome 3.4, Unity Shell		X	April 2019	July 2019
	Ubuntu 16.04, LTS version, with 32- and 64-bit Gnome 3.4, Unity Shell		X		
iOS	9.3.x				X
	10.x (latest version)		X[4]		
Chrome	Chrome OS recent stable channel		X		

[1] DRC recommends using operating system levels that are Fully Supported.
[2] When end of support occurs during a typical testing cycle, DRC will continue to provide Best Effort support until the testing cycle ends. DRC recommends that sites upgrade to a fully supported level before the testing cycle begins.
[3] X indicates the current level of support.
[4] DRC fully supports the most recent version of iOS 10 within 90 days of public availability of the new version. DRC will offer Best Effort support for previous versions of iOS 10 for which Apple maintains support.

DRC Central Office Services (COS) Software Requirements

The DRC COS software requirements are the same as the DRC INSIGHT requirements with the exception that the COS software cannot be installed on an iOS, Chrome, or Android device. The COS software will work with INSIGHT software installed on these devices.

- COS, which is 64-bit, runs on non-touch Windows desktop and laptop devices, non-touch Mac (OS X and macOS) desktop and laptop devices, and Linux desktop and laptop devices.

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