DRC INSIGHT™
ONLINE LEARNING SYSTEM

Technology User Guide
Volume II: Central Office Services (COS)

NEBRASKA

Produced by Data Recognition Corporation (DRC)
13490 Bass Lake Road
Maple Grove, MN 55311

Nebraska Customer Service: 1-866-342-6280
Website: https://ne.drcedirect.com
Email: necustomerservice@datarecognitioncorp.com
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301 Centennial Mall South
P.O. Box 94987
Lincoln, Nebraska 68509
(402) 471-2495.

The assessment contractor is Data Recognition Corporation (DRC).
DRC can be reached by calling toll-free (866) 342-6280, by emailing necustomerservice@datarecognitioncorp.com,
or by faxing (763) 268-2540.

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Introduction

About This Guide

This volume, V*olume II: Central Office Services (COS)*, is part of a multi-volume set of user guides that describe how to configure, install, manage, and troubleshoot DRC INSIGHT (or INSIGHT). INSIGHT provides a number of tools and testing information to help you troubleshoot your testing environment and verify that it is ready for testing. This guide describes how to install, configure, and use Central Office Services (COS), a software package that allows you to install, configure, and manage your online testing environment from a central location.

The audience for this guide is the Technology Coordinators (TCs) who are responsible for setting up and managing online testing and ensuring that their systems work effectively and securely. The audience should be knowledgeable about the technical details of the appropriate operating systems and have the necessary security privileges to perform the tasks discussed in this guide.

Central Office Services (COS)

The complete COS software consists of a number of functional components, including Content Management and Content Hosting (for an overview of COS and related terminology, see *Volume I: Introduction to Online Testing*).

This user guide describes COS and its software components and previews some of the components planned for future releases. COS has the following characteristics:

- It supports content caching, Content Hosting, and Content Management. Within a COS configuration, sites can use COS Service Devices for Content Management and Content Hosting.

  See *Online Testing Setup Options* in *Volume I: Introduction to Online Testing* for details about the online testing setups that are available with COS.

- It is designed to automatically receive software updates. After you install the software, COS will automatically retrieve and install COS updates as they become available.

- It supports Windows and Mac *Service Devices*, and Windows, Mac, iPad, and Chrome *testing devices.*

COS Service Devices and the Number of Students Testing

As a general guideline, you can install the COS software for a large number of students that are testing at the same time (concurrently). This guideline is based on the following assumptions:

- The COS Service Device is configured for Content Management and Content Hosting.
- The COS Service Device software is installed on a dedicated device.
- The COS Service Device and network meet the necessary system requirements.

The number of COS Service Devices required may differ based on the actual hardware and software specifications of the COS Service Device, the network speed, and the COS Service Device options selected.

COS Service Device System Requirements

For details regarding COS Service Device system requirements and the number of concurrent testers, refer to the latest version of the *DRC INSIGHT Online Learning System Supported System Requirements* available at your state's Portal site by navigating to **All Applications** or **My Applications–General Information–Downloads** and clicking **View System Requirements** at the bottom of the Test Setup General Information page.

Tablet Devices and COS Service Devices

A COS Service Device is used primarily to cache and manage test content. iPad, Chromebook, and other tablet devices cannot be used as host machines for a COS Service Device. As a result, you should install the COS Service Device software on a Windows PC or Mac (OS X or macOS) computer, and connect to the COS Service Device when you install INSIGHT on the tablet device.

Software Installation and Update Rights

Important: Certain software rights are required to install and/or automatically update INSIGHT and the COS Service Device software. INSIGHT requires Administrator rights to install it and Write access to perform the software Automatic Update function. The COS Service Device software requires Administrator rights to install it.

Overview of Working with COS

The tasks involved in the process of installing, configuring, and using the COS software are summarized below. For details, see the referenced information, which is linked to other sections in this guide.

Note: The first five tasks are numbered to follow the order in which you would perform them during initial installation and setup. The unnumbered tasks are optional.

Task 1: Install the COS software and create a COS Service Device
Reference: The various installation sections within this volume.

Task 2: Create a COS configuration
Reference: "Quick Tour: Creating a Central Office Services Configuration" on page 25

Task 3: Install (or uninstall and reinstall) DRC INSIGHT and associate it with the COS configuration that you created
Reference: Volume III: DRC INSIGHT

Task 4: Use the COS dashboard to monitor your COS configurations, COS Service Devices, and testing devices
Reference: "The Central Office Services Dashboard" on page 35

Task 5: Use the Configurations tab options to manage your COS configurations, services, and devices
Reference: "Managing Configurations" on page 54

Task: Create a Pool of COS Service Devices
Reference: "Creating COS SD Pools" on page 76

Task: Configure DRC INSIGHT to allow student testing without using a COS Service Device (for an extremely low number of testers)
Reference: "Creating New Configurations" on page 74

COS Windows Installation

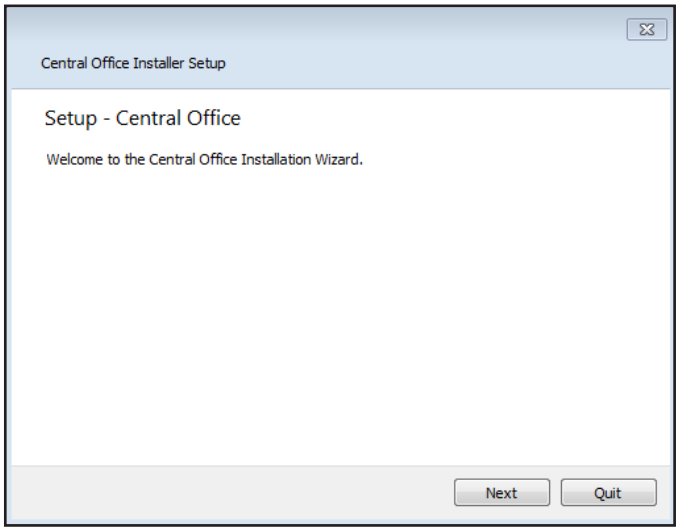
Quick Tour: Installing COS SD Software on Windows Devices

This Quick Tour describes how to install the COS Service Device (COS SD) software on a Windows device. DRC provides an easy-to-use wizard to install the COS SD software.

Important: To access COS, you must have the Portal Device Toolkit permission.

1. To launch the wizard and start the installation, on a Windows device that meets the COS SD system requirements sign on to your state's, open the **All Applications** menu bar, select **General Information–Downloads**, and click the **Central Office Services (COS) Installer** icon ( ) to download the COS installation wizard file (coninstaller.exe).

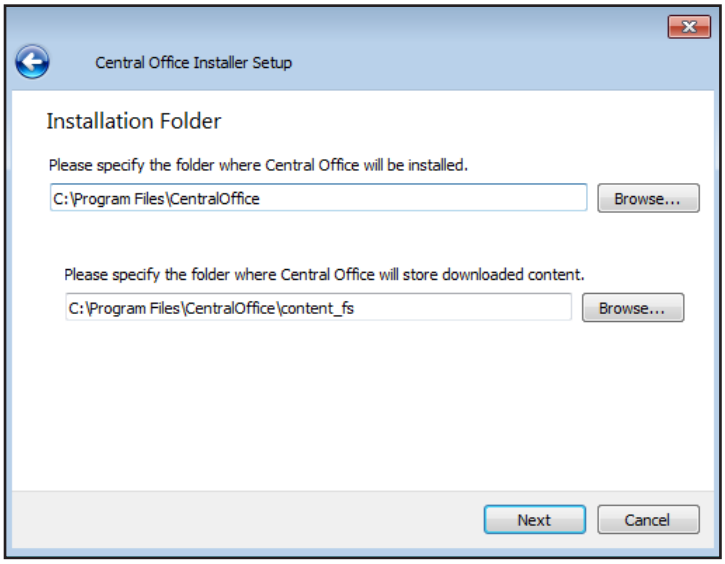
2. After the file is downloaded, double-click on the **coinstaller.exe** file to start the installation wizard. When the Setup - Central Office window displays, click **Next** to continue.



3. The Installation Folder window displays. You must indicate where to install the COS SD software and where to store downloaded content.

   The default location for the COS SD software is **C:\Program Files\CentralOffice** and the default location for the COS SD software to store downloaded test content is **C:\Program Files\CentralOffice\content_fs**.

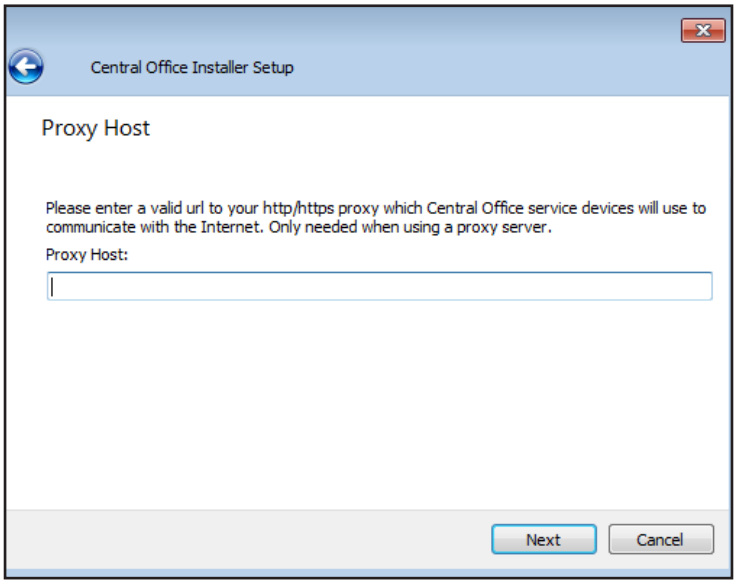
   Click **Next** to select the default locations, or **Browse...** to select different locations. DRC recommends using the default locations.



Quick Tour: Installing COS SD Software on Windows Devices (cont.)

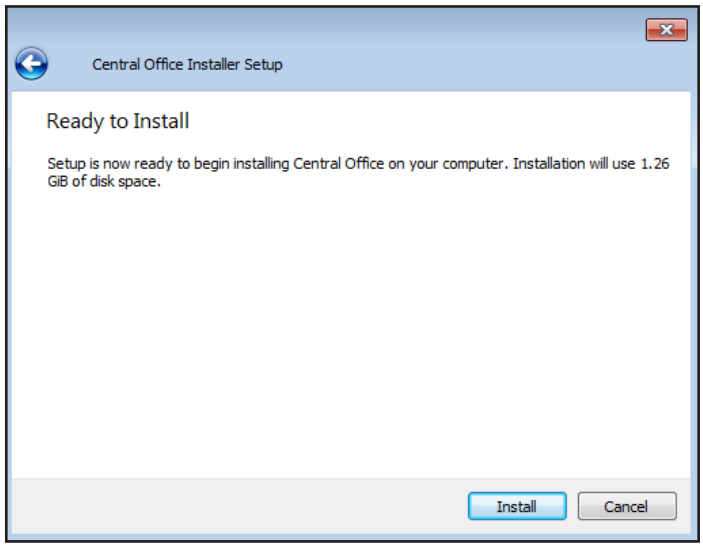
4. The Proxy Host window displays. This window allows you to specify a separate proxy server for the COS SD. This step is optional.

- If you are not planning to use a proxy server, leave the field blank and click **Next**.
- If you are planning to use a proxy server, enter the URL of the server in the Proxy Host field and click **Next** (for details, see "Configuring Testing Devices" on page 48).



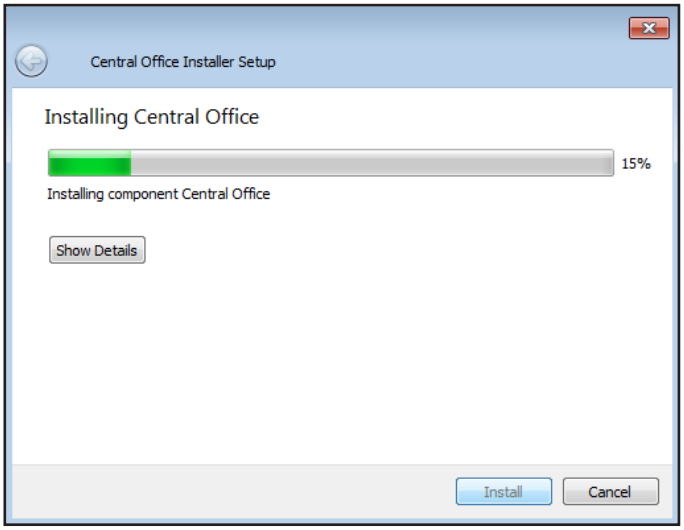
5. The Ready to Install window displays. The window indicates the amount of disk space the installation will require.

Click **Install** to continue (or **Cancel** to exit the installation).



6. The Installing Central Office window displays, indicating the progress of the installation.

Note: The installation process can take 30–45 minutes.

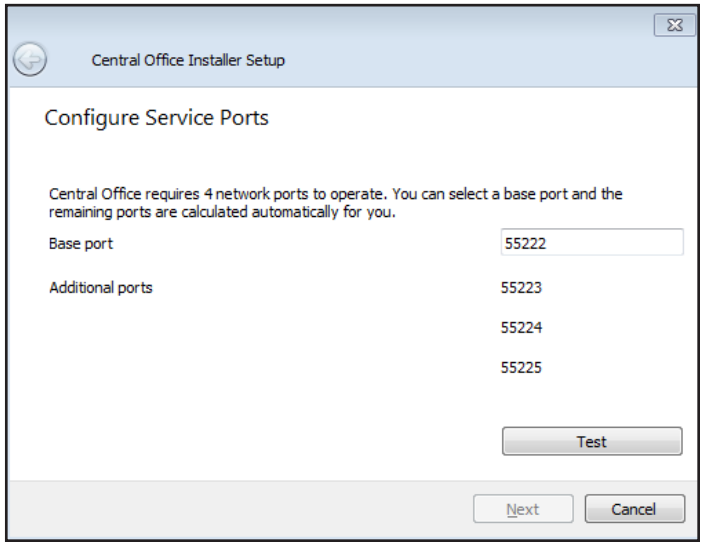


Quick Tour: Installing COS SD Software on Windows Devices (cont.)

7. The Configure Service Ports window appears. On this window you specify the port to use for Content Hosting (labeled the Base port). The COS software uses the base port to determine which ports to use for the Content Downloading, Relay, and Restricted Proxy services (labeled the Additional ports).

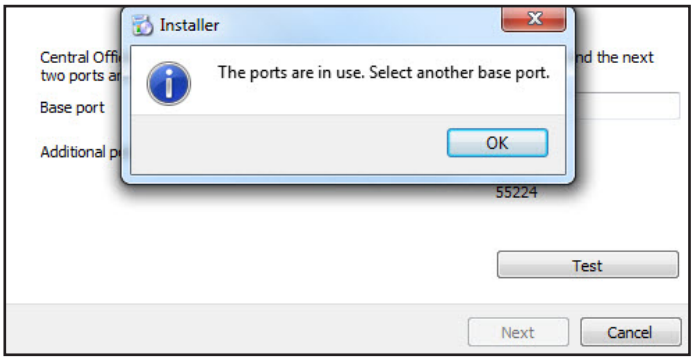
   The ports are four consecutive numbers, but you only need to enter the base port number in the Base port field. After you specify the base port, COS automatically selects the next three consecutively numbered ports. COS requires four port numbers, even if the device being configured will not use all of them.

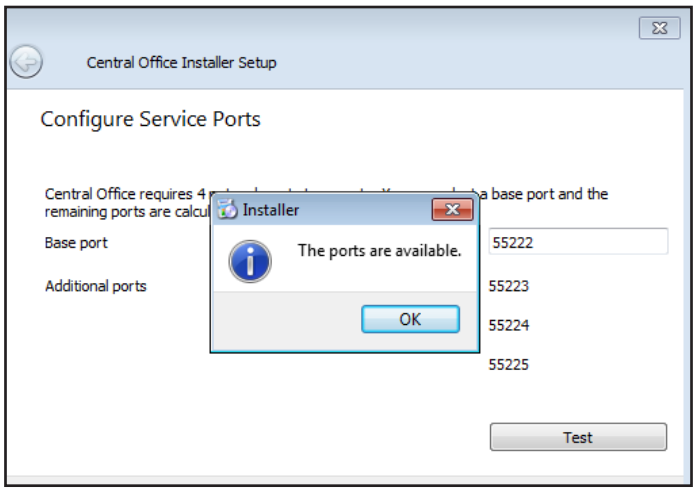
   The default port values are 55222, 55223, 55224, and 55225. You may select alternative port numbers as long as four consecutive numbers are available. For example, if you specify 11223 for the base port, COS also attempts to use ports 11224, 11225, and 11226.



8. After you select your ports, but before you click **Next**, click **Test** to verify that the ports selected are available on the device.

   - If the Installer dialog indicates that the ports are available, click **OK** and **Next** (or **Cancel** to exit the installation).
   - If the Installer dialog that displays indicates that the ports are not available, select a different base port and repeat this step until you have ports that are available.





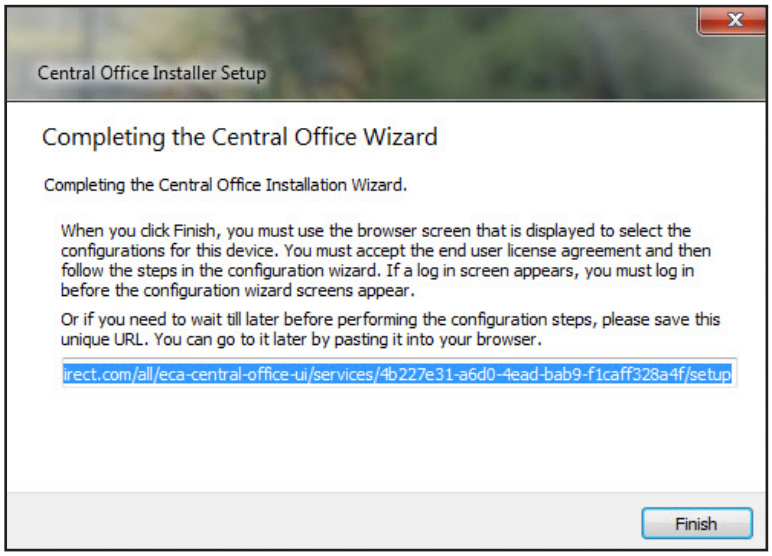
Important: To avoid conflicts and verify that no other device is using these ports, you can enter the command **netstat -a** from a command prompt to display a list of the ports currently being used.

Quick Tour: Installing COS SD Software on Windows Devices (cont.)

9. Two things now occur at the same time: The Completing the Central Office Wizard window appears and the DRC INSIGHT Portal screens are launched.

Important: From the Completing the Central Office Wizard window highlight and copy and save the URL that displays—you can use it to resume the process at this point (if necessary) without re-installing the COS SD software.

Click **Finish** in the Completing the Central Office Wizard window. To complete the process of configuring your COS SD, see "Quick Tour: Creating a Central Office Services Configuration" on page 25.

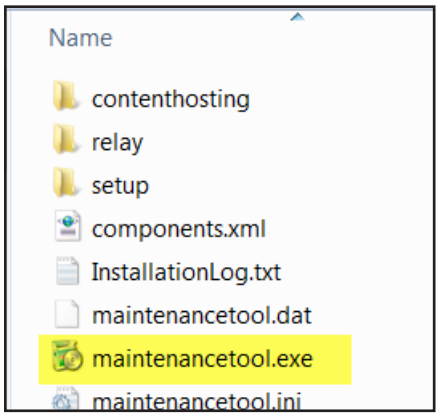


Manually Updating COS SDs for Windows

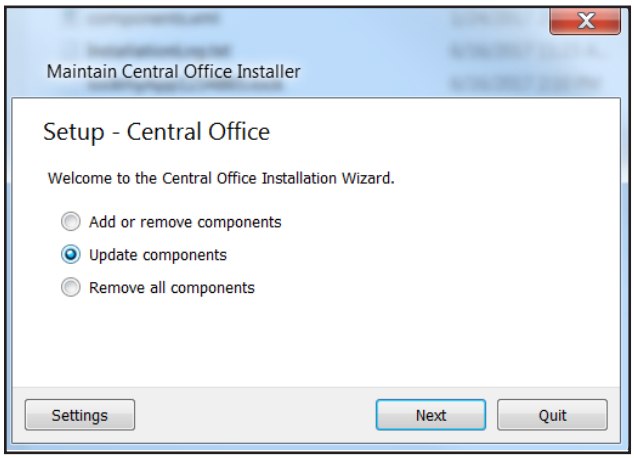
DRC sends COS SD software updates automatically at regular intervals. If a COS SD is turned off when DRC releases an update, the COS SD will not receive the update until the next time it is turned on.

Perform the following steps if you need to manually update the COS SD software on a Windows machine.

1. From the Program Files or Program files (x86) folder of the COS SD, double-click the **Central Office** folder.
2. Double-click the **maintenancetool.exe** file.



3. On the Setup - Central Office screen, check **Update components** and click **Next**.

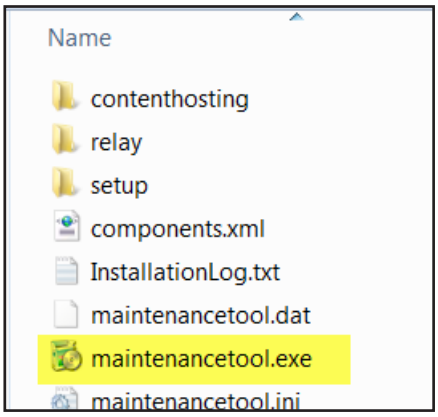


4. A message displays indicating the results of the update. Click **Quit** to finish.

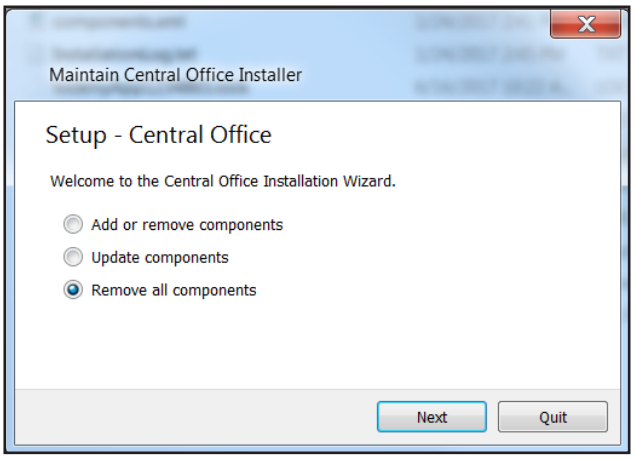
Uninstalling the COS SD Software for Windows Machines

To uninstall the COS SD software from a Windows machine, perform the following steps.

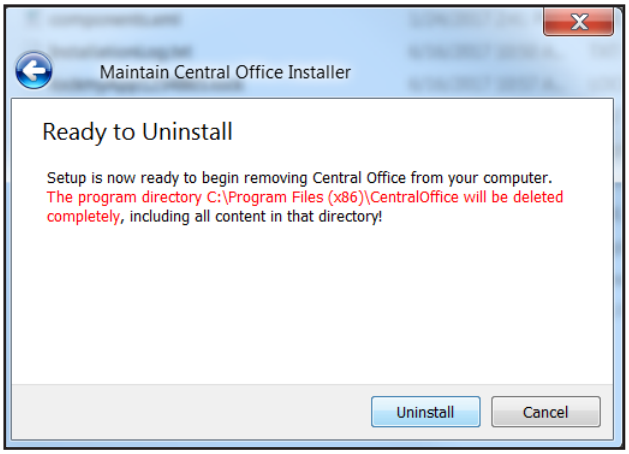
1. From the Program Files or Program files (x86) folder of the COS SD, double-click the **Central Office** folder.
2. Double-click the **maintenancetool.exe** file.



3. When the Setup - Central Office screen displays, verify that **Remove all components** is selected and click **Next**.



4. On the Ready to Uninstall screen, click **Uninstall**. The uninstall process completes in a few minutes.



COS Mac (OS X and macOS) Installation

Quick Tour: Installing COS SD Software on Mac Devices

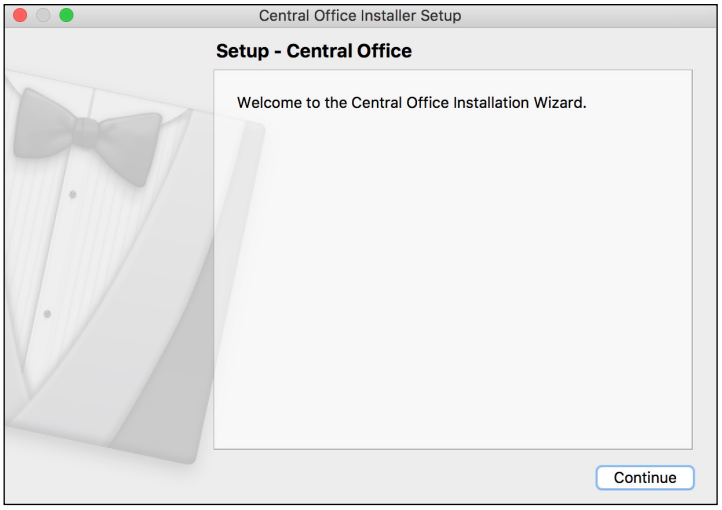
This Quick Tour describes how to install the COS SD software on a Mac (OS X or macOS) device. DRC provides an easy-to-use wizard to install the COS SD software.

Important: To access COS, you must have the Device Toolkit permission.

1. To launch the wizard and start the installation, on a Mac device that meets the COS SD system requirements sign on to your state's, open the **All Applications** menu bar, select **General Information–Downloads**, and click the **Central Office Services (COS) Installer** icon ( ) to download the COS SD installation wizard file (coinstaller.zip).

2. After you have downloaded the file, double-click on the file to open it, and double-click the **coinstaller** application file that is inside to launch the wizard.

   Note: You must be a Mac System Administrator to install the COS SD software from this file.



3. The Setup - Central Office window displays for the Central Office Installation Wizard.

   Note: On most installation windows, you can click Go Back to return to the previous window, Continue to proceed to the next window, and Cancel to cancel the installation.

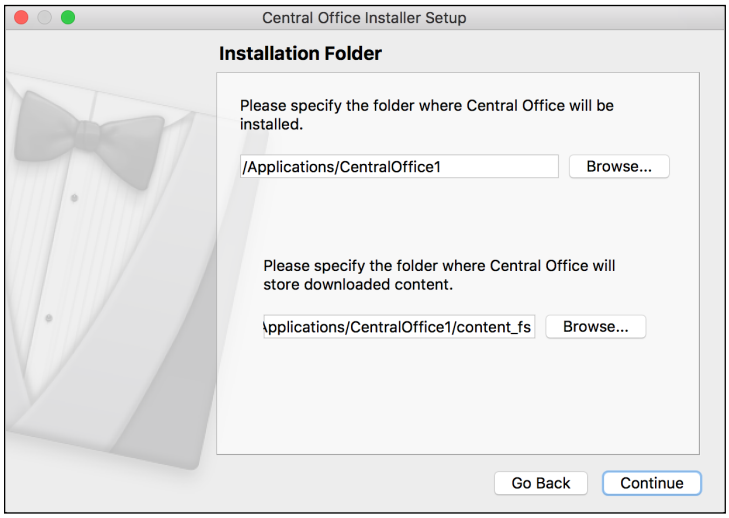
   Click **Continue**.

4. The Installation Folder window displays. You must indicate where to install the COS SD software and where to store downloaded content.

   The default location for the COS SD software is /Applications/CentralOffice. and The default location for the COS SD software to store downloaded content is /Applications/CentralOffice/content_fs.

   You can use the Browse buttons to select different locations. DRC recommends that you use the default locations.

   When you are ready, click **Continue**.

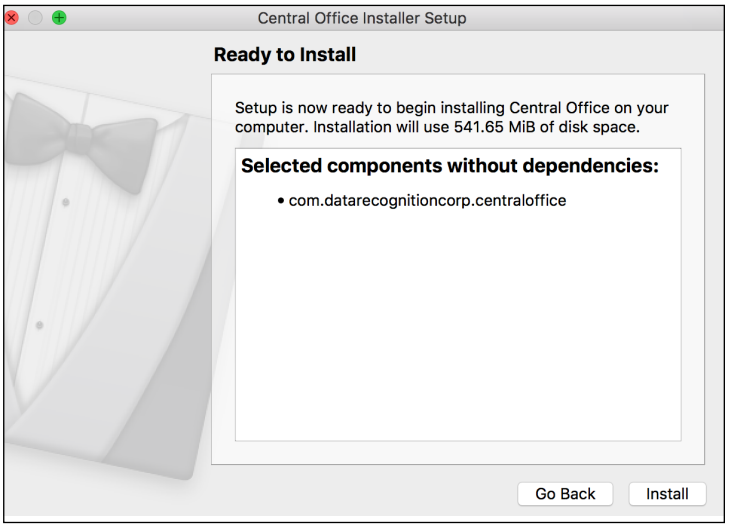


Quick Tour: Installing COS SD Software on Mac Devices (cont.)

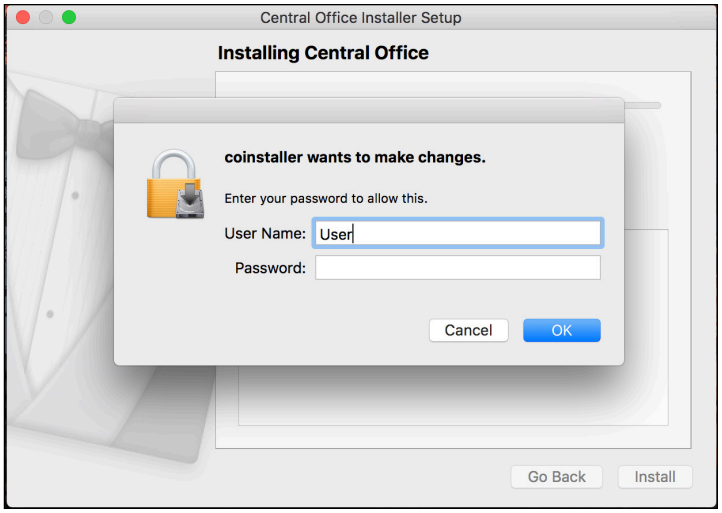
5. The Proxy Host window displays. This window allows you to specify a separate proxy server for the COS SD. This step is optional.
   - If you are not planning to use a proxy server, leave the field blank and click **Continue**.
   - If you are planning to use a proxy server, enter the URL of the server in the Proxy Host field and click **Continue** (for details, see "Configuring Testing Devices" on page 48).

6. The Ready to Install window displays. The window indicates the amount of disk space the installation will require and the components that will be installed as part of the COS SD software.

   Click **Install** to continue.



7. You must be a Mac System Administrator to install the COS SD software. After you enter your name and password and click **Install Software**, the installation begins.

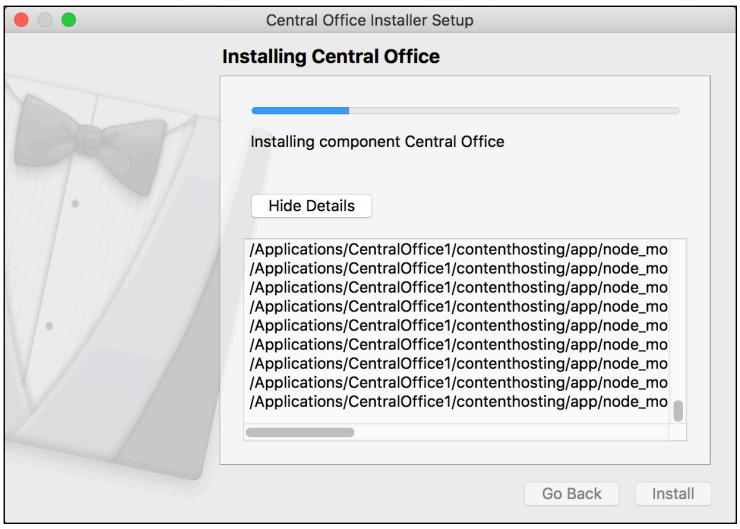


Quick Tour: Installing COS SD Software on Mac Devices (cont.)

8. The Installing Central Office window displays, indicating the progress of the installation.

You can click **Hide Details** to hide the details of the installation process, or **Show Details** to reveal them.

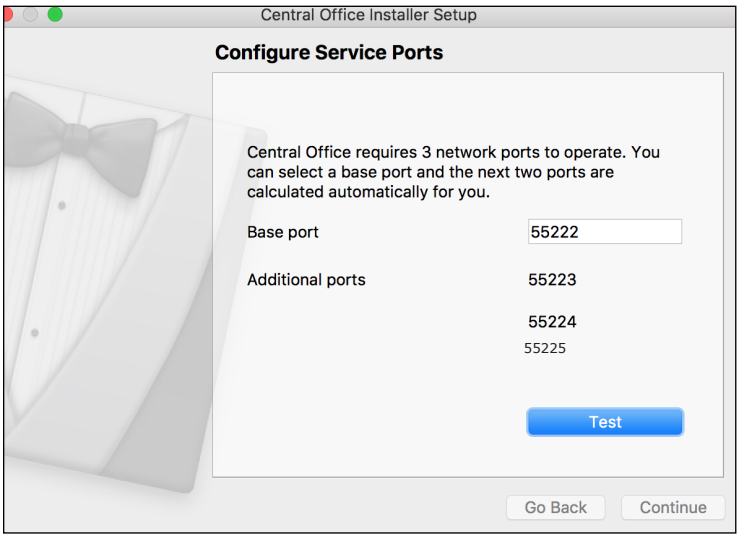
Note: The installation process can take 10–20 minutes.



9. The Configure Service Ports window appears. On this window you specify the port to use for Content Hosting (labeled the Base port). The COS SD software uses the base port to determine which ports to use for the Content Downloading, Relay, and Restricted Proxy services (labeled the Additional ports).

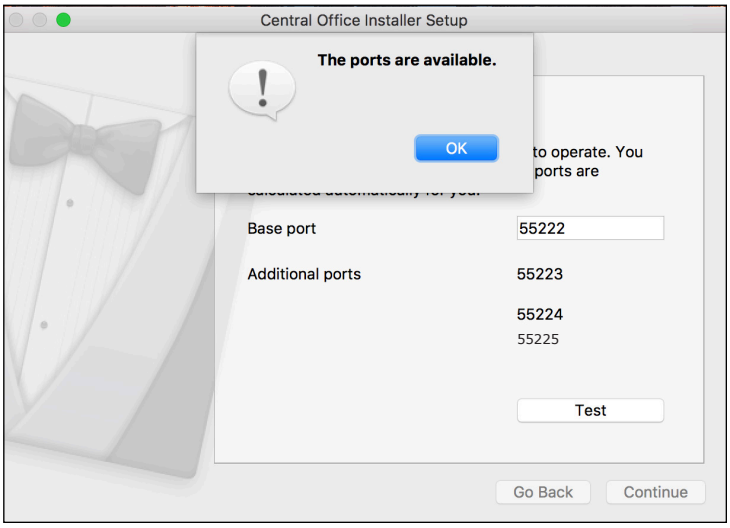
The ports are four consecutive numbers, but you only need to enter the base port number in the Base port field. After you specify the base port, the COS SD software automatically selects the next three consecutively numbered ports. The software requires four port numbers, even if the device being configured will not use all of them.

The default port values are 55222, 55223, 55224, and 55225. You may select alternative port numbers as long as four consecutive numbers are available. For example, if you specify 11223 for the base port, the COS SD software also attempts to use ports 11224, 11225, and 11226.



10. After you select your ports, but before you click **Continue**, click **Test** to verify that the ports selected are available on the device.

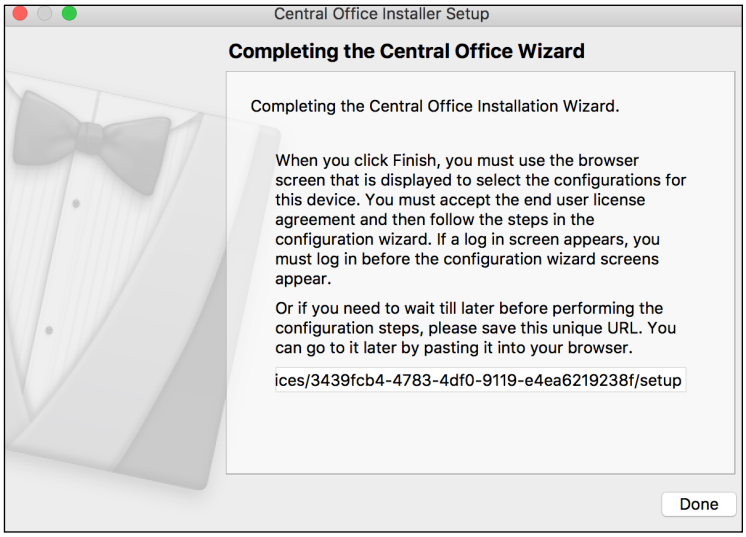
- If the Installer dialog indicates that the ports are available, click **OK** and then click **Continue**.
- If the Installer dialog that displays indicates that the ports are not available, select a different base port and repeat this step until you have ports that are available.



Quick Tour: Installing COS SD Software on Mac Devices (cont.)

11. Two things now occur at the same time: The Completing the Central Office Wizard window appears and the DRC Portal screens are launched.

Important: From the Completing the Central Office Wizard window highlight and copy and save the URL that displays—you can use it to resume the process at this point (if necessary) without re-installing the COS SD software.



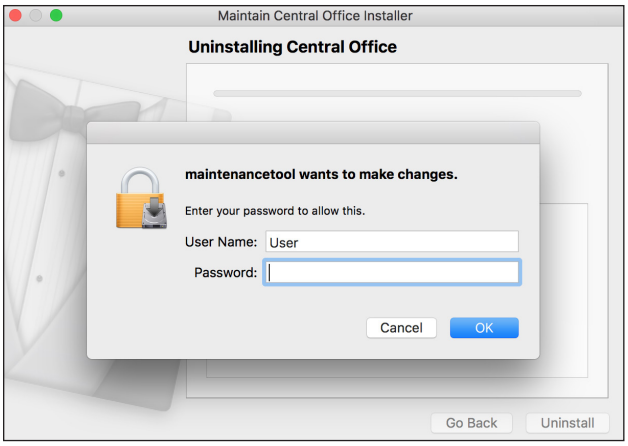
Click **Done** in the Completing the Central Office Wizard window. To complete the process of configuring your COS SD, see “Quick Tour: Creating a Central Office Services Configuration” on page 25.

Manually Updating COS SD Software for Mac Devices

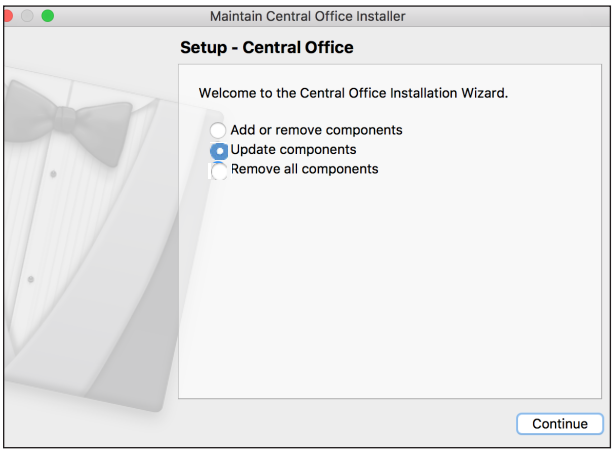
DRC COS software updates automatically at regular intervals. If a COS SD is turned off when DRC releases an update, the COS SD will not receive the update until the next time it is turned on at night.

Perform the following if you need to manually update the COS software on a Mac machine.

1. From the COS SD, select **Applications–Central Office–maintenancetool**.
2. Enter your Mac Administrator login information.



3. On the Setup - Central Office screen, select **Update components** and click **Continue**.

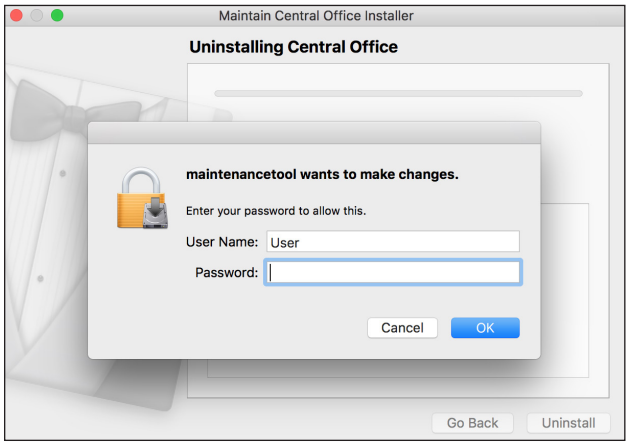


4. When the update process completes, a message displays indicating the results of the update. Click D**one**.

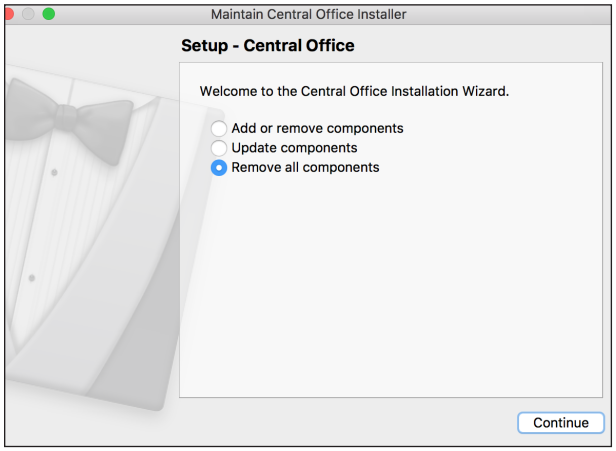
Uninstalling the COS SD Software for Mac Devices

To uninstall the COS SD software from a Mac machine, perform the following steps.

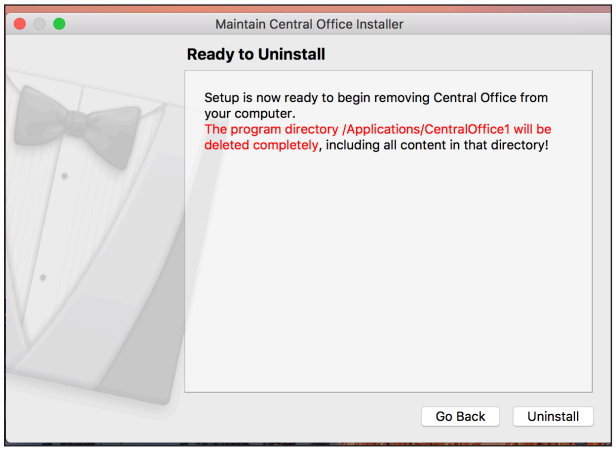
1. From the COS SD, select **Applications–Central Office–maintenancetool**.
2. Enter your Mac Administrator login information.



3. On the Setup - Central Office screen, select **Remove all components** and click **Continue**.



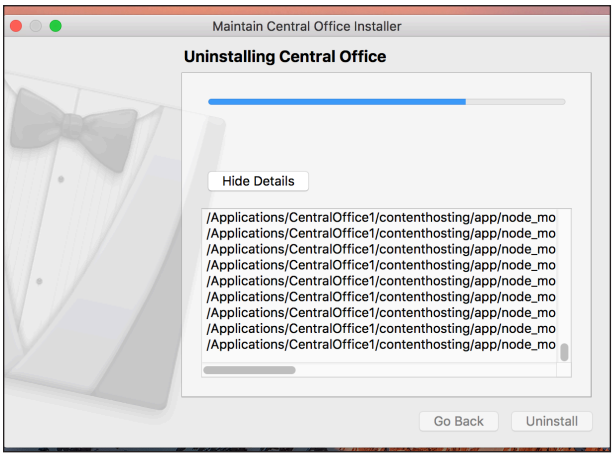
4. On the Ready to Uninstall screen, click **Uninstall**.



Uninstalling Central Office Services for Mac Devices (cont.)

5. If necessary, re-enter your Mac Administrator login information.

6. The uninstall process completes in a few minutes.



7. When the uninstall process completes, click **Done**.

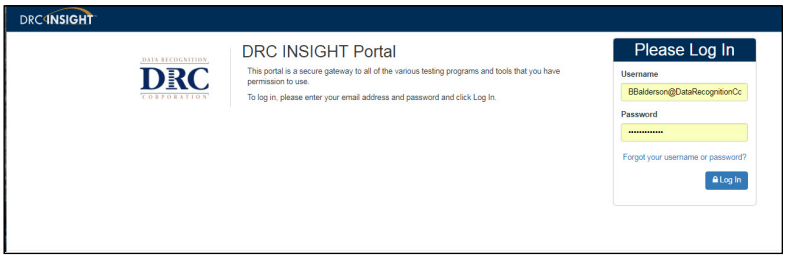
Creating a Central Office Services (COS) Configuration

Quick Tour: Creating a Central Office Services Configuration

After you have installed Central Office Services (COS) on a COS SD, you must create an initial COS configuration to use COS with your testing devices. This Quick Tour describes how to create the initial COS configuration. DRC provides an easy-to-use wizard to help you with this process.

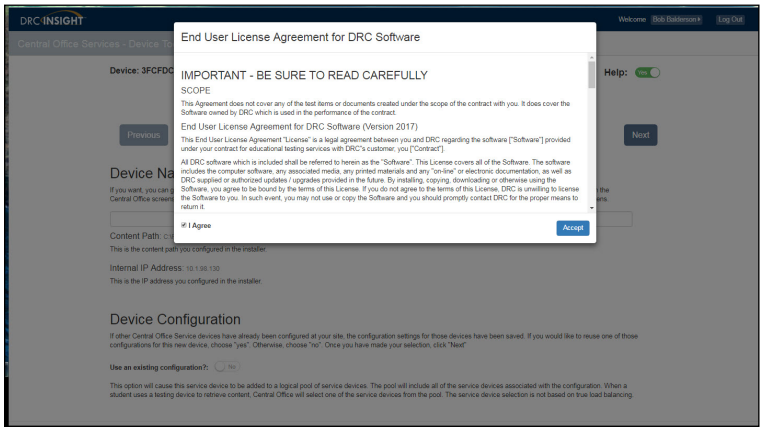
1. When you finish installing COS, the Central Office Setup Sign In window displays. Sign in to the Portal by entering your username and password and clicking **Log In**.

   Note: See *Volume I: Introduction to Online Testing* for information regarding the DRC INSIGHT Portal.



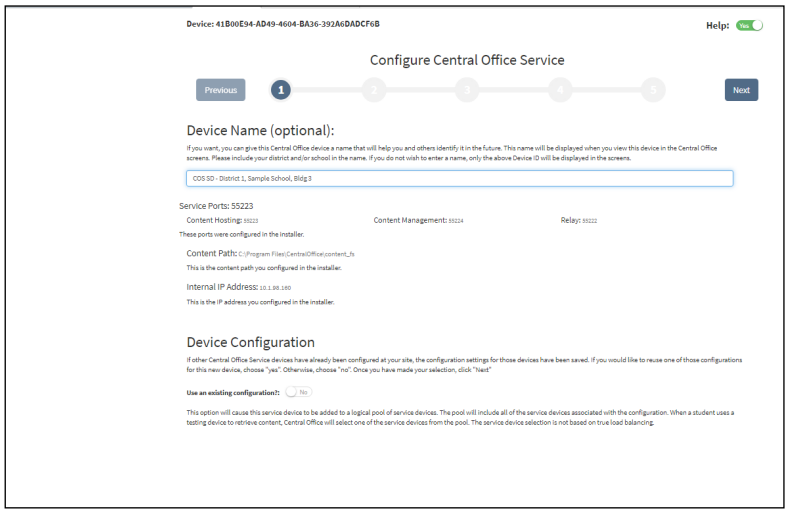
2. After you sign in to the DRC INSIGHT Portal, the End User License Agreement for DRC Software window displays.

   Read the agreement, check the **I Agree** checkbox, and click **Accept** (you must accept the agreement to continue).



3. After you accept the license agreement, the Central Office configuration wizard displays.

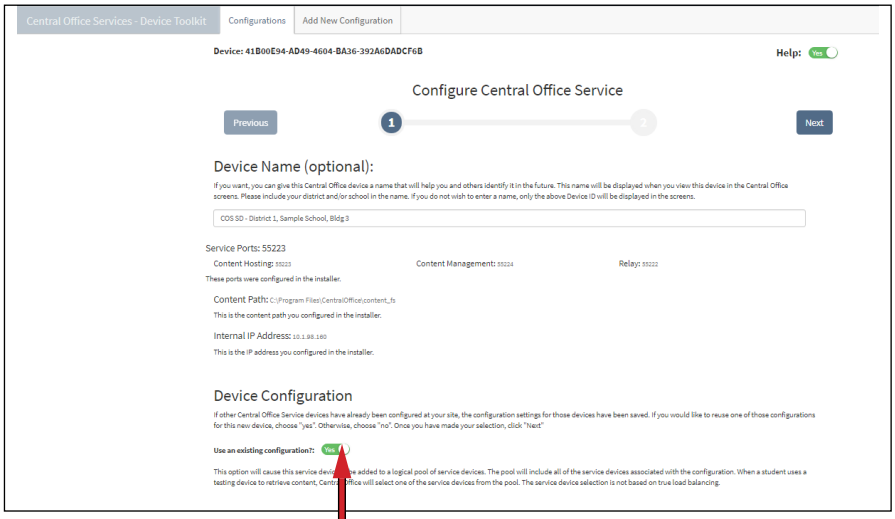
   When the configuration wizard displays, enter a unique name to identify the COS SD you have just created to help you identify it in the COS dashboard. The name displays anytime you view the device in COS. If you do not name the COS SD, only the Device ID, generated by DRC, displays.



Quick Tour: Creating a Central Office Services Configuration (cont.)

Important: For COS SDs that are part of a pool (including load-balanced pools), if you have already configured a COS SD and want to use the same configuration for this COS SD, you can reply **Yes** to Use an existing configuration? There are a number of considerations you should be aware of before you make this decision. See "Creating COS SD Pools" on page 76.

Click **Next** when you are ready.



Before you decide to use an existing configuration, see "Creating COS SD Pools" on page 76.

4. Enter a name for the configuration that will help you identify it easily.

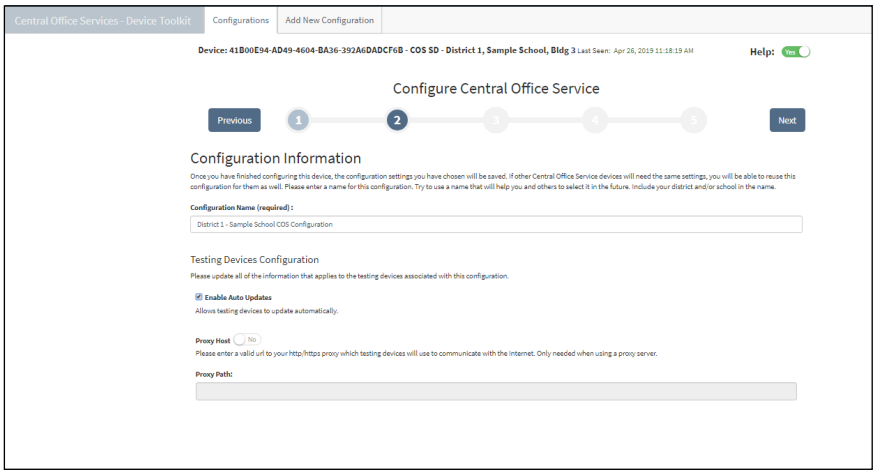
5. Enable automatic INSIGHT software updates by selecting Enable Auto Update. When you select Enable Auto Update, DRC updates the INSIGHT software automatically.

   Note: If you do not select Enable Auto Update, DRC notifies you whenever an update to the INSIGHT software is available and you must update the software manually.

   Proxy Host Configurations

   To specify an HTTP proxy host server, move the Proxy Host toggle to Yes and enter the server name (or IP address) and port number (separated by a colon), followed by a forward slash (/), in the Proxy Path field. To use a *restricted proxy host*, after you complete the wizard you must update the configuration and activate the restricted proxy host (see "Configuring Testing Devices" on page 48).

   Click **Next** when you are ready.



Quick Tour: Creating a Central Office Services Configuration (cont.)

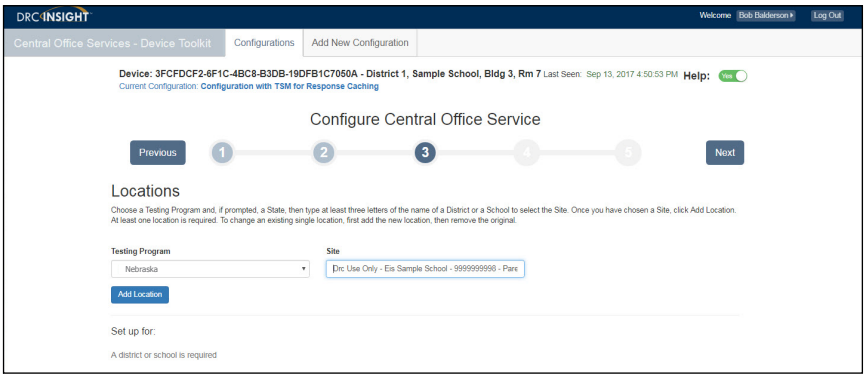
6. When the Locations page appears, select a testing program from the Testing Program drop-down menu. Then, start typing a district name, school name, or site code in the Site filter.

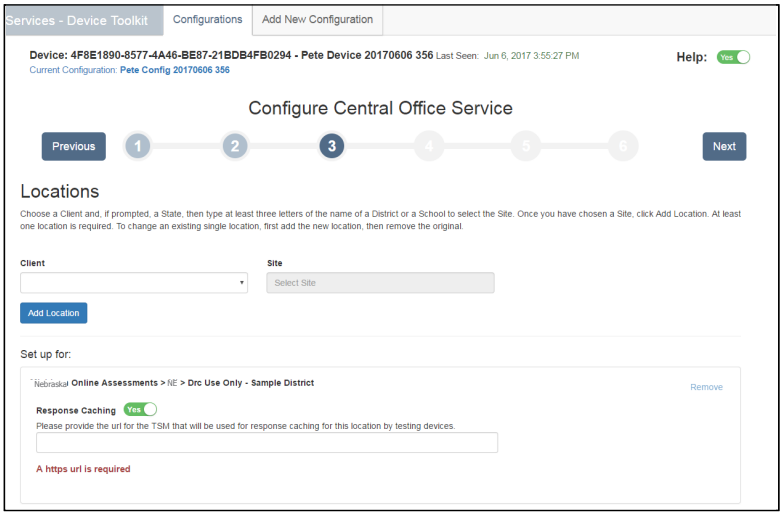
7. When you locate the district or school name to which you want to register the configuration, click **Add Location**.

   Important: You can select a site for which you have access (your access is defined by the Portal Device Toolkit permission).

   Note: You must click **Add Location** to continue. At any time after you add a location, you can click **Remove** to the right of the location to remove it.

   Click **Next** when you are ready.





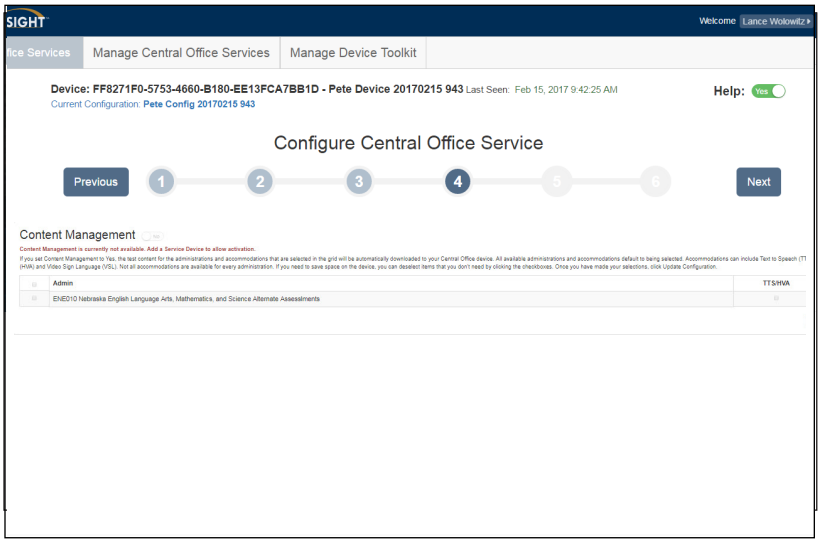
Quick Tour: Creating a Central Office Services Configuration (cont.)

8. Now, you can set Content Management to Yes or No.

Important: Your state may have a requirement to use Content Management for your testing program.

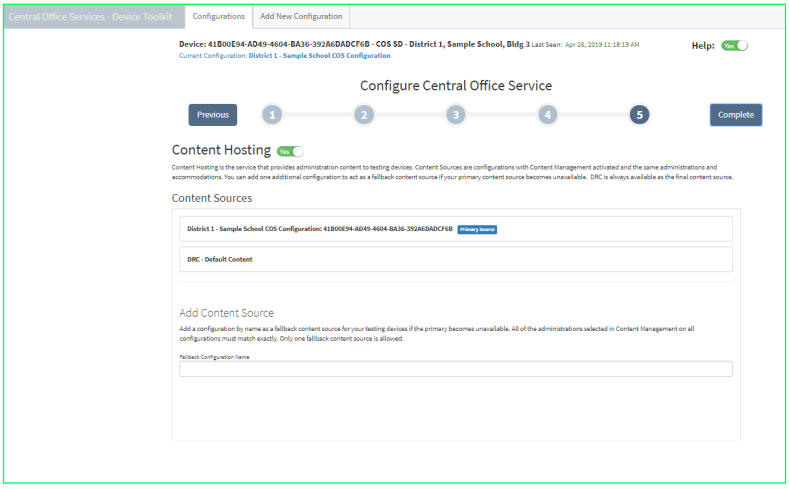
If you select Yes, the test content for the selected administrations and accommodations will be downloaded automatically to your COS device. The default is all available administrations and accommodations. If you need to save space on the COS SD, de-select unneeded administrations and accommodations.

After you make your selections, click **Next**.

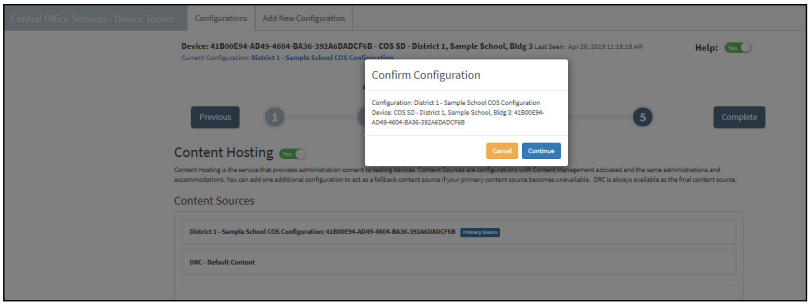


9. On the Content Hosting page, Verify that Content Hosting is set to **Yes**.

Note: When Content Management is set to Yes, the current COS SD appears as the first content source.

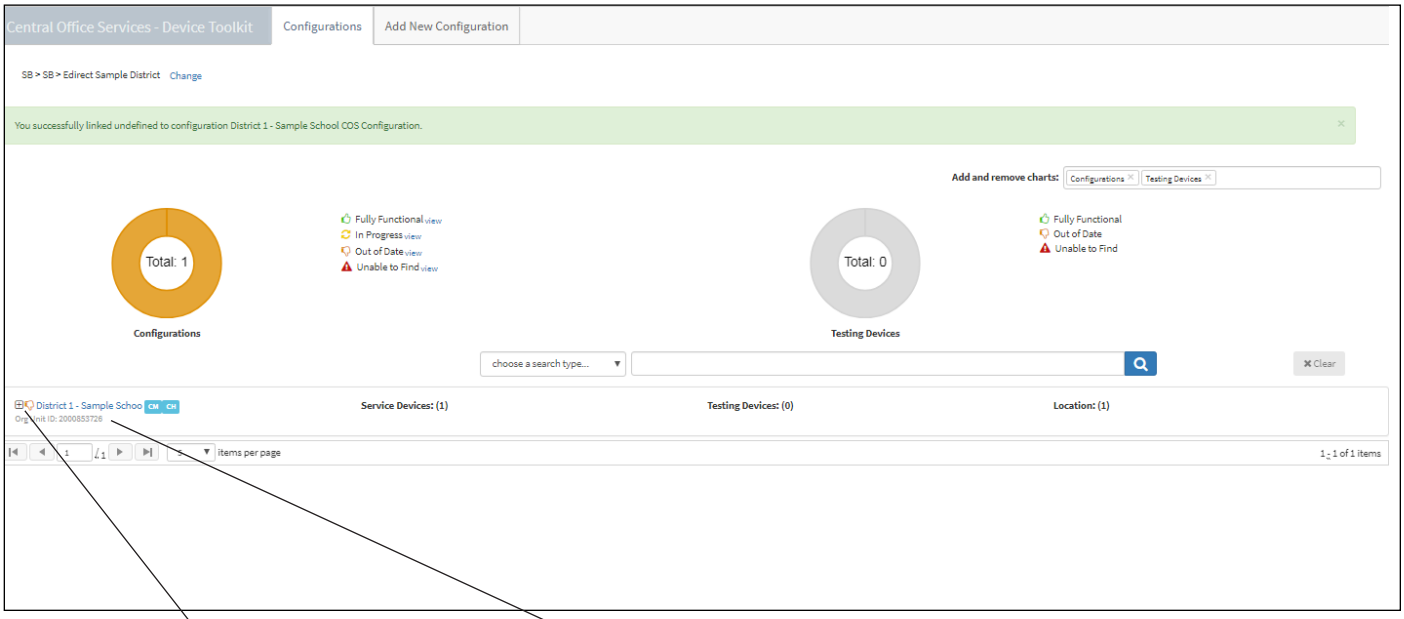


10. Click **Complete**. When the Confirm Configuration dialog box displays, click **Continue**.



Quick Tour: Creating a Central Office Services Configuration (cont.)

11. The configuration that you just created displays on the Configurations tab in the COS dashboard.



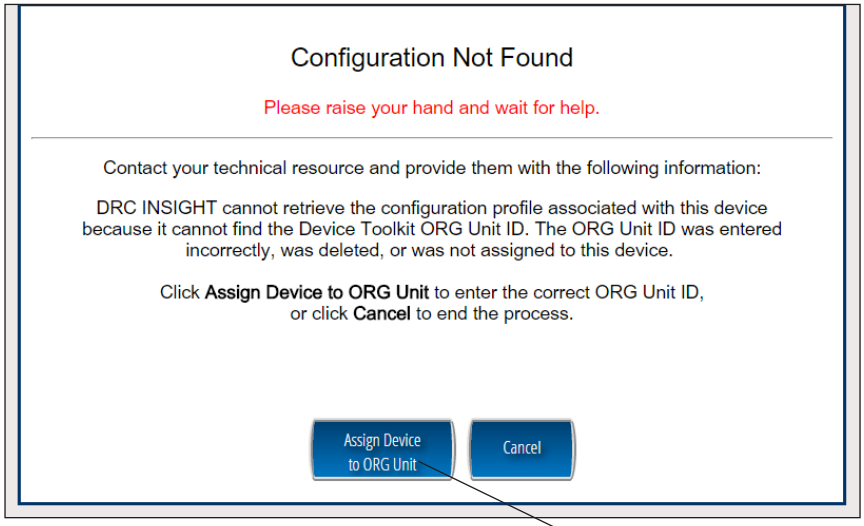
Click the Plus (**+**) sign (toggles to minus [-] sign) to display detailed information about the configuration.

12. Copy and save the Org Unit ID. You use this ID to register your devices for testing in Step 15.

Quick Tour: Creating a Central Office Services Configuration (cont.)

13. What you do now depends on whether INSIGHT is already installed on the testing device.

- If INSIGHT is not installed, install it on the testing device.
- If INSIGHT is installed, you can use the version of INSIGHT that is installed.



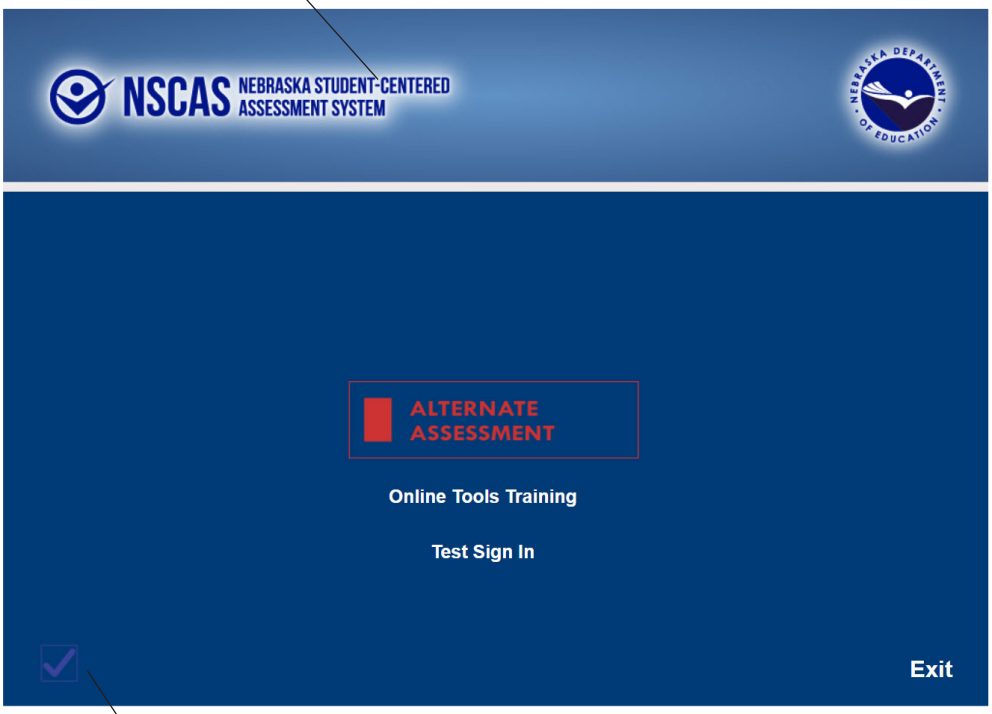
14. Start INSIGHT on the device. Because the device is not yet registered with COS, the Configuration Not Found screen displays when you start INSIGHT. Click **Assign Device to ORG Unit**.

15. When the Device Registration page appears, enter or paste the device's ORG Unit ID that you saved in Step 12 and click **Add**. After you have added the ORG Unit, click **Register**.

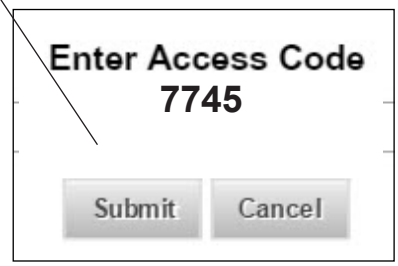
Note: After the device is successfully registered, it will display in the Central Office Testing Devices tab.

Quick Tour: Creating a Central Office Services Configuration (cont.)

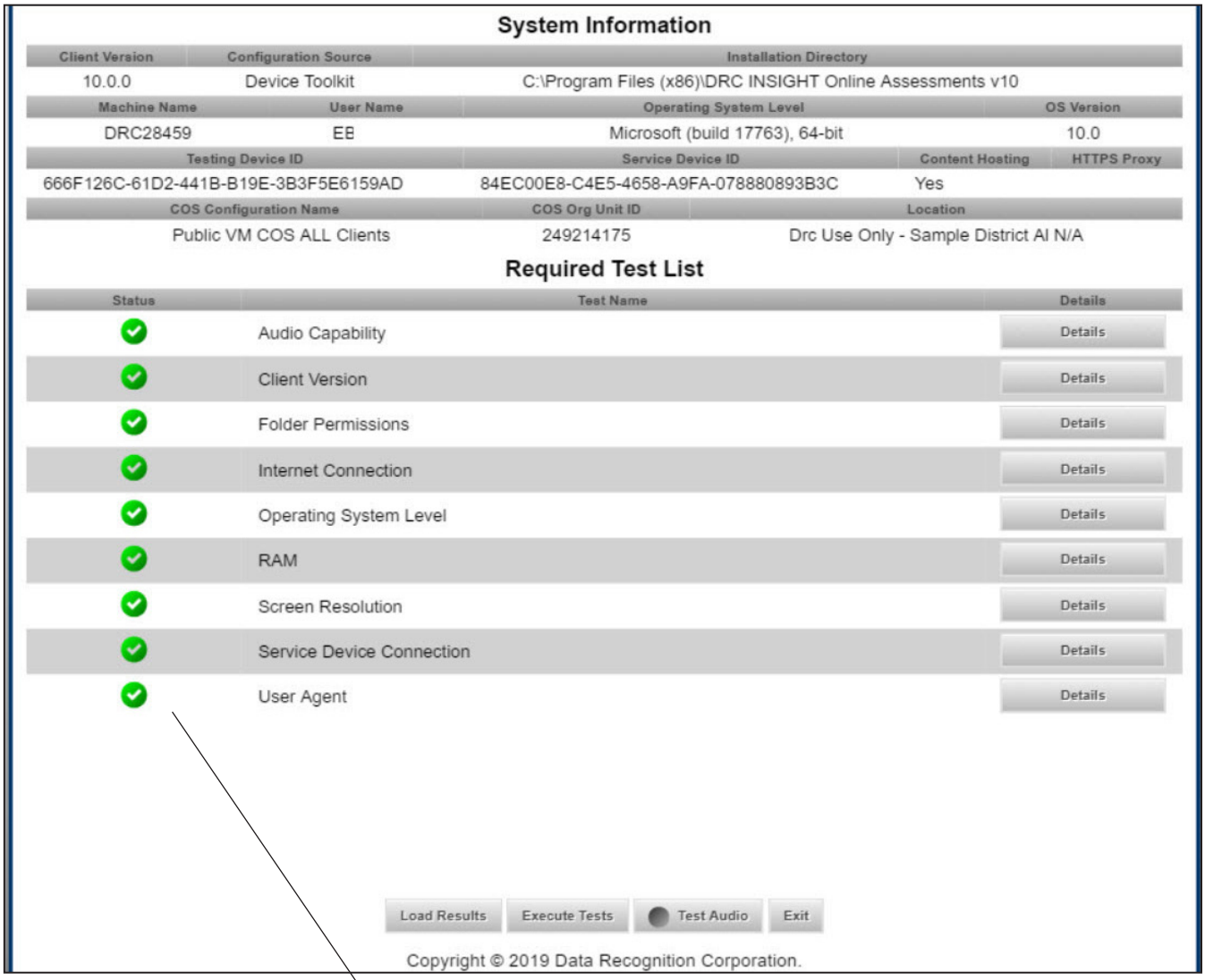
16. The main INSIGHT screen displays.



17. If you need to start the System Readiness Check, click the checkmark in the lower left corner of the main INSIGHT screen. When prompted, enter the **7745** access code and click **Submit**.



Quick Tour: Creating a Central Office Services Configuration (cont.)



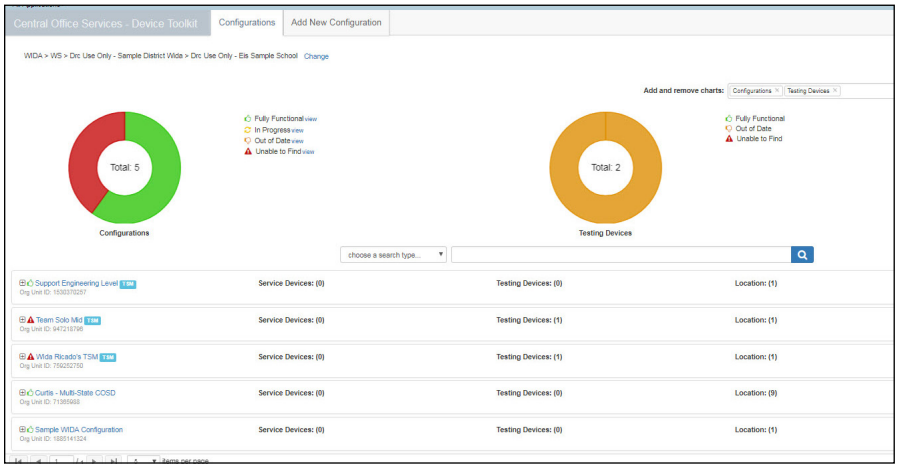
18. When the System Readiness Check displays, all icons should display green if everything is set up correctly (for more information, refer to the various System Readiness Check topics in *Volume III: DRC INSIGHT*). Click **Exit**.

Monitoring Central Office Services

Introduction

The Central Office Services - Device Toolkit interface consists of two tabs: Configurations and Add New Configuration.

- The **Configurations** tab displays a visual dashboard describing the configurations that currently exist in COS, as well as status information about each configuration and the testing devices associated with the configuration. From this tab you can drill down to see additional options for managing your COS configurations and devices.



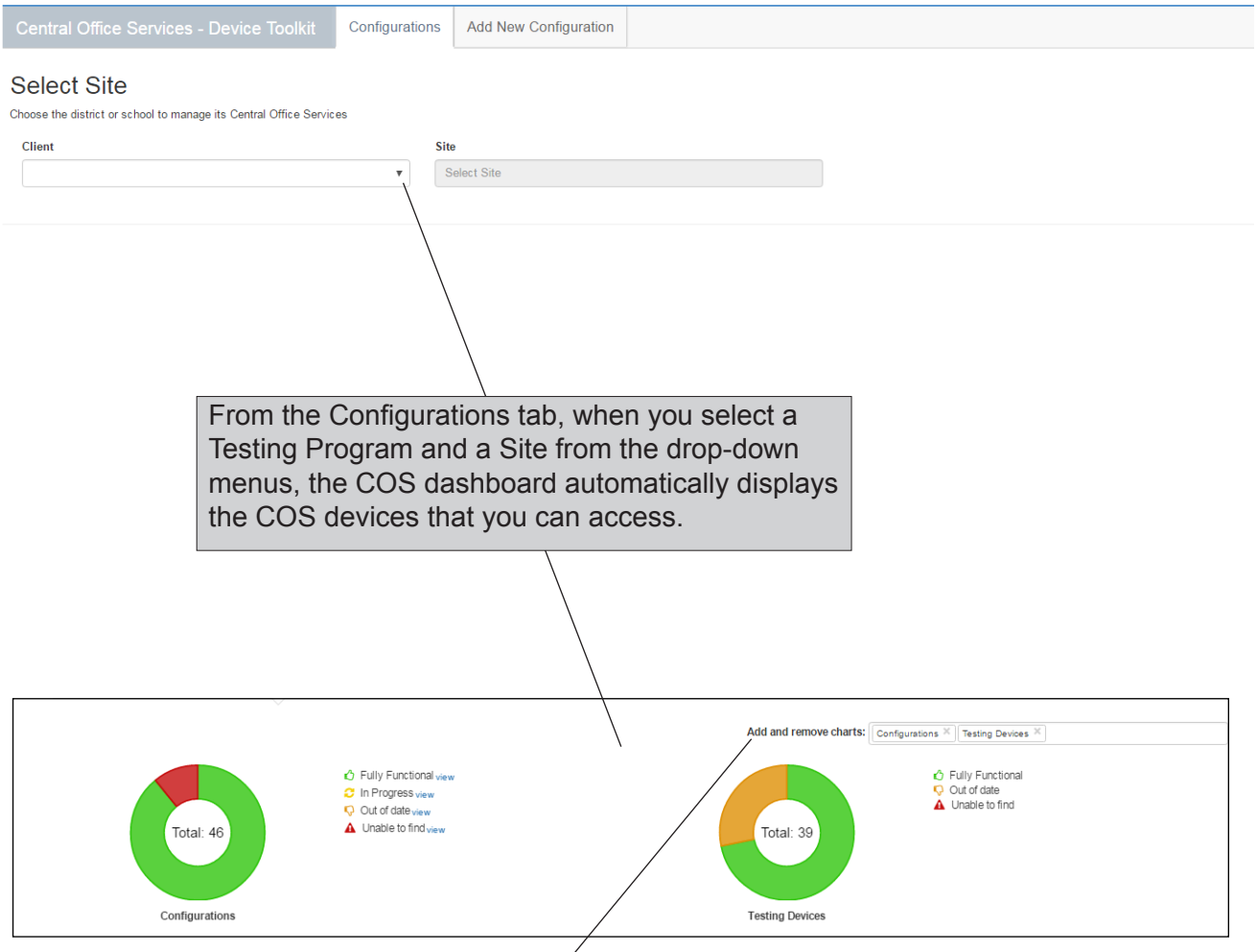
- The **Add New Configuration** tab allows you to quickly create a COS configuration for a group of testing devices.

This section describes the COS dashboard that displays in the Configurations tab. Using the dashboard, you can review, monitor, and manage your configurations, COS SDs, and testing devices from a central location.

Important: When you open the dashboard and select a Testing Program and Site, the Configurations tab displays the COS devices that you can access.

The Central Office Services Dashboard

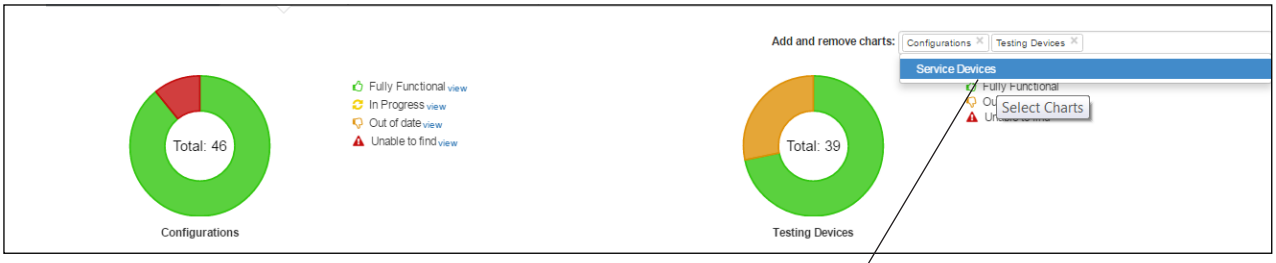
From the Configurations tab, select a Testing Program and a Site from the drop-down menus to display the COS dashboard. When the COS dashboard first displays, two “donut” charts—**Configurations** and **Testing Devices**—display at the top of the dashboard. A third chart, COS SDs is also available. You can toggle the dashboard to display any combination of these charts.



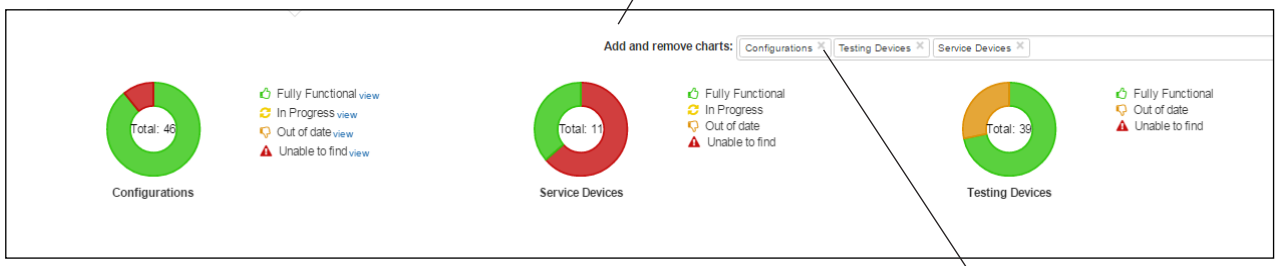
From the Configurations tab, when you select a Testing Program and a Site from the drop-down menus, the COS dashboard automatically displays the COS devices that you can access.

The **Add and remove charts** tabs indicate the donut charts currently displayed in the dashboard. The default is to display the Configurations and Testing Devices charts.

The Central Office Services Dashboard (cont.)



Move your cursor to the right of the chart tabs and left-click to display the **COS SDs** option. When you select this option the graph re-displays with three charts: Configurations, COS SDs, and Testing Devices.



You can click the **x** in the upper-right corner of any chart tab to remove the chart from the display.

The Central Office Services Dashboard (cont.)

Within a chart, you can hover your mouse over a color to display the number of configurations or devices that have a particular status. Clicking on the text in the legend to the right of a chart displays a definition of the status in popover text. The grids below list the colors and corresponding icons that display in each legend (and elsewhere in the dashboard). They also list the corresponding status and provide a brief description of each status. Note that the statuses for the Configurations and COS SDs charts are similar, but the statuses for the Testing Devices chart are different.

Configurations Chart

Chart Color	Icon	Configuration Status	Description
Green		Fully functional	All devices using a configuration are visible to COS and are in use or ready for use
Red		Unable to Find	Configured services that were last seen an hour ago or more
Yellow		In Progress	One or more of the devices using the configuration is currently uploading or downloading test content
Orange		Out of date	The test content on one or more devices using the configuration is out of date

Service Devices Chart

Chart Color	Icon	Configuration Status	Description
Green		Fully functional	All COS SDs using a configuration are visible to COS and are in use or ready for use
Red		Unable to Find	Configured services that were last seen an hour ago or more
Yellow		In Progress	One or more of the COS SDs using the configuration is currently uploading or downloading test content
Orange		Out of date	The test content on one or more COS SDs using the configuration is out of date

Testing Devices Chart

Chart Color	Icon	Testing Device Status	Description
Green		Fully functional	Testing device last seen within a month
Red		Unable to Find	Testing device last seen a year ago or more
Orange		Out of date	Testing device last seen a month ago or more

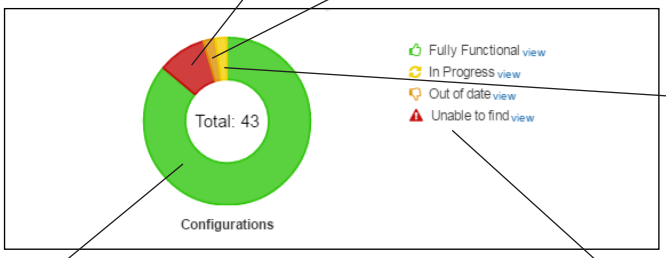
The Central Office Services Dashboard (cont.)

When you hover over a color in a donut chart, informational text displays based on the color of the chart.

Configurations Chart

The red area text displays **Unable to find:** *x*, where *x* is the number of missing configurations.

The orange area text displays **Out of date:** *x*, where *x* is the number of configurations that are out of date.



The yellow area text displays **In Progress Upload/Download:** *z*, where *z* is the number of configurations uploading or downloading.

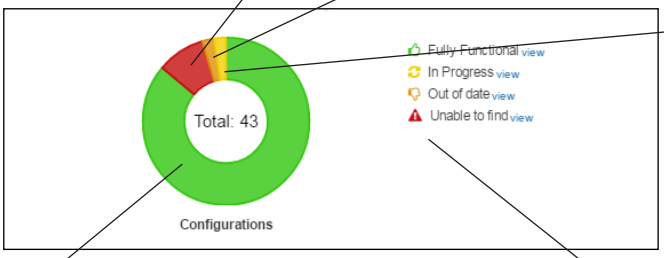
The green area text displays **Fully Functional:** *y*, where *y* is the number of fully functional configurations.

The four status icons are listed to the right of the Configurations chart. Click **view** to the right of a status icon to filter the list starting with the status you selected. Click on a status name to display a definition of the status.

Service Devices Chart

The red area text displays **Unable to find:** *x*, where *x* is the number of missing COS SDs.

The orange area text displays **Out of date:** *x*, where *x* is the number of COS SDs that are out of date.



The yellow area text displays **In Progress Upload/Download:** *z*, where *z* is the number of COS SDs that are uploading or downloading test content.

The green area text displays **Fully Functional:** *y*, where *y* is the number of fully functional COS SDs.

The four status icons are listed to the right of the Configurations chart. Click **view** to the right of a status icon to filter the list starting with the status you selected. Click on a status name to display a definition of the status.

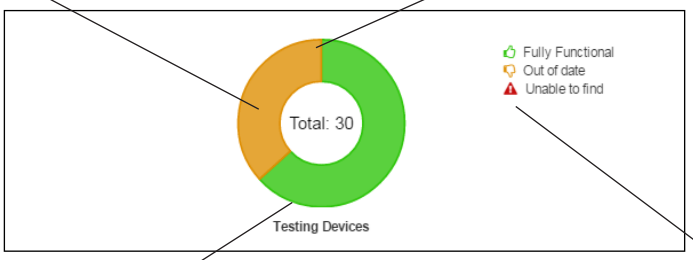
The Central Office Services Dashboard (cont.)

When you hover over a color in a donut chart, informational text displays based on the color of the chart.

Testing Devices Chart

The orange area text displays **Out of date:** *x*, where *x* is the number of testing devices with content that is out of date.

The red area text displays **Unable to find:** *x*, where *x* is the number of missing testing devices.



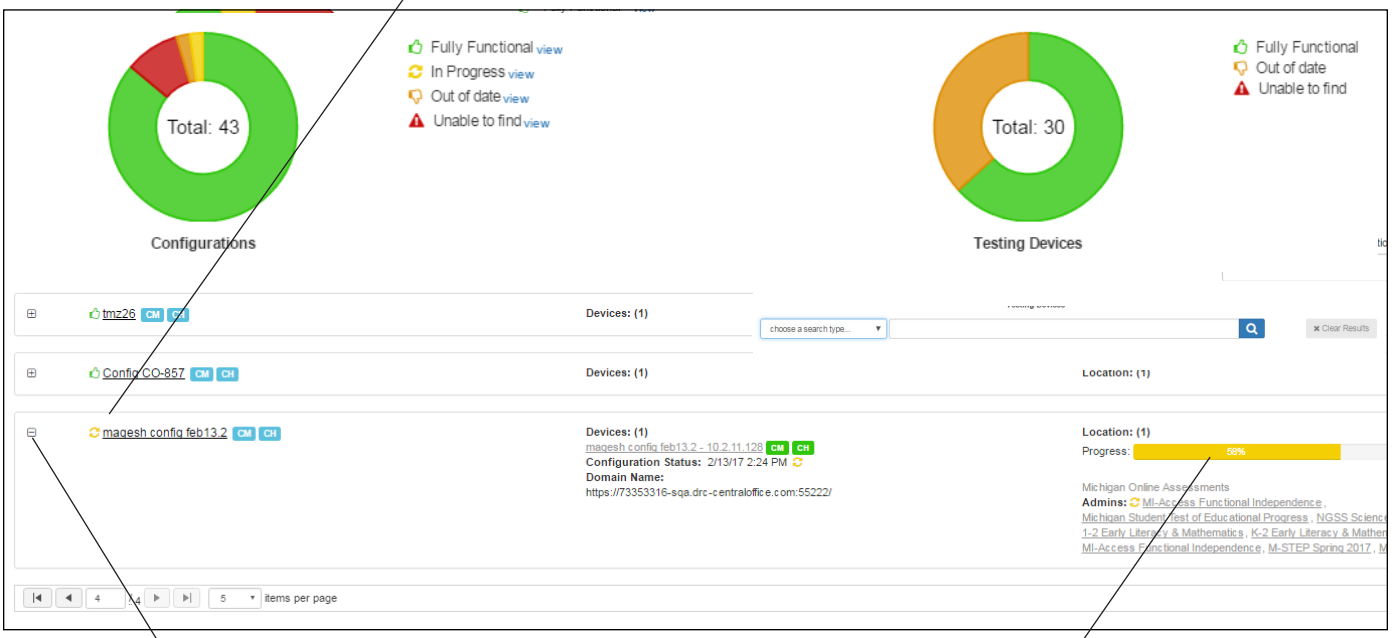
The green area text displays **Fully Functional:** *y*, where *y* is the number of fully functional testing devices.

The three status icons are listed to the right of the Testing Devices chart. Click on a status name to display a definition of the status.

The Central Office Services Dashboard (cont.)

The icon to the left of the configuration name indicates the current overall status of the COS SDs in the configuration.

Icon	Description
Unable to Find ( )	One or more COS SDs in the configuration has not been “seen” in the last hour by COS. **Note:** If the Unable to Find icon appears to the right of Configuration Status (the configuration has changed but the changes have not been applied to the COS SD), the Unable to Find **icon** also appears on the far left.
In Progress ( )	Test content for any administration on any COS SD in the configuration is being downloaded.
Out of Date ( )	Test content for any administration on any COS SD in the configuration is out of date.
Fully Functional ( )	Test content for all administrations is up to date on all COS SDs and the configured services on all COS SDs are functional.



Click the Plus (+) sign (toggles to a minus [-] sign) to display location information about the COS SD.

The orange progress bar only displays if the configuration includes Content Management. It indicates the overall progress of downloading the test content for all administrations and devices that use the configuration.

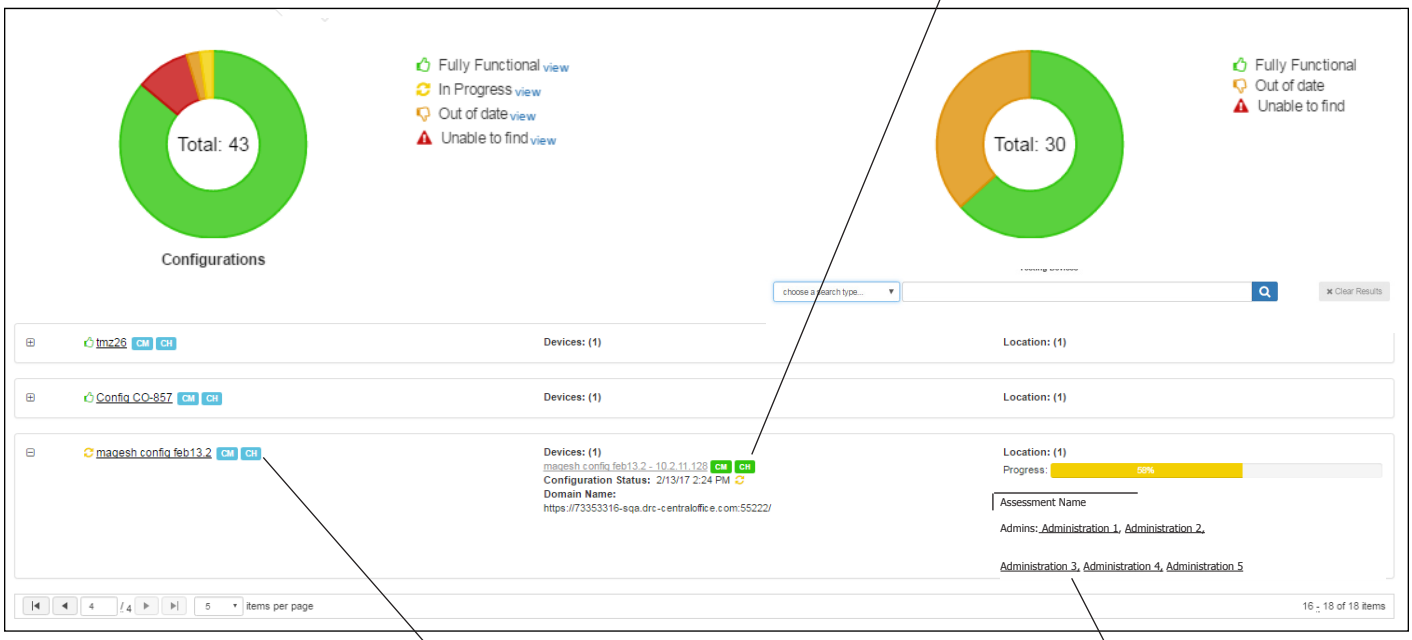
The Central Office Services Dashboard (cont.)

The color of the CH and CM icons indicates the status of its corresponding service.

Color	Description
Green	The service is fully functional
Yellow	The server is currently downloading test content (In Progress)
Orange	The content on the server is out of date
Red	The service has not been “seen” (last seen) for at least an hour

You can click these icons to see the last seen date for the service.

You can click the underlined device name to the left of these icons to rename the device or remove the device from the configuration (see “Renaming or Removing Service Devices” on page 63).



The blue icons, **CH** (Content Hosting CH) and **CM** (Content Management CM), indicate the services specified in the configuration.

The title of the assessments and administrations that were selected in the configuration is listed.

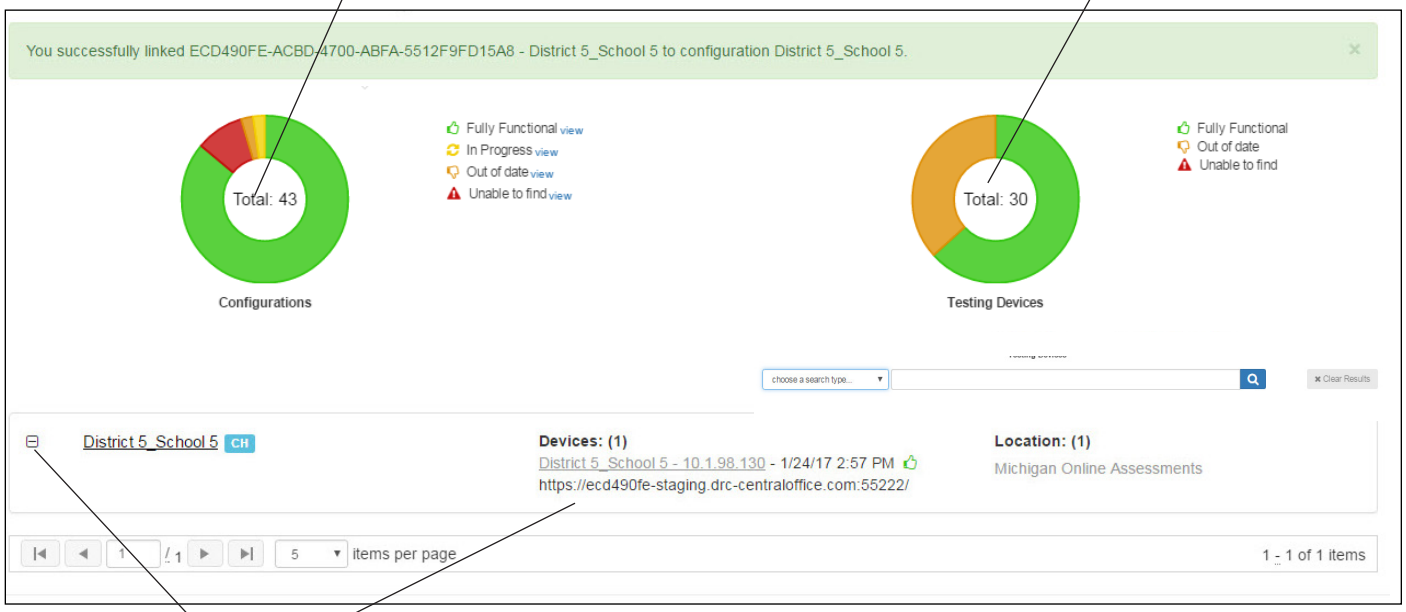
The Central Office Services Dashboard (cont.)

The Configurations tab displays all of the configurations that match your search criteria. When the device(s) for a configuration are displayed, the following information is also displayed:

- The device name for each COS SD. If no name was specified during configuration, the IP address displays.
- The IP address plus the Device Status date and time. The Device Status date and time reflects the last date and time that the device pinged DRC.
- The device URL for each COS SD (Domain Name).
- The locations(s) where the configuration and associated devices are registered. For COS, a location is defined as a site within a client testing program. For example, a specific school within a state testing program. A configuration can have multiple locations and testing programs, such as the state testing program and .
- The ORG Unit ID.
- If the device configuration is new, or changed, and has not been applied to the device, a red triangle displays to the right of the Device status date (the same as the **Unable to find** triangle in the dashboard legend). After the configuration is applied to the device, the red triangle turns into the **Fully Functional** (green thumbs-up) symbol.

The total value in the Configurations chart reflects the total number of configurations that meet your selection criteria.

The total value in the Testing Devices chart reflects the total number of testing devices that meet your selection criteria.



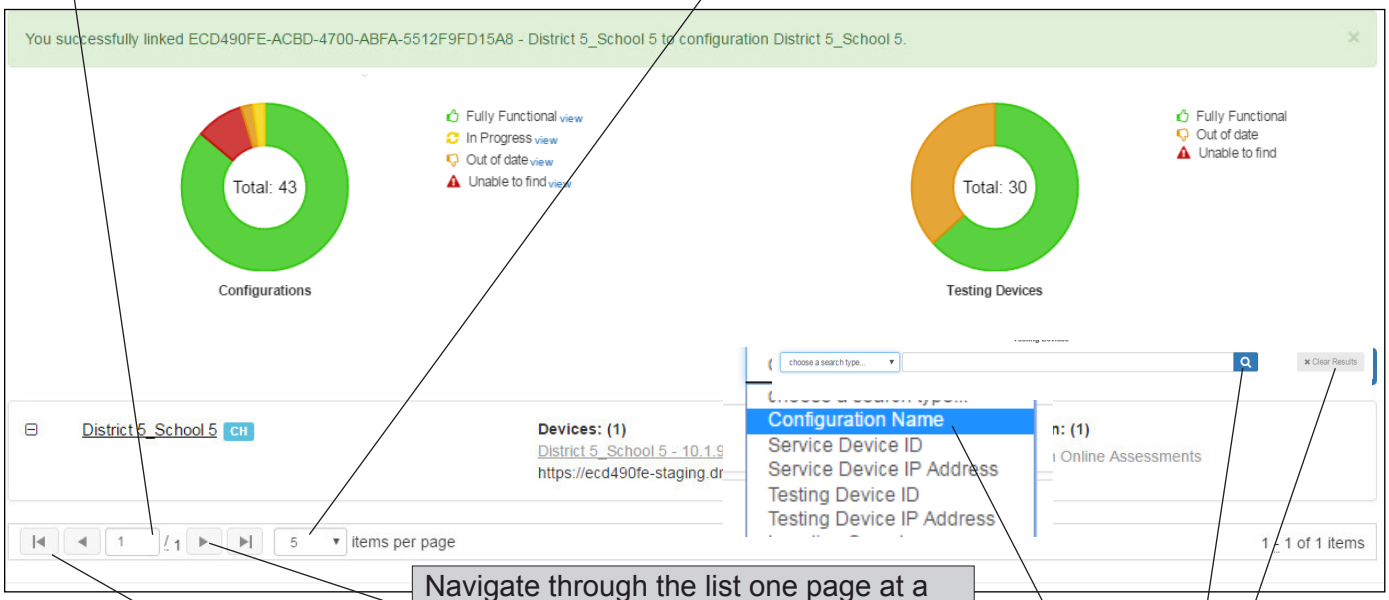
Click the Plus (+) sign (toggles to a minus [-] sign) to display location information about the COS SD.

The Central Office Services Dashboard (cont.)

When there are more configurations than can be shown on a single page, the COS - Device Toolkit allows the user to page through the configurations. There are multiple ways to navigate the dashboard configuration pages as shown below.

Enter a number in the selected page box to jump directly to a certain page.

Specify the number of configurations to display on a page by using the **items per page** drop-down menu.



Navigate through the list one page at a time by clicking the Page forward (▶) and Page back (◀) buttons.

Click the Page to first (|◀) or Page to last (▶|) buttons to go to the first or last page.

To refine your search criteria, choose a search type—Configuration Name, Service Device ID, Service Device IP Address, Testing Device ID, or Testing Device IP Address, enter your search values, and click the Search icon (🔍). You can click **Clear** at any time to clear your search results and return to the original display.

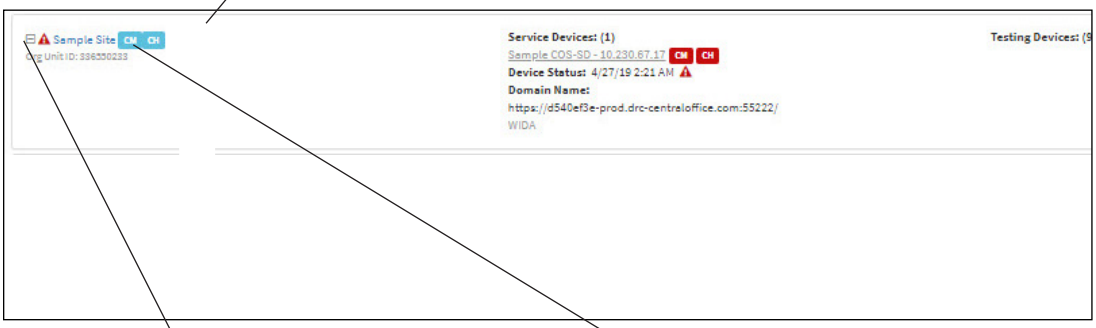
Notes:

- The search value(s) you enter for a Configuration Name search do not have to be the first values in the string for which you are searching. The search locates any string in the search type that contains the search value(s) you specified.
- The minimum number of characters you must enter varies by search type and a reminder is displayed, if necessary, when you search.

The Central Office Services Dashboard (cont.)

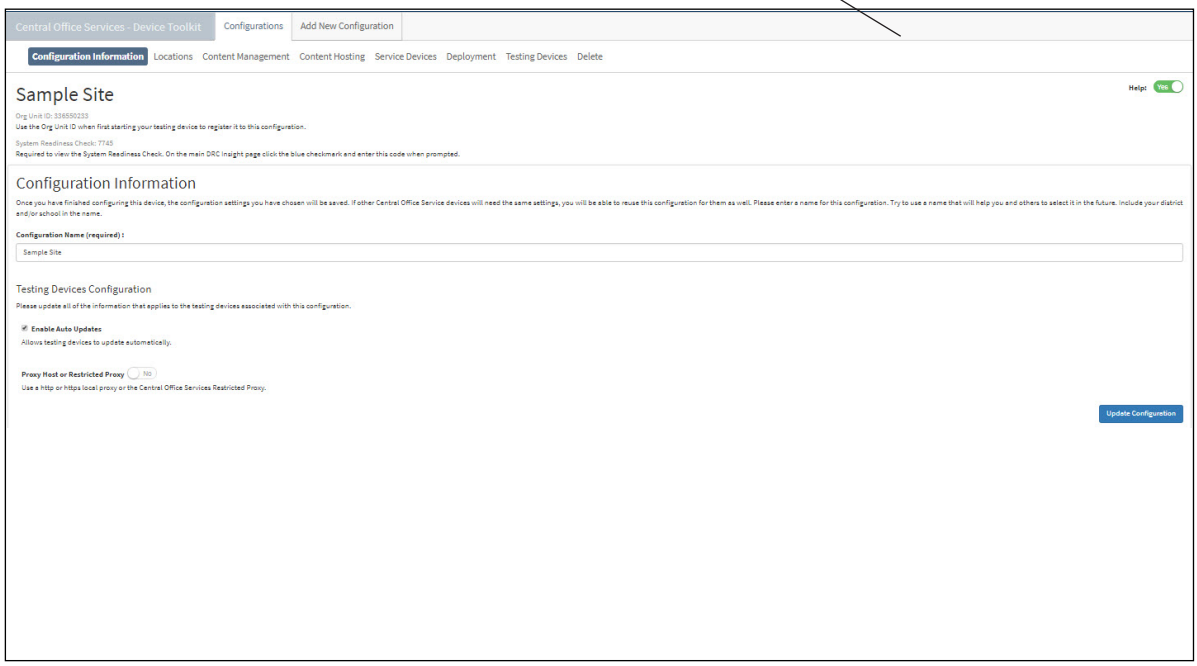
Each row on a page displays a configuration name with one or more icons indicating the configured services, the number of devices using the configuration, and the number of locations that were configured.

- A CM icon (CM) indicates a device configured for Content Management.
- A CH icon (CH) indicates a device configured for Content Hosting.



Click the plus **(+)** sign to the left of a configuration name to see all of the devices that use the configuration and the location(s) where the devices are registered.

Click on the name of the configuration to display details of the configuration.



Managing Central Office Services

Introduction

This section describes the Configuration tab options you can use to manage your COS configurations and devices: **Configuration Information**, **Locations**, **Content Management**, **Service Devices**, **Deployment**, **Testing Devices,** and **Delete**.

The following is an alphabetical list of some of the major tasks you can perform using these options, cross-referenced to the topic where the task is described.

Testing Device Tasks

Task: Configure Testing Devices
Reference: “Configuring Testing Devices” on page 48

Task: Specify Testing Device Locations
Reference: “Working with Locations” on page 55

Task: View the Current Status of Testing Devices
Reference: “Working with Testing Devices” on page 65

Task: Move or Remove Testing Devices
Reference: “Moving and Removing Testing Devices” on page 66

Task: Add Testing Devices
Reference: “Adding Testing Devices by Device ID” on page 68

Task: View Log Files
Reference: “Viewing Testing Device Log Files” on page 69

Task: Deploy Files for Mass Configuration of Testing Devices (Silent Installation)
Reference: “Creating a Deployment File for Testing Devices” on page 72

COS SD Tasks

Task: View the Current Status of COS SDs
Reference: “Working with Service Devices” on page 59

Task: Add, Remove, or Validate COS SDs
Reference: “Adding, Removing, and Validating Service Devices” on page 60

Task: Rename or Delete COS SDs
Reference: “Renaming or Removing Service Devices” on page 63

Task: Set Up a Pool of COS SDs
Reference: “Creating COS SD Pools” on page 76

Task: Deploy Files for Mass Configuration of COS SDs (Silent Installation)
Reference: “Using a Deployment File to Add COS Service Devices to a Configuration” on page 85

COS Configuration Tasks

Task: Edit and Maintain Configurations
Reference: “Managing Configurations” on page 54

Task: Delete Configurations
Reference: “Deleting Configurations” on page 73

Task: Set Up a Simple COS configuration without COS SDs
Reference: “Creating New Configurations” on page 74

Other Tasks

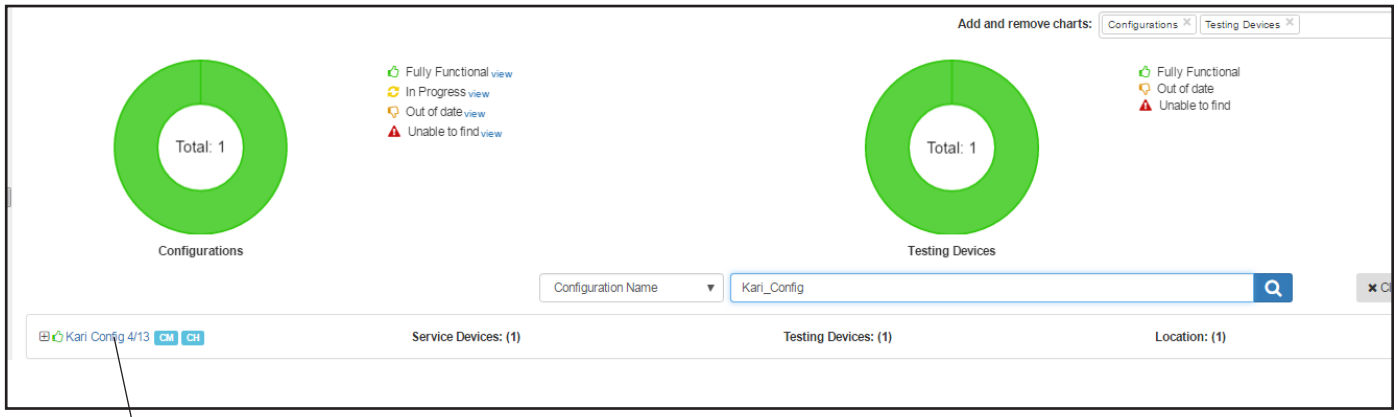
Task: Manage Test Content
Reference: “Working with Content Management” on page 57

Task: Manage Content Hosting*
Reference: “Working with Content Hosting” on page 58

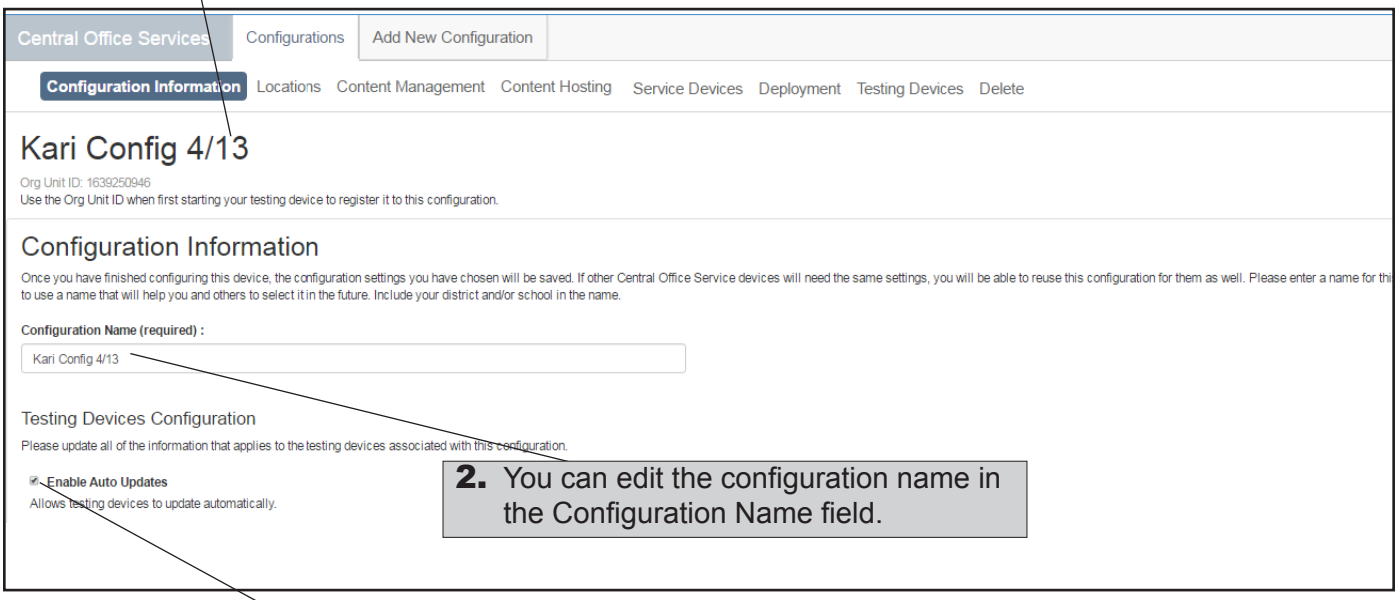
******The Add Content Source functionality of Content Hosting is not available for the initial release of COS*

Configuring Testing Devices

This topic describes how to use the COS - Device Toolkit to configure your testing devices.



1. Click on the configuration name in the Configurations tab of the COS dashboard. The Configuration Information page displays for the configuration. From this page, you can specify various configuration settings.



2. You can edit the configuration name in the Configuration Name field.

3. To enable automatic INSIGHT software updates, select **Enable Auto Update**.

- If you select Enable Auto Update, DRC updates the INSIGHT software automatically.
- If you do not select Enable Auto Update, DRC notifies you whenever an update to the INSIGHT software is available and you must update the software manually.

Configuring Testing Devices (cont.)

4. The next step in the process, specifying a proxy host or a restricted proxy host for DRC INSIGHT to use, is optional. If you do not need to perform this step, skip to step 5.

Important: Many sites do not use a proxy host or a restricted proxy host.

A proxy host is a device—such as a server or COS SD. When DRC INSIGHT needs to send or receive data to/from DRC, it does so through the proxy host.

A restricted proxy host is used to channel data, such as test responses, from a testing device to a COS SD over the LAN only, which prevents the testing devices from accessing the Internet.

Note: To specify a restricted proxy host, a COS SD must be associated with the configuration.

If you are unsure whether your site uses a proxy host or a restricted proxy host, contact your site or network administrator.

If you need to specify a proxy host or restricted proxy host for DRC INSIGHT, what you do depends on whether a COS SD is associated with the configuration.

- If no COS SD is associated with the configuration, you may specify a proxy host only. The COS - Device Toolkit interface displays the option shown in step 4A. Perform step 4A by specifying a path to the proxy host and then complete step 5.
- If one or more COS SDs are associated with the configuration, you may specify a proxy host or a restricted proxy host. The COS - Device Toolkit interface displays the options shown in steps 4B–4D. Skip to step 4B, perform the particular steps that apply to your testing setup, and then perform step 5.

4A. If no COS SD is associated with the configuration:

To specify a proxy host, toggle the Proxy Host option to **Yes** and enter the server name (or IP address) and port number (separated by a colon), followed by a forward slash (/), in the Proxy Path field.

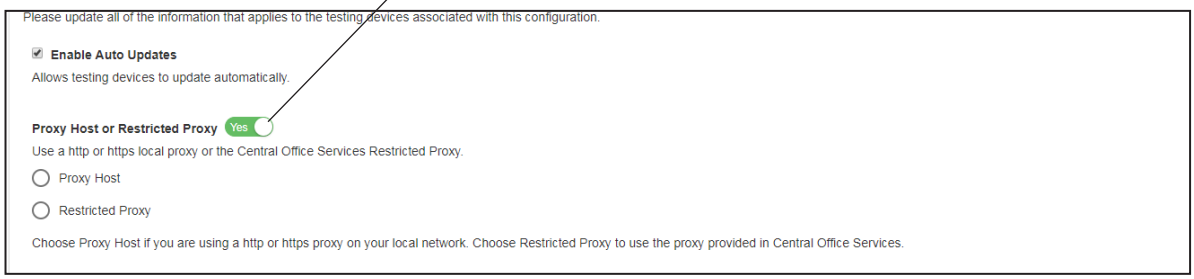
Note that the path to this proxy host should match the proxy host path you specified when you installed COS on the device (if necessary, refer to the appropriate COS installation section).

When you are finished, skip to step 5.

Configuring Testing Devices (cont.)

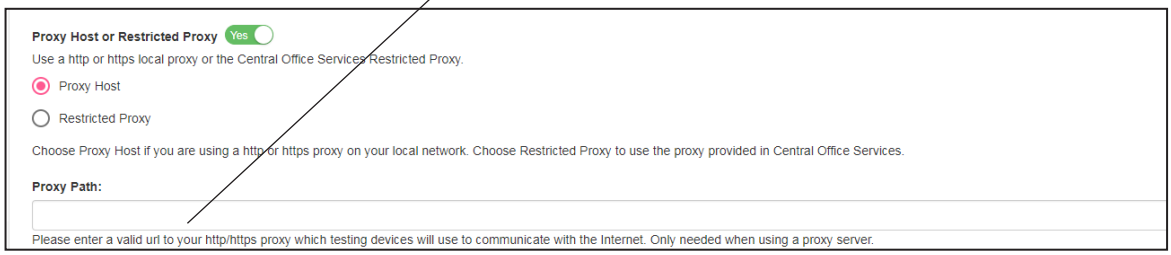
4B. If one or more COS SDs are associated with the configuration:

To specify a proxy host or a restricted proxy host, move the **Proxy Host** or **Restricted Proxy** toggle to **Yes.**



4C. To specify an HTTP proxy host, select the **Proxy Host** radio button and enter the server name (or IP address) and port number (separated by a colon), followed by a forward slash (/), in the Proxy Path field.

Note that the path to this proxy host should match the proxy host path you specified when you installed COS on the device (if necessary, refer to the appropriate COS installation section).

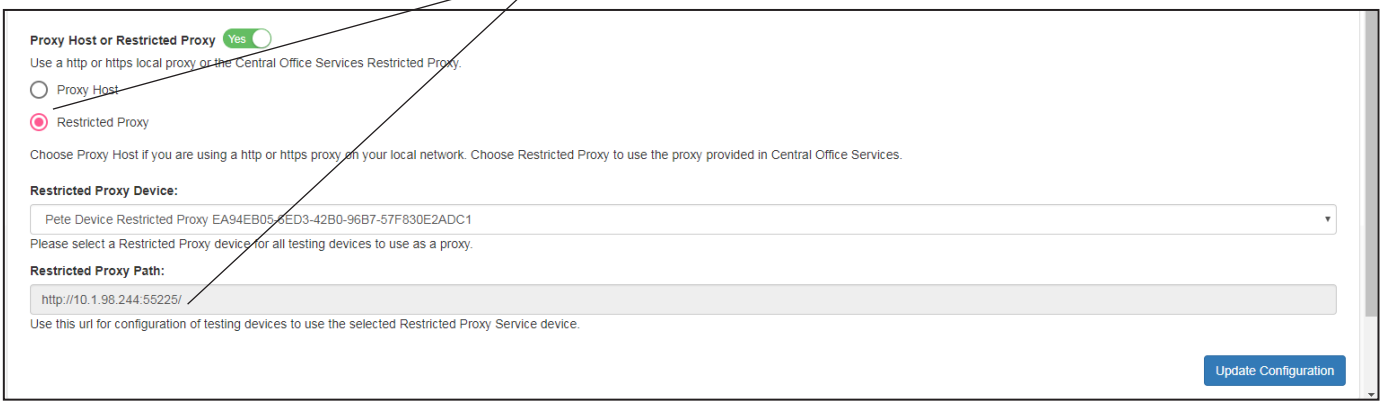


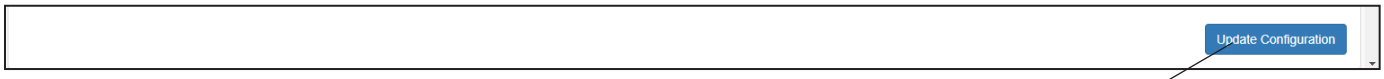
Configuring Testing Devices (cont.)

4D. To specify an HTTP restricted proxy host, select the **Restricted Proxy** radio button. Using the Restricted Proxy option causes the specified COS SD to become a proxy host for INSIGHT.

- If only one COS SD is associated with the configuration, the Restricted Proxy Path field (display-only) is automatically populated with the COS SD's information.
- If more than one COS SD is associated with the configuration, you must select a COS SD from the Restricted Proxy Device drop-down menu that displays.

Important: Sites that use restricted proxy hosts typically have special security requirements for testing. Before configuring a restricted proxy host, contact your site administrator to verify that your testing site is set up to use this technology.





5. Click **Update Configuration** to save your changes or **Cancel** to cancel them. A message displays indicating whether the configuration was updated successfully.

Important: The final part of the process of configuring testing devices occurs when you register the testing device with DRC INSIGHT after INSIGHT is installed on the device.

For standard testing environments, the details of registering testing device with INSIGHT are covered in *Volume III: DRC INSIGHT*.

For restricted proxy environments, the process of registering testing devices with INSIGHT varies depending upon the type of Internet environment the testing site is using. If your testing site is using a restricted proxy environment, see "Registering Testing Devices in a Restricted Proxy Environment" on page 52 for more details about how to register your testing devices with DRC INSIGHT to test using a restricted proxy host.

Registering Testing Devices in a Restricted Proxy Environment

Important: The following topic only applies to sites that have specified a restricted proxy host, as shown in steps 4B–4D in the *Configuring Testing Devices* topic.

There are two main types of restricted proxy environments in which a testing site registers testing devices with DRC INSIGHT—environments that provide temporary Internet access to configure testing devices and environments that do not provide Internet access to testing devices. The process for registering DRC INSIGHT with testing devices is different for these two environments.

Note: If INSIGHT is not registered with the restricted proxy host, INSIGHT will not use the restricted proxy host setting.

Environment A: Temporary Internet Access to Configure Testing Devices

For this testing environment each testing device has temporary Internet access while INSIGHT is being installed and the restricted proxy feature is being configured. After the installation and configuration of DRC INSIGHT and the restricted proxy feature is complete, the temporary Internet access is removed.

Important: In this environment, after the site administrator has updated the COS configuration by specifying the restricted proxy feature (steps 4B–5 on the previous pages), they can manually start INSIGHT on each testing device in the configuration and then exit INSIGHT to register INSIGHT with the restricted proxy host.

After INSIGHT is registered with the restricted proxy host, INSIGHT will use the restricted proxy host whenever it is started.

Environment B: No Internet Access for Testing Devices

For this testing environment, the testing device never has Internet access—before, during, or after INSIGHT and the restricted proxy feature is being configured.

Important: In this environment, after the site administrator has updated the COS configuration by specifying the restricted proxy feature (steps 4–5 on the previous pages), they must create deployment files and distribute the updated configuration.

The deployment files have the scripts for installing INSIGHT with the restricted proxy setting. After these files have been deployed to the testing devices, when INSIGHT is initially launched, the device will register with its ORG Unit without needing Internet access and INSIGHT will use the restricted proxy host whenever it starts.

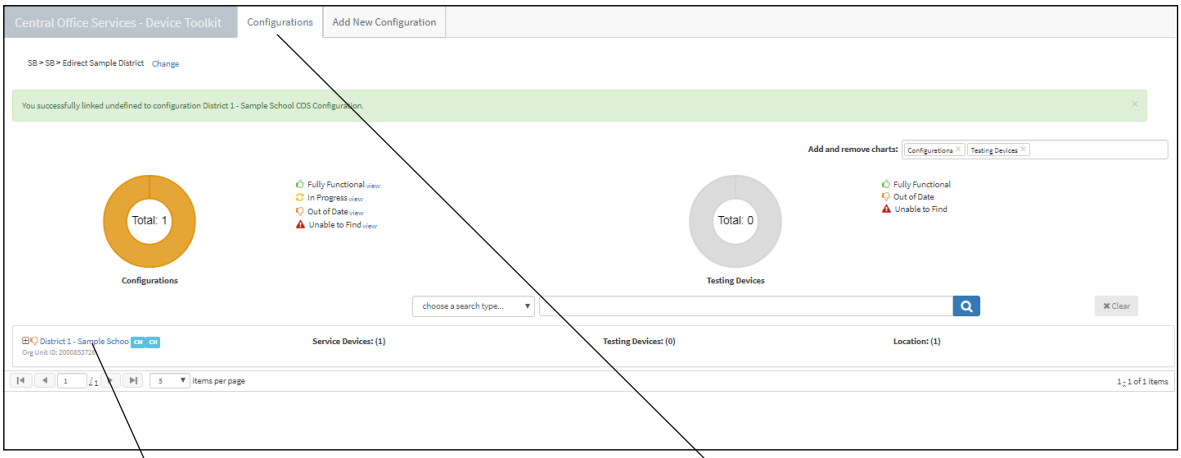
For details about this process, see the topics “COS Testing Device Deployment Files” on page 70, “Silent Installation of Testing Devices” on page 71, and “Creating a Deployment File for Testing Devices” on page 72).

Managing Configurations

You can click on a configuration name in the Configurations tab to display the options available to manage the configuration. When the Configurations tab re-displays, you can select from the following options:

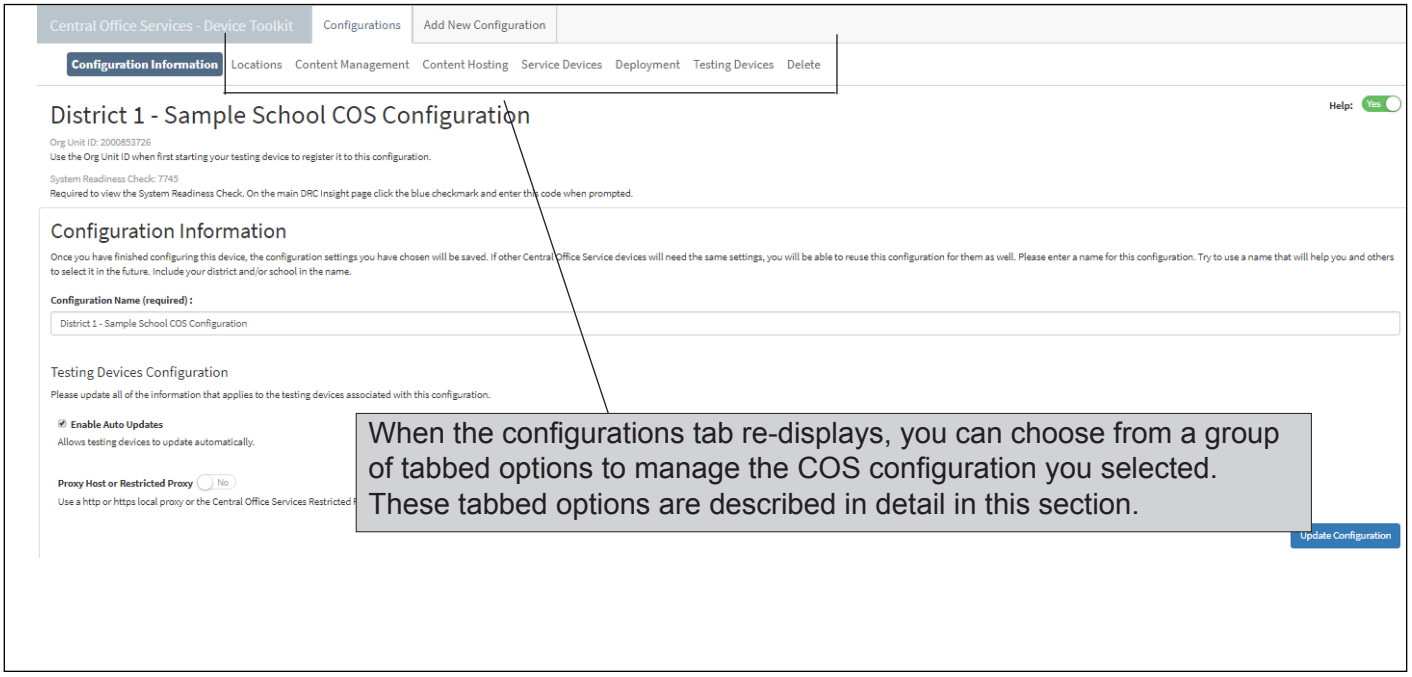
- Configuration Information
- Locations
- Content Management
- Content Hosting
- Service Devices
- Deployment
- Testing Devices
- Delete

These options and the functions that you can perform using each one are described in this section.



To display the configuration management options, click on the configuration name in the Configurations tab.

Click on the **Configurations** tab to refresh the dashboard and reset it to its default values.



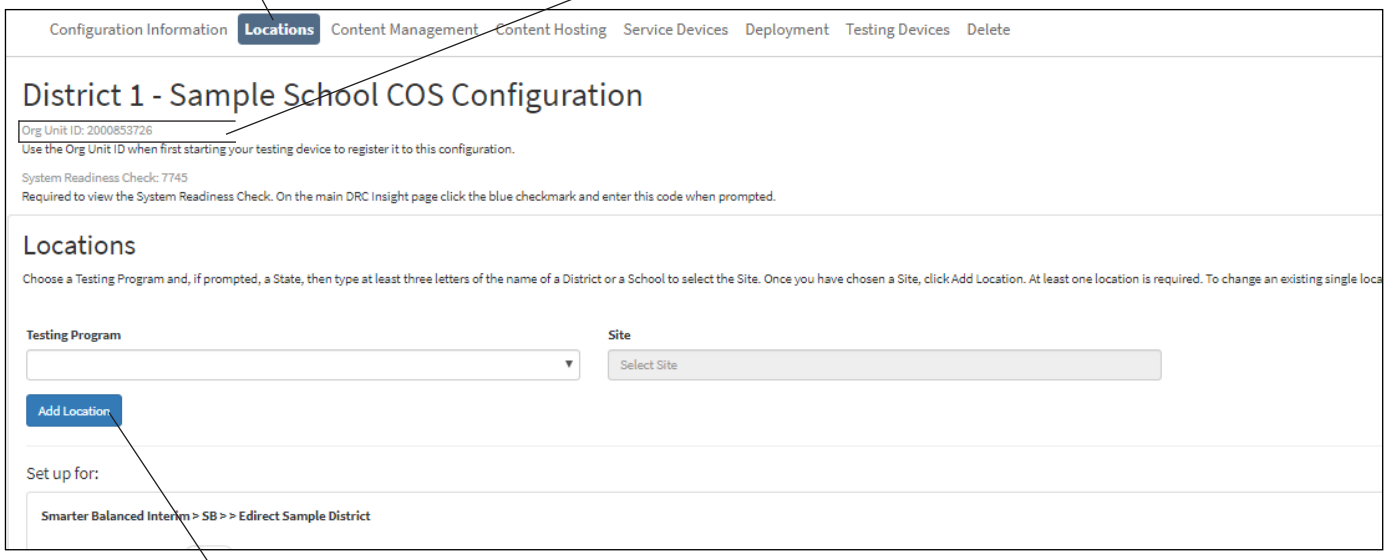
When the configurations tab re-displays, you can choose from a group of tabbed options to manage the COS configuration you selected. These tabbed options are described in detail in this section.

Working with Locations

Use the Locations tab to view, add, or remove locations where testing devices are registered and to locate the ORG Unit ID for the configuration. For COS, the term location is defined as a site within a testing program. For example, a specific school within the state testing program.

1. From the Configurations tab, click **Locations** to display the Locations page. This page shows the location(s) where the testing devices are registered.

You can copy the ORG Unit ID from the Locations page. You use this ORG UNIT ID when you register a testing device with this configuration to test with INSIGHT.

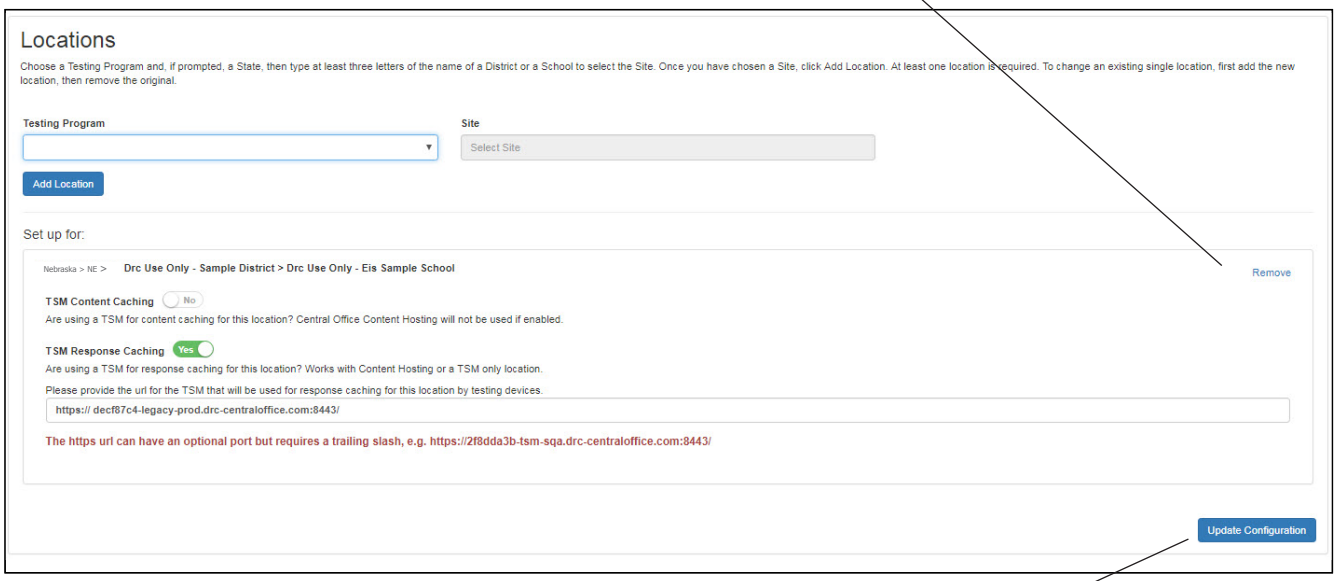


2. To add a location, select it using the Testing Program drop-down menu and the Site menu (enter three or more letters of the site name) and click **Add Location**.

Working with Locations (cont.)

Important: Content caching is available only if you are not using COS SDs and Content Management.

3. The Locations page re-displays with the location added. To remove a location, click **Remove**.



4. When you are finished making updates, click **Update Configuration**. A message displays confirming that the configuration was updated.

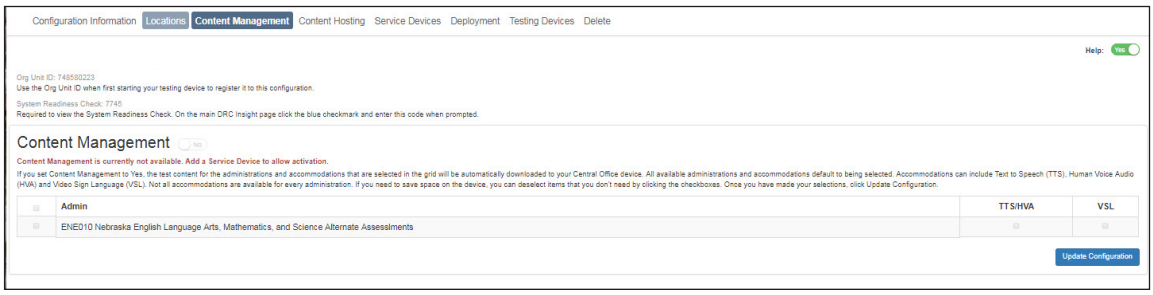
Working with Content Management

Use the Content Management tab to enable/disable Content Management and change the selected administrations and accommodations.

Content Management is the COS service used to manage the delivery of test content to each site that needs content caching. At least one COS SD must have Content Management enabled to manage the download of test content from DRC cloud-based storage.

Sites can download only the test content they need to reduce download times. For example, a site could download test content for only one administration.

1. From the Configurations tab, click **Content Management** to display the Content Management page. This page indicates whether Content Management was selected for the configuration.



2. If Content Management was selected, the selected administrations and accommodations are also displayed. You can enable or disable Content Management using the Content Management **Yes/No** toggle. You also can use the checkboxes to change the selected administrations and accommodations.

3. To save your changes, click **Update Configuration**.

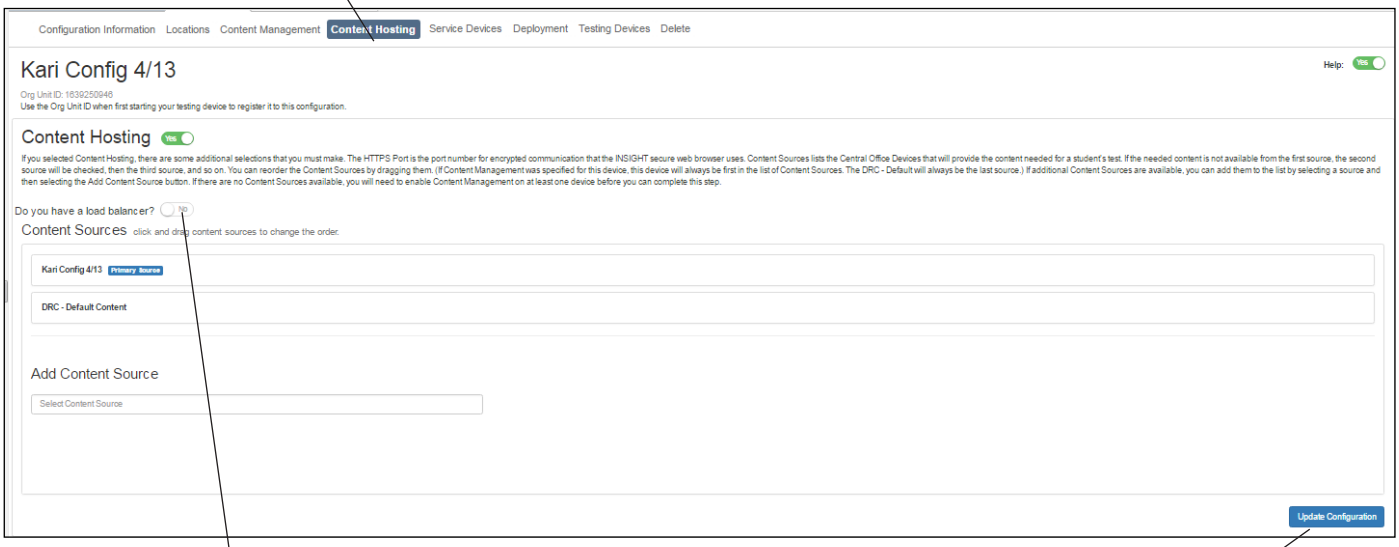
Note: The changes you make may cause more content to be downloaded to the COS SDs in the configuration, if necessary.

Working with Content Hosting

Use the Content Hosting tab to enable/disable Content Hosting and to enable load balancing. Content Hosting is the COS service used to provide content to student testing devices. Content Hosting authenticates content requests, decrypts content, and aggregates items into forms. To use content Hosting, a COS SD must be configured.

Important: Multiple content sources are currently not supported for COS. COS uses the first content source only.

1. From the Configurations tab, click **Content Hosting** to display the Content Hosting page. This page indicates whether Content Hosting is enabled and the configurations selected.

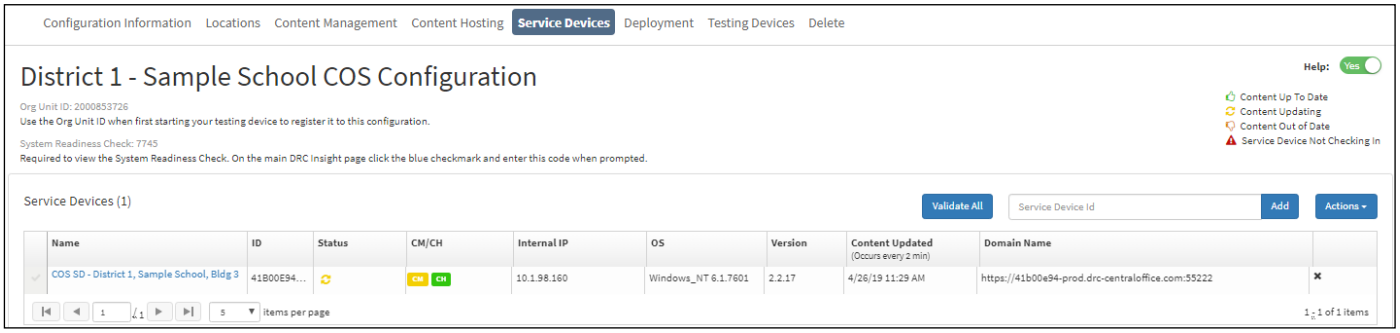


2. To use the **Do you have a load balancer** option, see “Enabling Load Balancing” on page 80.

3. You can enable or disable Content Hosting on this page. To save your changes, click **Update Configuration**.

Working with Service Devices

Select **Service Devices** from the Configurations tab to view the current status of the COS SD(s) associated with the configuration (a configuration can support multiple Services Devices). You also can add COS SDs to, or remove them from, a configuration.



The table below describes the fields displayed on the Service Devices page.

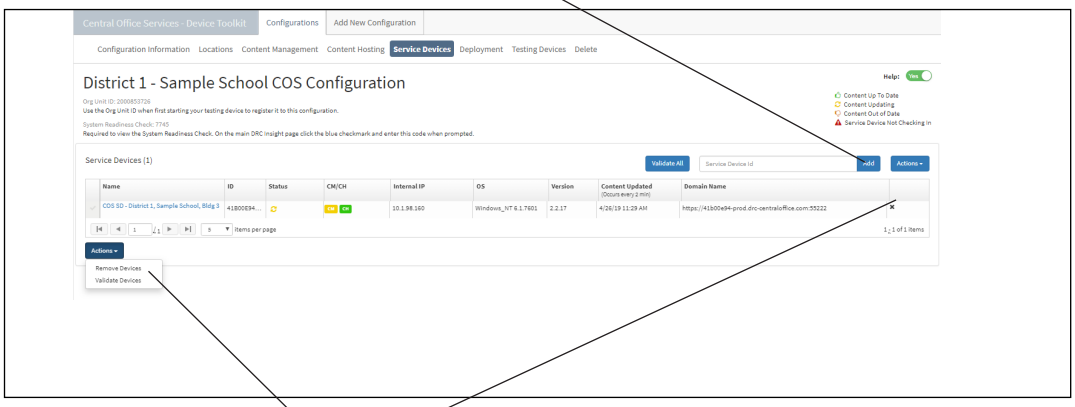
Field	Description
Name	The name given to the COS SD when it was configured.
ID	The unique alphanumeric Device ID that COS created for the COS SD
Status	The current status of the COS SD. The possible statuses are: **Icon** — **COS SD Status** — **Description** Fully Functional — The COS SD is in use or ready for use Unable to Find — COS cannot "see" the COS SD In Progress — The COS SD is currently uploading or downloading test content Out of Date — The test content on the COS SD is out of date
CM/CH	The CM (CM) and CH (CH) icons indicate whether the COS SD is configured for Content Management and Content Hosting. The color of the icon indicates the status of the COS SD. **Color** — **Status** Green — Fully Functional Red — Unable to Find Yellow — In Progress Orange — Out of Date • If neither service is configured, neither icon displays • If one service is configured, the appropriate icon displays • If both services are configured, both icons display
IP	The internal IP address of the COS SD.
Last Seen	The date and time that the COS SD last pinged DRC to check for updates or changes.
Domain Name	A unique, identifying URL generated on the COS device.
x	The remove COS SD option. Click the **x** to remove the COS SD from the configuration. A dialog box displays to confirm the removal.

Adding, Removing, and Validating Service Devices

You can use the COS - Device Toolkit to edit configurations by adding or removing COS SDs, and to manually validate the testing content of COS SDs. You can add or remove COS SDs to maximize the efficiency of your testing environment as testing needs change.

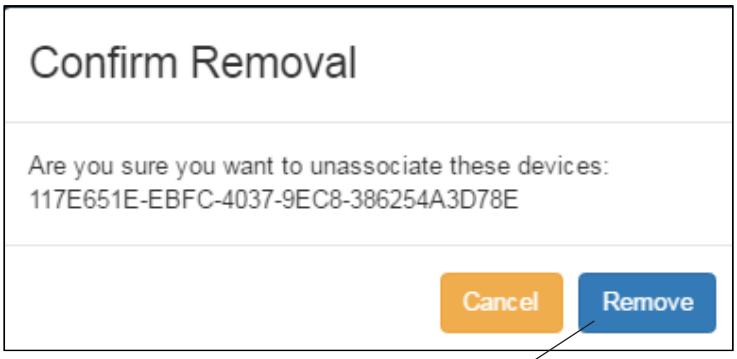
1. To add an COS SD to a configuration, select **Service Devices** for the correct configuration, enter the COS SD Id in the Add field, and click **Add** to add the COS SD to the configuration.

Important: A COS SD can only be associated with one configuration. If the COS SD you want to move is associated with a different configuration, you must remove it from its current configuration before adding it to the new configuration. Remember to keep track of its Device ID.



2. To remove multiple COS SDs, select **Service Devices** for the correct configuration. Select the devices by clicking the checkmark next to each device (the device is highlighted), click the **Actions** menu, and click **Remove Devices**.

3. Alternatively, to remove a single COS SD, you can click the **x** to the right of the device to remove it.



4. If you attempt to remove an COS SD, the Confirm Removal dialog box displays. Click **Remove** to remove the COS SD from the configuration or **Cancel** to cancel the removal.

Adding, Removing, and Validating Service Devices (cont.)

You can manually validate one or more COS SDs to verify that they have the current testing content and that their content is viable.

Note: The validation process runs automatically each night on all COS SDs that are not turned off.

1. You can manually validate the content of one or more COS SDs.

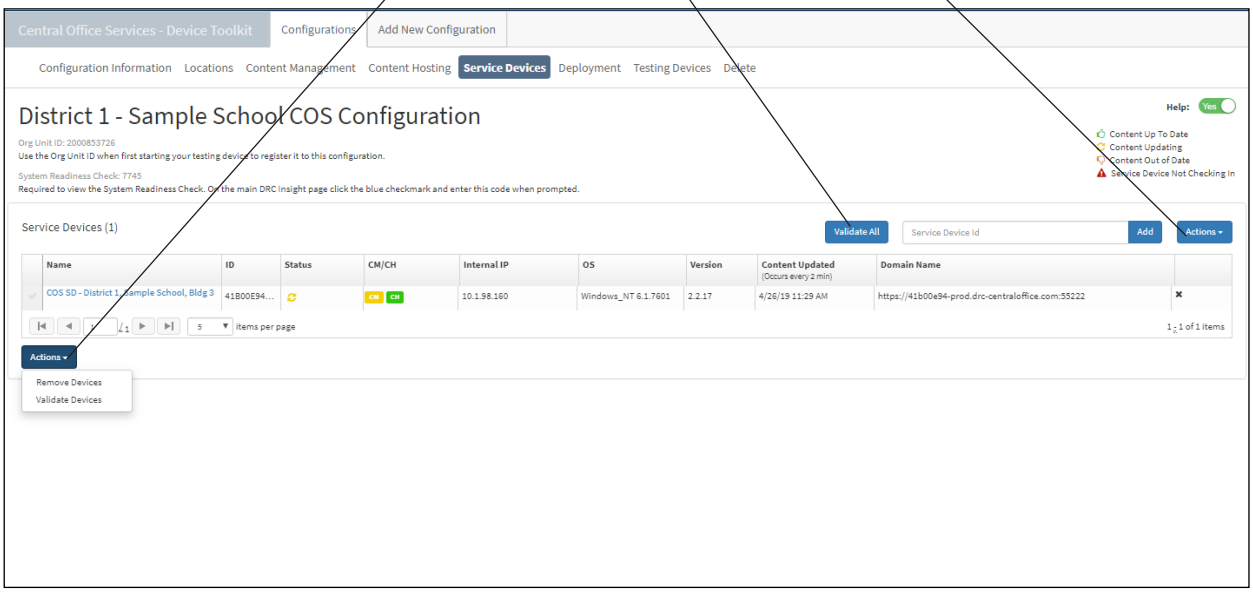
a. To validate the content of a single COS SD, locate the COS SD you want to validate either by using the Search feature or by selecting **Service Devices** for the correct configuration and navigating through the Service Devices page. Enter a checkmark next to the device and select **Validate Devices** from the **Actions** menu.

b. To validate the content of multiple COS SDs, select **Service Devices** for the correct configuration, select the COS SDs by clicking the checkmark next to each device (each device selected is highlighted), and select **Validate Devices** from the **Actions** menu.

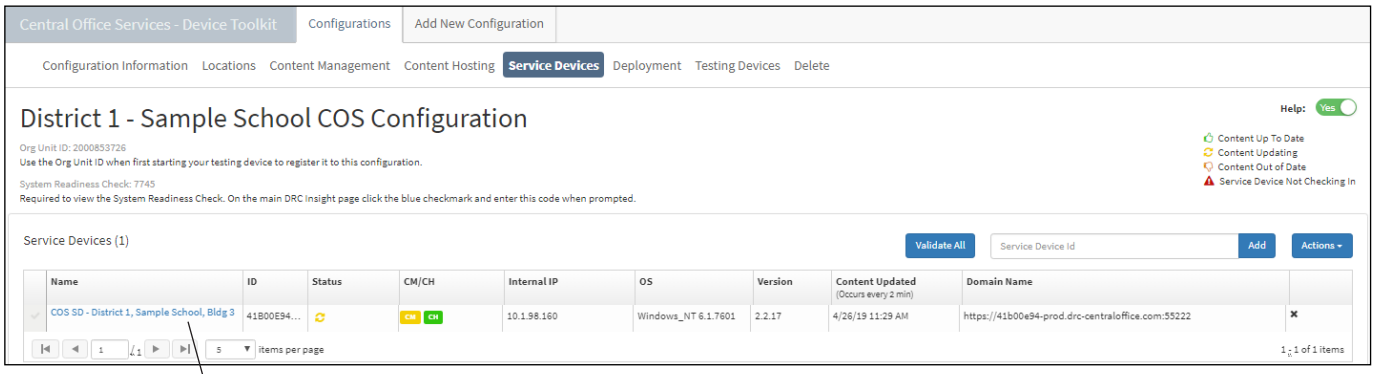
c. To validate the content of all the COS SDs in the configuration, click **Validate All** without selecting specific COS SDs.

Notes:

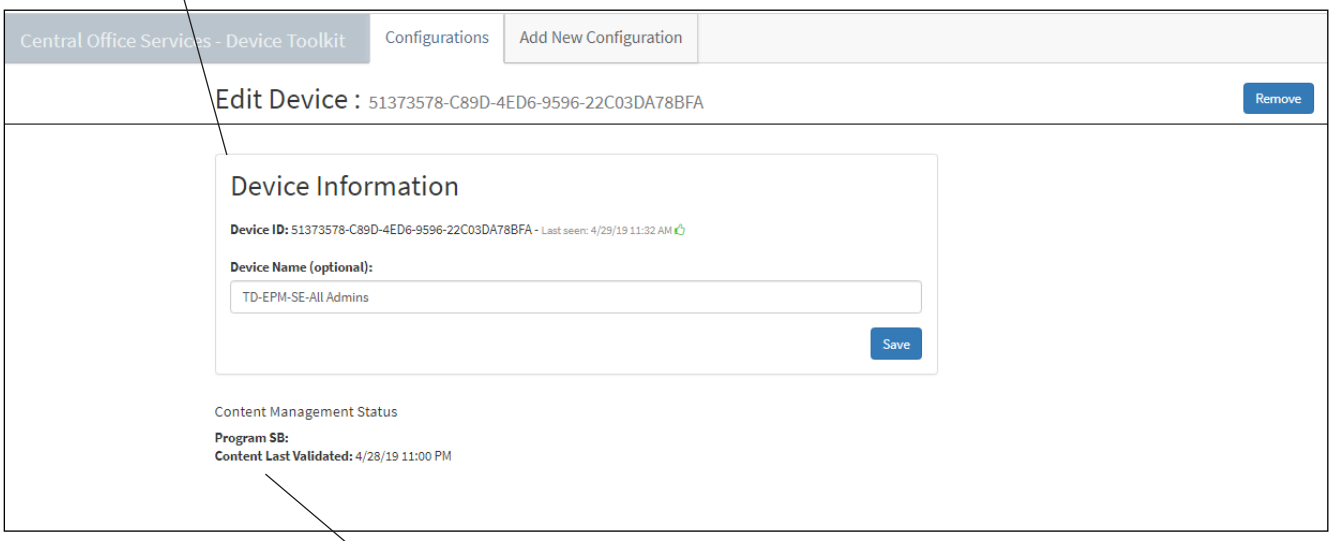
- The status icon changes to yellow next to each COS SD affected and a user message displays indicating that COS SD validation has been requested. The icon remains yellow until the validation process is complete.
- The COS SD Details page lists a date/timestamp indicating the last time the device's content was validated.
- If files are missing from the COS content_fs directory, the Validate All process downloads the missing files.
- The Validate All process detects corrupted files and overwrites these files with uncorrupted files.



Adding, Removing, and Validating Service Devices (cont.)



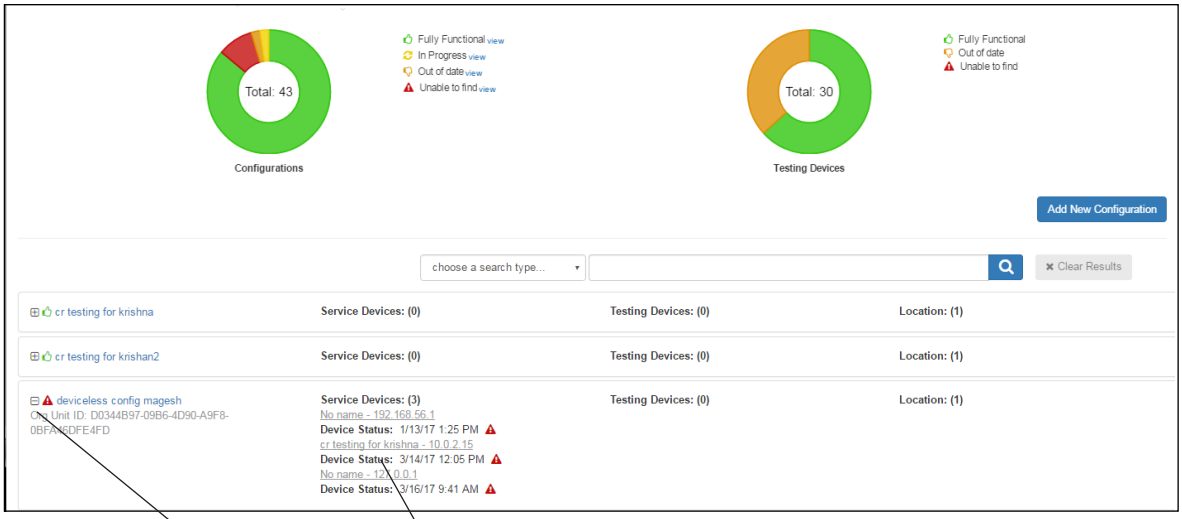
2. To display the validation history of the COS SDs in the configuration, click on the name of an COS SD in the **Name** field to display the Device Information page. This page lists information about the COS SD, including a date/timestamp indicating the last time the COS SD's content was validated.



3. From the Device Information page that displays, you can view validation information about all of the COS SDs, as well as name, rename, or remove the COS SD selected (see "Renaming or Removing Service Devices" on page 63).

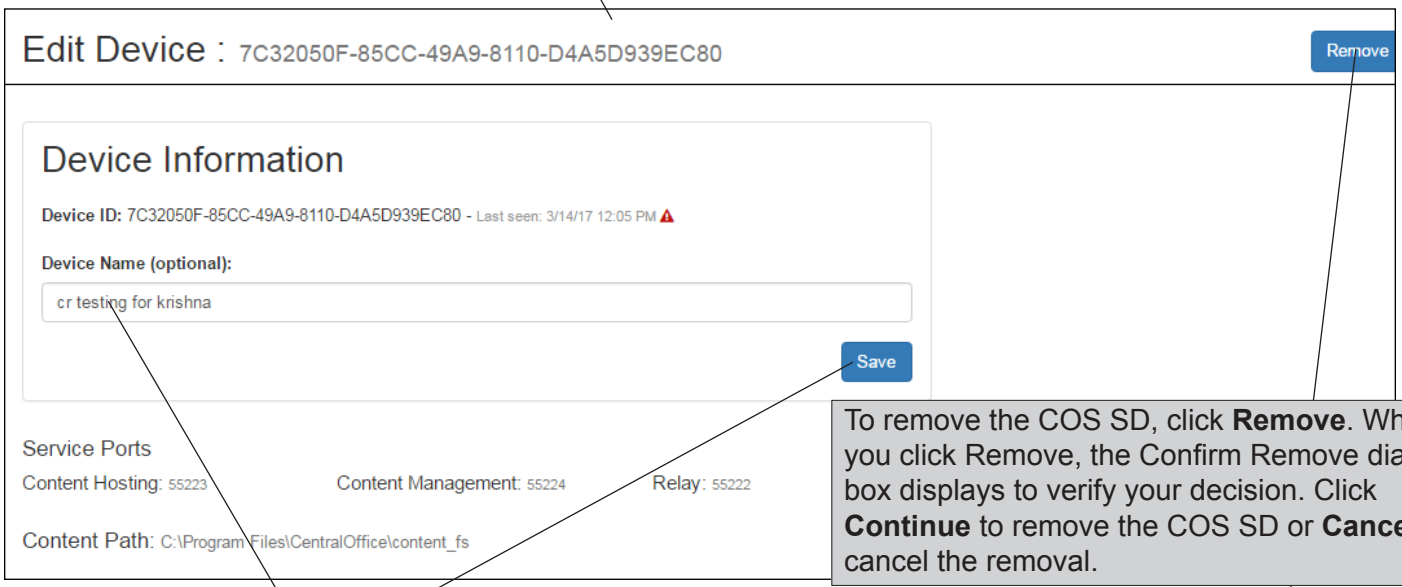
Renaming or Removing Service Devices

From the Configurations tab, you can quickly rename an COS SD or remove it from a configuration.



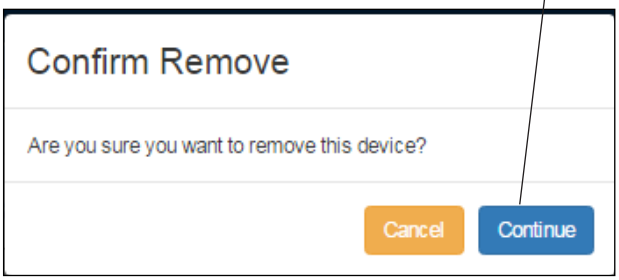
From the Configurations tab, click the underlined COS SD name to the left of the red or green CM or CH icons to display the Edit Device page. You can use this page to change the name of the COS SD or to remove the device from the COS database.

Note: You must have clicked the plus sign [+] on the left of the tab to expand the testing device information.



To remove the COS SD, click **Remove**. When you click Remove, the Confirm Remove dialog box displays to verify your decision. Click **Continue** to remove the COS SD or **Cancel** to cancel the removal.

To rename the COS SD, enter its new name in the Device Name field and click **Save**.



COS SD Deployment Files

You can use COS to create a deployment file, a container file (.zip file) that holds files containing configuration information for Windows, Mac, and Linux COS SDs. You can use the deployment file to create COS SDs using an existing configuration that does not use a TSM for content caching. You use this file to configure your COS SDs silently (non-interactively or in batch mode).

Note: Please ignore the Linux information if your state does not test using Linux.

The following is a list of the files contained in a COS SD deployment file and a brief description of their content.

Readme.txt
Contains commands for silently installing COS SDs on Windows, Mac, and Linux machines

Silent.cmd
Contains configuration information for Windows machines

Silent–mac.sh
Contains configuration information for Mac machines

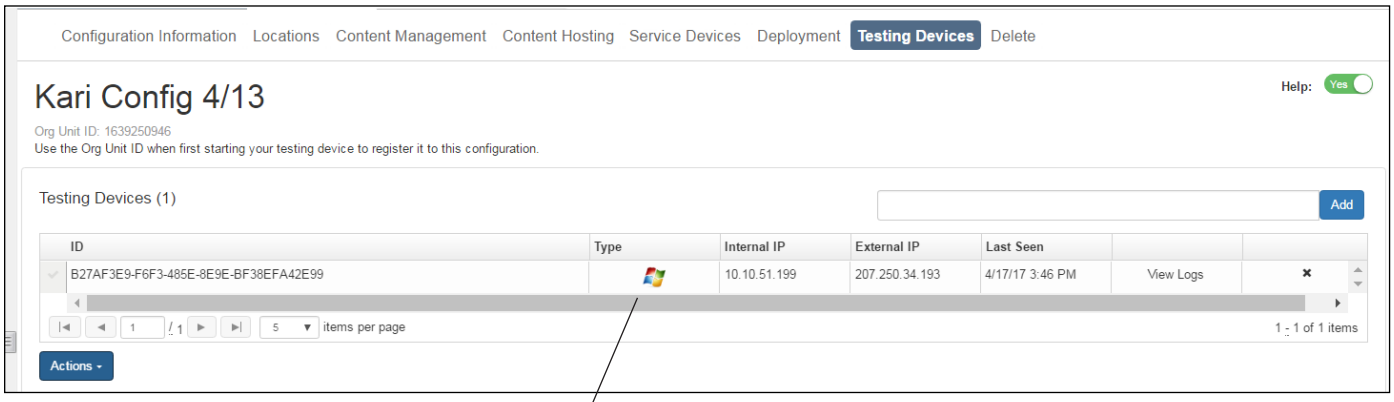
Silent–linux.sh
Contains configuration information for Linux machines

Silent.qs
Contains configuration information for Windows, Mac, and Linux machines

Important: Typically, you would use a deployment file to create a pool of COS SDs and use them in a configuration that has Content Management and Content Hosting enabled. This pool of COS SDs can be a load-balanced pool. For details, see “Creating COS SD Pools” on page 76.

Working with Testing Devices

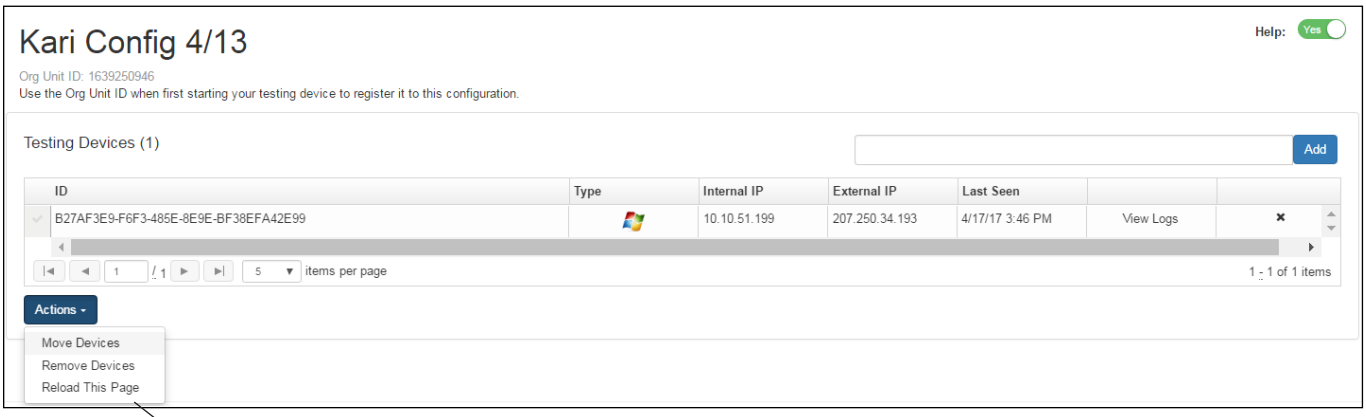
Select a configuration from the Configurations tab and select the **Testing Devices** tab to view the list of testing devices that are currently part of the configuration. You can move testing devices, remove testing devices, and reload (refresh) the display. In addition, you can edit the configuration by adding or deleting testing devices, and you can view the log files for a testing device.



Field	Description
ID	The unique alphanumeric Device ID that COS created for the testing device
Type	An icon representing the testing device type. The icons and their respective testing device type or operating system are shown below. **Icon** — **Testing Device Type** Chromebook device iPad Linux Mac (OS X and macOS) Windows
IP	The internal IP address of the testing device
Last Seen	The date and time (CT) the testing device was last used for INSIGHT testing
x	The remove testing device option. Click the **x** to remove the testing device from the configuration. A dialog box displays to confirm the removal.

Moving and Removing Testing Devices

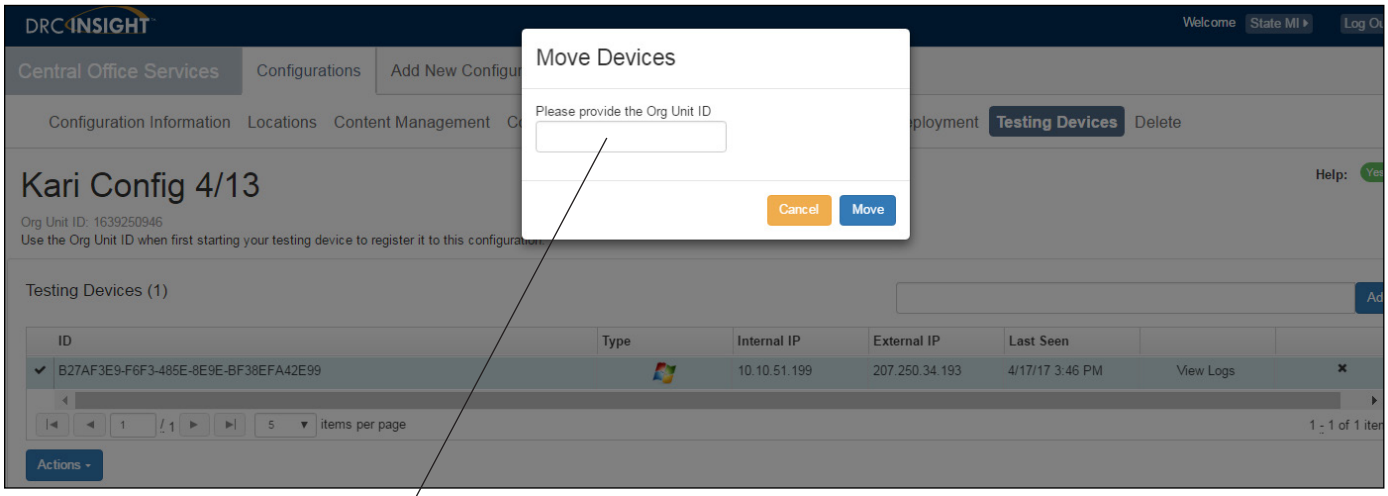
You can use the Actions menu on the Testing Devices page of the COS - Device Toolkit to move testing devices between configurations, remove testing devices from configurations, and reload (refresh) the page. You can move and remove testing devices to efficiently organize your testing devices and to meet changing testing needs. When you remove a device from a configuration, the device exists, but is no longer associated with the configuration (you can copy and save the Device ID to add the device to another configuration).



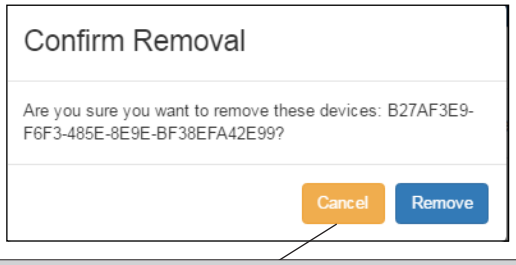
1. Select **Testing Devices** for the correct configuration. To move, remove, or reload testing devices, select the device(s) by clicking the checkmark next to each device, click the **Actions** menu, and select the correct option.

Option	Description
Move Devices	Moves the selected testing device(s) to a different configuration. You are prompted to supply the Org Unit ID for the target configuration.
Remove Devices	Removes the selected testing device(s) from the current configuration. A dialog displays to confirm the removal. You also can remove a device by clicking the **x** in the right-most device field. **Note:** Remember to copy or save the device's Device ID if you plan to add the device to another configuration.
Reload This Page	Refreshes the display using the latest information about the current testing devices.

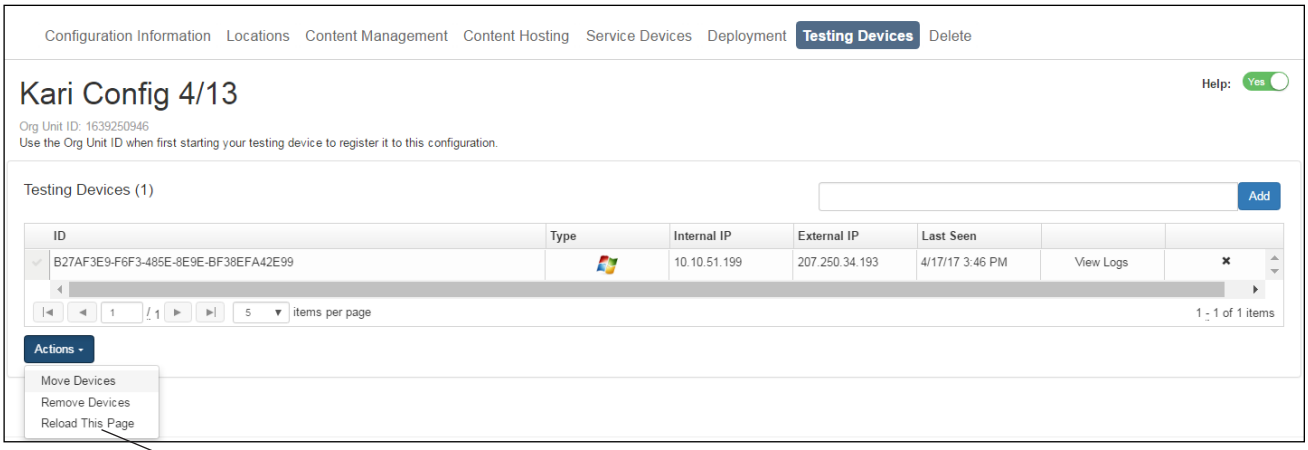
Moving and Removing Testing Devices (cont.)



2. If you attempt to move a device, the Move Devices dialog box displays. Enter the testing device's target ORG Unit ID and click **Move** to move the testing device, or **Cancel** to cancel the move.



3. If you attempt to remove a device, the Confirm Removal dialog box displays. Click **Remove** to remove the testing device from the configuration or **Cancel** to cancel the removal.



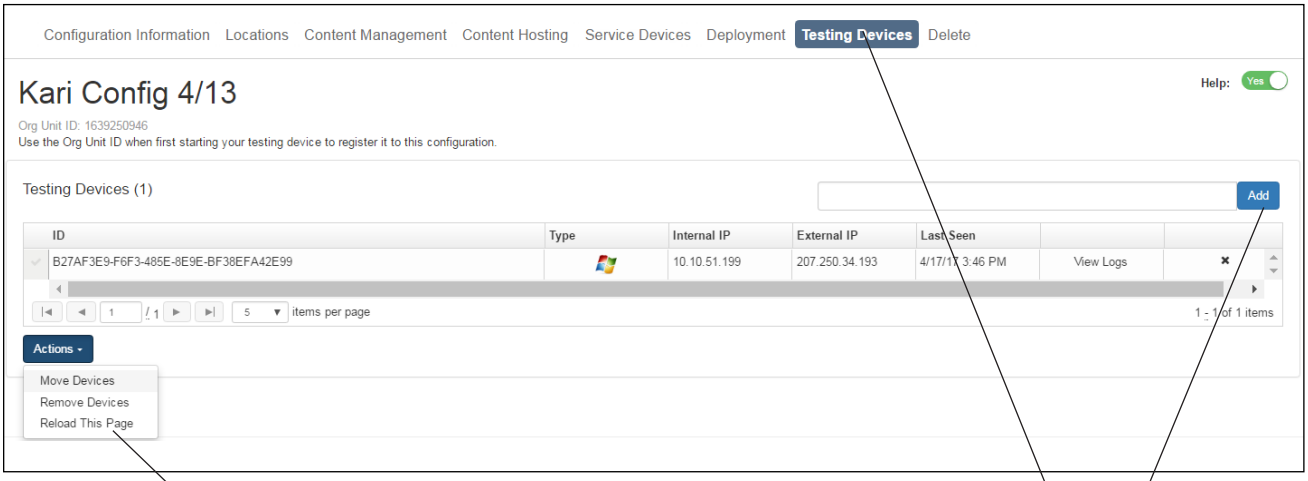
4. After you move or remove a device, you can click **Reload This Page** from the Actions menu to refresh the display with the latest information and to verify any changes that you made.

Adding Testing Devices by Device ID

You can use the COS - Device Toolkit to add testing devices to a configuration to organize your testing devices for testing.

To add a testing device, you must know the device's Device ID. If you do not know the Device ID, you can locate it by starting the System Readiness Check on the device or from the list of testing devices in a configuration where the testing device is currently located.

Note: There are other ways to add testing devices to an existing configuration. For example, you can enter the ORG Unit ID manually when you start INSIGHT on an unregistered device (see *Volume III: DRC INSIGHT*) and you can deploy testing devices to configurations silently (see "Creating a Deployment File for Testing Devices" on page 72).



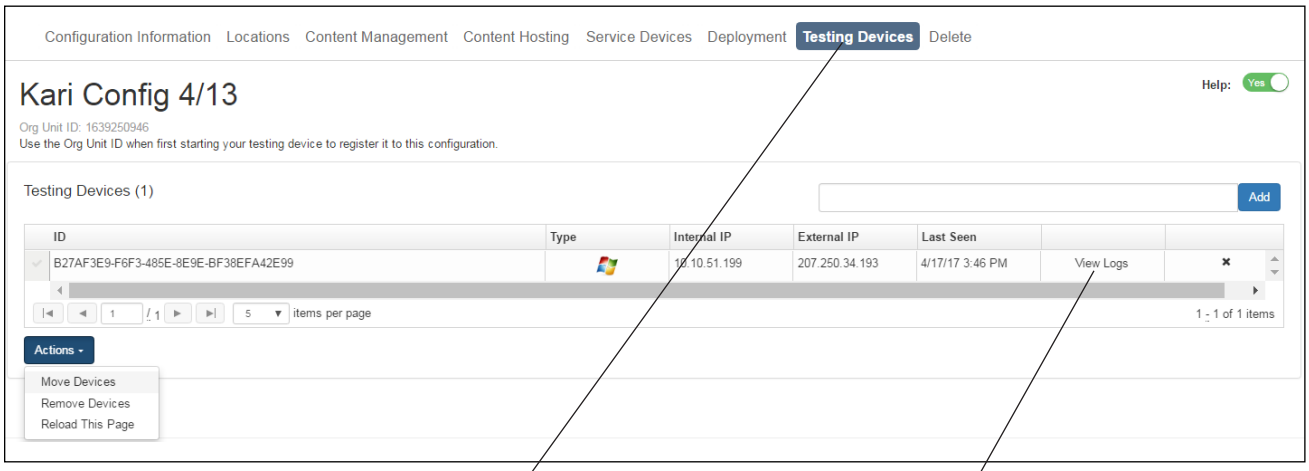
1. Select **Testing Devices** for the correct configuration, enter the Device ID of the testing device in the Add field, and click **Add** to add the testing device.

2. The Current Devices grid reappears with the testing device added to the configuration. (You may need to select **Reload This Page** from the **Actions** menu to refresh the display.)

Note: The Device ID is not the testing device's serial number.

Viewing Testing Device Log Files

You can use the COS log files to review system information about the testing devices assigned to a configuration. The log entries are stored for 30 days.



1. Select a configuration and select **Testing Devices**.

2. Click **View Logs** for the device whose log files you want to view.

3. System information about the device displays. You can view the time an incident was logged, the Device ID, and the message.

COS Testing Device Deployment Files

You can use the COS - Device Toolkit to create a deployment file (.zip file) that holds files containing configuration information for each testing device type (see the table).

Important: In the code shown below, INSIGHT uses a restricted proxy host located at http://10.200.2.59:55225 and an ORG Unit ID of 1265228949 for the testing devices. This code is an example only—depending on various factors, such as your Mobile Device Management (MDM) software—your configuration information could be very different.

File: Desktop.txt

This file contains example commands for silently installing INSIGHT on Windows, Mac, and Linux machines.

```
Windows
msiexec.exe /i DRC_INSIGHT_SETUP.msi  /qn  /lv  “install.log”  HTTPS_
PROXY=“http://10.200.2.59:55225”  OU_IDS=“1265228949”

Mac OS X
sudo   .drc_silent_install   -o  1265228949   -x  “http://10.200.2.59:55225”

Linux
sudo.sh ./silent_installer.sh -p http://10.2000.2.59:55225   -o  “1265228949”
```

File: Chromeos.json

This file contains configuration information for Chromebook devices.

```
{"ouIds":{"Value":["1265228949"]}}
```

File: DRCConfiguration.json

This file contains configuration information for Windows, Mac, and Linux machines. Silent installation information is available in the desktop.txt file.

```
{
   "config": {
      "httpsProxy": "http://10.200.2.59:55225"
   },
   "ouIds": [
      "1265228949"
   ],
   "toolkitUrl": "https://www.drcedirect.com/all/eca-device-toolkit-loader-ui/"
}
```

File: ios.plist

This file contains a silent installation command for iPad devices.

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE plist PUBLIC "-//Apple//DTD PLIST 1.0//EN" "http://www.apple.com/DTDs/
PropertyList-1.0.dtd">
<plist version="1.0">
<dict>
<key>ouIds</key>
<array>
<string>1265228949</string>
</array>
</dict>
</plist>
```

Silent Installation of Testing Devices

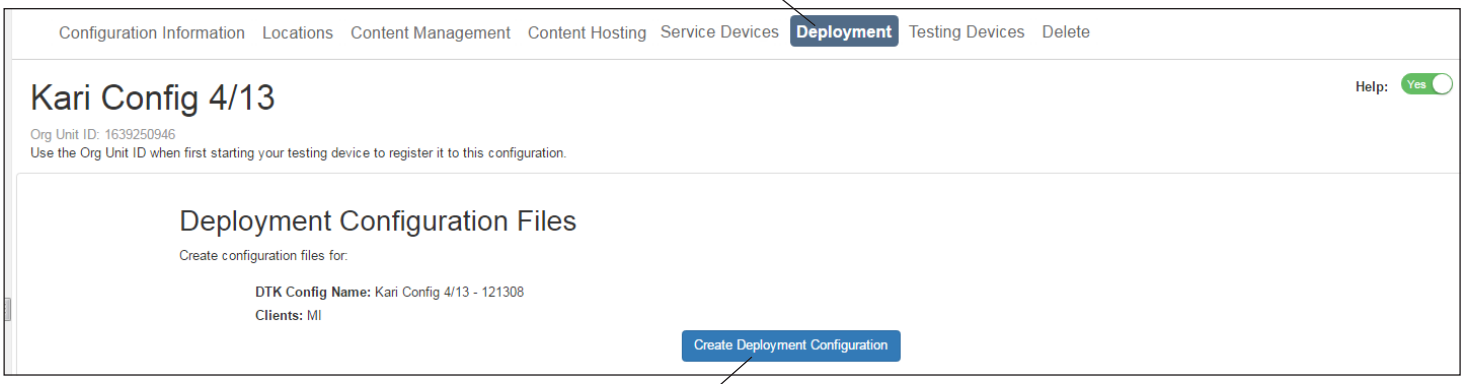
To install INSIGHT on your testing devices silently (non-interactively), download the container (.zip) file, extract the specific configuration files you need to install INSIGHT based on the type of devices you configured, and deploy the files to these devices (see "Creating a Deployment File for Testing Devices" on page 72).

Note: For details about the process of configuring, installing, deploying, and registering DRC INSIGHT on testing devices, see *Volume III: DRC INSIGHT*.

Creating a Deployment File for Testing Devices

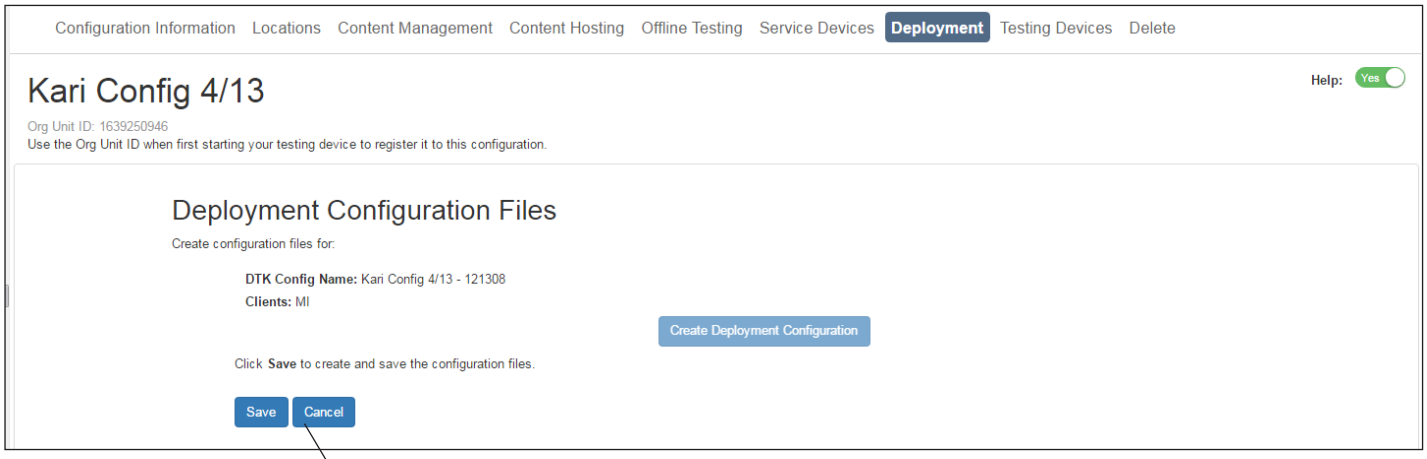
You can use the COS - Device Toolkit to create a deployment file for testing devices using an existing configuration. You use this file to configure your testing devices when you install INSIGHT silently (non-interactively or in batch mode).

1. Select a configuration from the Configurations tab and select the **Deployment** tab.



2. To create a deployment configuration file for testing devices, click **Create Deployment Configuration**.

Note: This option is available from every type of COS configuration.



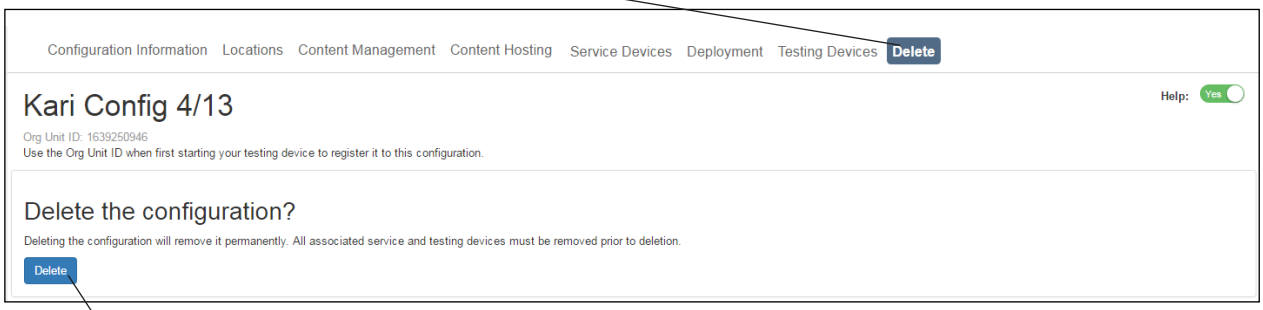
3. Click **Save** to create a configuration file or **Cancel** to cancel the process.

4. When you click **Save**, the deployment configuration file is downloaded to your Downloads folder. For a description of the contents of this file, see "Central Office Testing Device Deployment Files" on page 70.

Deleting Configurations

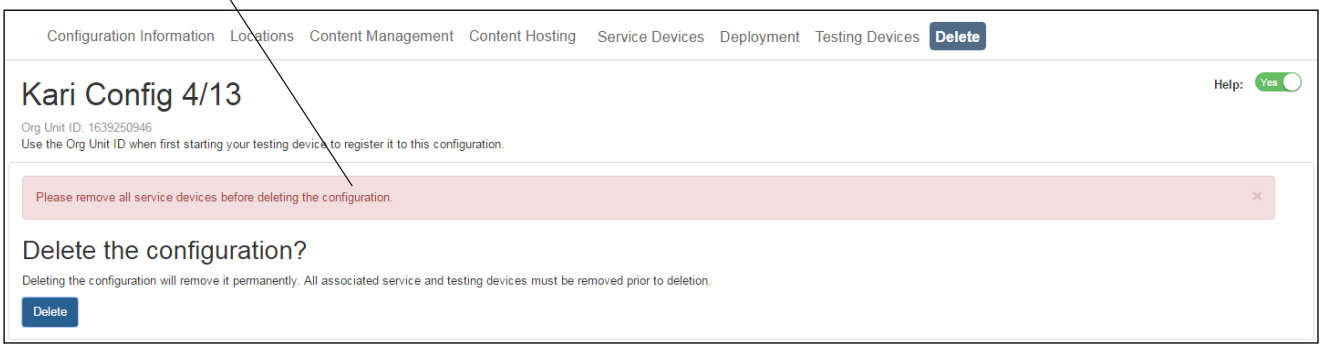
You use the Delete tab to delete a configuration. To delete a configuration, all of the service and testing devices associated with the configuration must be removed from the configuration (see “Renaming or Removing Service Devices” on page 63 and “Moving and Removing Testing Devices” on page 66).

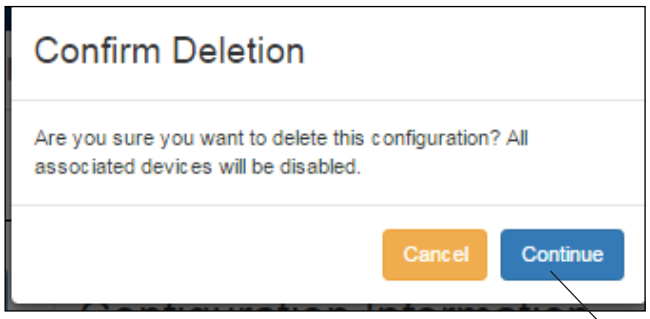
1. Select a configuration and select **Delete**.



2. Click **Delete** to delete the configuration from the COS database.

Note: You must remove all of the configuration’s COS SDs (see “Renaming or Removing Service Devices” on page 63) and testing devices (see “Moving and Removing Testing Devices” on page 66) before you can delete the configuration (see the message below).



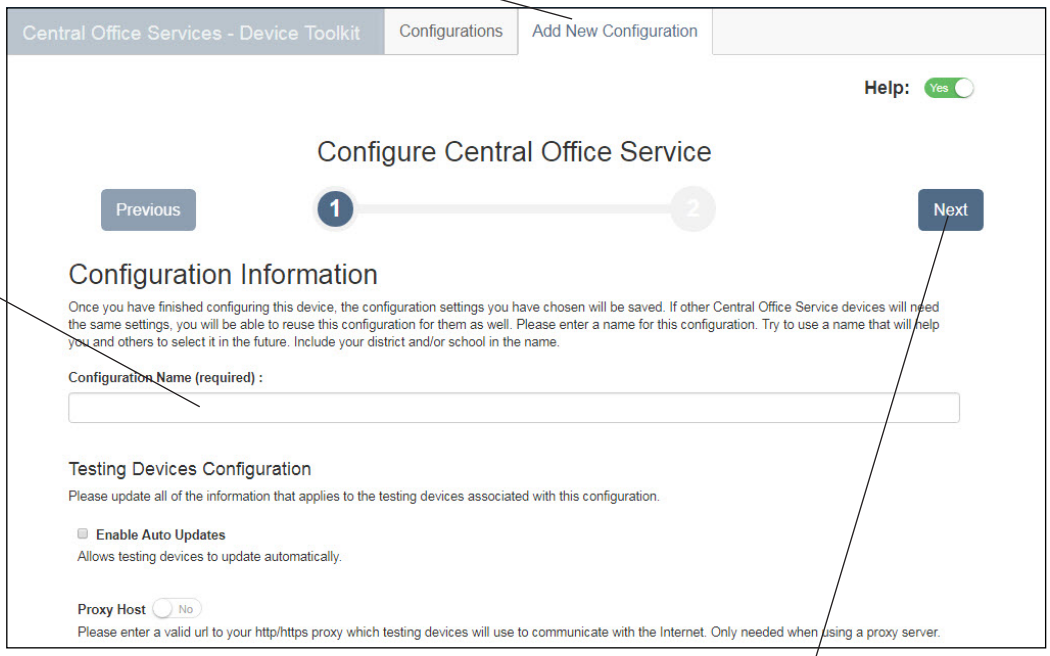


3. When you click Delete, if there are no service or testing devices associated with the configuration, the Confirm Deletion dialog box displays to verify your decision. Click **Continue** to delete the configuration or **Cancel** to cancel the deletion.

Creating New Configurations

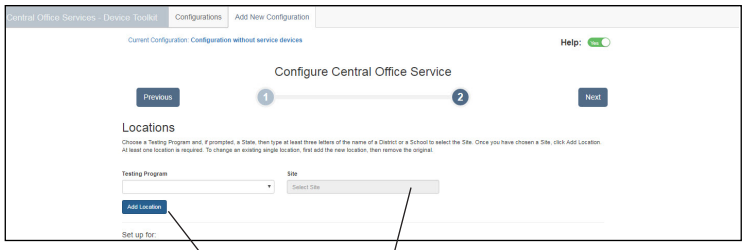
If you want to set up testing devices for testing, but do not want to use COS Content Hosting or Content Management, you can create a configuration using the Add New Configuration tab. In this case, you are retrieving content directly from DRC Servers versus a COS SD.

1. To create a new configuration, select the **Add New Configuration** tab.



2. When the configuration Information page displays, enter a meaningful configuration name in the Configuration Name field.

3. Select the appropriate options from the Testing Devices Configuration section of the Configuration Information page (for details about the other options, see "Configuring Testing Devices" on page 48). When you are ready, click **Next**.

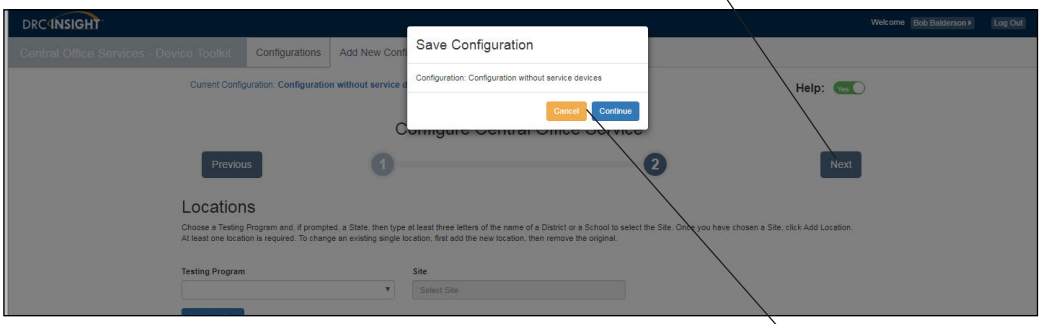


4. When the Locations page displays, select a testing program from the Testing Program drop-down menu. Then, start typing a district name, school name, or site code in the Site filter. When you locate the district or school name to which you want to register the configuration and its associated COS SDs and testing devices, click **Add Location**.

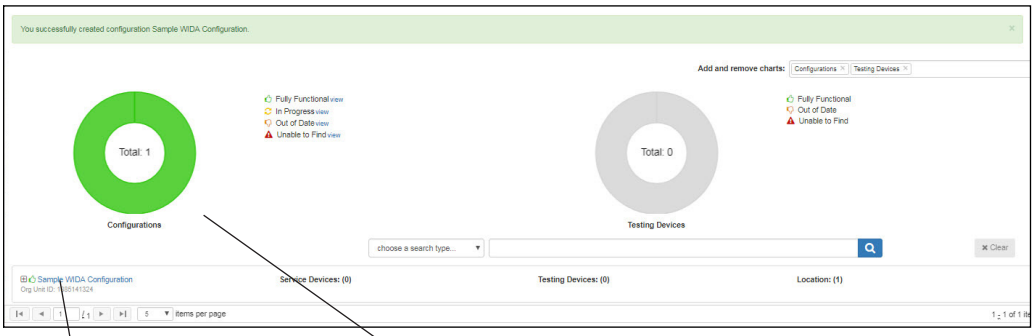
Note: You can select more than one location.

Creating New Configurations (cont.)

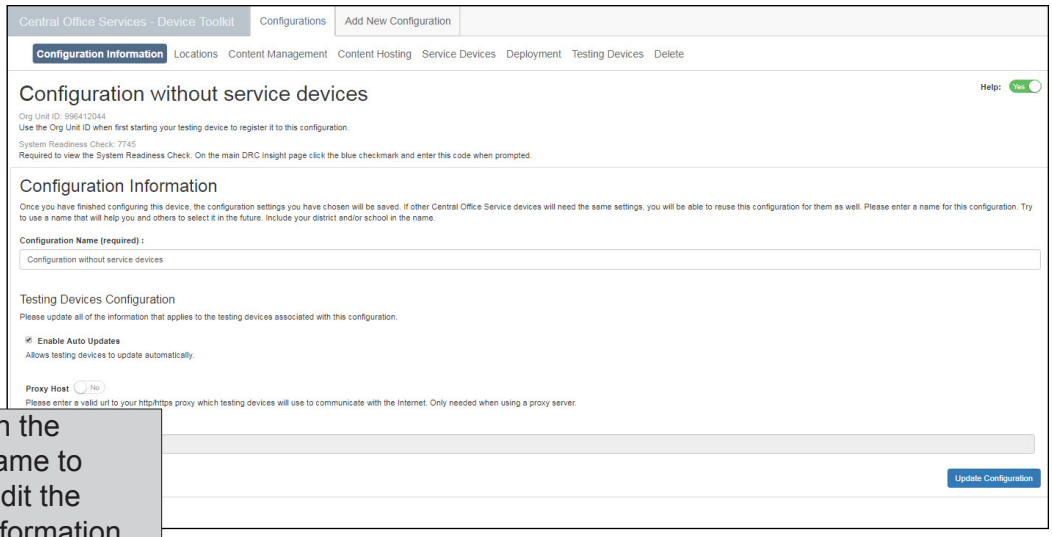
5. When you have selected all of your location(s), **click Next**.



6. The Save Configuration dialog box displays to confirm your choice. Click **Continue** to create the configuration or **Cancel** to cancel the process.



7. If you click Continue, the Configuration tab re-displays your new configuration.



8. You can click on the configuration name to and review or edit the configuration information.

Creating COS SD Pools

This section describes the process of creating a pool of COS SDs within a COS configuration. The process varies depending on whether the pool of COS SDs uses the default COS SD-selection process or a selection process based on load-balancing hardware and software.

The default COS SD selection process uses a “round-robin” approach—when multiple COS SDs are linked to a single COS configuration, the COS SDs in the pool are selected for work uniformly. For example, if 5000 testers use a round-robin pool containing 10 COS SDs, each COS SD will service approximately 500 testers, regardless of the current workload on the device. This type of pool is not a load-balanced pool.

Alternatively, if you have installed and configured load-balancing hardware and software, you can link COS SDs to your load-balancing hardware and software to create a load-balanced pool of COS SDs. COS SDs in this type of pool are selected for work based on the parameters specified in your load-balancing hardware and software.

Creating Round-Robin Pools of COS Service Devices

This topic provides an overview to the processes of creating round-robin pools of COS SD, including prerequisite information and references to additional information sources.

Note: Please ignore the Linux information if your state does not test using Linux devices.

Prerequisites

Before creating a round-robin pool of COS SDs (the default COS setup for multiple COS SDs in a configuration), keep the following items in mind:

- You must use a COS configuration that has at least one location that does not use a TSM for content caching. The location can use a TSM for response caching, but not for content caching. If the location is using a TSM for response caching, you can only specify one TSM.
- If you plan to deploy COS SDs to a round-robin pool using a deployment file, you must use the default installation path for the COS SDs on the device's local storage.

Process

To create a round-robin pool of COS SDs, perform the following steps.

1. Create a COS configuration by manually installing and configuring the first COS SD.

   Follow the instructions in the appropriate installation section of this volume for your Windows, Mac, or Linux COS SD.

2. Add additional COS SDs to your configuration, either manually (interactively) or by using a deployment file (non-interactively).
   - To add COS SDs manually, see "Manually Adding COS Service Devices to a COS Configuration" on page 83.
   - To add COS SDs using a deployment file, see "Using a Deployment File to Add COS Service Devices to a Configuration" on page 85.

Creating Load-Balanced Pools of COS SDs

This topic provides an overview to the processes of creating load-balanced pools of COS SD, including prerequisite information and references to additional information sources.

Note: Please ignore the Linux information if your state does not test using Linux devices.

Prerequisites

Before creating a load-balanced pool of COS SDs, keep the following items in mind:

- You must have already installed and configured your load balancing hardware and software.
- You must know the IP address of your load balancer.
- You must know how to "point" the load balancer to each COS SD in the load-balanced pool.
- All of the COS SDs in the pool should be the same type of device—Windows, Mac, or Linux. Do not mix device types.
- If you know which device in the load-balanced pool you want to use to manage the content in your shared storage location—it's easier to configure that device first.
- You must have a shared network location for test content, know the network share path to the location, and all of the COS SDs in the load-balanced pool must have access to the shared location.
  - This path must be available from every Content Hosting device in the load-balanced pool.
  - This path overrides the default COS installation path (or a different path that you specified during installation).
- You must use a COS configuration that has at least one location that does not use a TSM for content caching. The location can use a TSM for response caching, but not for content caching. If the location is using a TSM for response caching, you can only specify one TSM.

Process

To create a load-balanced pool of COS SDs, perform the following steps.

1. Install and configure your load-balancing hardware and software.
2. Create a COS configuration by manually installing and configuring the first COS SD.

   Follow the instructions in the appropriate installation section of this volume for your Windows, Mac, or Linux COS SD.
3. For a load-balanced pool of COS SDs, you must specify a shared path for the COS SDs.

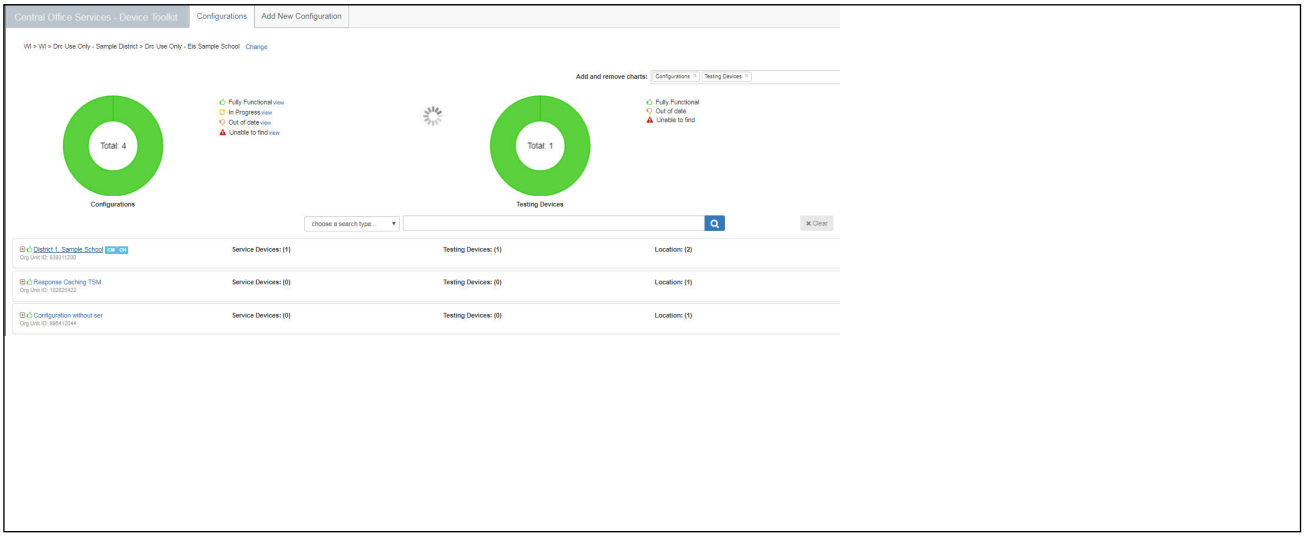
   To link your COS SD to your load-balancing hardware and software using the shared path, see “Enabling Load Balancing” on page 80.
4. Add additional COS SDs to your configuration, either manually (interactively) or by using a deployment file (non-interactively).
   - To add COS SDs manually, see “Manually Adding COS Service Devices to a COS Configuration” on page 83.
   - To add COS SDs using a deployment file, see “Using a Deployment File to Add COS Service Devices to a Configuration” on page 85.

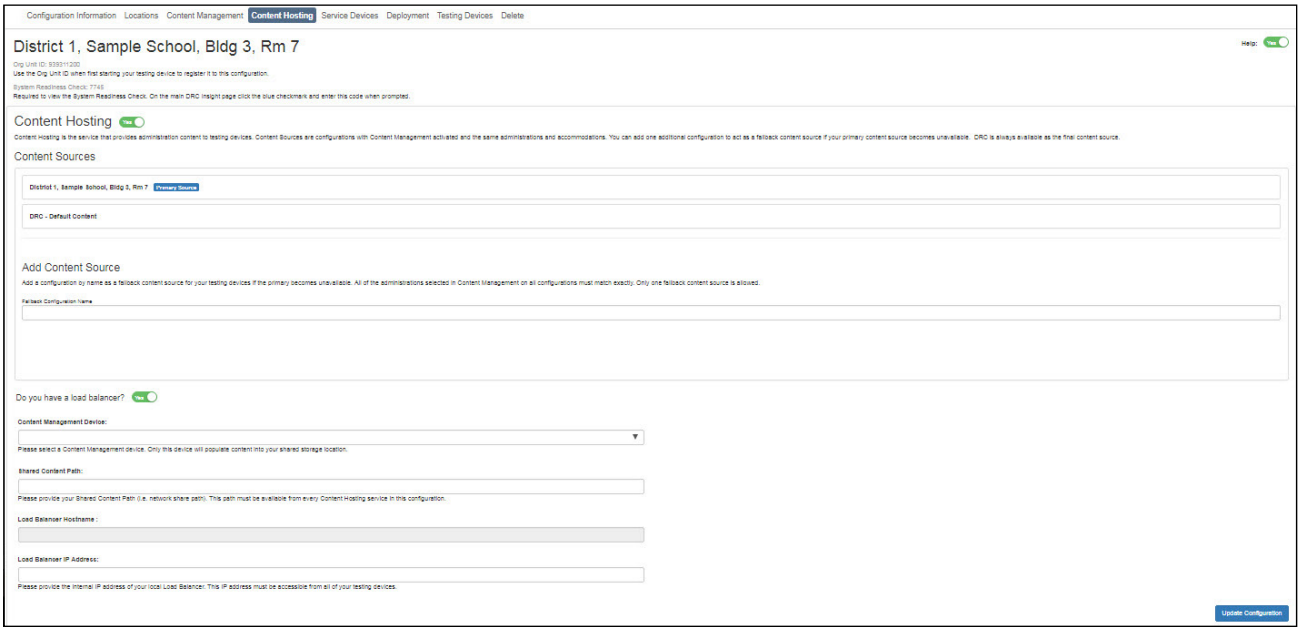
Enabling Load Balancing

This topic describes how to link your load balancing hardware and software to an existing COS configuration.

1. After you complete the Configuration wizard for the first COS device by following the normal progression of steps, open your new configuration by clicking on its name in the COS dashboard and navigate to the Content Hosting page.

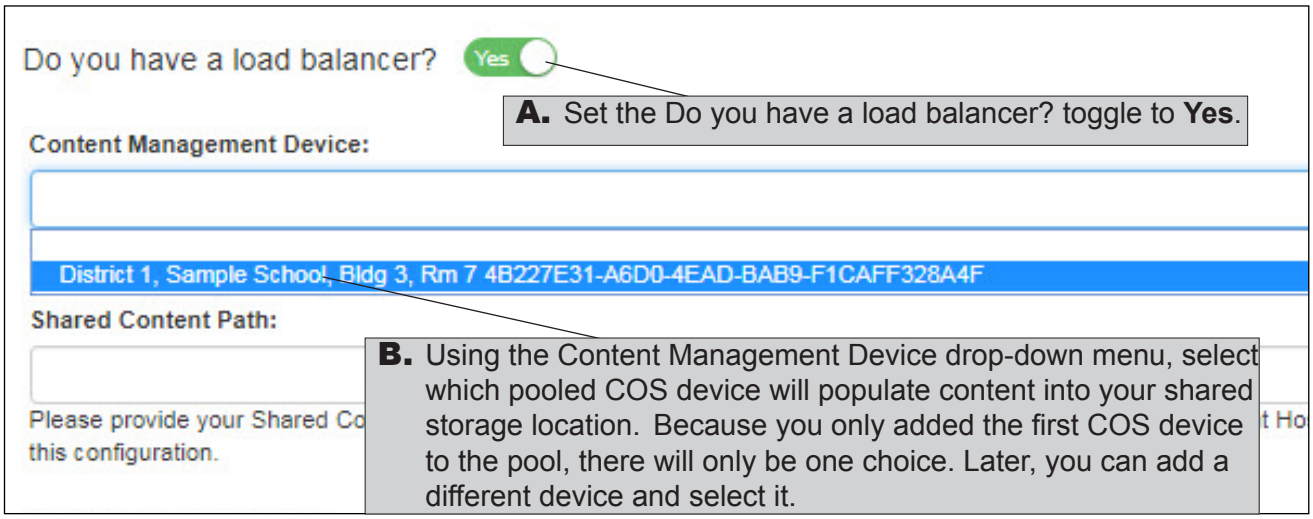
   References: "The Central Office Services Dashboard" on page 35 and "Working with Content Hosting" on page 58





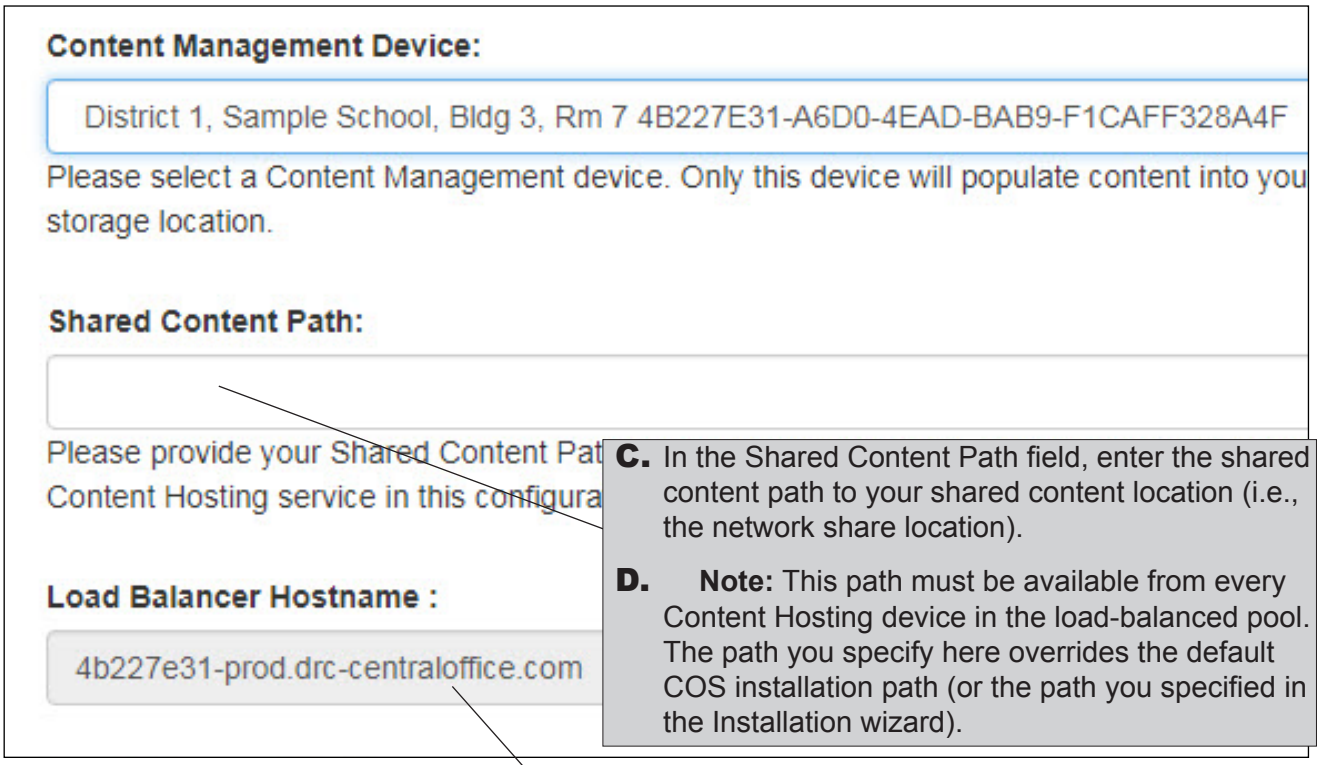
Enabling Load Balancing (cont.)

2. From the Content Hosting page, perform steps A–E.



A. Set the Do you have a load balancer? toggle to **Yes**.

B. Using the Content Management Device drop-down menu, select which pooled COS device will populate content into your shared storage location. Because you only added the first COS device to the pool, there will only be one choice. Later, you can add a different device and select it.

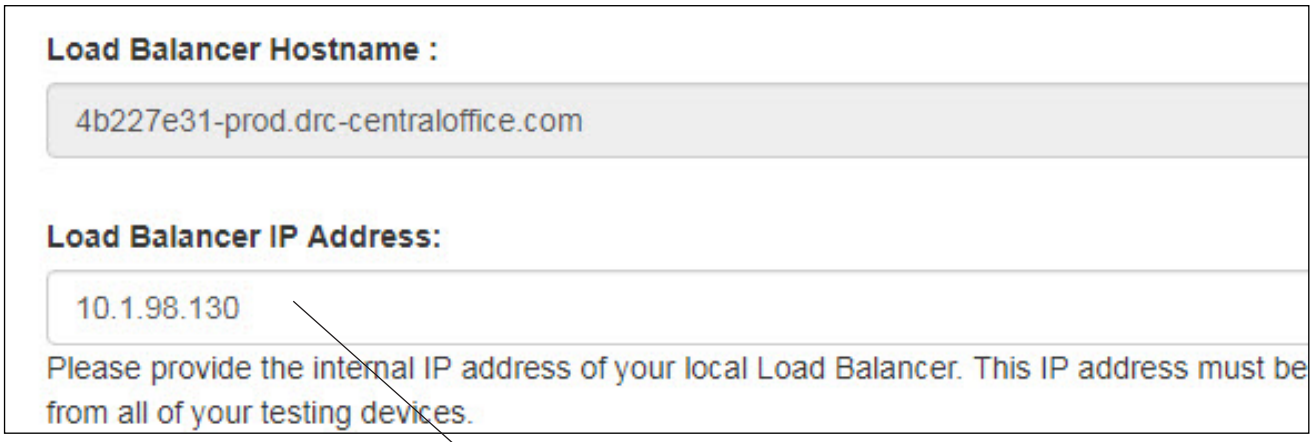


C. In the Shared Content Path field, enter the shared content path to your shared content location (i.e., the network share location).

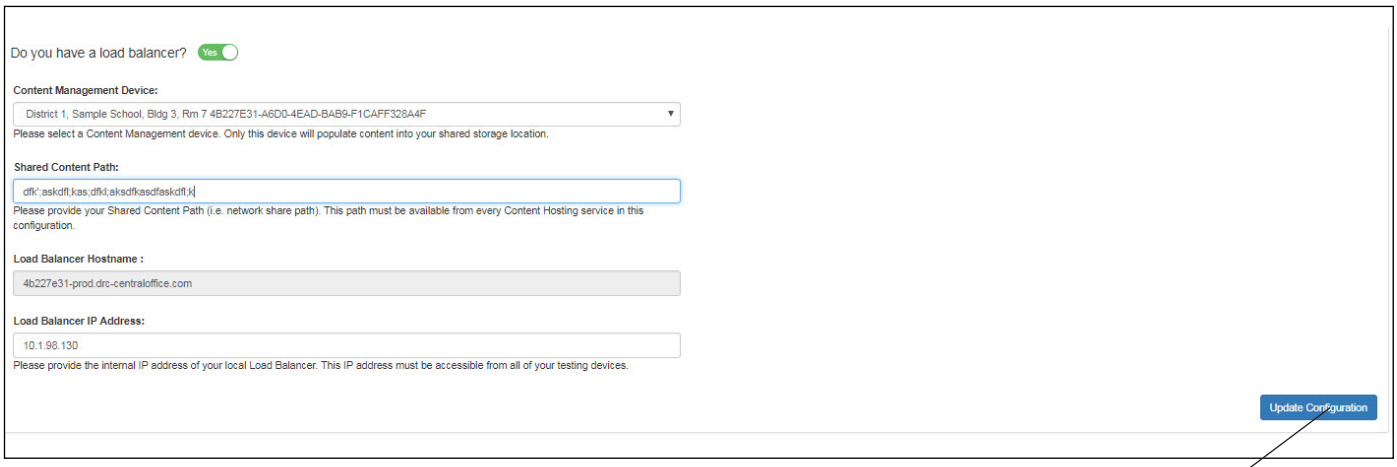
D. **Note:** This path must be available from every Content Hosting device in the load-balanced pool. The path you specify here overrides the default COS installation path (or the path you specified in the Installation wizard).

The system automatically generates a fully-qualified domain name (FQDN) for your load balancer, displayed in the **Load Balancer Hostname** field for informational purposes only. You do not need to do anything with this value—COS automatically “points” the testing devices to this FQDN.

Enabling Load Balancing (cont.)



E. In the Load Balancer IP Address field, enter the internal IP address of your local load balancer. This IP address must be accessible from all of your testing devices.



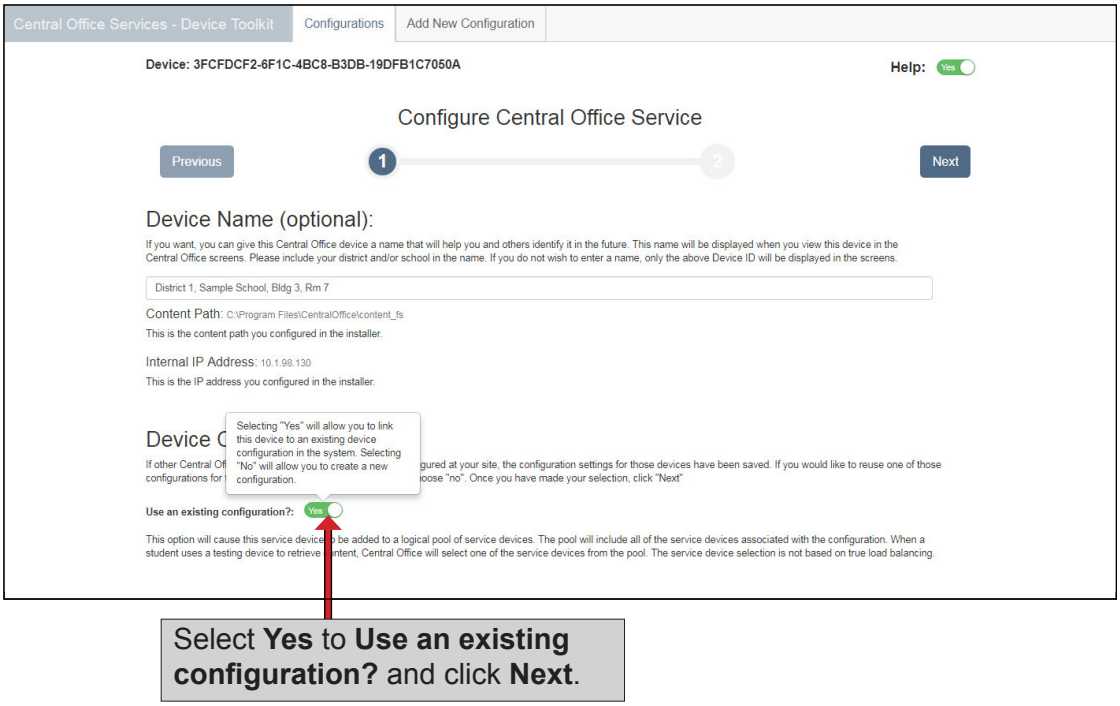
F. Click **Update Configuration**.

Manually Adding COS Service Devices to a COS Configuration

This topic describes how to manually add additional COS SDs to a configuration by selecting the **Use an existing configuration?** option at the beginning of the process to create a COS configuration.

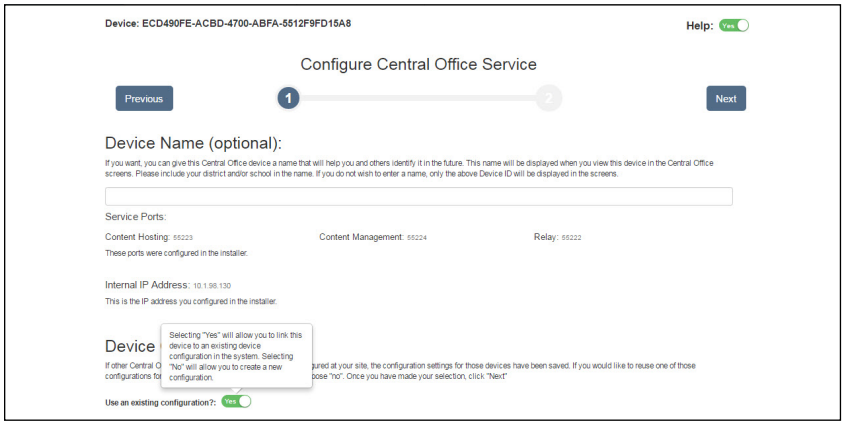
Note: You must have already created a COS configuration by installing/configuring at least one COS SD. This topic applies to both types of COS SD pools.

1. During the process of creating a COS configuration, if you would like to add the COS SD that you are configuring to a logical pool of devices, reply **Yes** to the Use an existing configuration? prompt. This shortens the process to two steps.



Select **Yes** to **Use an existing configuration?** and click **Next**.

2. You can name the device to help you identify it in the COS - Device Toolkit Dashboard. The name displays anytime you view the device in COS. If you do not name the device, only the Device ID, generated by DRC, displays. Click **Next** when you are ready.

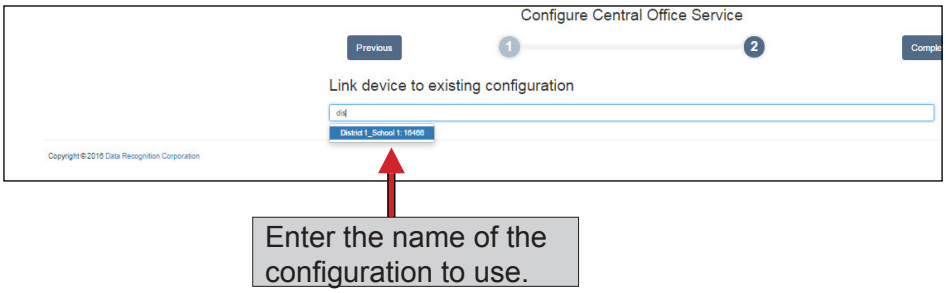


Manually Adding COS Service Devices to a COS Configuration (cont.)

3. Start entering the name of the configuration you want to use in the **Link device to existing configuration** field.

   When you locate the configuration, select it or enter it in the **Link device to existing configuration** field.

   Important: You are restricted to viewing only the configurations for sites that you can access.



4. The name of the configuration plus information about the configuration displays. Click **Complete**.
5. A confirmation dialog box displays. Select **Continue** to use this configuration (**Cancel** to cancel the process).

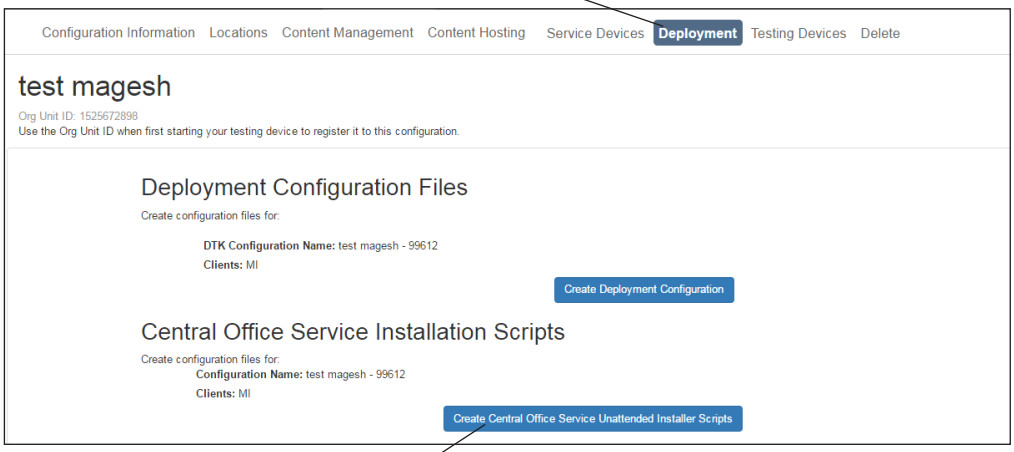
Using a Deployment File to Add COS Service Devices to a Configuration

This topic describes how to use a deployment file to configure multiple Windows, Mac, or Linux COS SDs non-interactively using an existing COS configuration containing at least one location that does not use a TSM for content caching. The COS SDs that are installed/configured by this process will be part of a pool of COS SDs linked to the same configuration.

Note: Please ignore the Linux information if your state does not test using Linux.

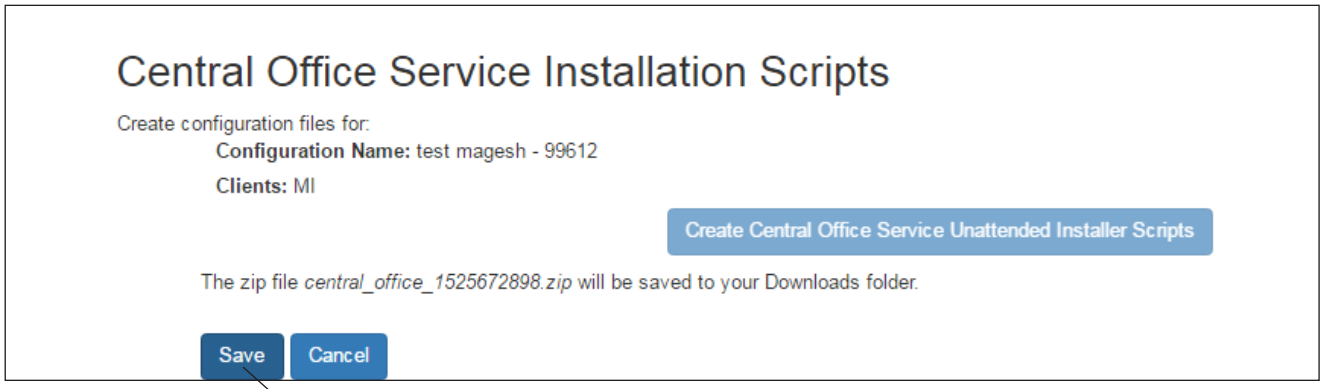
Important: The COS SDs can be part of either type of device pool: round-robin or load-balanced. However, do not use this method for a round-robin pool of COS SDs if you want to specify a shared content path—this method only allows you to use the default content path.

1. Select a configuration from the Configurations tab that has at least one location that does not use a TSM for Content Caching and select the **Deployment** tab.



2. To create a deployment configuration file for COS SDs, click **Create Central Office Service Unattended Installer Scripts**.

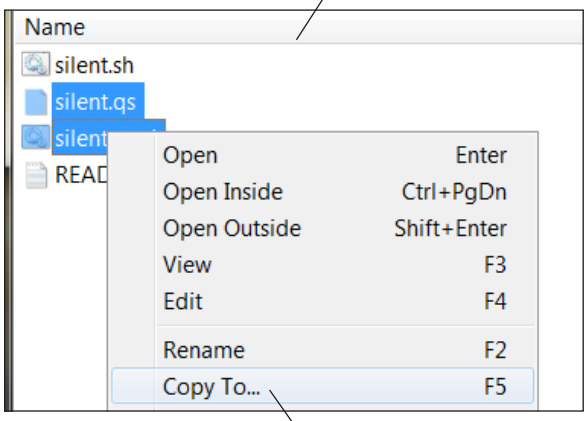
Note: This option is unavailable if you specified a TSM to use for content caching when you created the configuration

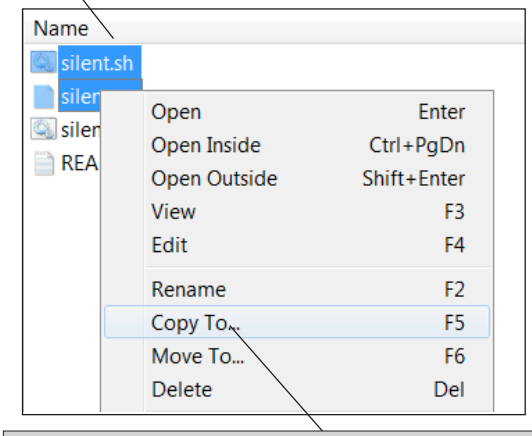


3. Click **Save** to create a configuration file or **Cancel** to cancel the process. When you click **Save**, the deployment configuration file (.zip) is downloaded to the folder you select.

Using a Deployment File to Add COS Service Devices to a Configuration (cont.)

4. Locate the .zip file you downloaded and view the archive.





4a. For a Windows COS SD, select the **silent.cmd** and **silent.qs** files, right-click and select **Copy To...** and copy the files to the same directory where the COS installation file (**coinstaller.exe**) is located.

4b. For a Linux COS SD, select the **silent-linux.sh** and **silent.qs** files, right-click and select **Copy To...** and copy the files to the same directory where the COS installation file (**coinstaller**) is located.

4c. For a Mac COS SD, select the **silent-mac.sh** and **silent.qs** files and copy the files to the same directory where the COS installation file (**coinstaller**) is located.

Use the Finder on your Mac to open the Applications folder. Within the Applications folder, open the Utilities folder and double-click on **Terminal** or **Terminal. app** (the Terminal application).

5. Navigate to the directory containing the files.

- To install COS silently for Windows, double-click the **silent.cmd** file.
- To install COS silently for Mac, enter the following command (when prompted, enter your Mac administrator password and press **Enter**).

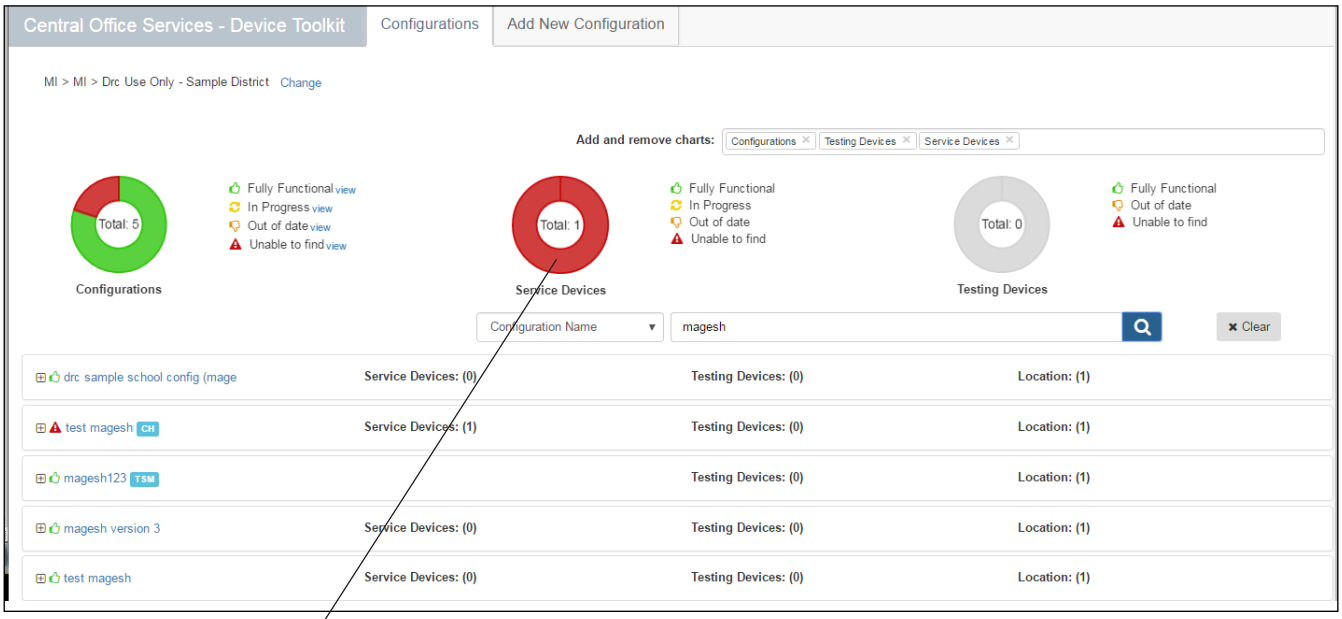
  ./slient-mac.sh

- To install COS silently for Linux, open a Terminal and enter the following commands:

  load libX11-xcb.so.1

  sudo sh silent-linux.sh

Using a Deployment File to Add COS Service Devices to a Configuration (cont.)



6. After the silent installation process completes, navigate to the COS Configuration tab. Click on the name of the configuration you updated to display configuration details and click the **Service Devices** tab. If your new COS SD is displayed, the silent installation is complete.

Appendix

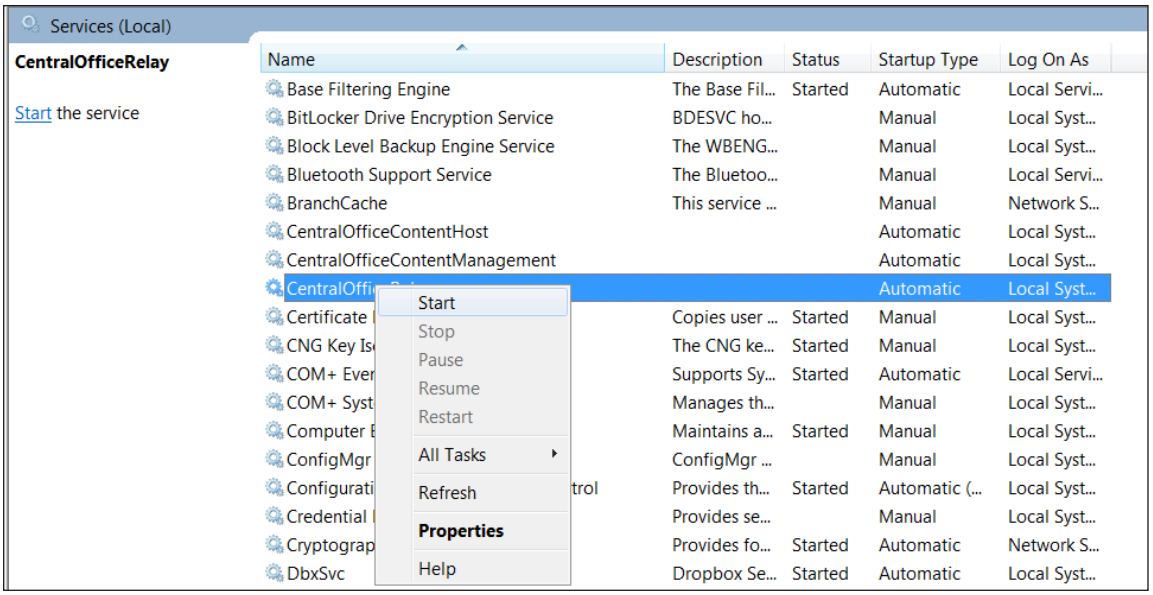
Starting and Stopping the COS Services

COS consists of four services: Content Hosting, Content Management, Relay, and Restricted Proxy. These services execute in the background, and start automatically after installation and whenever the COS SD is booted. In addition, administrators can start and stop these services manually. Technology Coordinators (TCs) should be familiar with the process of starting and stopping these services.

Windows

On a Windows COS SD, perform the following steps:

1. Select **Control Panel–Administrative Tools–Services**.
2. Select any of the services—**CentralOfficeContentHost**, **CentralOfficeContentManagement**, **CentralOfficeRelay, or CentralOfficeRestictedProxy—r**ight-click and select **Start** (to start) or **Stop** (to stop) the service.



Mac (OS X and macOS)

The COS services execute in the background without a standard graphical window (each service name is prefixed with **com.datarecognitioncorp**). On a Mac COS SD, a Mac administrator uses the launchd and launchctl commands in the terminal to manage these services.

Linux – Please ignore if your state does not test using Linux.

A Linux administrator uses the following commands on a Linux COS SD in terminal mode to start or stop the COS services:

service centralofficecontenthosting1 start

service centralofficemanagement1 start

service centralofficerelay1 start

service centralofficerestrictedproxy1 start

service centralofficecontenthosting1 stop

service centralofficemanagement1 stop

service centralofficerelay1 stop

service centralofficerestrictedproxy1 stop

Produced by Data Recognition Corporation (DRC)
13490 Bass Lake Road
Maple Grove, MN 55311

Nebraska Customer Service: 1-866-342-6280
Website: https://ne.drcedirect.com
Email: necustomerservice@datarecognitioncorp.com
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