



# Technology User Guide

## Volume II: Testing Site Manager (TSM)

### Nebraska

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# Introduction



## ■ About This Guide

This volume, *Volume II: Testing Site Manager (TSM)*, 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 user guide describes how to configure, install, manage, and troubleshoot the Testing site Manager (TSM) software. It contains configuration and installation information for the various TSM environments and describes how to use the TSM and its components.

## □ Important Information

.....  
**! Important:** Throughout this user guide, the Information icon (!) indicates important information or crucial tips.  
.....

This guide is designed primarily for the NeSA-Technology Assessment Coordinators (N-TACs) who are responsible for setting up and managing online testing, and ensuring their systems work effectively and securely. N-TACs should be knowledgeable about the technical details of the Windows, Mac (OS X and macOS), and Linux operating systems, and have the necessary security privileges to perform the tasks discussed in this guide. This guide also helps Test Administrators (TAs), District Assessment Contacts (DACs), and School Test Coordinators (STCs) use DRC INSIGHT more effectively.

## ■ Testing Site Manager (TSM)

The DRC Testing Site Manager (TSM) is a powerful, web-based application that provides caching and software tools to help you plan, configure, and manage your online testing environment.

## □ Benefits and Features

A TSM offers many benefits and features, including a typical reduction in bandwidth traffic of about 50% when downloading test content.

- You can install the TSM using an easy-to-use installation wizard (requires administrative rights).
- You can populate the TSM with test content using its content caching option. After the content is installed, updates to test content are automatically downloaded.

.....  
**! Important:** Certain software rights are required to install and/or automatically update the TSM software. The TSM software requires Administrator rights to install it and to perform the software Automatic Update function.  
.....

## ❑ TSM Overview

### Content and Response Caching

The TSM is a web-based application that provides caching and software tools to help you manage your online testing. Usually, you install the TSM caching software on one or more strategic computers with sufficient bandwidth to help manage and streamline communication between the test devices and the DRC INSIGHT server.

The TSM offers two types of caching—content caching for test content and response caching for student test responses. At test time, the TSM content caching software sends its cached test items to the testing devices. This content must be current in order for students to test.

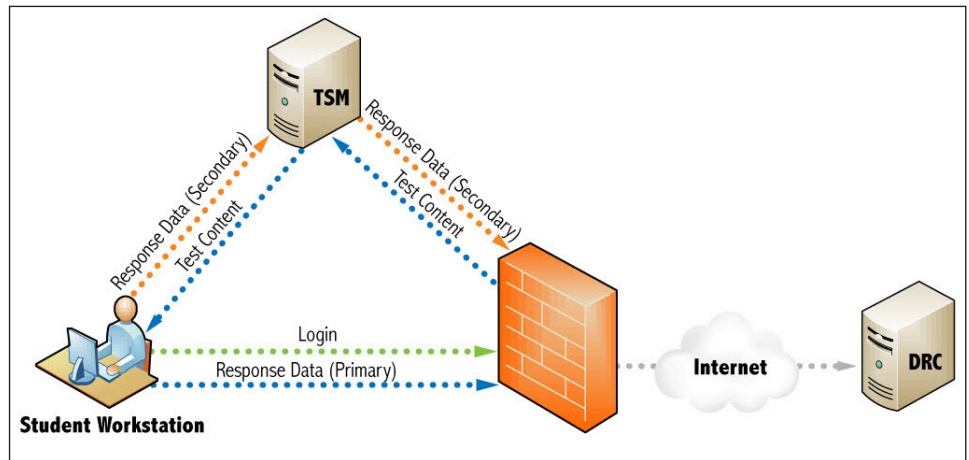


Figure: TSM Content and Response Caching

During testing, if the test computers can communicate with the DRC INSIGHT server, responses go directly to the server. If test computers cannot communicate with the server, the response caching software buffers and stores their test responses. When the response caching software is communicating with DRC, it sends test responses to the DRC INSIGHT server every fifteen minutes. Even if DRC is not currently communicating with the testing computers, the test responses are still being stored on the TSM for transmission to DRC, so no responses are lost.

**! Important:** TSM response caching is used *during* a test session—students cannot start a test session if there is no communication between the INSIGHT server and the testing device, or if there are unsent responses on the TSM.

### TSM Diagnostic Tools

In addition to content and response caching, the TSM offers powerful diagnostic software tools, including Load Simulation Tests and Ping Trend Graphs, to help sites prepare and manage their test environment.

# **TSM System Requirements and Testing Information**



### ■ What's Covered in This Section

### ■ TSM Installation and the Number of Students Testing

This section contains a link to the specific hardware, software, network, and desktop requirements to configure the Testing Site Manager (TSM) and automatic software updates.

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

- The TSM software is configured for content caching.
- The TSM software is installed on a dedicated device.
- The TSM device and network meet the necessary system requirements.

The number of TSMs required may differ based on the actual hardware and software specifications of the TSM device, the network speed, and the TSM caching options selected. For details regarding the number of concurrent testers and system requirements, refer to the latest version of the *DRC INSIGHT Online Learning System Supported System Requirements* available at your state's eDIRECT site by navigating to **All Applications–General Information–Downloads** and clicking **View System Requirements** at the bottom of the Test Setup General Information page.

[View System Requirements](#)

[Monitor Setting Verification](#)



[Supported System Requirements](#)

### ■ Tablet Devices and the TSM

A TSM is used primarily to cache and manage test content and responses. iPad, Chromebook, Android, and other tablet devices do not provide a suitable environment for a TSM. As a result, you should install the TSM software on Windows PC, Mac (OS X) computer, or Linux machine, and connect to the TSM 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 TSM software. INSIGHT requires Administrator rights to install it and Write access to perform the software Automatic Update function. The TSM software requires Administrator rights to install it and to perform the software Automatic Update function.

### ■ Nebraska TSM System Requirements Information

The DRC system requirements information describes the specific hardware, software, network, and desktop requirements to configure INSIGHT and the TSM to work with various testing devices in different testing scenarios. This information is updated quarterly based on various factors, including changes in vendor support of various operating systems and hardware devices.

To review the current information, refer to the *DRC INSIGHT Online Learning System Supported System Requirements*.

# TSM Windows Installation



### ■ What's Covered in This Section

This section describes the Testing Site Manager (TSM) installation process in a Windows environment.

.....  
**! Important:** To make the installation process easier, DRC recommends that you install the TSM before you use the Central Office Services - Device Toolkit to create configurations and before you install INSIGHT.  
.....

The first part of this section provides basic information about installing and uninstalling a TSM. Then, the section provides more advanced technical information about the following topics:

- Managing a TSM—starting, stopping, and uninstalling
- Working with the TSM in a non-graphical (terminal) mode using Windows operating system commands

Because of the role that the TSM plays in testing, there are some special considerations regarding TSM software installation.

- It is best if the computer on which you install the TSM software has a static IP address. If the IP address of the TSM machine changes, the TSM Server Domain address will update to the current IP address the next time the TSM communicates with DRC. But, during the time the IP address is out of date, any testing computers that attempt to use the TSM will not point to the correct TSM machine.
- If you need to change the configuration of a TSM after it is installed, you must uninstall the TSM and install a new version. If you reinstall a TSM, you may need to reconfigure the testing devices that connect to it.
- There are now two versions of the TSM for Windows: 32-bit and 64 bit. If you are installing the TSM on a 64-bit Windows machine that has a TSM, you must uninstall the old TSM and install the new 64-bit version.

If you plan to perform multiple types of assessments using the same testing computers, you may need to install more than one TSM and use INSIGHT to access more than one testing program.

- You cannot install more than one TSM on the same computer.
- You can install a TSM and INSIGHT on the same computer.
- You can use INSIGHT to access multiple testing programs from the same device. You access these testing programs using the same DRC INSIGHT desktop shortcut. When you start INSIGHT, a page displays listing the different testing programs from which you can select.

### ■ Installing a TSM

### ■ Installing Multiple TSMs and INSIGHT

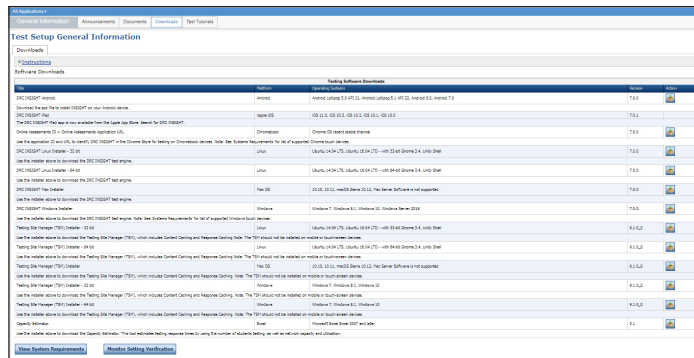


## Quick Tour: Installing a TSM for Windows OS

This Quick Tour describes how to install a TSM for Windows. DRC provides an easy-to-use wizard to install the TSM software.

1. To launch the wizard and start the installation, sign on to eDIRECT, open the **All Applications** menu bar, select **General Information–Downloads** and click the **Testing Site Manager (TSM) installer icon** (📄) for Windows. Use the correct version for the TSM computer: 32-bit or 64-bit.

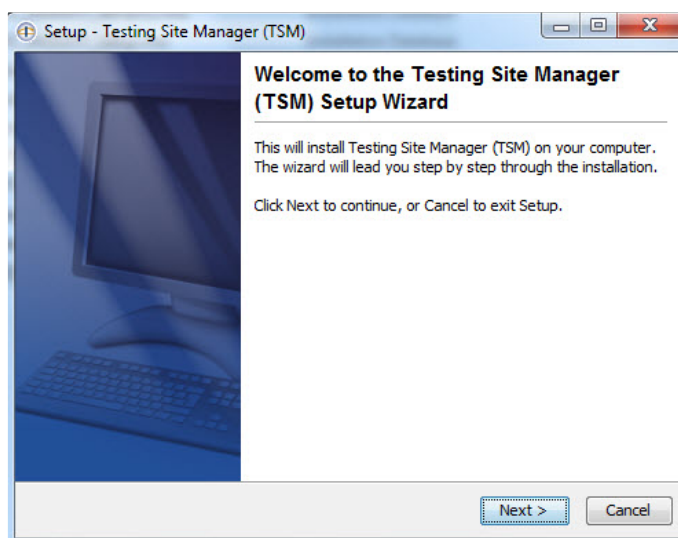
At this time, you also may want to download the INSIGHT Secure Browser Installer for Windows.



2. After you download the installation program, click **TESTING\_SITE\_MANAGER\_Setup.exe** to launch the wizard and start the installation.

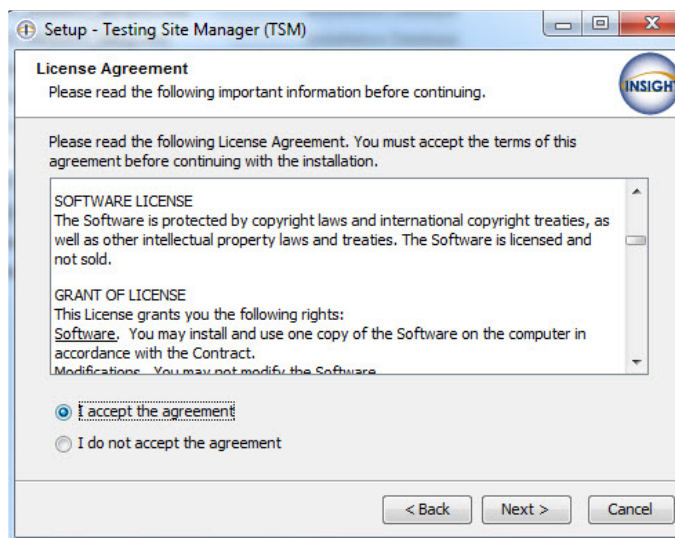
The Welcome screen displays the Testing Site Manager (TSM) Setup Wizard. Click **Next** to continue.

**Note:** On most installation windows, you have the option of clicking **Back** to return to the previous window or **Next** to proceed to the next window. Some windows display other options.



3. The DRC INSIGHT License Agreement window displays. To continue the installation, read the agreement and select the option **I accept the agreement**. (If you do not accept the agreement, the installation ends.)

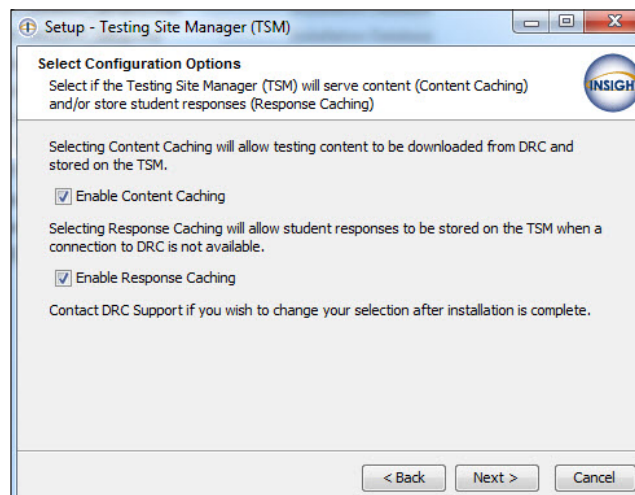
When the Next button becomes active, click **Next** to continue.



### Quick Tour: Installing a TSM for Windows OS (cont.)

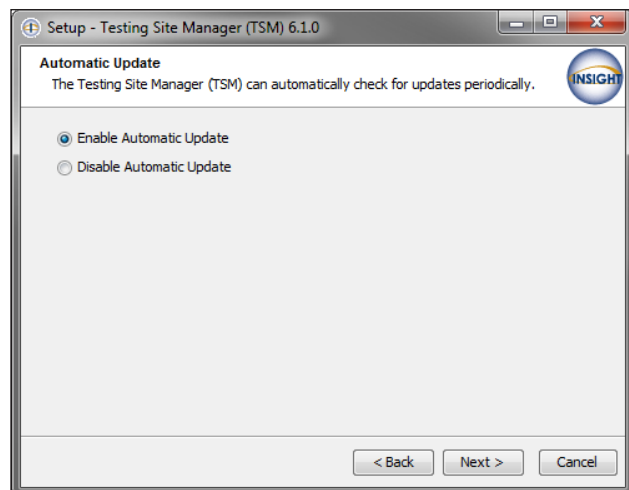
4. The Select Configuration Options window displays. On this window you specify whether to enable content caching and response caching. The default values are to enable both types of caching. After you make your selections, click **Next** to continue.

.....  
**! Important:** Install the TSM software on a computer that will be powered on when test content is automatically updated. If the computer is not on or is unavailable, it will not be updated. Whenever you restart a computer that has the TSM software installed, or anytime you plan to use the TSM for testing, verify that the TSM software and test content are up to date before you attempt to test (see “Content Caching” on page 44).  
.....



5. The Automatic Update window displays. On this window, specify whether to enable automatic TSM software updates.

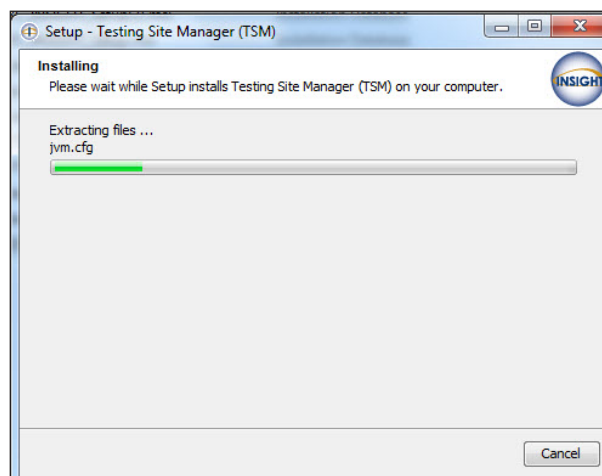
- If you select **Enable Automatic Update** (the default value), DRC updates the TSM software automatically. DRC recommends enabling automatic updates.
- If you select **Disable Automatic Update**, DRC notifies you whenever an update to the TSM software is available and you must update the software manually.



.....  
**! Important:** You use the Central Office Services - Device Toolkit to change the TSM configuration of a testing device. If you update a device's TSM configuration, the next time you start INSIGHT it automatically updates the configuration of the testing device to reflect the changes.  
.....

Click **Next** to continue.

6. During the installation, a window displays to indicate the progress of the installation. If necessary, click **Cancel** to end the process.



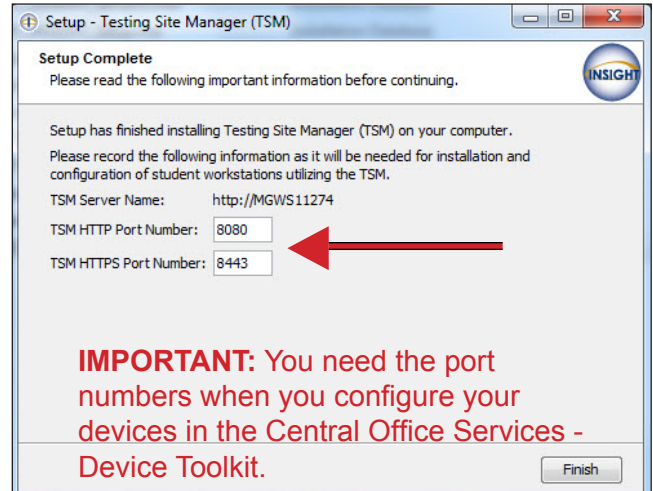
## Quick Tour: Installing a TSM for Windows OS (cont.)

7. The Setup Complete window displays.

❗ **Important:** Record the port numbers, you need this information when you install INSIGHT. You can change the port numbers from this window. Click **Finish** when you are ready.

- The TSM HTTP Port Number is the port number for regular communication.
- **The TSM HTTPS Port Number is the port number for encrypted communication that the INSIGHT secure web browser uses.**

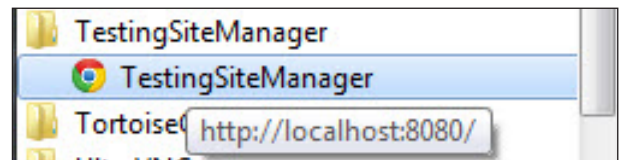
❗ **Important:** To avoid conflicts, verify that no other device is using either port. For Windows, you can enter the command **netstat -a** from a command prompt to display the list of ports currently being used.



8. After the installation is complete, start the TSM from the Start menu by selecting **All Programs–TestingSiteManager–TestingSiteManager**.

**Note:** If you specified Content Caching (step 4), your standard test forms and items are downloaded automatically with the TSM installation (see “Content Caching” on page 44).

9. When the **Enter Testing Site Manager Name** window displays, enter a name (up to 40 characters) to help you remember the location of the TSM machine in the TSM Name field. DRC recommends that you include some combination of the district, school, and location (building and/or room number) of the TSM. Click **Save**.



### Enter Testing Site Manager Name

TSM Name:

Save



## Quick Tour: Installing a TSM for Windows OS (cont.)

### 10. The TSM displays.

.....  
**! Important:** Record or copy the **TSM Server Domain** address—you need this information to configure your devices in the Central Office Services - Device Toolkit.  
.....

If you are using an accommodation, check the checkbox to select the media content you need (for example, Download TTS) and click **Update Content** to load the latest test versions.

**IMPORTANT:** Record or copy the **TSM Server Domain** address—you need this information to configure your devices in the Central Office Services - Device Toolkit.

The screenshot shows the 'Testing Site Manager (TSM)' web interface. At the top, it says '(includes Local Caching Service (LCS) capabilities)'. Below this, the 'TSM Name' is 'District 1, Sample School, Bldg 3, Rm 7', the 'TSM Version' is '9.1.0.0', and the 'TSM Server Domain' is 'd4d5eace-legacy-sqa.dfo-centraloffice.com'. A red arrow points to this domain field. Below the domain field are three tabs: 'Content Caching', 'Response Caching', and 'Tools'. The 'Content Caching' tab is active, showing a 'Content List' table. The table has columns for 'Content', 'Status', 'Download Wk', 'Download TTS', 'File Count', 'Download Results', and 'Retry Content'. There are four rows of content listed, each with a 'Up to Date' status and a 'Download' button. At the bottom of the table, it says 'Showing 1 to 4 of 4 entries'.

Content	Status	Download Wk	Download TTS	File Count	Download Results	Retry Content
528008 - 2015-2016 NaSA-RAIS Spring 2016	Up to Date			5216R215	<a href="#">Download</a>	<a href="#">Retry</a>
528489 - 2015 NaSA Technology Trial Fall 2016	Up to Date	N/A		173/173	<a href="#">Download</a>	<a href="#">Retry</a>
528536 - 2015-2016 NaSA-RI Practice Test Spring 2016	Up to Date	N/A	N/A	93/93	<a href="#">Download</a>	<a href="#">Retry</a>
528537 - NaSA-ELA Practice Test Spring 2016	Up to Date	N/A		425/425	<a href="#">Download</a>	<a href="#">Retry</a>

## Managing the TSM

This section describes how to install a TSM from the command line, how to start and stop a TSM from a command line, and how to uninstall a TSM.

### Installing a TSM from the Command Line

You can install a TSM in the Windows environment using the command line interface instead of the graphical interface. This type of installation is useful to install the software in unattended mode or to install it quickly on a number of computers. To run the TSM installation in unattended mode, do the following:

1. Log in to eDIRECT, open the **All Applications** menu bar, select **General Information–Downloads**, and download the TSM setup command file, TESTING\_SITE\_MANAGER\_Setup.exe, to a directory or location that you specify.
2. Start a command prompt (**Start–Run–Cmd**) and navigate to the directory or location where the file was downloaded.
3. Execute the TESTING\_SITE\_MANAGER\_Setup command (with appropriate options) for 32-bit machines.

#### TESTING\_SITE\_MANAGER\_Setup -q

Execute the TESTING\_SITE\_MANAGER\_Setup\_64 command (with appropriate options) for 64-bit machines.

#### TESTING\_SITE\_MANAGER\_Setup\_64 -q

**! Important:** Use the correct command for the type of machine you have, 32-bit or 64-bit. The command and machine type must match.

The following figure shows the list of setup options.

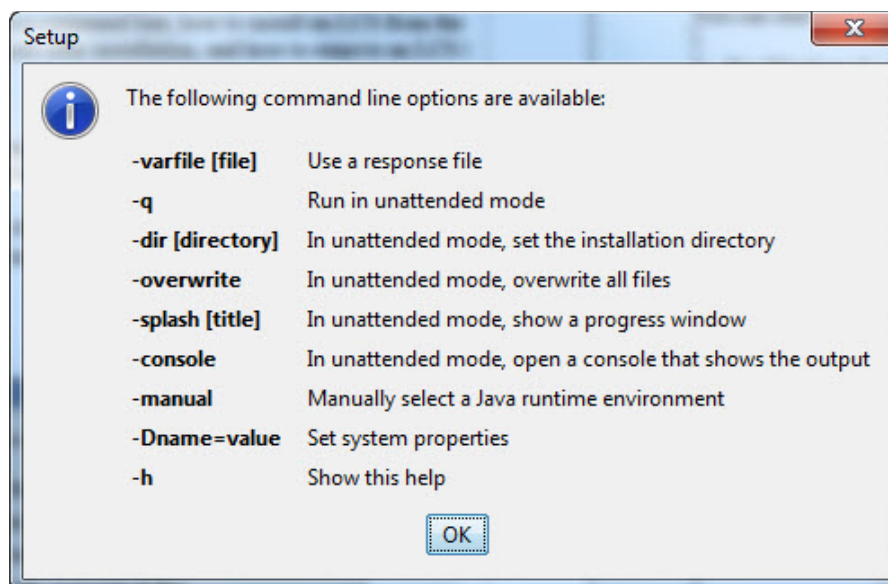


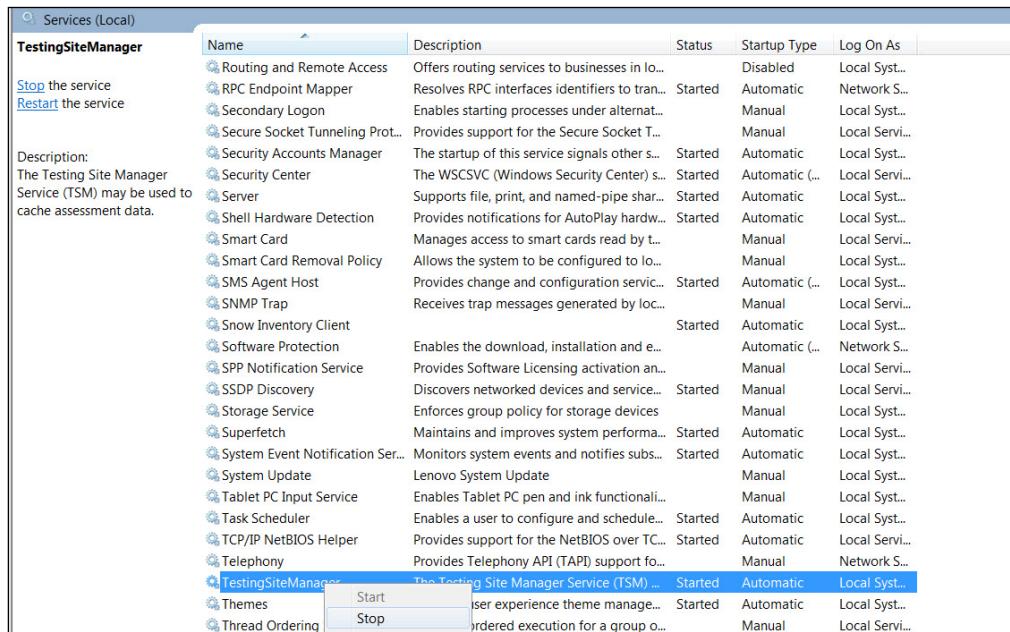
Figure: TSM Setup Command Options



## Starting and Stopping the TSM

You can start and stop the TSM using the Control Panel.

1. For Windows 7, select **Control Panel–System and Security–Administrative Tools–Services**.



2. The Services window displays. Select **TestingSiteManager**.
3. To stop the TSM, right-click and select **Stop**. To restart the TSM, right-click and select **Start**.

## Uninstalling the TSM

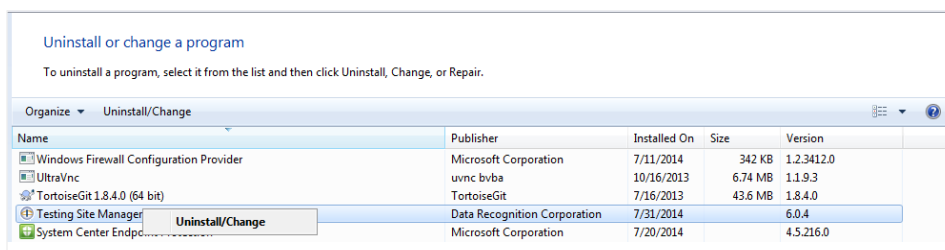
You can uninstall (remove) the TSM using the Control Panel. If you want to uninstall the TSM, verify that there are no unsent responses. If there are, transmit them manually first. If the TSM has unsent stored responses, the uninstall won't finish (see "Response Caching-Viewing Unsent Student Test Responses" on page 48).

**Note:** If you are unable to remove a TSM, please contact Customer Service.

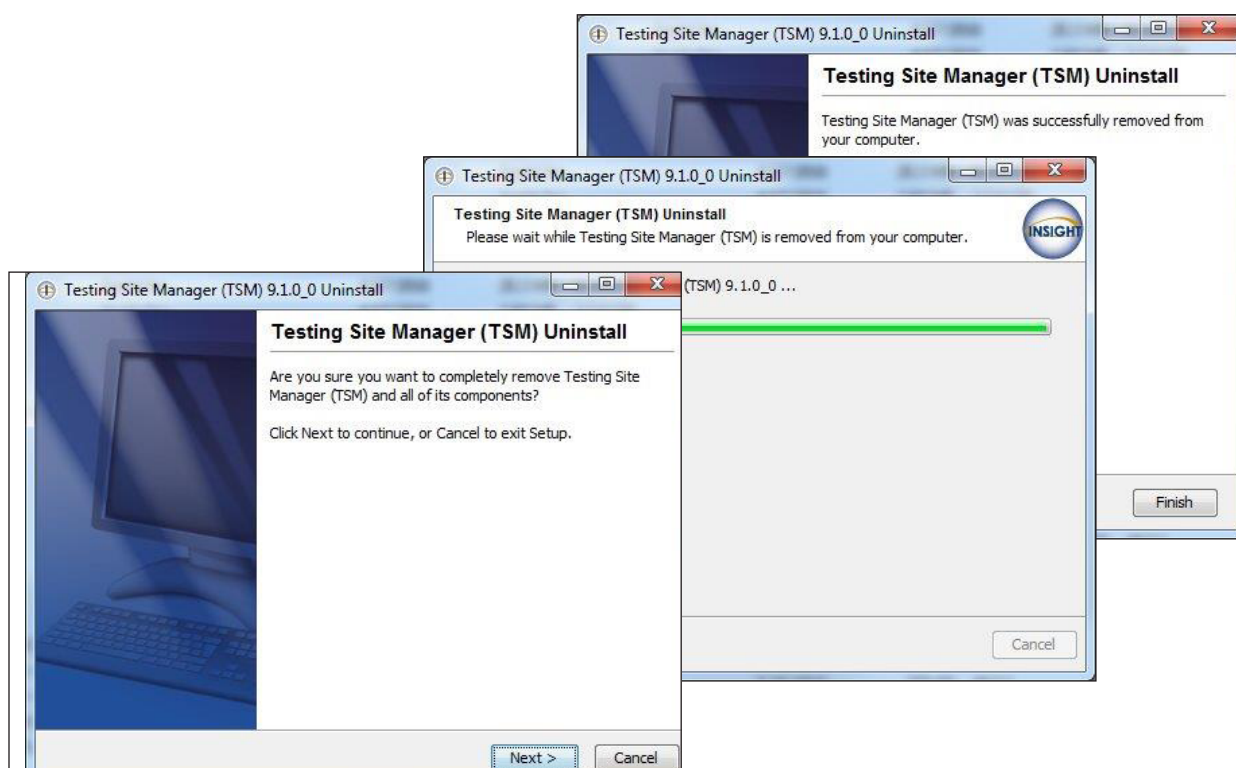
### Using the Control Panel

To uninstall the TSM using the Control Panel, do the following:

1. Select **Uninstall a Program** and select **Testing Site Manager (TSM) – NE**.
2. Right-click and select **Uninstall/Change**.



3. Click **Next** when the Testing Site Manager (TSM) Uninstall wizard displays. The wizard walks you through the process.



4. Navigate to the location where the TSM was installed and verify that it is uninstalled. If you plan on installing a new TSM, please reboot the TSM machine before you install a new TSM.

# **TSM Mac (OS X and macOS) Installation**





### ■ What's Covered in This Section

This section describes the Testing Site Manager (TSM) installation process in a Mac (OS X) environment.

.....  
**! Important:** To make the installation process easier, DRC recommends that you install the TSM before you use the Central Office Services - Device Toolkit to create configurations and before you install INSIGHT.  
.....

First, this section provides basic information about installing and uninstalling a Testing Site Manager (TSM) using the standard Mac graphical interface. Then, the section provides more advanced technical information about the following topics:

- Managing a TSM: starting, stopping, and uninstalling
- Working with a TSM in a non-graphical (terminal) mode using Mac (OS X) operating system commands

### ■ Installing a TSM

Because of the role that the TSM plays in testing, there are some special considerations regarding TSM software installation.

- It is best if the computer on which you install the TSM software has a static IP address. If the IP address of the TSM machine changes, the TSM Server Domain address will update to the current IP address the next time the TSM communicates with DRC. But, during the time the IP address is out of date, any testing computers that attempt to use the TSM will not point to the correct TSM machine.
- If you need to change the configuration of a TSM after it is installed, you must uninstall the TSM and install a new version. If you reinstall a TSM, you may need to reconfigure the testing devices that connect to it.
- A TSM cannot be installed on a Mac (OS X and macOS) device that is running mac OS server software.

### ■ Installing Multiple TSMs and INSIGHT

If you plan to perform multiple types of assessments using the same testing computers, you may need to install more than one TSM and use INSIGHT to access more than one testing program.

- You cannot install more than one TSM on the same computer.
- You can install a TSM and INSIGHT on the same computer.
- You can use INSIGHT to access multiple testing programs from the same device. You access these testing programs using the same DRC INSIGHT desktop shortcut. When you start INSIGHT, a page displays listing the different testing programs from which you can select.

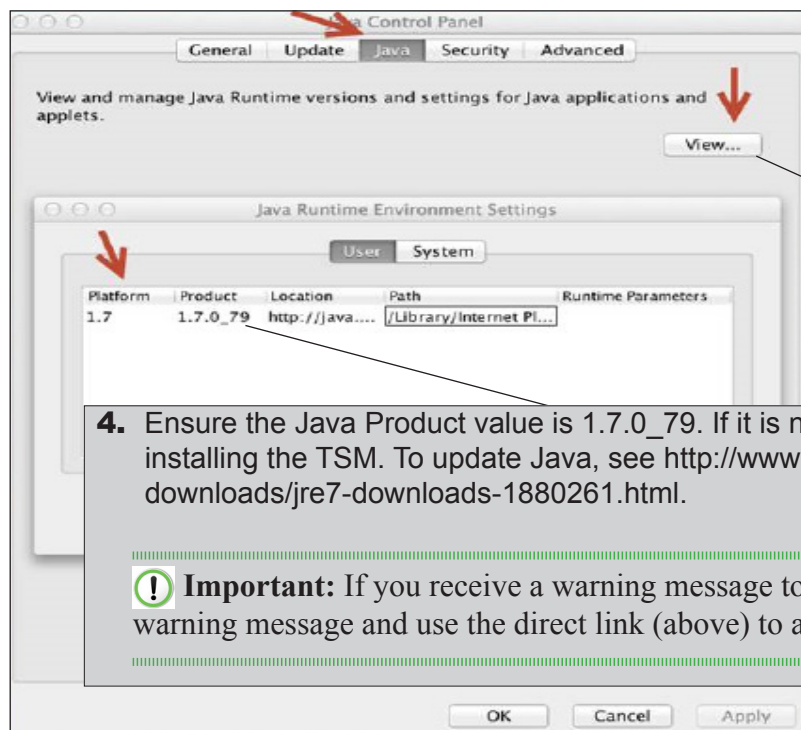
### TSM for Mac Installation Prerequisite: Java 1.7

Before installing the TSM, verify that the TSM computer has Java 1.7 (versions 7u79) installed. The TSM will not work with any other version of Java. Use the following procedure to check the version of Java on the TSM computer. To update Java, see <http://www.oracle.com/technetwork/java/javase/downloads/jre7-downloads-1880261.html>.

**Note:** You do not need to perform this process if you are using TSM level 9.1.0\_2 or higher.

1. Go to System Preferences and locate the Java icon. Double-click **Java** to display the Java Control Panel.

**Note:** If you do not see a Java icon, the Java version is below 1.7. You need to update the Java level before installing the TSM.



2. Select the **Java** tab at the top of the window.
3. Click the **View** button to display Java details.

4. Ensure the Java Product value is 1.7.0\_79. If it is not, you must update Java before installing the TSM. To update Java, see <http://www.oracle.com/technetwork/java/javase/downloads/jre7-downloads-1880261.html>.

**Important:** If you receive a warning message to update to Java 1.8, cancel out of the warning message and use the direct link (above) to access the Java 1.7 installation.

## Quick Tour: Installing a TSM for Mac OS X and macOS

This Quick Tour describes how to install a TSM in the Mac (OS X) environment. DRC provides an easy-to-use wizard to install the TSM software.

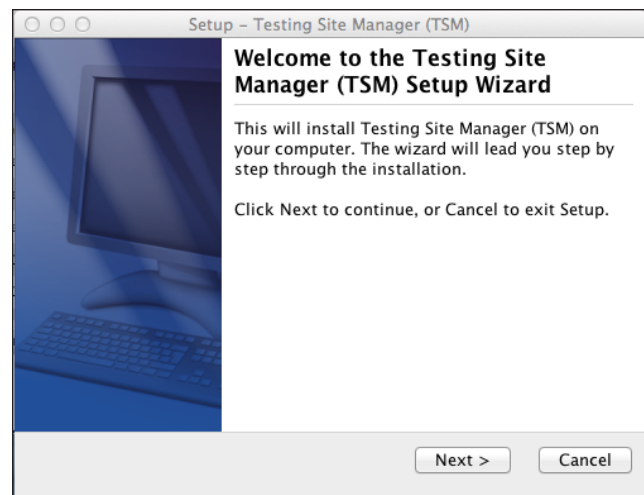
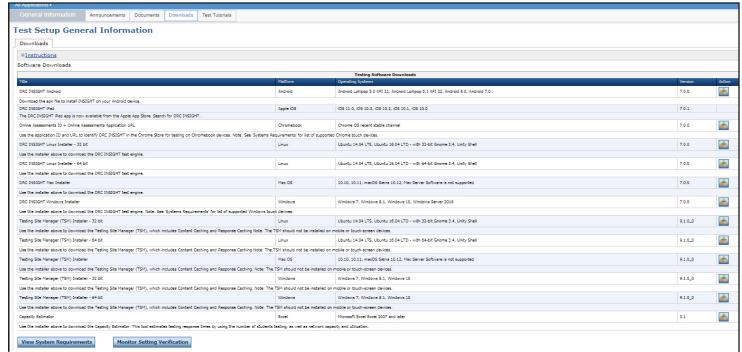
1. To launch the wizard and start the installation, sign on to eDIRECT, open the **All Applications** menu bar, select **General Information–Downloads** and click the **Testing Site Manager (TSM)** installer icon (📦) for Mac OS. At this time, you also may want to download the Macintosh Installer for INSIGHT.
2. After you have downloaded the installation program, double-click the **TESTING\_SITE\_MANAGER\_Setup.dmg** file and double-click the **Testing Site Manager (TSM) Installer** to start the installation.

**Note:** You must be a Mac System Administrator to install the TSM from this file.

3. The Welcome screen displays for the Testing Site Manager (TSM) Setup Wizard.

**Note:** On most of the installation windows, you can click **Back** to return to the previous window, **Next** to proceed to the next window, and **Cancel** to cancel the installation. Click **Next** to continue.

4. The DRC INSIGHT License Agreement windows displays. Read the agreement and select the option **I accept the agreement**. When the Next button becomes active, click **Next** to continue.



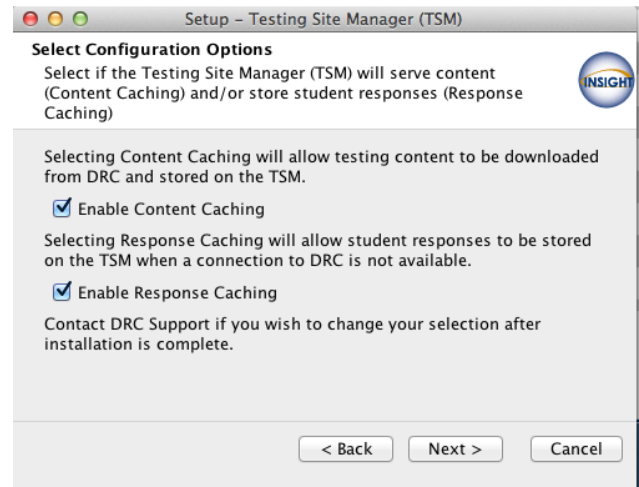
### Quick Tour: Installing a TSM for Mac OS X and macOS (cont.)

5. The Select Configuration Options window displays. On this window you specify whether to enable content caching and/or response caching. The default values are to enable both types of caching. After you make your selections, click **Next** to continue.

.....

**! Important:** Install the TSM software on a computer that will be powered on when the TSM software or test content is automatically updated. If the computer is not on or is unavailable, it will not be updated. Whenever you restart a computer that has the TSM software installed, or anytime you plan to use the TSM for testing, verify that the TSM software and test content are up to date before you attempt to test (see “Content Caching” on page 44).

.....

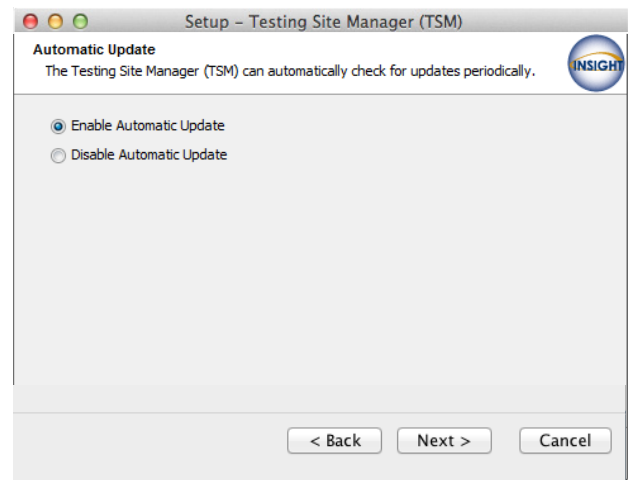


6. The Automatic Update window displays. On this window, specify whether to enable automatic TSM software updates.
- If you select **Enable Automatic Update** (the default value), DRC updates the TSM software automatically.
  - If you select **Disable Automatic Update**, DRC notifies you whenever an update to the TSM software is available and you must update the software manually.

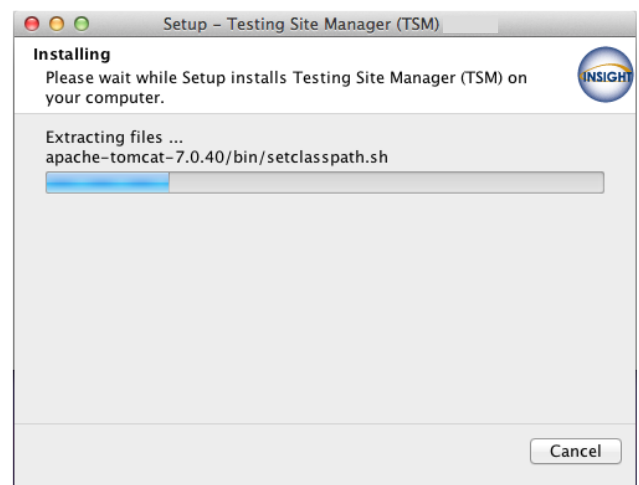
.....

**! Important:** You use the Central Office Services - Device Toolkit to change the TSM configuration of a testing device. If you update a device's TSM configuration, the next time you start INSIGHT, it automatically updates the configuration of the testing device to reflect the changes.

.....



After you have made your selection, click **Next** to start the installation. During the installation, a window displays to indicate the progress of the installation. If necessary, you can click **Cancel** to end the installation process.

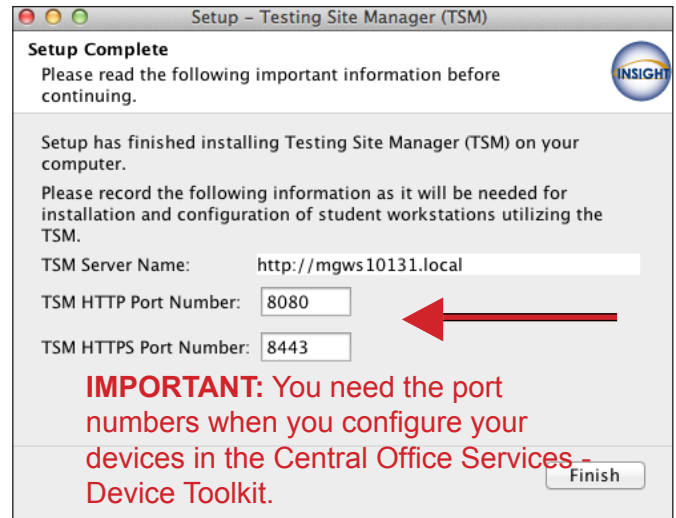


## Quick Tour: Installing a TSM for Mac OS X and macOS (cont.)

- When the installation completes, the Setup Complete window displays. **Record the port numbers—you need this information to configure the device in the Central Office Services - Device Toolkit.** You can change the port numbers from this window. Click **Finish** when you are ready.

- The TSM HTTP Port Number is the port number for regular communication.
- The TSM HTTPS Port Number is the port number for encrypted communication that the INSIGHT secure web browser uses.**

**! Important:** To avoid conflicts, verify that no other device is using either port. For Mac OS X, use the Network Utility located at Applications/Utilities/Network.

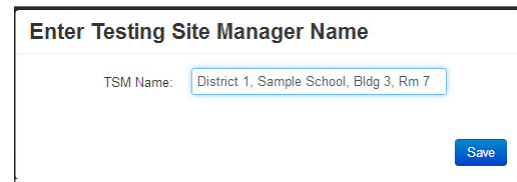


- Start the TSM by selecting **Applications—TestingSiteManager—TestingSiteManager.url**.

**Note:** Because you specified Content Caching (step 5), when the TSM is first installed, your standard test forms and items are downloaded automatically (see “Content Caching” on page 44).

- When the **Enter Testing Site Manager Name** window displays, enter a name to help you remember the location of the TSM machine in the TSM Name field. DRC recommends that you include some combination of the district, school, and location (building and/or room number) of the TSM. Click **Save**.

**Note:** The name is limited to 40 characters with no special formatting requirements.



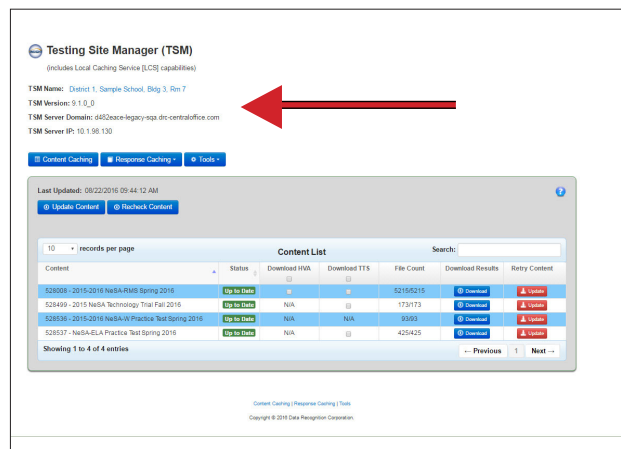
## Quick Tour: Installing a TSM for Mac OS X and macOS (cont.)

### 10. The TSM displays.

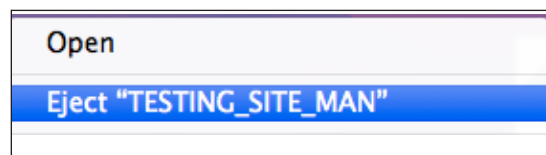
**Important:** Record or copy the **TSM Server Domain** address—you need this information to configure your devices in the Central Office Services - Device Toolkit.

If you are using an accommodation, check the checkbox to select the media content you need (for example, Download TTS) and click **Update Content** to load the latest test versions.

**IMPORTANT:** Record or copy the **TSM Server Domain** address—you need this information to configure your devices in the Central Office Services - Device Toolkit.



### 11. After installation is complete, select the **TESTING\_SITE\_MAN** volume from the desktop, **Ctrl-click**, and select **Eject "TESTING\_SITE\_MAN"** to unmount the volume and avoid potential conflicts with automatic updates.





## Managing the TSM

This section describes how to start and stop a TSM from a command line and how to uninstall a TSM.

### Starting and Stopping the TSM

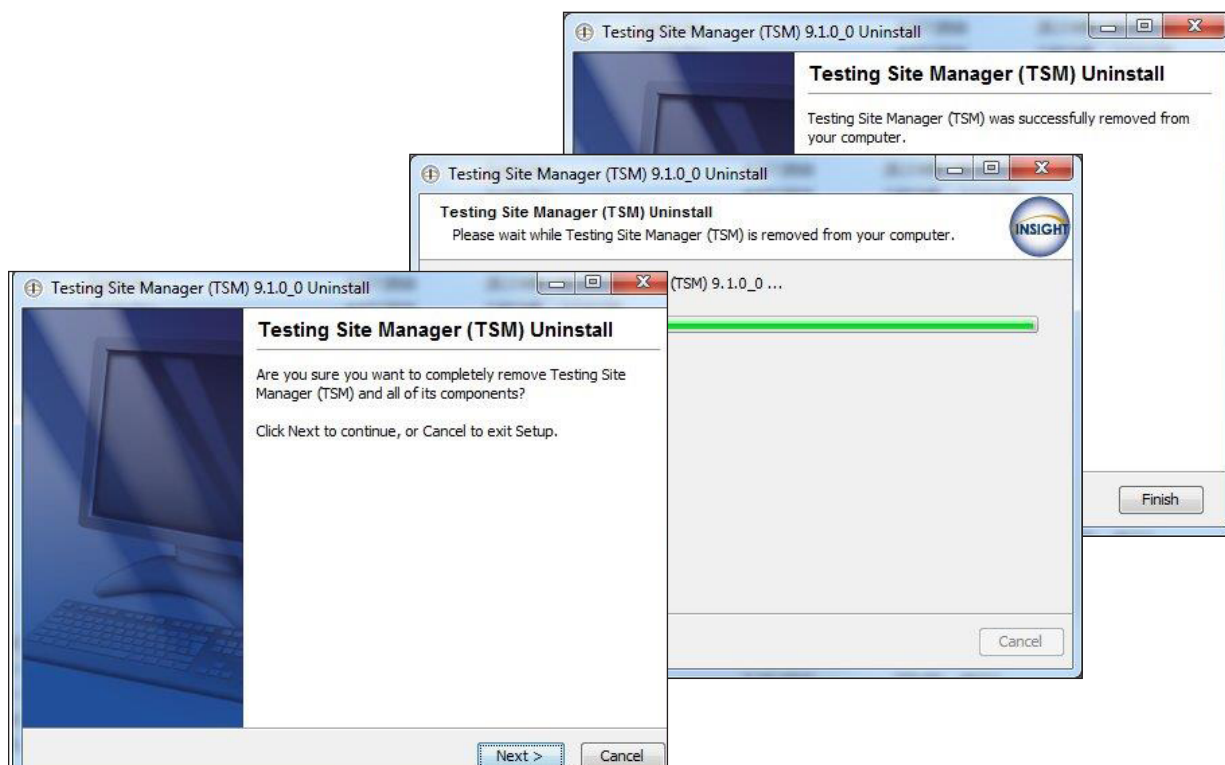
The TSM is a service that executes in the background without a standard graphical window. NeSA-Technology Assessment Coordinators (N-TACs) should be familiar with starting and stopping the TSM with the TESTING\_SITE\_MANAGER script. You can use the **launchd** and **launchctl** commands to manage services. By default, the TSM is started after installation and launches anytime the computer is booted.

### Uninstalling the TSM

Before you attempt to uninstall the TSM, verify that there are no unsent responses in the TSM. If there are, transmit them manually first. If there are any unsent responses, you cannot uninstall the TSM.

**Note:** If you are unable to remove a TSM, please contact Customer Service.

1. To uninstall (remove) the TSM, select **Applications–TestingSiteManager–Testing Site Manager (TSM) Uninstaller**.
2. Enter your Mac Administrator log-in information.
3. When the Testing Site Manager (TSM) Uninstall wizard displays, click **Next**.
4. The wizard walks you through the process.



5. Verify that the **Testing Site Manager** folder has been removed from the Applications folder. If you plan to reinstall a TSM, reboot the machine before you reinstall.

# Linux Installation





## ■ What's Covered in This Section

This section describes the Testing Site Manager (TSM) installation process in a Linux environment.

.....  
**! Important:** To make the TSM installation process easier, DRC recommends that you install the TSM before you use the Central Office Services - Device Toolkit to create configurations and before you install INSIGHT.  
.....

The first part of this section provides basic information about installing and uninstalling the TSM using the standard Linux interface. Then, the section provides more advanced technical information about the following topics:

- Managing a TSM: starting, stopping, changing the default communication port, and uninstalling
- Working in the terminal using Linux operating system commands

**Note:** In this section, we assume that as an experienced Linux user you are familiar with Linux concepts such as Terminal mode, the Boot-Up Manager software, and the Ubuntu Software Center.

## ■ Installing a TSM

Because of the role that the TSM plays in testing, there are some special considerations regarding TSM software installation.

- It is best if the computer on which you install the TSM software has a static IP address. If the IP address of the TSM machine changes, the TSM Server Domain address will update to the current IP address the next time the TSM communicates with DRC. But, during the time the IP address is out of date, any testing computers that attempt to use the TSM will not point to the correct TSM machine.
- If you need to change the configuration of a TSM after it is installed, you must uninstall the TSM and install a new version. If you reinstall a TSM, you may need to reconfigure the testing devices that connect to it.

### ■ Installing Multiple TSMs and INSIGHT

If you plan to perform multiple types of assessments using the same testing computers, you may need to install more than one TSM and use INSIGHT to access more than one testing program.

- You cannot install more than one TSM on the same computer.
- You can install a TSM and INSIGHT on the same computer.
- You can use INSIGHT to access multiple testing programs from the same device. You access these testing programs using the same DRC INSIGHT desktop shortcut. When you start INSIGHT, a page displays listing the different testing programs from which you can select.

## Quick Tour: Installing a TSM for Linux

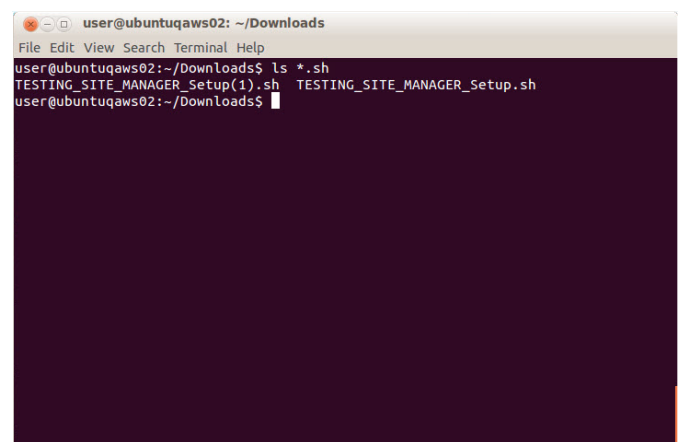
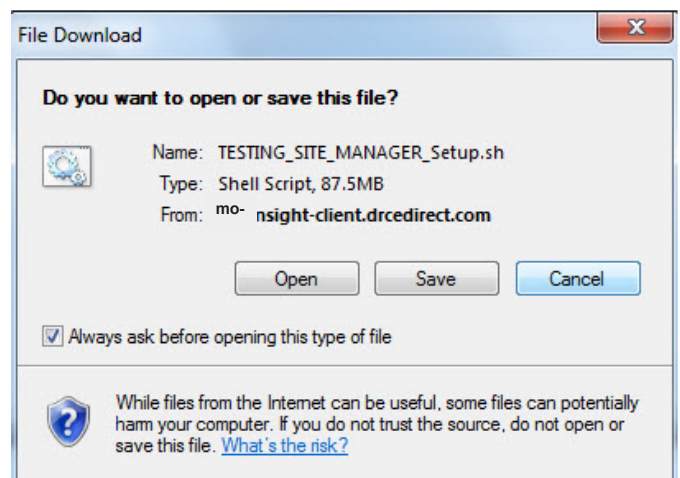
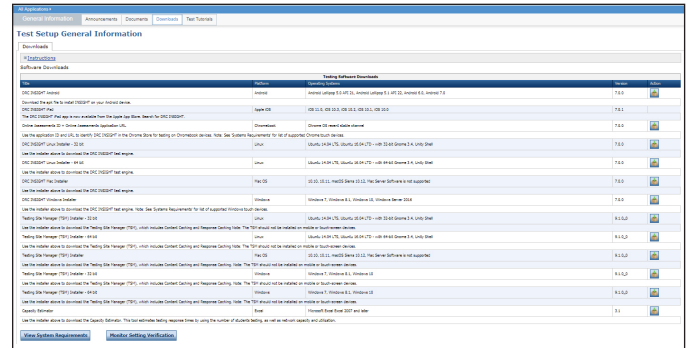
This Quick Tour describes how to install the Testing Site Manager (TSM) for Linux. DRC provides an easy-to-use wizard to install the TSM software. In a Linux environment, you must enter a few commands before you can run the wizard.

1. To launch the Wizard and start the installation, sign on to eDIRECT, open the **All Applications** menu bar, select **General Information–Downloads** and click the **Testing Site Manager (TSM)** installer icon () for Linux.
2. Click the Testing Site Manager (TSM) installer icon () for Linux to download the TSM setup shell file—**TESTING\_SITE\_MANAGER\_Setup.sh**—to the Downloads directory on your testing computer.

**Note:** Depending on the web browser you are using, a pop-up window may display. If it does, select **Save File** and click **OK**. Other browsers automatically download the installation file to your Downloads folder.

3. Start a terminal and navigate to your Downloads directory.

4. Use the **ls** command to verify that the TESTING\_SITE\_MANAGER\_Setup.sh file is in the Downloads directory. If it is not there, download it again.



## Quick Tour: Installing a TSM for Linux (cont.)

5. Enter the following command (all Linux commands are case-sensitive) to start the installation:

```
sudo sh TESTING_SITE_
MANAGER_Setup.sh
```

The sudo command gives you temporary administrator privileges and allows you to run the shell file.

If prompted, enter your administrator password at the prompt. Linux unpacks the shell file and launches the wizard to start the installation. The installation program creates an application folder in the /opt or /usr/local directory.

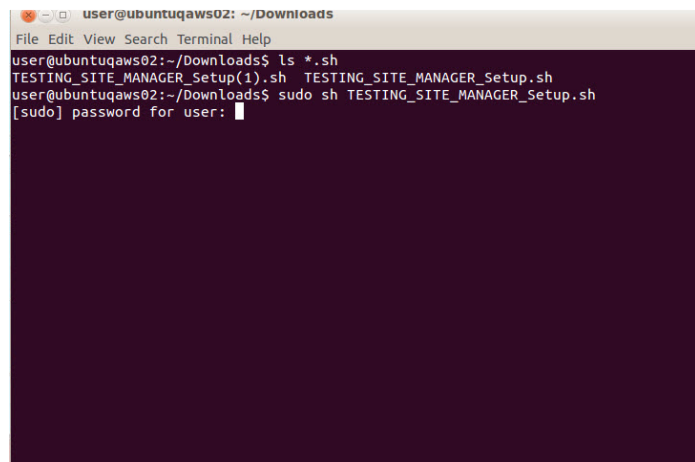
**Note:** On some 64-bit systems, you must install 32-bit Java libraries for the installation program to run. If you need to install these libraries, enter the command, **sudo apt-get install ia32-libs**.

6. The Welcome screen displays for the DRC INSIGHT Testing Site Manager (TSM) Setup Wizard.

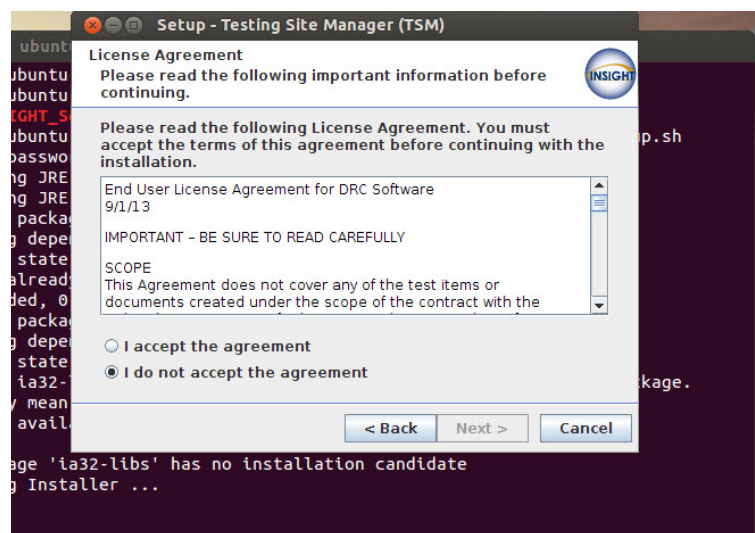
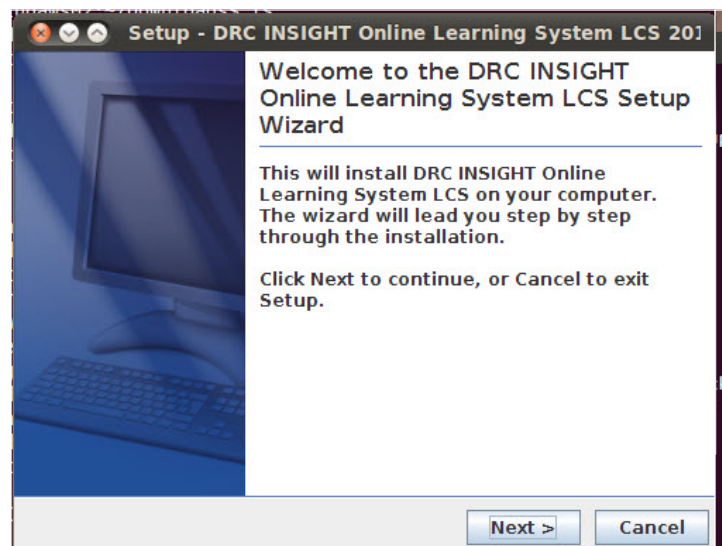
Click **Next** to continue.

7. The DRC INSIGHT License Agreement window displays. To continue the installation, read the agreement and select the option **I accept the agreement**. (If you do not accept the agreement, the installation ends.)

When the Next button becomes active, click **Next** to continue.



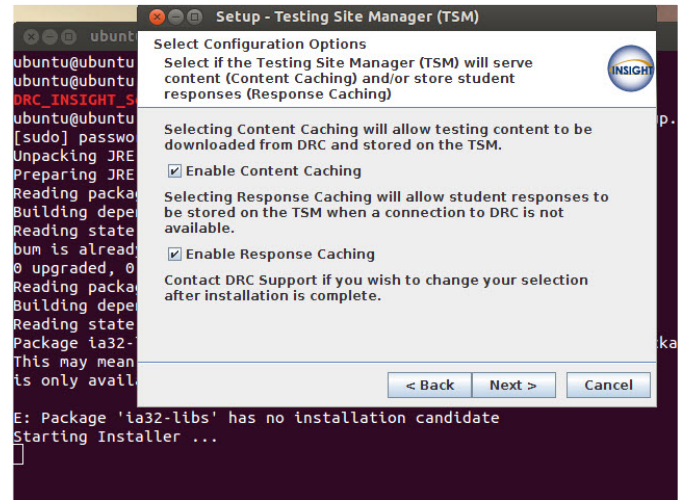
```
user@ubuntuqaws02: ~/Downloads
File Edit View Search Terminal Help
user@ubuntuqaws02:~/Downloads$ ls *.sh
TESTING_SITE_MANAGER_Setup(1).sh TESTING_SITE_MANAGER_Setup.sh
user@ubuntuqaws02:~/Downloads$ sudo sh TESTING_SITE_MANAGER_Setup.sh
[sudo] password for user: 
```



## Quick Tour: Installing a TSM for Linux (cont.)

8. The Select Configuration Options window displays. On this window you can enable content caching (test content) and response caching (test responses). The default values are to enable both types of caching. After you have made your selections, click **Next** to continue.

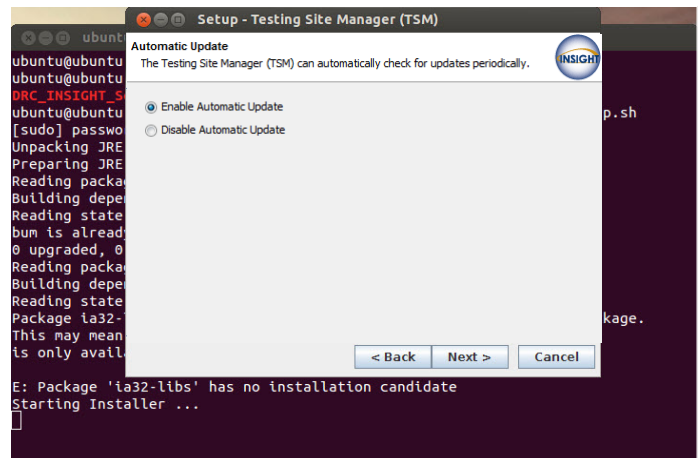
.....  
**! Important:** For content caching, install the TSM software on a computer that will be available when test content is automatically updated. Whenever you restart a computer that has the TSM software installed, or anytime you plan to use the TSM for testing, verify that the TSM content is up to date before you attempt to test (see “Content Caching” on page 44).  
 .....



9. The Automatic Update window displays. On this window, specify whether to enable automatic TSM software updates.
- If you select **Enable Automatic Update** (the default value), DRC updates the TSM software automatically.
  - If you select **Disable Automatic Update**, DRC notifies you whenever an update to the TSM software is available and you must update the software manually.

After you have made your selection, click **Next** to continue.

.....  
**! Important:** If you need to change the configuration of a TSM after it is installed, you must uninstall the TSM and install a new version. If you reinstall a TSM after you have installed INSIGHT, you may need to reset the TSM configuration properties for the testing computers that use the TSM (see *Volume III: Configuring Devices for Testing*).  
 .....





## Quick Tour: Installing a TSM for Linux (cont.)

10. During the installation, a window displays to indicate the progress of the installation. If necessary, you can click **Cancel** to end the installation process. When the installation completes, the Setup Complete window displays.

**Record the port numbers. You need this information when you install INSIGHT.** You can change the port numbers from this window.

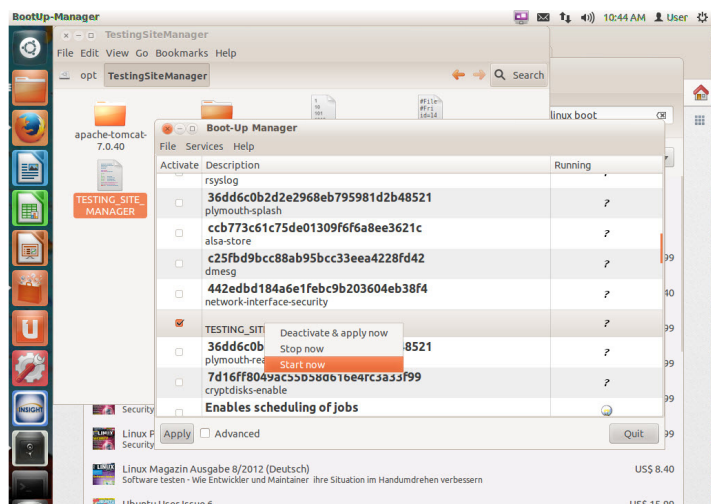
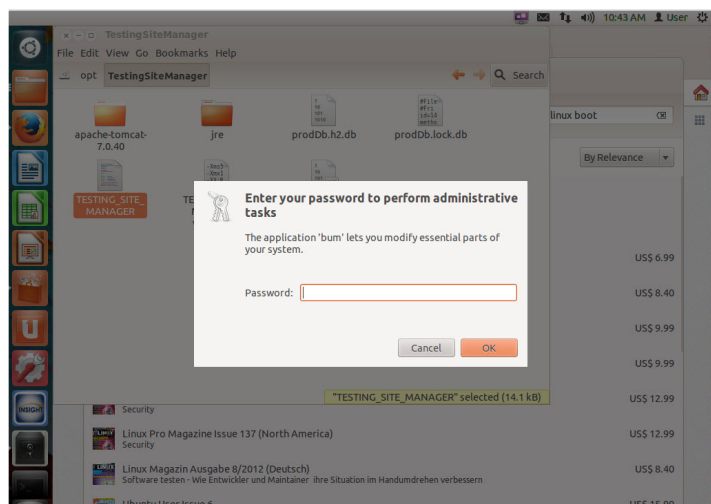
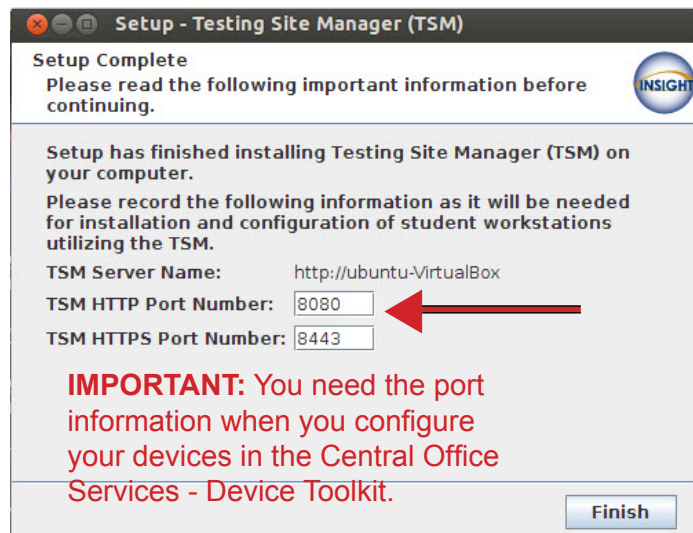
- The TSM HTTP Port Number is the port number for regular communication.
- **The TSM HTTPS Port Number is the port number for encrypted communication that the INSIGHT secure web browser uses.**

❗ **Important:** To avoid potential conflicts, be certain no other device is using either port. For Linux, you can enter the command `netstat -p` to display the list of ports currently being used.

Click **Finish** when you are ready.

11. Open the Linux Boot-Up Manager. You may need to provide your administrator password.

12. Locate **TESTING\_SITE\_MANAGER** in the list, select it, right-click, and select **Start Now**. When the Service Started pop-up dialog displays, click **OK**.



## Quick Tour: Installing a TSM for Linux (cont.)

13. Start a web browser and enter the following address into the address bar of a web browser:

**http://servername:8080/**

where *servername* is the TSM server name from step 10. In our example, it is **ubuntu-VirtualBox**. When the TSM is first installed, the forms and items for all tests are downloaded automatically. The TSM will not display until these forms and items are downloaded.

When the **Enter Testing Site Manager Name** window displays, enter a name to help you remember the location of the TSM machine in the TSM Name field. DRC recommends that you include some combination of the district, school, and location (building and/or room number) of the TSM. Click **OK**.

The name you choose is limited to 40 characters and there are no special formatting requirements (see “Using the TSM” on page 40).

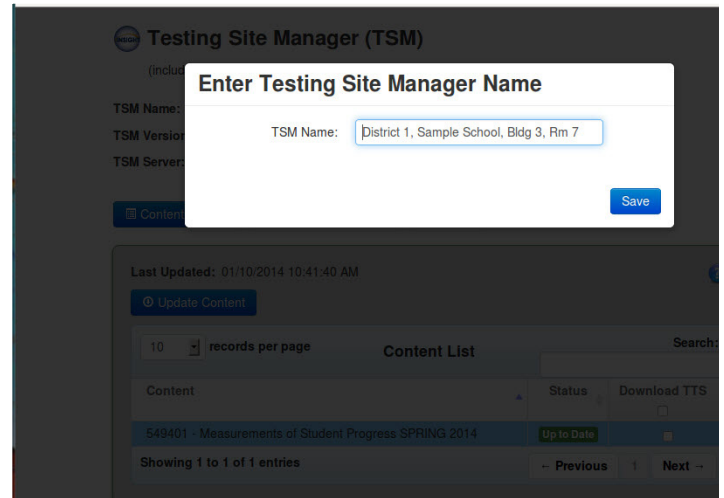
14. The TSM displays.

**! Important:** Record or copy the TSM Server Domain address—you need this information to configure your devices in the Central Office Services - Device Toolkit.

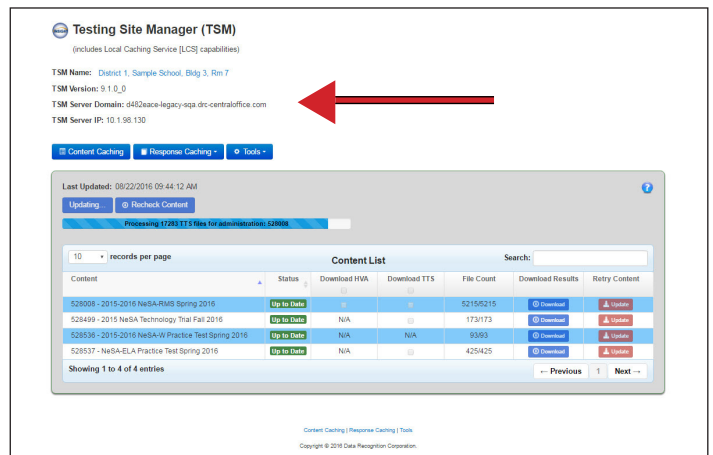
**Note:** If you specified Content Caching (step 8), when the TSM was first installed, your standard test forms and items are downloaded automatically (see “Content Caching” on page 44).

If you are using optional accommodations, select the media content you need (for example, Download TTS). The status of the corresponding test changes to Out of Date.

Click **Update Content** to load the latest test versions. When the TSM updates the content cache, the Status field changes to Up to Date.



**IMPORTANT:** Record or copy the **TSM Server Domain** address—you need this information to configure your devices in the Central Office Services - Device Toolkit.



## Managing the TSM

This section describes how to start and stop the TSM from a command line and how to uninstall a TSM.

### Starting and Stopping the TSM from the Terminal

After the TSM software is installed, the Linux Administrator must start the associated service. The Linux Administrator can start or stop the TSM services in Terminal mode by using the start and stop commands as shown in the following examples:

```
sudo /opt/TestingSiteManager/TESTING_SITE_MANAGER start
```

```
sudo /opt/TestingSiteManager/TESTING_SITE_MANAGER stop
```

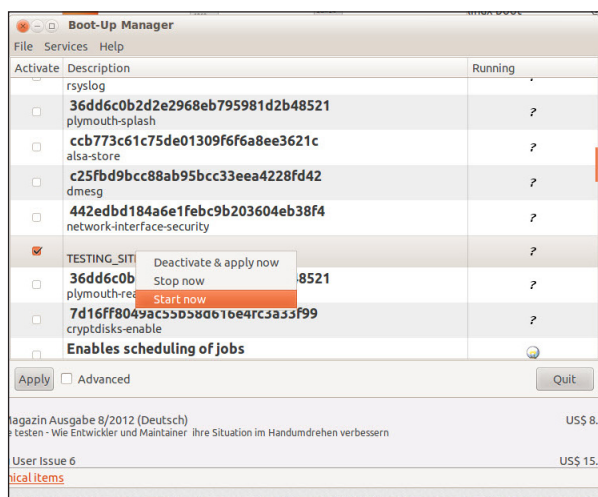
### Starting and Stopping the TSM Using the Boot-Up Manager Software

A Linux Administrator also can use the Boot-Up Manager to stop or start a service and define whether to launch a service automatically on startup.

**Note:** The Boot-Up Manager software is installed automatically with the TSM. You also can install it from the Ubuntu Software Center or by using the **apt-get install bum** command.

To start the TSM service, stop the TSM service, or launch the TSM service automatically at startup, do the following:

1. Start the Boot-Up Manager.
2. Locate **TESTING\_SITE\_MANAGER**.
3. Click the **Activate** checkbox to launch the service automatically on startup. To start or stop the service, right-click and select **Start now** or **Stop now**.





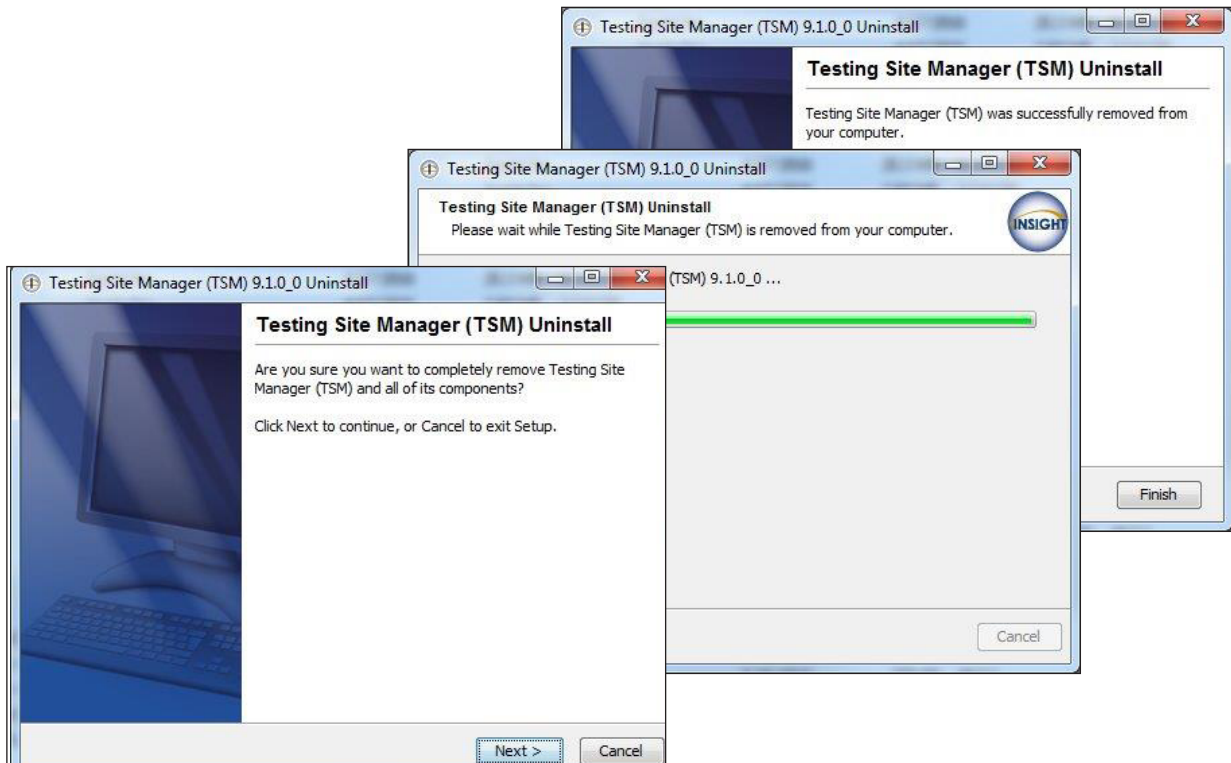
## Uninstalling the TSM

Before you attempt to uninstall the TSM, verify that there are no unsent responses in the TSM. If there are, transmit them manually first. If there are any unsent responses, you cannot uninstall the TSM.

To uninstall the TSM, perform the following steps:

1. Start Terminal mode.
2. Navigate to the TSM directory, `/opt/TestingSiteManager`.
3. Enter the command **sudo sh uninstall**.
4. Click **Next** when the Uninstall Wizard displays (see the figure below), follow the prompts, and click **Finish** when you are done.

**Note:** The uninstall process may leave log or configuration files in the installation directory or the user home folder. You can ignore these files, or delete them using the **rm** command.



**Note:** If you are unable to remove a TSM, please contact Customer Service.

# Working with the TSM



## ■ What's Covered in This Section

## ■ Testing Site Manager Tools

The Testing Site Manager (TSM) contains a number of software tools to help you plan, configure, manage, and troubleshoot your online testing environment, including caching software to store tests and/or student test responses. This section describes how to use the TSM, as well as caching and the various TSM software tools that are available.

The following table overviews TSM caching and its software tools.

Item	Description
<b>Content Caching*</b>	The TSM stores tests and lets you update them to the most current versions for testing.
<b>Response Caching*</b>	<p>In the event the Internet connection to DRC is lost, the TSM stores test responses and attempts to transmit them at fifteen-minute intervals to DRC.</p> <p>It also lets you review details about responses currently stored in the TSM (unsent responses) and responses the TSM transmitted to DRC (historical responses).</p>
<b>Ping Trend Graphs</b>	Ping Trend Graphs help you determine the best time of day to test based on the variances in speed, connectivity, and responsiveness of your network communication.
<b>Load Simulation Test</b>	The Load Simulation Test helps you estimate variations in network responsiveness based on the number of students testing at the same time, the current network traffic, the amount of available bandwidth, and other site-specific factors.
<b>Load Balancing</b>	<p>The TSM offers a Load Balancing Registration feature. If your site has configured and uses load balancing hardware and software, you can use this feature to register a load balancer IP address for your pool of TSM servers to help manage your workload more efficiently.</p> <p>The TSM load balancing feature is supported for content caching only—response caching is not supported for load balancing.</p>

\*Content and response caching are discussed in “Using Content Caching” on page 43, “Response Caching-Viewing Unsent Student Test Responses” on page 48, and “Response Caching-Viewing Historical Test Responses” on page 51.

## Using the TSM

This section describes how to use the TSM and its basic functions.

To start the TSM on a Windows machine, select **Start–All Programs–TestingSiteManager–TestingSiteManager**. On a MAC, select **Applications–TestingSiteManager–TestingSiteManager.url**.

Alternatively, if you know the TSM Server IP address (see page 41), you can display the TSM from a web browser by entering the following string: **http://TSM Server IP address:8080**

Replace *TSM Server IP address* with the actual IP address of the TSM. And, if you did not use the default value of 8080 for the port number during installation, replace 8080 with the actual port number you assigned to the TSM.

The first time you start the TSM, the Enter Testing Site Manager Name dialog box displays. In the TSM Name field, enter a name that will help you remember the location of the TSM machine and click **Save**.


**Note:** DRC recommends that you include the district, school, and location (building and/or room number) of the TSM. The name you choose is limited to 40 characters and there are no special formatting requirements.

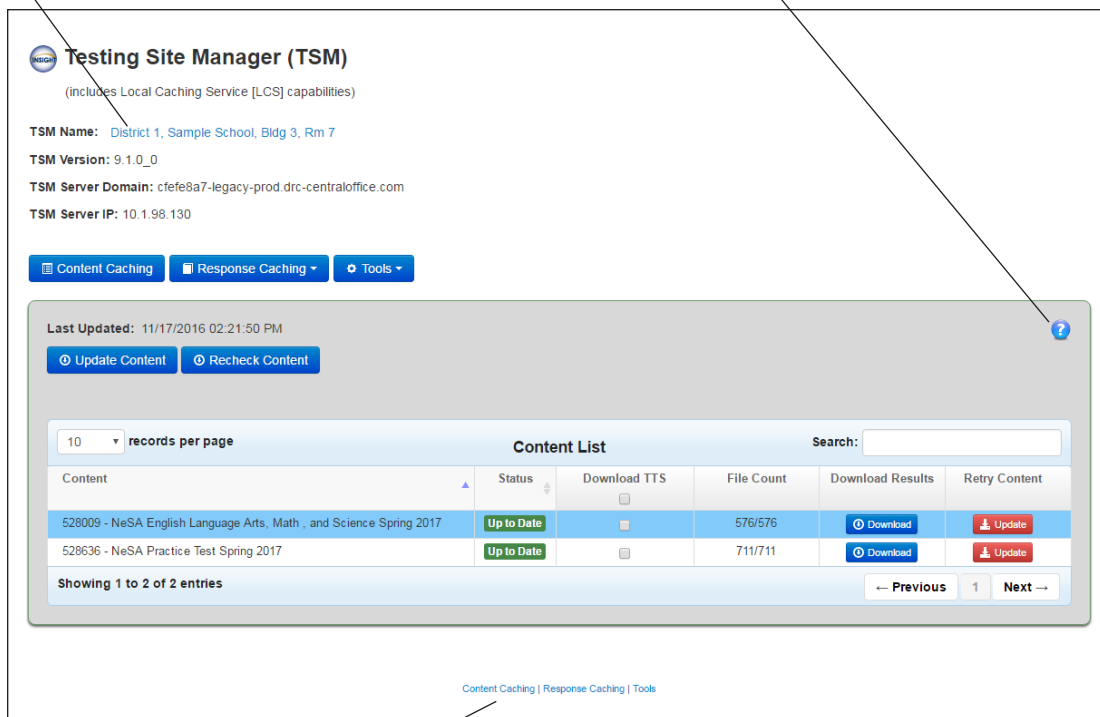
You can click on the name of the TSM to edit it (this is the name you entered when you started the TSM for the first time).







### Enter Testing Site Manager Name

TSM Name:

Save

The **Help** icon () is displayed on every page in the TSM. Click it to display online help for the page you are currently on.



Content	Status	Download TTS	File Count	Download Results	Retry Content
528009 - NeSA English Language Arts, Math, and Science Spring 2017	Up to Date		576/576	 Download	 Update
528636 - NeSA Practice Test Spring 2017	Up to Date		711/711	 Download	 Update

There are links to the functions currently configured in the TSM.

## Using the TSM (cont.)

The **TSM Server Domain** indicates the domain address of the TSM server. Use this information to identify your TSM server when you configure devices in the Central Office Services - Device Toolkit.

The **TSM Version** indicates the version number of the TSM software.

**Testing Site Manager (TSM)**  
(includes Local Caching Service [LCS] capabilities)

TSM Name: District 1, Sample School, Bldg 3, Rm 7  
 TSM Version: 9.1.0\_0  
 TSM Server Domain: cfefe8a7-legacy-prod.drc-centraloffice.com  
 TSM Server IP: 10.1.98.130

Content Caching | Response Caching | Tools

Last Updated: 11/17/2016 02:21:50 PM  
 Update Content | Recheck Content

10 records per page

Content	Status	Download TTS	File Count	Download Results	Retry Content
528009 - NeSA English Language Arts, Math, and Science Spring 2017	Up to Date		576/576		
528636 - NeSA Practice Test Spring 2017	Up to Date		711/711		

Showing 1 to 2 of 2 entries

Content Caching | Response Caching | Tools

The **TSM Server IP** indicates the IP address of the TSM server. The IP address is the address the TSM Server Domain translates to and the address testing devices will use to interact with the TSM. If this is the wrong address, you must modify your network adaptor priority to point to the device that the testing devices will connect to.

**Note:** The IP address chosen by the TSM is determined by the priority of the network adaptor in the Network Interface Card (NIC). To change the IP address the TSM selects you must set the TSM's IP address to the have a priority of 1.

### Using the TSM (cont.)

You can sort the data in a column.

- Click the up arrow icon (▲) next to the column header to sort the column data in ascending order, either alphabetically or by date, depending on the type of data.
- Click the down arrow icon (▼) next to the column header to sort the data in descending order, either alphabetically or by date, depending on the type of data.

Throughout the TSM you can use the Search field to search for specific information, such as tests, student responses, and simulation results, and filter the display.

The screenshot displays the Testing Site Manager (TSM) interface. At the top, it shows the TSM Name, Version, Server Domain, and Server IP. Below this are buttons for Content Caching, Response Caching, and Tools. The main section is titled 'Content List' and includes a search bar and a table of content items. The table has columns for Content, Status, Download TTS, File Count, Download Results, and Retry Content. Two entries are shown, both marked as 'Up to Date'. Navigation buttons for 'Previous' and 'Next' are at the bottom right of the table, with the number '1' indicating the current page.

Content	Status	Download TTS	File Count	Download Results	Retry Content
528009 - NeSA English Language Arts, Math, and Science Spring 2017	Up to Date	<input type="checkbox"/>	576/576	<a href="#">Download</a>	<a href="#">Update</a>
528636 - NeSA Practice Test Spring 2017	Up to Date	<input type="checkbox"/>	711/711	<a href="#">Download</a>	<a href="#">Update</a>

Use the **records per page** drop-down menu to specify the number of records to display at once. You can select **10** (the default value), **25**, **50**, **100**, or **All** (for all records).

Use the **Previous** and **Next** buttons to move backward and forward between pages in the display. The number between the buttons indicates the number of the page you are currently viewing.

■ Using Content Caching

The TSM can cache (store) test items using its Content Caching option and this caching option is configurable. Before testing occurs, content caching stores copies of the test items that you can keep updated, manually or automatically, to guarantee that students are using the correct version of the test.

.....  
**! Important:** With content caching, each morning before testing begins, verify that your TSM has the most current test items (see “Content Caching” on page 44).  
.....

□ Testing with Content Caching

With TSM content caching, before testing begins tests are downloaded from DRC’s servers across the Internet and stored on the school or district computer where the TSM software is installed. When the student logs in at test time, the test content is downloaded from the TSM to the student’s testing device.

## Content Caching

The correct test content must be available when students start testing—students can only test using test content that is up to date. Because there may be updates to test content between the time the TSM was installed and testing begins, it is important to verify that the test items stored in the TSM are up to date. Before testing can begin, you must replace any test content that is out of date with the most current versions from DRC.

The **Content Caching** button displays the tests available on the TSM. These tests are available to download to INSIGHT.

Each testing administration in the cache is identified by a unique ID number followed by the name of the specific assessment. In some examples in this user guide, a generic identifier is displayed.

**Testing Site Manager (TSM)**  
(includes Local Caching Service [LCS] capabilities)

TSM Name: District 1, Sample School, Bldg 3, Rm 7  
TSM Version: 9.1.0.0  
TSM Server Domain: cfef8a7-legacy-prod.drc-centraloffice.com  
TSM Server IP: 10.1.98.130

[Content Caching](#) [Response Caching](#) [Tools](#)

Last Updated: 11/17/2016 02:21:50 PM  
[Update Content](#) [Recheck Content](#)

10 records per page

Content	Status	Download TTS	File Count	Download Results	Retry Content
528009 - NeSA English Language Arts, Math, and Science Spring 2017	Up to Date		576/576	<a href="#">Download</a>	<a href="#">Update</a>
528636 - NeSA Practice Test Spring 2017	Up to Date		711/711	<a href="#">Download</a>	<a href="#">Update</a>

Showing 1 to 2 of 2 entries

[Previous](#) 1 [Next](#)

[Content Caching](#) | [Response Caching](#) | [Tools](#)

The **Status** column in the Content List table indicates whether all test forms in an administration are the most current version (up to date).

- If all of the most current versions of tests in an administration are on the TSM, the Status column displays **Up to Date** in green text.
- If the most current versions are not on the TSM, the Status column displays **Out of Date** in red text.

**Note:** An administration must have a status of Up to Date before it is administered. Otherwise, students receive an error message when they log in and will be unable to test.



## Content Caching (cont.)

The **File Count** column in the Content List table indicates the number of files currently in the TSM and the total number that will be in the TSM when all of the necessary files are downloaded.

The format is  $X/Y$ , where  $X$  is the current number of files and  $Y$  is the total number of files.

When the TSM is up to date, these numbers should be the same.

Click the **Recheck Content** button to check the TSM for corrupted files.

**Manager (TSM)**  
ing Service [LCS] capabilities)

TSM Name: District 1, Sample School, Bldg 3, Rm 7  
TSM Version: 9.1.0\_0  
TSM Server Domain: cfef8a7-legacy-prod.drc-centraloffice.com  
TSM Server IP: 10.1.98.130

Content Caching | Response Caching | Tools

Last Updated: 11/17/2016 02:21:50 PM  
Update Content | Recheck Content

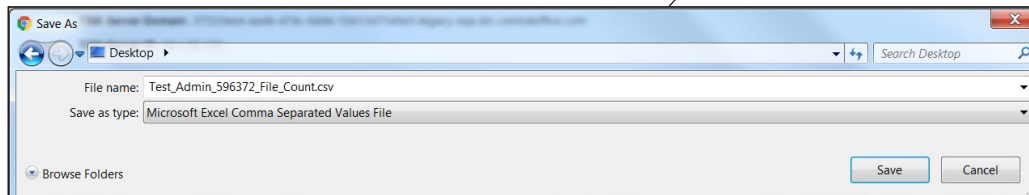
10 records per page

Content	Status	Download TTS	File Count	Download Results	Retry Content
528009 - NeSA English Language Arts, Math, and Science Spring 2017	Up to Date		576/576	Download	Update
528636 - NeSA Practice Test Spring 2017	Up to Date		711/711	Download	Update

Showing 1 to 2 of 2 entries

Previous 1 Next

The **Download Results** column in the Content List table contains a **Download** button that you can click to download a comma-separated values (.csv) file containing a list of all of the files in the TSM.



	A	B
1	Filename	Downloaded
2	2014_10_16_175141/108680/stimulus-1.html	complete
3	2014_10_16_175141/108680/css/full.css	complete
4	2014_10_16_175141/108680/css/gr1_3.css	complete
5	2014_10_16_175141/108680/css/speaking-stimulus.css	complete
6	2014_10_16_175141/108680/js/jquery-2.0.3.min.js	complete
7	2014_10_16_175141/108680/js/orientation-audio.js	complete
8	2014_10_16_175141/108680/js/wida.js	complete
9	2014_10_16_175141/108680/media/balloonwhite.svg	complete
10	2014_10_16_175141/108680/media/s15_directionspractice_p100_1.mp3	complete
11	2014_10_16_175141/108680/media/s15_directionspractice_p100_131101	complete
12	2014_10_16_175141/108680/media/vta_crop_edit-96x92.png	complete
13	2014_10_16_180407/i696093/stimulus-9.html	complete
14	2014_10_16_180407/i696093/css/full.css	complete

### Content Caching (cont.)

To update all tests manually, click the **Update Content** button at the top of the page or the **Update** button in the Retry Content column. When you click **Update Content** or **Update**, the latest test content is downloaded. After the update is complete, the status changes to Up to Date and the **Last Updated** date and time is updated.

**Note:** The TSM also automatically checks for test content updates at regular intervals. If the computer where the TSM is installed is powered on, the TSM automatically updates the test content.

Click **Update Content** to update all of the tests in the TSM with the latest versions.

**Important:** On the day of testing, confirm that the TSM test content is up to date to ensure that students can log into their tests. For example, if the machine where the TSM is installed was turned off recently, it is possible that its content is out of date. If it is, click **Update Content** to update all content or **Update** to update a specific test.

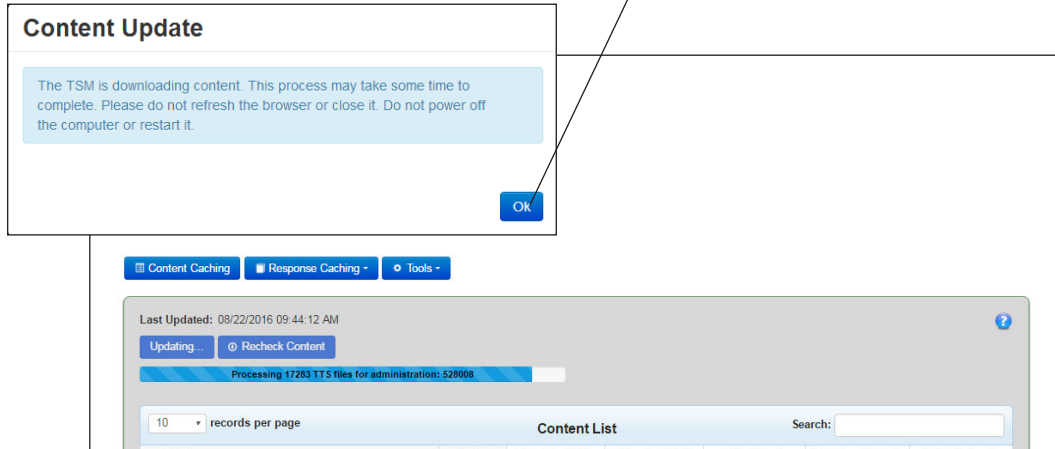
The screenshot displays the Testing Site Manager (TSM) interface. At the top, it shows the TSM Name, Version, Server Domain, and Server IP. Below this, there are tabs for Content Caching, Response Caching, and Tools. The main section is titled 'Last Updated: 11/17/2016 02:21:50 PM' and contains two buttons: 'Update Content' and 'Recheck Content'. Below these is a 'Content List' table with columns for Content, Status, Download TTS, File Count, Download Results, and Retry Content. The table shows two entries, both with a status of 'Up to Date'. At the bottom, there are navigation buttons for 'Previous', '1', and 'Next'.

Content	Status	Download TTS	File Count	Download Results	Retry Content
528009 - NeSA English Language Arts, Math, and Science Spring 2017	Up to Date		576/576	Download	Update
528636 - NeSA Practice Test Spring 2017	Up to Date		711/711	Download	Update

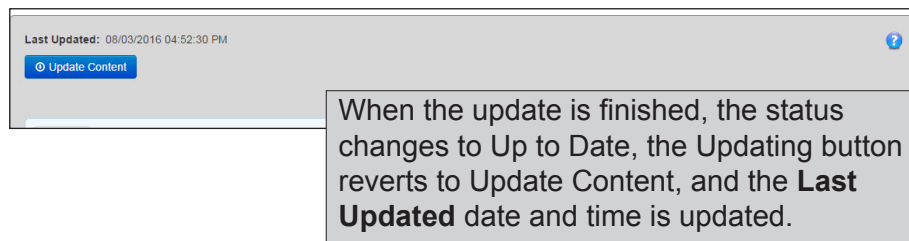
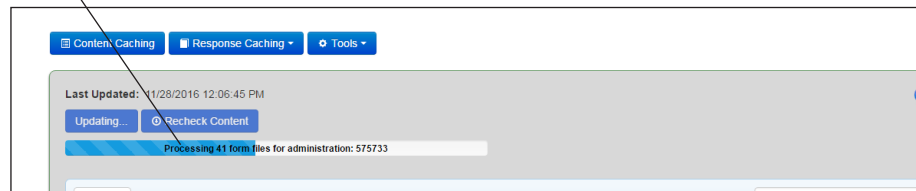
Click **Update** to update all tests to the latest version.

## Content Caching (cont.)

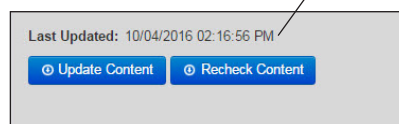
When an update starts, the **Content Update** page displays information regarding the update process. After you read the information, click **OK**.



During the update, a progress bar displays to indicate the status of the update.



When the update is finished, the status changes to Up to Date, the Updating button reverts to Update Content, and the **Last Updated** date and time is updated.



### Response Caching—Viewing Unsent Student Test Responses

To check whether student test responses have been transmitted to DRC and for detailed information about those responses, Select **Response Caching—Unsent Responses**.

**Note:** If the Internet connection with DRC is lost while testing, student responses are saved to the TSM. When the TSM is communicating with DRC, these stored responses are transmitted automatically every fifteen minutes.

The screenshot shows the Testing Site Manager (TSM) interface. At the top, it displays the TSM Name, Version, Server Domain, and Server IP. Below this, there are three main menu items: Content Caching, Response Caching, and Tools. The Response Caching menu is expanded, showing two sub-items: Unsent Responses and Historical Responses. A callout box points to the Unsent Responses option. Below the menu, there is a table titled 'Content List' with columns for Content, Status, Download TTS, File Count, Download Results, and Retry Content. The table shows two entries: '528009 - NeSA English Language Arts, Math, and Science Spring 2017' and '528636 - NeSA Practice Test Spring 2017'. Both entries have a status of 'Up to Date' and a file count of 576/576. The table also includes a search bar and pagination controls.

Content	Status	Download TTS	File Count	Download Results	Retry Content
528009 - NeSA English Language Arts, Math, and Science Spring 2017	Up to Date	<input type="checkbox"/>	576/576	<a href="#">Download</a>	<a href="#">Update</a>
528636 - NeSA Practice Test Spring 2017	Up to Date	<input type="checkbox"/>	711/711	<a href="#">Download</a>	<a href="#">Update</a>

Showing 1 to 2 of 2 entries

← Previous 1 Next →

Select **Response Caching—Unsent Responses** to see information about student responses currently stored on the TSM for transmission to DRC.

## Response Caching—Viewing Unsent Student Test Responses (cont.)

When you select **Unsent Responses**, the Student Responses—Unsent tab displays information about student responses currently stored in the TSM that are waiting to be transmitted to DRC.

You can send saved student responses manually by clicking the **Transmit Responses** button.

Unsent Tests: 4  
 Last Transmission Attempt: 01/14/2014 12:53:59 PM  
 Next Transmission Attempt: 01/14/2014 01:08:59 PM

[Transmit Responses](#)

10 records per page

School	Test Session	Student Name	State ID	Earliest Response
Demo Site 1	Grade 05	Demo One Student	231365498	01/14/2014 12:39:57 PM
Demo Site 1	Grade 05	Demo Two Student	231365499	01/14/2014 12:39:57 PM
Demo Site 2	Grade 06	Demo Three Student	231365400	01/14/2014 12:39:57 PM
Demo Site 2	Grade 06	Demo Four Student	231365401	01/14/2014 12:39:57 PM

Showing 1 to 4 of 4 entries

Content Caching | Response Caching | Tools

**Next Transmission Attempt** indicates the date and time the next automatic transmission is scheduled. Responses are automatically transmitted every fifteen minutes.

**Last Transmission Attempt** indicates the date and time of the last attempt to transmit student responses.

### Response Caching—Viewing Unsent Student Test Responses (cont.)

**Unsent Tests** indicates the number of tests that have not been sent to DRC.

**! Important:** Verify that this number is 0 (zero) at the end of each testing day and at the end of the entire testing period. If it is not zero, click the **Transmit Responses** button to transmit any stored responses.

Enter information in the **Search** field to search for specific data.

Content Caching | Response Caching | Tools

Unsent Tests: 4

Last Transmission Attempt: 01/14/2014 12:53:59 PM

Next Transmission Attempt: 01/14/2014 01:08:59 PM

Transmit Responses

10 records per page

Student Responses - Unsent

Search:

School	Test Session	Student Name	State ID	Earliest Response
Demo Site 1	Grade 05	Demo One Student	231365498	01/14/2014 12:39:57 PM
Demo Site 1	Grade 05	Demo Two Student	231365499	01/14/2014 12:39:57 PM
Demo Site 2	Grade 06	Demo Three Student	231365400	01/14/2014 12:39:57 PM
Demo Site 2	Grade 06	Demo Four Student	231365401	01/14/2014 12:39:57 PM

Showing 1 to 4 of 4 entries

Previous 1 Next

By default, the Student Responses – Unsent page displays all of the information currently available.

Use the **Previous** and **Next** buttons to move backward and forward between pages in the display. The number between the buttons indicates the page you are currently viewing.

## Response Caching—Viewing Historical Test Responses

Select **Historical Responses** from the drop-down menu to display information about student responses that have been transmitted to DRC.

The screenshot shows the Testing Site Manager (TSM) interface. At the top, it displays the TSM Name, Version, Server Domain, and Server IP. Below this, there are three main tabs: 'Content Caching', 'Response Caching', and 'Tools'. The 'Response Caching' tab is active, and its dropdown menu is open, showing 'Unsent Responses' and 'Historical Responses'. The 'Historical Responses' option is highlighted. Below the tabs, there are buttons for 'Update Content' and 'Recheck Content'. The main content area shows a 'Content List' table with columns for Content, Status, Download TTS, File Count, Download Results, and Retry Content. The table contains two entries, both marked as 'Up to Date'. A callout box points to the 'Historical Responses' option in the dropdown menu.

**Testing Site Manager (TSM)**  
(includes Local Caching Service [LCS] capabilities)

TSM Name: District 1, Sample School, Bldg 3, Rm 7  
TSM Version: 9.1.0\_0  
TSM Server Domain: cfefe8a7-legacy-prod.drc-centraloffice.com  
TSM Server IP: 10.1.98.130

Content Caching | **Response Caching** | Tools

Unsent Responses  
**Historical Responses**

Last Updated: 11/17  
Update Content | Recheck Content

10 records per page

Content	Status	Download TTS	File Count	Download Results	Retry Content
528009 - NeSA English Language Arts, Math, and Science Spring 2017	Up to Date		576/576	<a href="#">Download</a>	<a href="#">Update</a>
528636 - NeSA Practice Test Spring 2017	Up to Date		711/711	<a href="#">Download</a>	<a href="#">Update</a>

Showing 1 to 2 of 2 entries

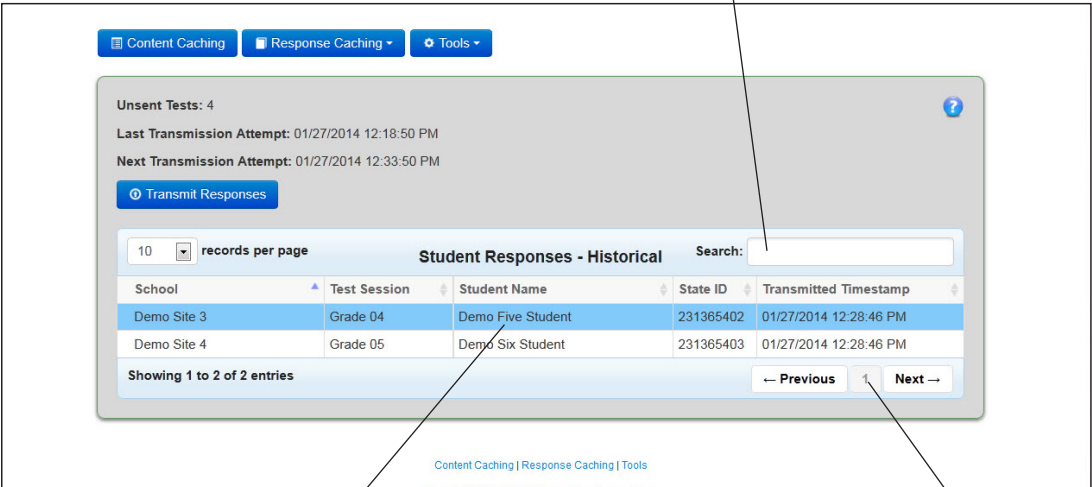
← Previous 1 Next →

Select **Response Caching—Historical Responses** to display information about the student test responses that the TSM has sent to DRC.



### Response Caching—Viewing Historical Test Responses (cont.)

Enter information in the **Search** field to search for specific data.



The screenshot displays the 'Student Responses - Historical' interface. At the top, there are tabs for 'Content Caching', 'Response Caching', and 'Tools'. Below these, a summary section shows 'Unsent Tests: 4', 'Last Transmission Attempt: 01/27/2014 12:18:50 PM', and 'Next Transmission Attempt: 01/27/2014 12:33:50 PM', along with a 'Transmit Responses' button. The main area features a table titled 'Student Responses - Historical' with columns: School, Test Session, Student Name, State ID, and Transmitted Timestamp. The table contains two entries. Above the table is a search bar and a 'records per page' dropdown set to 10. Below the table, it says 'Showing 1 to 2 of 2 entries' and includes 'Previous' and 'Next' navigation buttons. A footer at the bottom shows 'Content Caching | Response Caching | Tools'.

School	Test Session	Student Name	State ID	Transmitted Timestamp
Demo Site 3	Grade 04	Demo Five Student	231365402	01/27/2014 12:28:46 PM
Demo Site 4	Grade 05	Demo Six Student	231365403	01/27/2014 12:28:46 PM

Showing 1 to 2 of 2 entries

← Previous 1 Next →

Content Caching | Response Caching | Tools

By default, the **Student Responses – Historical** tab displays all of the information currently available.

Use the **Previous** and **Next** buttons to move backward and forward between pages in the display. The number between the buttons indicates the page you are currently viewing.

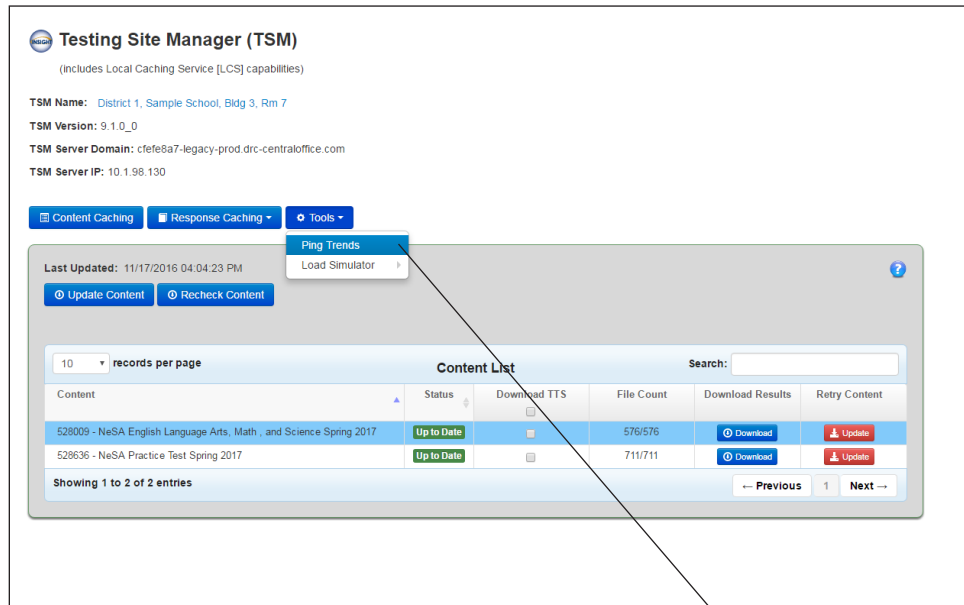
## ■ Ping Activity

When the TSM “pings” the IP address of the DRC server, the network sends data packets from the TSM to the DRC server and back. The network also calculates the time, in milliseconds, it takes for the data to be received. The longer this time is, the longer it has taken the DRC server to receive the data packets (usually because of excess network traffic).

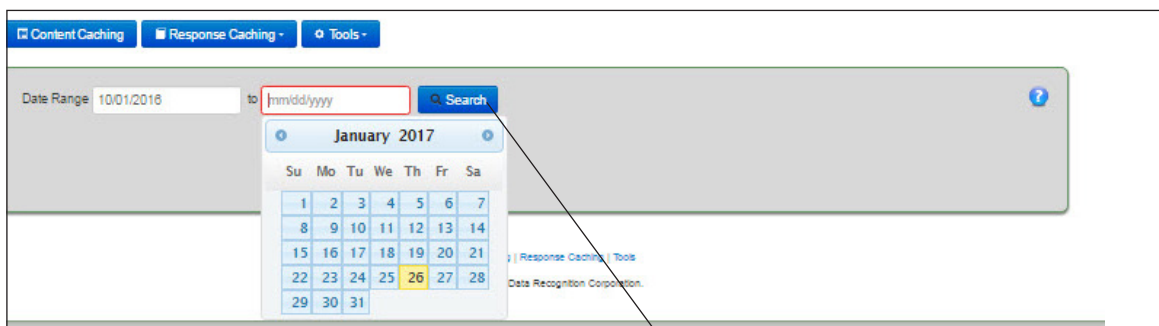
This rate of data transfer across a network is referred to as latency. Knowing the latency is useful for helping to determine peak network traffic times and for analyzing the best times for testing.

## Graphing Ping Activity

Select **Tools–Ping Trends** to graph the time that was required by the TSM to ping the DRC servers for a date range that you specify, as well as the number of ping failures during the same date range.

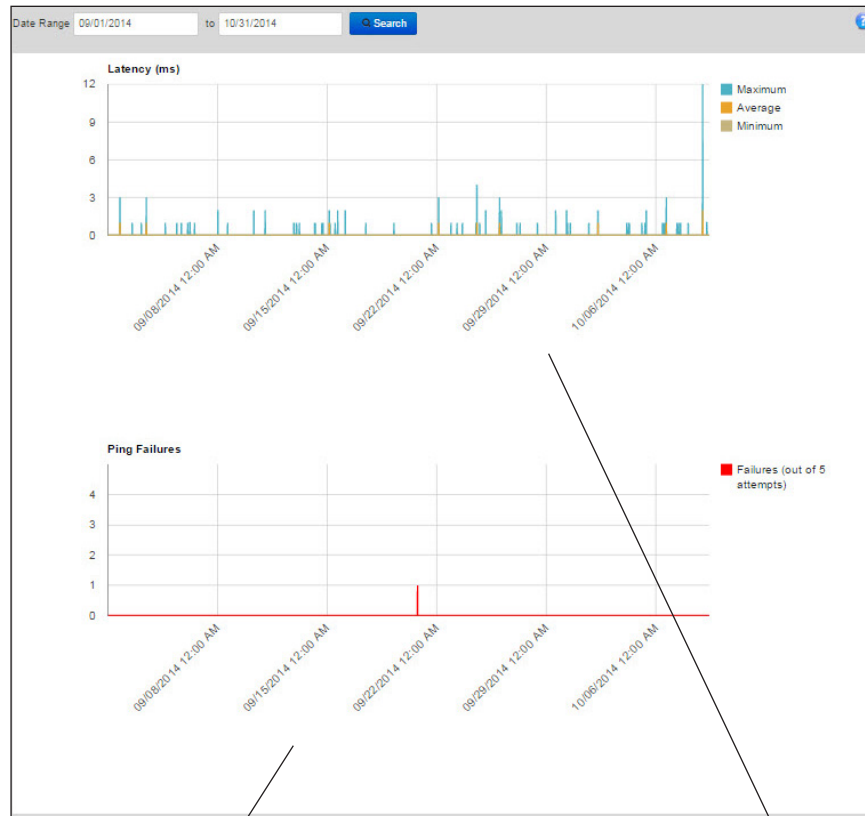


1. Select **Tools–Ping Trends** to display the Ping Trends page.



2. Use the drop-down calendars to specify a date range for the data and click **Search**.

## Graphing Ping Activity (cont.)

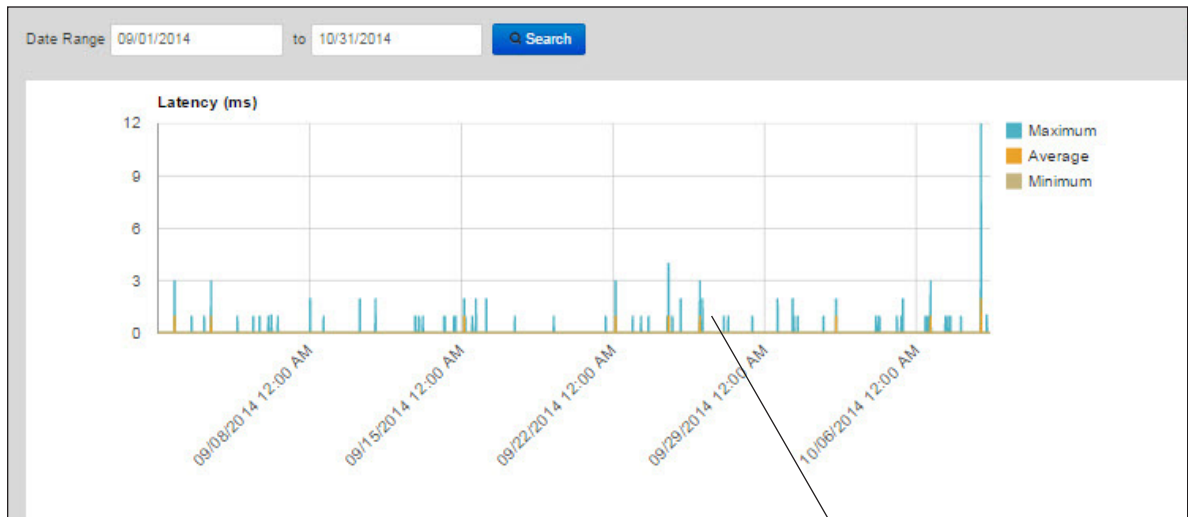


Two graphs display network communication information for the date range.

- The first graph reveals the latency of the network.
- The second graph indicates the number of ping failures.

### Graphing Ping Activity (cont.)

The first graph displays a measure of the latency during the date range. Latency is a measure of the time delay in a system—the greater the latency, the slower the communication.



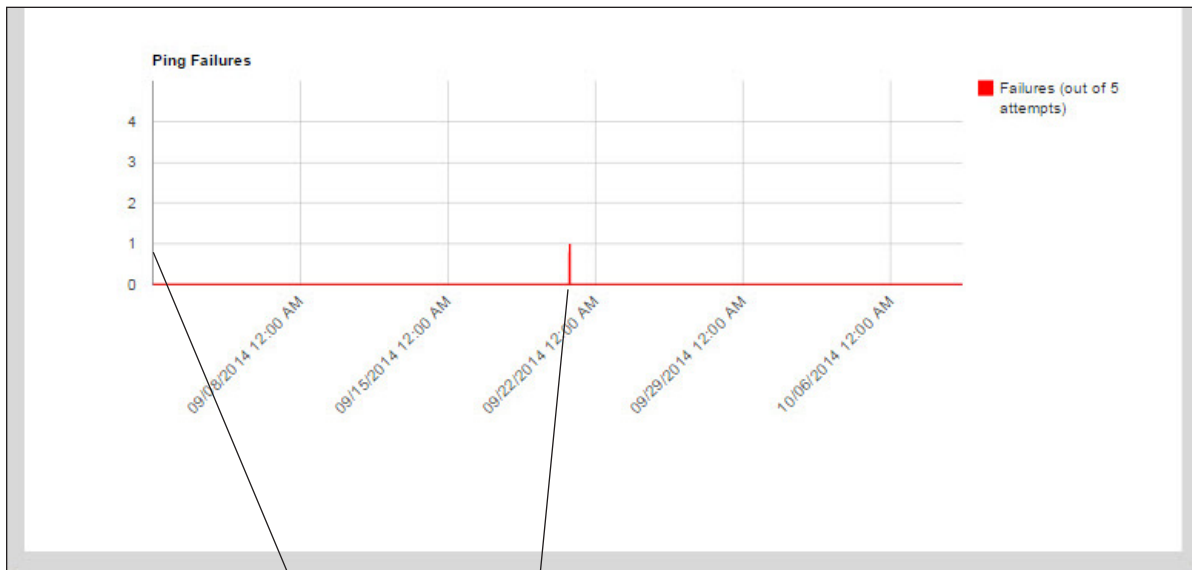
In this graph, latency represents the time required (in milliseconds) for ping attempts during the time period, organized by color:

- The blue line indicates the maximum amount of time needed for ping attempts.
- The orange line indicates the average amount of time needed for ping attempts.
- The tan line indicates the minimum amount of time needed for ping attempts.

As the time required for ping attempts increases, peaks or spikes appear that can indicate increased network traffic and slower response time. You can use this information to determine optimal testing times.

## Graphing Ping Activity (cont.)

The second graph displays the number of ping failures during the date range. Ping failures are a good indicator of system availability—a spike, or high failure rate, indicates a time period of poor communication between the TSM and DRC. Similarly, a low failure rate indicates a good time for testing. You can use this information to determine optimal testing times.



Ping failures indicate the number of times (y-axis) that the TSM was unable to successfully ping the DRC server after five attempts during each time interval\* (x-axis).

\*To graph ping failures, the TSM divides the date range you specified into equal date and time intervals.

### ■ Load Simulation Testing

NeSA-Technology Assessment Coordinators (N-TACs) can perform load simulations to estimate the amount of time it will take during testing to download tests and upload responses. The following are prerequisites and tips for performing load simulation tests:

- The TSM must be installed, running, and connected to each testing device that you plan to include in the simulation.  
.....  
ⓘ **Important:** For a load simulation test, limit the number of testing devices per TSM to 100. Attempting to perform a load simulation test with more than 100 devices may cause the TSM to become unresponsive. You may have to uninstall and reinstall the TSM.  
.....
- DRC recommends that you run the simulation three times during your load simulation testing. Run it twice specifying the TSM as the source for form content and once specifying DRC as the source for form content.
- Run different load simulations with different groups of devices to ensure that all devices are included in multiple simulations.
- INSIGHT must be installed on each testing computer that you plan to include in the simulation.
- The System Readiness Check must be displayed on the screen of each testing computer that you plan to include in the simulation.

**Note:** For general questions and answers regarding Load Simulation Testing, see *Load Simulation Testing Questions in Volume V: Troubleshooting*.

### □ Load Simulation Testing and Actual Testing

.....  
ⓘ **Important:** Enable load simulations only when you are actually conducting a load simulation test using a TSM and a set of student testing devices. Prior to actual student testing (when students are logging in and taking tests), be sure to disable load simulations for the TSM by selecting **Content Caching Only** for the TSM Content caching functions on the Locations page of the Central Office Services - Device Toolkit (see *Working with Locations in Volume III: Configuring Devices for Testing* for more information).  
.....



## Performing a Load Simulation

You use the TSM and INSIGHT to perform a load simulation—if you are not using a TSM for content caching, you cannot perform load simulations. First, group the device in a Central Office Services - Device Toolkit configuration that specifies the location of a TSM to use for content caching. Next, install INSIGHT on a testing device to register the testing device with the TSM. Now, start the TSM, specify which of the registered computers to include in the simulation, and run your simulations. Then, use the TSM to review the results of the simulations.

System Information		
Client Version	Configuration Source	Installation Directory
6.0.0	Device Toolkit	C:\Program Files\DRC INSIGHT Online Assessments
Machine Name	User Name	OS Level
		Microsoft Windows 7 Enterprise Edition Service Pack 1 (build 7601), 32-bit
OS Version		
6.1		
Response Caching TSM Connection	Response Caching TSM Configuration	Content Caching TSM Connection
https://10.1.99.78:8443/	Yes	https://10.1.99.78:8443/
Content Caching TSM Configuration		
Yes		
HTTPS Proxy	Device ID	Device Toolkit Organizational Unit and ID
	QJU	Level 2 Support (969)
District		
Sample District		
School		
Sample School 2		
Required Test List		
Status	Test Name	Details
✓	Screen Resolution	Details
✓	Internet Connection	Details
✓	RAM	Details
✓	Audio Capability	Details
✓	OS Level	Details
✓	User Agent	Details
✓	Response Caching TSM Connection	Details
✓	Response Caching TSM Status	Details
✓	Response Caching TSM Version	Details
✓	Content Caching TSM Connection	Details
✓	Content Caching TSM Version	Details
✓	Client Version	Details
✓	Folder Permissions	Details

Load Results Execute Tests Test Audio Exit

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1. To perform a load simulation, install INSIGHT on each testing device (see *Volume IV: DRC INSIGHT*) that you will be using in the load simulation.
2. Start the System Readiness Check (click the link and enter the four-digit passcode) to display the System Information page.
3. Verify that a TSM is configured correctly for content caching.
 

**! Important:** If you have not configured a TSM for content caching for the configuration associated with the device, use the Central Office Services - Device Toolkit to either reconfigure the configuration or move the device to a different configuration (see *Volume III: Configuring Devices for Testing*), and restart INSIGHT on the device.
4. When you are finished, leave the System Readiness Check open. The System Readiness Check must be active on each testing computer that you plan to include in the simulation.
5. Start the TSM by selecting **Start–All Programs–TestingSiteManager–TestingSiteManager**.

## Performing a Load Simulation (cont.)

### 6. From the TSM, select **Tools–Load Simulator–Enable Simulator**.

The screenshot shows the Testing Site Manager (TSM) interface. At the top, it displays the TSM Name, Version, Server Domain, and Server IP. Below this, there are tabs for Content Caching, Response Caching, and Tools. The Tools menu is open, showing options like Ping Trends, Load Simulator, Enable Simulator, and Historical Simulations. The Load Simulator option is selected, and the Enable Simulator checkbox is checked. Below the menu, there is a Content List table with columns for Content, Status, Download HVA, Download TTS, File Count, Download Results, and Retry Content. The table shows four entries, all with a status of 'Up to Date'.

You can specify the source for the test form content—the TSM or the DRC servers.

### 7. Click the Enable Simulator checkbox and use the radio buttons to specify the source of the form content for the simulation.

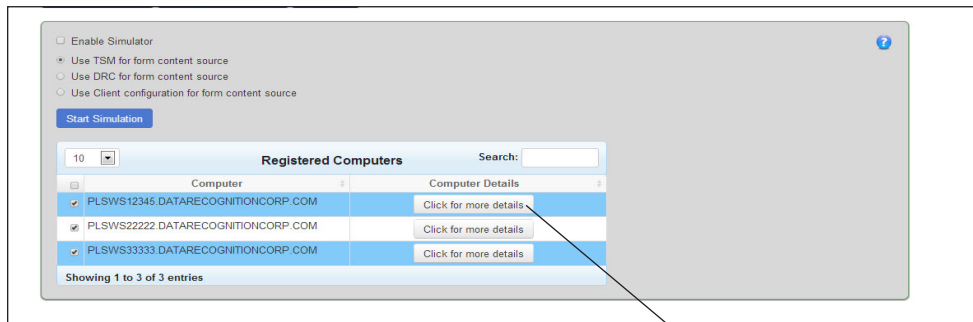
**Note:** This step registers the testing computer with the TSM.

The screenshot shows the Registered Computers page in the TSM interface. It displays a list of registered computers with columns for Computer and Computer Details. Two computers are listed, both with the name 'PLYWS11945.DATARECOGNITIONCORP.COM'. The first computer has a checkbox checked. Below the list, there is a 'Start Simulation' button. The footer of the page shows the copyright information for Data Recognition Corporation.

The Registered Computers page displays the number and name of each testing computer registered to the TSM.

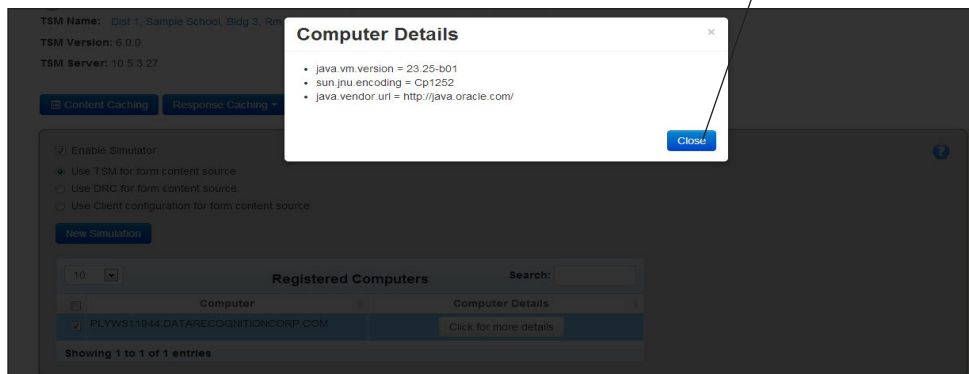
### 8. Select one or more computers from the Computer column to include in the simulation by clicking the checkbox next to each computer's name. Click the checkbox at the top of the column to test all of the computers.

## Performing a Load Simulation (cont.)

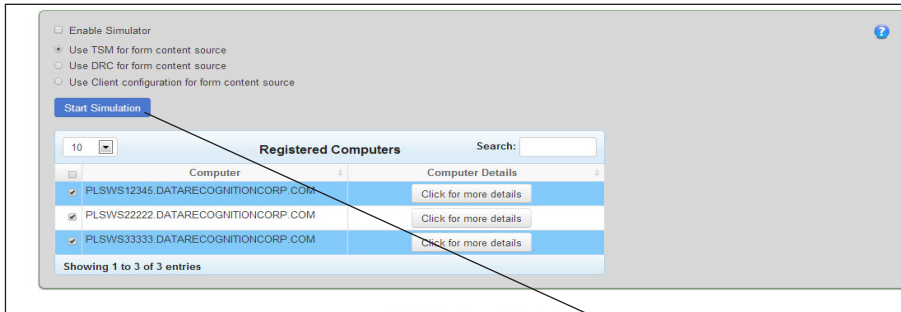


You are ready to run a simulation.

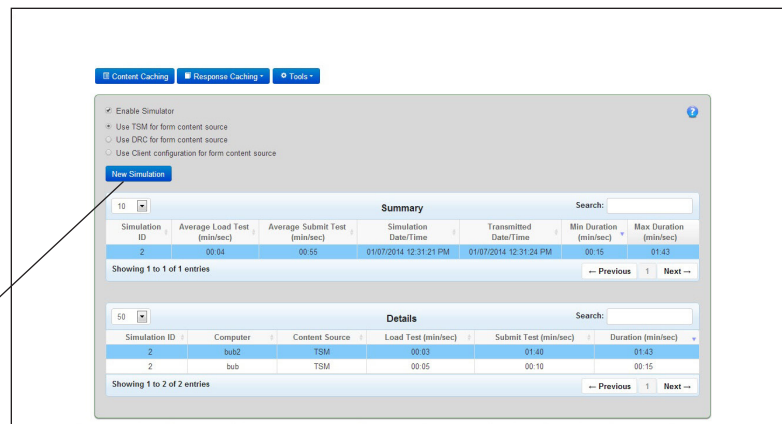
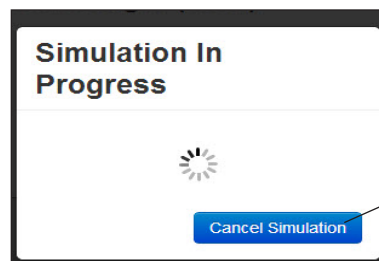
- 9.** To locate one or more computers in the list, use the Search box. Click the **Click for more details** button to display technical details about the testing computer. Click **Close** when you are finished.



## Performing a Load Simulation (cont.)



**10.** Click **Start Simulation** to start the simulation. You can click Cancel Simulation to cancel a simulation.



After a simulation, the Start Simulation button changes to New Simulation and each testing computer in the simulation displays a completion message.

**11.** To run another simulation, click the New Simulation button to reset it to Start Simulation and repeat steps 4–9. If you are finished, close the System Readiness Check on each testing computer.

**Note:** A simulation times out after ten minutes. The time for a simulation that lasts less than one second is rounded to one second.

## Analyzing Load Simulation Results

When the load simulation finishes, the results display. For a description of the information displayed, refer to the tables on the following page.

The simulation results are sorted by Maximum Duration and Simulation ID. You can click the column headings to re-sort the data.

Content Caching
Response Caching
Tools

☒ Enable Simulator

- ☒ Use TSM for form content source
- ☐ Use DRC for form content source
- ☐ Use Client configuration for form content source

New Simulation

10

Summary

Search:

Simulation ID	Average Load Test (min/sec)	Average Submit Test (min/sec)	Simulation Date/Time	Transmitted Date/Time	Min Duration (min/sec)	Max Duration (min/sec)
2	00:04	00:55	01/07/2014 12:31:21 PM	01/07/2014 12:31:24 PM	00:15	01:43

Showing 1 to 1 of 1 entries

Previous 1 Next

50

Details

Search:

Simulation ID	Computer	Content Source	Load Test (min/sec)	Submit Test (min/sec)	Duration (min/sec)
2	bub2	TSM	00:03	01:40	01:43
2	bub	TSM	00:05	00:10	00:15

Showing 1 to 2 of 2 entries

Previous 1 Next

### Analyzing Load Simulation Results (cont.)

The following tables describe the information displayed from the completed simulation.

#### Summary

The information in the Summary column summarizes simulation results across all of the testing computers in the simulation.

Heading	Description
Simulation ID	A system identifier for the simulation.
Average Load Test (min/sec)	The average time for the computers in the simulation to load test content.
Average Submit Test (min/sec)	The average amount of time for the computers in the simulation to submit all test responses to DRC. This time factors in the time required to submit each test response, the wait time between each test question, and the time required for the final test submission.
Simulation Date/Time	The date and time the simulation started.
Transmitted Date/Time	The date and time the simulation results were transmitted to DRC.
Min Duration (min/sec)	The time required for the fastest computer in the simulation to load the test and submit the results.
Max Duration (min/sec)	The time required for the slowest computer in the simulation to load the test and submit the results.

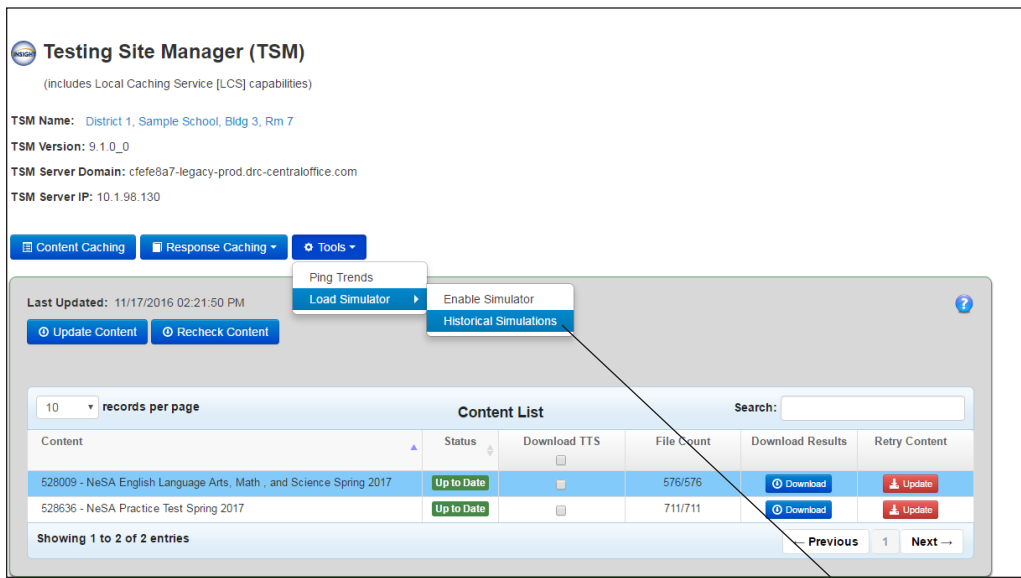
#### Details

The information in the Details column shows simulation details for each testing computer in the simulation.

Heading	Description
Simulation ID	A system identifier for the simulation.
Computer	The unique name of each computer in the simulation.
Content Source	The source of the test content loaded to the testing computer, DRC or TSM.
Load Test (min/sec)	The time it took the testing computer to load test content.
Submit Test (min/sec)	The time it took the testing computer to submit test responses to DRC.
Duration (min/sec)	The total time it took the testing computer to load the test and submit the results.

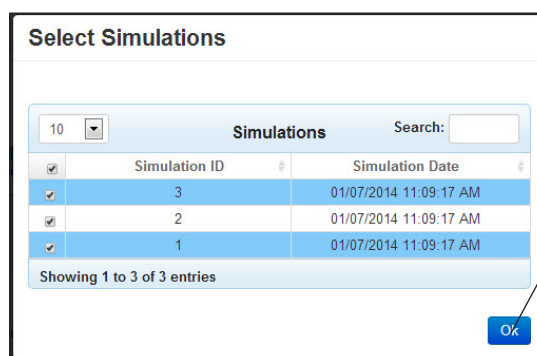
## Viewing Historical Simulation Data

Use the Historical Simulations option to view the results of one or more simulations that you select. For a description of the meaning of the information displayed, refer to the tables that follow.



To select one or more simulations, do the following:

1. Select **Tools–Load Simulator–Historical Simulations**.
2. Click **Select Simulations**.
3. The Select Simulations dialog displays. Click a checkbox for each simulation you want to display.
4. Click **OK** to view the results.





## Viewing Historical Simulation Data (cont.)

Content Caching
Response Caching
Tools

Select Simulations

10
Summary
Search:

Simulation ID	Average Load Test (min/sec)	Average Submit Test (min/sec)	Simulation Date/Time	Transmitted Date/Time	Min Duration (min/sec)	Max Duration (min/sec)
2	00:08	00:06	01/07/2014 11:09:17 AM		00:13	00:14
3	00:06	00:06	01/07/2014 11:09:17 AM		00:09	00:18
1	00:04	00:06	01/07/2014 11:09:17 AM		00:08	00:10

Showing 1 to 3 of 3 entries

Previous 1 Next

10
Details
Search:

Simulation ID	Computer	Content Source	Load Test (min/sec)	Submit Test (min/sec)	Duration (min/sec)
3	PLSWS22222.DATARECOGNITIONCORP.COM	DRC	00:13	00:05	00:18
2	PLSWS33333.DATARECOGNITIONCORP.COM	DRC	00:08	00:06	00:14
2	PLSWS11111.DATARECOGNITIONCORP.COM	DRC	00:07	00:07	00:13
2	PLSWS22222.DATARECOGNITIONCORP.COM	DRC	00:09	00:05	00:13
1	PLSWS11111.DATARECOGNITIONCORP.COM	TSM	00:03	00:07	00:10
1	PLSWS33333.DATARECOGNITIONCORP.COM	TSM	00:03	00:06	00:09
3	PLSWS33333.DATARECOGNITIONCORP.COM	TSM	00:03	00:06	00:09
3	PLSWS11111.DATARECOGNITIONCORP.COM	TSM	00:03	00:07	00:09
1	PLSWS22222.DATARECOGNITIONCORP.COM	TSM	00:04	00:05	00:08

Showing 1 to 9 of 9 entries

Previous 1 Next

The results display for the simulations you selected.

- For a description of the meaning of the information displayed, refer to the tables on the following page.

**Note:** The results are sorted by Maximum Duration and Simulation ID. You can click the column headings to re-sort the data.

## Viewing Historical Simulation Data (cont.)

The following tables describe the simulation information that displays.

### Summary (Historical)

The historical summary information summarizes simulation results across all of the testing computers in the simulation selected.

Heading	Description
Simulation ID	A system identifier for the simulation.
Average Load Test (min/sec)	The average time for the testing computers in the simulation to load test content.
Average Submit Test (min/sec)	The average amount of time for the computers in the simulation to submit all test responses to DRC. This time factors in the time required to submit each test response, the wait time between each test question, and the time required for the final test submission.
Simulation Date/Time	The date and time the simulation started.
Transmitted Date/Time	The date and time the simulation results were transmitted to DRC.
Min Duration (min/sec)	The time required for the fastest computer in the simulation to load the test and submit the results.
Max Duration (min/sec)	The time required for the slowest computer in the simulation to load the test and submit the results.

### Details (Historical)

The historical detail information shows simulation details for each testing computer in the simulation selected.

Heading	Description
Simulation ID	A system identifier for the simulation.
Computer	The unique name of each computer in the simulation.
Content Source	The source of the test content loaded to the testing computer, DRC or TSM.
Load Test (min/sec)	The time it took the testing computer to load test content.
Submit Test (min/sec)	The time it took the testing computer to submit test responses to DRC.
Duration (min/sec)	The total time it took the testing computer to load the test and submit the results.

### ■ Load Balancing the TSM

#### □ Prerequisites

This topic describes the process of using the Load Balancing Registration feature of the Testing Site Manager (TSM). If your site is using load balancing hardware and software, you can use this feature to register a load balancer IP address for your pool of TSM servers to help manage your workload more efficiently.

- Your site must have installed and configured your load balancing hardware and software.
- You must know the IP address of your load-balanced server pool.
- You must have installed the optional TSM level 9.1.0\_2 update (or higher).

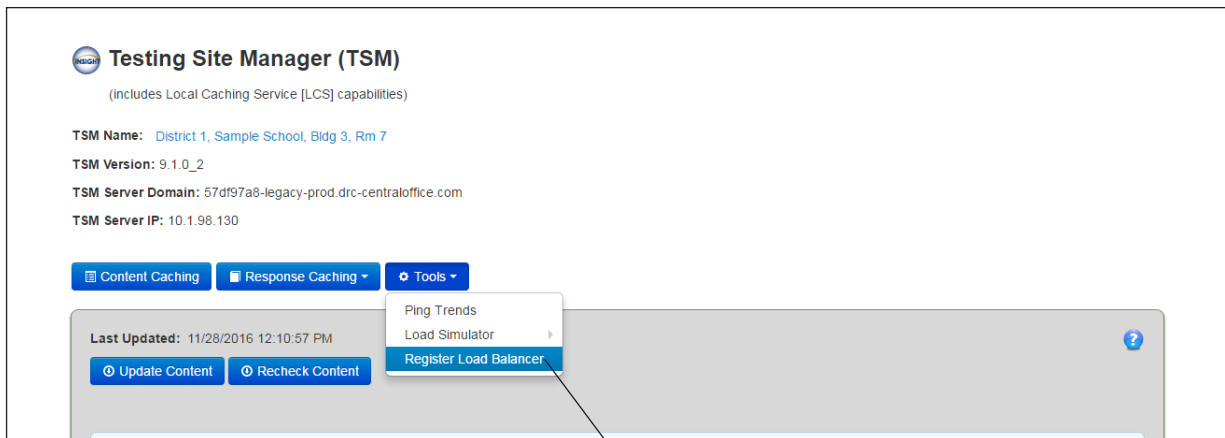
.....  
**❗ Important:** The TSM load balancing feature is supported for content caching only—response caching is not supported for load balancing.  
.....

## Registering a TSM for Load Balancing

Use the following process to register your TSM in your load balancing pool.

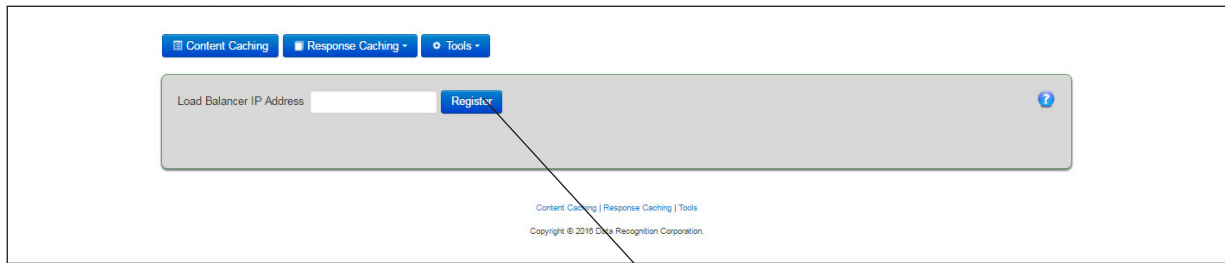
1. To register a TSM for load balancing, navigate to `https://<TSM domain name>:8443/` or `http://<TSMip>:8080/`

Where: *<TSM domain name>* is your TSM Server Domain name and *<TSMip>* is the IP address of your TSM machine.



2. When the TSM displays, select **Register Load Balancer** from the **Tools** drop-down menu.

### Registering a TSM for Load Balancing (cont.)



The screenshot shows a web interface with three tabs: 'Content Caching', 'Response Caching', and 'Tools'. The 'Response Caching' tab is selected. Below the tabs is a form with a label 'Load Balancer IP Address' followed by a text input field. To the right of the input field is a blue 'Register' button. A blue question mark icon is in the top right corner of the form. Below the form, there is a breadcrumb trail 'Content Caching | Response Caching | Tools' and a copyright notice 'Copyright © 2016 Data Recognition Corporation.'.

3. When the Load Balancer IP Address field displays, enter the IP address of the load balancer pool and click **Register**.

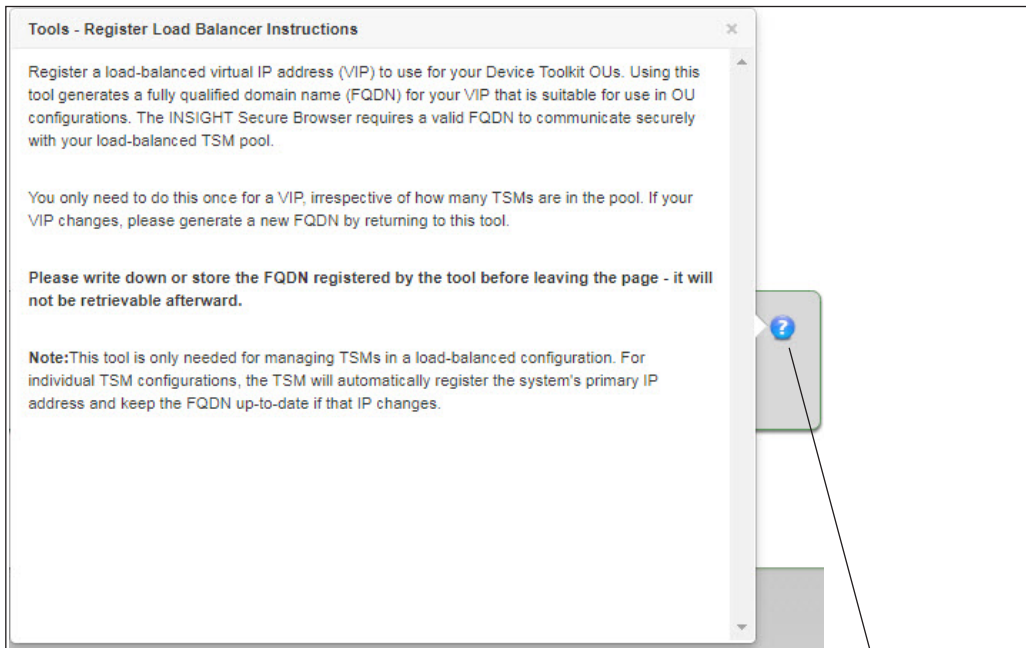


The screenshot shows the same web interface as the previous one, but now the 'Load Balancer IP Address' field is filled with the text '10.1.108.212'. Below the IP field, a new field 'Load Balancer Domain URL' is visible, containing the text '83eee632-legacy-lb-staging.drc-centraloffice.com'. A red arrow points to the 'Register' button. The breadcrumb trail and copyright notice are the same.

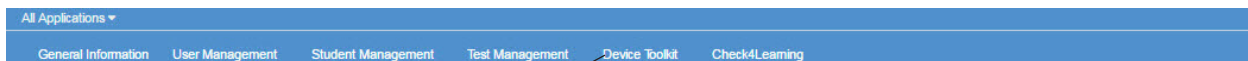
4. The system creates a Load Balancer Domain URL that you can use to register the TSM in the Central Office Services - Device Toolkit. Copy or write down the URL.

.....  
**! Important:** Record the Load Balancer domain URL. **The Load Balancer Domain URL is not saved on the TSM page.** If you lose or forget the Load Balancer Domain URL, you must repeat steps 1–4 to generate a new one.  
.....

## Registering a TSM for Load Balancing (cont.)



5. For additional information, click the blue question mark icon (?) to display online Help about load balancing registration.



6. Navigate to your eDIRECT site, open the **All Applications** menu bar, and click the **Device Toolkit** link.

## Registering a TSM for Load Balancing (cont.)

Central Office Services - Device Toolkit

Configurations Add New Configuration

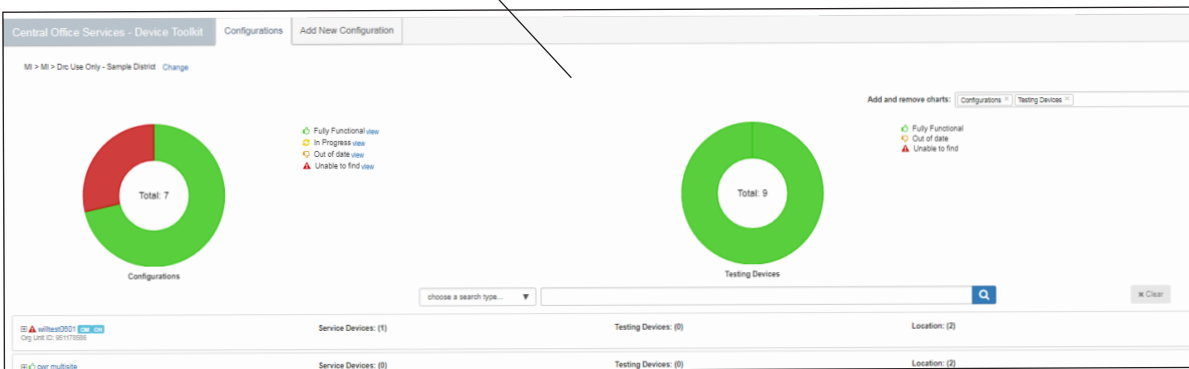
Select Site

Choose the district or school to manage its Central Office Services

Testing Program

Site

7. In the Central Office Services - Device Toolkit, specify a testing program and site (district and/or school), and select the configuration for the TSM from the dashboard (see *Volume III: Configuring Devices for Testing*).



8. Select the Locations tab, toggle **TSM Content Caching** to **Yes** (if necessary), and in the Content Caching URL field enter `https://`, followed by the Load Balancer Domain URL, a colon (:), the port number (8443 in the example), and a forward slash (/).

See the example, but do not copy—it is an example only.

### Example

`https://19c3438e-legacy-lb-prod.drc-centraloffice.com:8443/`

Michigan Online Assessments > MI > > Dir Use Only - Sample District

System Readiness Check Access Code: 7745

TSM Content Caching is Enabled for Content Cache Only

TSM Content Caching ☒ Yes

Are using a TSM for content caching for this location? Central Office Content Hosting will not be used if enabled.

Please provide the url for the TSM that will be used for content caching for this location by testing devices.

Content Caching Url:

Content Cache Usage Choose whether the content cache TSM is only used for load simulation or content caching or both.

Content Cache Only

TSM Response Caching ☐ No

Are using a TSM for response caching for this location? Works with Content Hosting or a TSM only location.

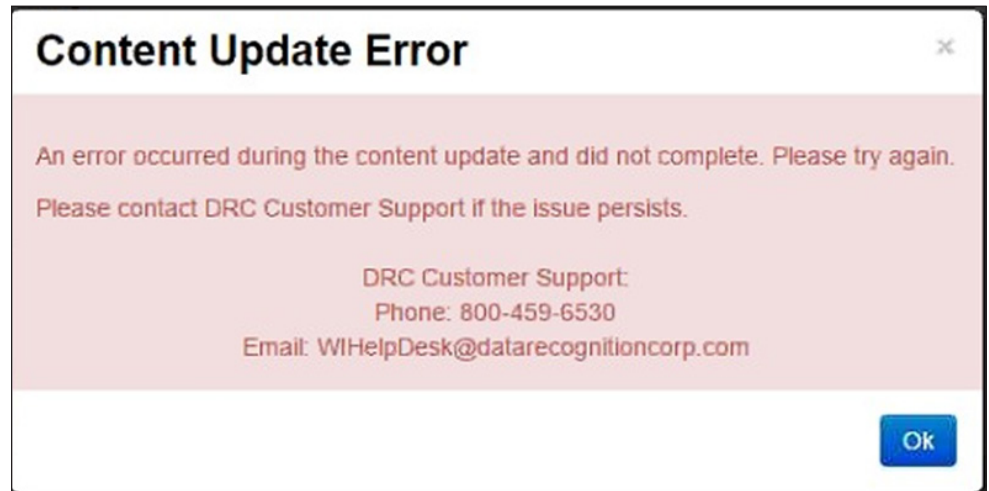
Update Configuration

9. Click **Update Configuration**.

**! Important:** Load balancing is supported for content caching only—response caching is not supported for load balancing.

## ■ Updating the TSM Clock Time

Some DRC testing sites that download test content and/or software updates from Amazon CloudFront™ have reported receiving the following Content Update Error message (see below) when installing new Testing Site Manager (TSM) software or when trying to update existing TSM software.



### □ The Issue

This issue can occur if your TSM cannot reach DRC's content servers. It also occurs when the local time on the TSM computer is not correct. The clock that the TSM computer is using must be set to within 30 seconds of an accurate time source, such as the time displayed at [www.time.gov](http://www.time.gov).

### □ The Resolution

To resolve the issue, verify that you have whitelisted the correct URLs (for details, see *Volume I: Introduction to Online Testing* of the *DRC INSIGHT Technology User Guide*).

Also verify that the clock setting on the TSM computer is synchronized with the time at the [www.time.gov](http://www.time.gov) website and reset it, if necessary. After the clock is set correctly, the TSM update content process will resume working correctly. For details about how to review and reset the time on a Windows™ or Mac® computer to automatically be in synchronization with [www.time.gov](http://www.time.gov), see the instructions that follow.

**⚠ Important:** If your site uses Active Directory™ for your Windows network and is having problems getting the clock to remain at a set time, it may be an Active Directory issue. Active Directory automatically sets the time of all of the client machines in the network. To resolve the issue, you must correct the time on the Active Directory masters and Active Directory will propagate the correct time to the other devices in the network. For more information, refer to your Active Directory documentation.

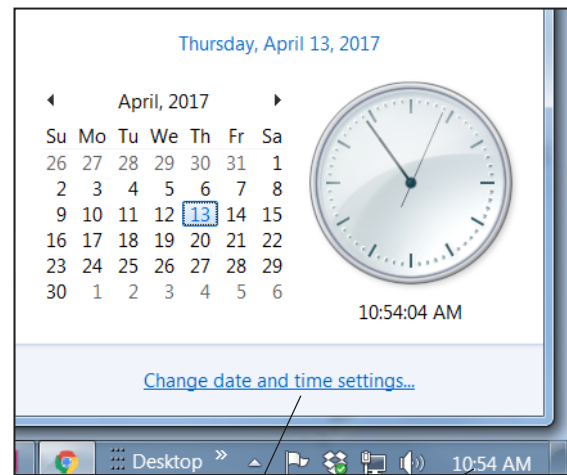


## Resetting the Time on a Windows 7 TSM Computer

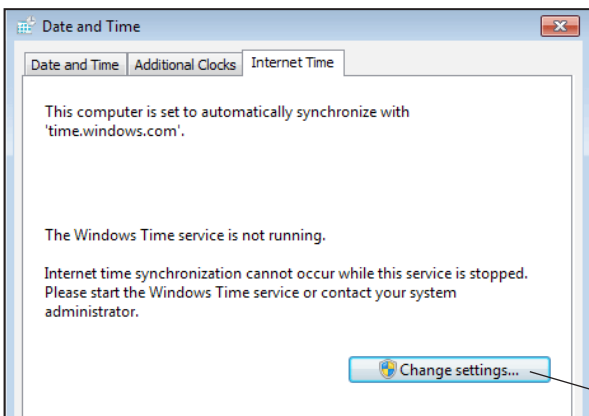
Perform the following steps to verify and reset the TSM Windows 7 computer time, if necessary.



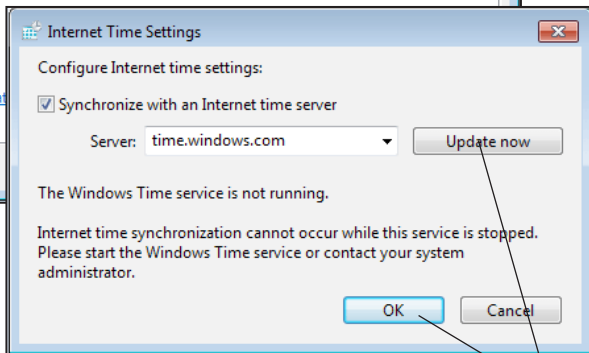
1. Using a browser, go to [www.time.gov](http://www.time.gov) to display the correct time.



2. Display the clock from the desktop. If the times are not within 30 seconds of each other, click **Change date and time settings....**



3. Select the **Internet Time** tab and click **Change settings....**



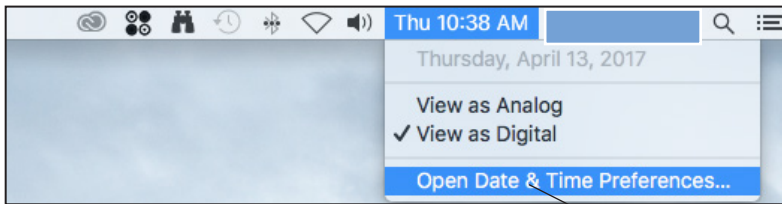
4. When the Internet Time Settings dialog box displays, check **Synchronize time with an Internet time server**, select the default server (time.windows.com, which is synchronized with www.time.gov), click **Update now** to start the Windows Time service, and click **OK**.

## Resetting the Time on a Mac (OS X and macOS) TSM Computer

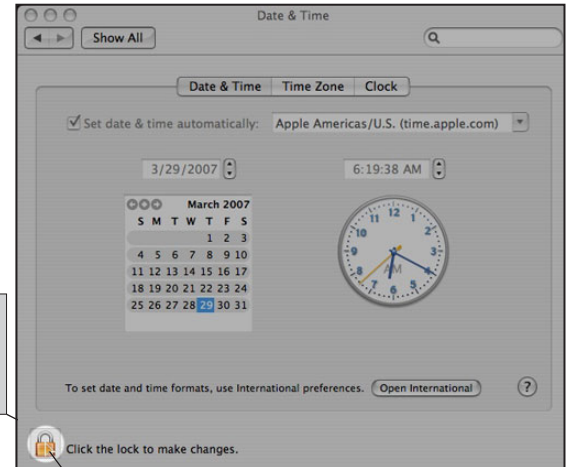
Perform the following steps to verify and reset the TSM Mac computer time, if necessary.



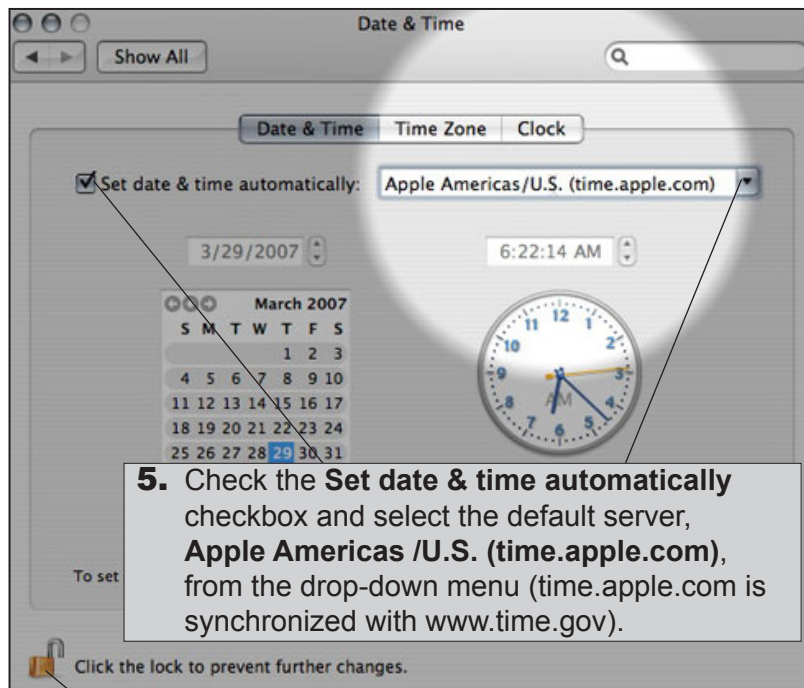
1. Using a browser, go to [www.time.gov](http://www.time.gov) to display the correct time.



2. Check the clock time on the desktop. If the times are not within 30 seconds of each other, right-click on the time and select **Open Date & Time Preferences...**

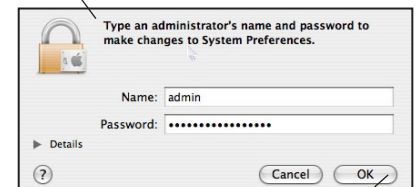


3. When the Date and Time window displays, unlock the display to change the time.




5. Check the **Set date & time automatically** checkbox and select the default server, **Apple Americas /U.S. (time.apple.com)**, from the drop-down menu (time.apple.com is synchronized with www.time.gov).

6. Click the lock to save your changes.



4. When the administrator dialog displays, enter you name and password, and click **OK**.

**Note:** You must be a Mac system administrator on the Mac computer to change the time.



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