



## **Custom Online Assessments**

# **Online Assessment System Release 10**

## **INSTALLATION GUIDE**

**October, 2014**

Reference documentation for Technology Coordinators  
This document provides detail information on the configuration, set up,  
and installation of software required for test scheduling and testing.

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## TABLE OF CONTENTS

<b>1. INTRODUCTION TO THE ONLINE ASSESSMENT SYSTEM .....</b>	<b>3</b>
PURPOSE OF TECHNICAL CONFIGURATION REQUIREMENTS .....	3
<b>2. PURPOSE FOR THIS DOCUMENT .....</b>	<b>4</b>
PRODUCT SUPPORT .....	4
TECHNICAL OVERVIEW.....	4
METHODOLOGY .....	5
MINIMUM TECHNOLOGY REQUIREMENTS LIST.....	5
DOCUMENT NOTATIONS .....	5
<b>3. CONFIGURATION CHECK .....</b>	<b>6</b>
ADMINISTRATOR DESKTOP TECHNICAL REQUIREMENTS .....	6
STUDENT WORKSTATION TECHNICAL REQUIREMENTS—WINDOWS PC .....	6
STUDENT WORKSTATION TECHNICAL REQUIREMENTS—MACINTOSH.....	7
STUDENT WORKSTATION TECHNICAL REQUIREMENTS--LINUX.....	8
NETWORK, SECURITY AND OTHER CONSIDERATIONS .....	8
CHECKING NETWORK CONNECTIVITY .....	10
TROUBLESHOOTING WITH THE NETWORK UTILITY .....	10
<b>4. WORKSTATION SET UP.....</b>	<b>11</b>
INSTALL ONLINE ASSESSMENT SOFTWARE .....	11
INSTALLING PREREQUISITE SOFTWARE .....	12
INSTALLING ASSESSMENT SOFTWARE (STANDARD INTERACTIVE INSTALL).....	13
INSTALLING ASSESSMENT SOFTWARE (CUSTOM CONFIGURATION INSTALL) .....	17
DOWNLOADING TESTS.....	19
DOWNLOAD NEW TESTS.....	21
“BULK PRE-POSITIONING” OF TEST CONTENT.....	21
<b>5. UPDATING WORKSTATIONS TO HOST MULTIPLE TEST PRODUCTS.....</b>	<b>22</b>
OVERVIEW .....	22
POSITIONING CONTENT FOR MULTIPLE PRODUCTS .....	23
FINDING THE VERSION OF THE CURRENTLY INSTALLED SOFTWARE.....	24
<b>6. COMMON PROBLEMS .....</b>	<b>25</b>
COMMON ERROR MESSAGES (STUDENT WORKSTATIONS) .....	25
ERROR MESSAGE.....	25
EXPLANATION AND RESOLUTION.....	25
<b>7. MINIMUM TECHNICAL REQUIREMENTS .....</b>	<b>27</b>
OAS CONFIGURATION CHECKLIST (PC, MAC, AND LINUX).....	27

## 1. INTRODUCTION TO THE ONLINE ASSESSMENT SYSTEM

CTB/McGraw-Hill's Online Assessment System (OAS) is a secure system for administering summative tests. OAS is comprised of two integrated software applications: the Test Administration System (TAS), and the student Test Delivery Client (TDC). The TDC implements a locked-down browser to deliver the tests, to prevent students from searching the web or messaging through the web for help with response to the test.

Proper configuration of systems and computers is essential to ensure security throughout the flow of managing system users, managing student records, scheduling tests, installing software and pre-positioning test content on student workstations, as well as during the test-taking experience.

Certain safeguards in configuring non-OAS applications on the student workstation are essential to assure an interruption-free test session. A detailed list of configuration requirements for Apple® Macintosh®, Windows® PC, and Linux workstations should be made available to technical personnel well in advance of the testing window, to facilitate correct setup and configuration. An image of these minimum technical requirements is provided in this guide as well, on page 27.

### ***Purpose of Technical Configuration Requirements***

The goals for the technical criteria that must be met in order for the TDC to work correctly, regardless of what other software may be resident on the student workstation, are as follows:

- Appropriate versions of Adobe® AIR®, Flash® Player, and the Java Runtime Environment™ must be installed and runnable by the logged-in user during testing
- The Test Delivery Client must be installed, and the Test Delivery executable, [TDC installation location]/Online Assessment.exe must be runnable by the logged-in user during testing
- This executable must not be prevented from executing other processes, specifically java.exe
- The java executable must not be prevented from executing other processes
- The java executable must be able to make HTTP/HTTPS connections on ports 80/443 to \*.ctb.com addresses
- The logged-in user during testing must have write access to [TDC installation location] and certain subfolders
- If a proxy server is in use, appropriate configuration values (proxy host, port, and credentials if needed) must be present in [TDC installation location]/Online Assessment/etc/proxy.properties
- For best performance, encrypted content files for the test to be delivered should exist under [TDC installation location]/Online Assessment/data/objectbank. The encrypted files can be placed there by the content pre-positioning download, previous test delivery on the same workstation, or by direct file copy from a workstation on which the files have already been pre-positioned.

The chapters that follow offer guidance on how to accomplish the required positioning of the secure TDC and encrypted test content on student workstations. Shortcuts for accomplishing multiple installations quickly are listed in the appropriate sections of this Guide.

## 2. PURPOSE FOR THIS DOCUMENT

This document outlines the minimum and recommended hardware, software, network and security technical requirements, and the process for preparing your organization's testing sites for the administration of online assessments with CTB/McGraw-Hill's Online Assessment System (OAS) summative platform.

This document is updated frequently. To ensure this document is the current version, and especially before making any decisions about upgrading hardware or software, check the version date on the cover page of the Installation Guide on your organization's web page on [ctb.com](http://ctb.com) or call CTB OAS Product Support at 866-282-2250.

This document is intended to be used by the Technology team within a school or district to prepare for an online assessment event. Technology team members include:

- Network Support staff
- Testing Coordinators from affected schools, districts, or testing sites
- Technology Coordinators at testing sites

### **Product Support**

The following product support is available:

#### **CTB OAS Product Support**

*Please note that custom contracts may have different support hours and phone number.*

Hours of Operation: 7:30 AM to 8:00 PM, Eastern, Central, Mountain, and Pacific  
Standard Time  
Phone Number: 866-282-2250  
E-mail: [ctbtechnicalsupport@ctb.com](mailto:ctbtechnicalsupport@ctb.com)

#### **Online Support**

Information on the major features and functions of the product is available 24 hours a day, seven days a week through the following resources:

OAS Help System: <https://oas.ctb.com>  
Resource URL: [https://www.ctb.com/\[your organization's page\]](https://www.ctb.com/[your organization's page])

### **Technical Overview**

The Online Assessment System (OAS) is a web-based cross-platform application supporting Windows® PC, Apple® Macintosh® (MAC) and Linux clients. OAS is designed to be compatible with hardware and software commonly found in today's classrooms.

Computer workstations must be connected to your site's local area network and have a high speed connection (T1, cable, or DSL) to your district's wide area network. Windows, MAC, and Linux operating systems are supported, and you must have access to the CTB internet web site link, <https://oas.ctb.com>

#### **Computer Desktop/Workstation Uses**

Computer desktops/workstations linked to OAS have one or both of the following uses:

- Administrator Desktop  
Administrators, teachers, proctors and other school officials who will be responsible for managing users and/or students, scheduling tests, and proctoring tests primarily use the Test Administration module of OAS. The Administration

module is browser based and is accessed through the OAS URL, <https://oas.ctb.com>.

- Student Workstation

Students take their tests through the OAS Online Assessment software (the Test Delivery Client, or TDC), which can be easily downloaded and executed on a local computer, or may be downloaded from a server with content hosted on a server or network location. After the TDC has been set up and launched by authorized personnel, students need only log in to the Online Assessment to run the software.

Hardware and software technical requirements for the Administrator Desktop and the Student Workstation follow. Further information is provided in Chapter 3, *Configuration Check*, of this guide.

## **Methodology**

The following is the recommended methodology to use to ensure that each computer in the site is prepared for the testing event. Details on these tasks are described in Chapter 3, *Configuration Check* on page 6, and in Chapter 4, *Workstation Set Up*, on page 11.

- Configuration Check

Configuration Check can begin as soon as OAS Technical Requirements are available. Configuration check is a prerequisite to Workstation Set Up.

- Workstation Set Up

Workstation Set Up consists of the steps required to download and install the OAS Online Assessment software, and other required software. This is also when the tests customized for this program will be downloaded from CTB's OAS server and loaded to the Windows PC workstation. Since it involves downloading assets from CTB's OAS server, Workstation Set Up requires a login and password to OAS.

After the encrypted test content has been downloaded to the first workstation, you may use the "bulk pre-positioning" method. For rapid pre-positioning of encrypted test content, see "*Bulk Pre-Positioning of Test Content*" on page 21.

## **Client Updates**

Most of the Site Readiness tasks, particularly the Configuration Check, need to be performed only once for this administration. Downloading tests to workstations (or pre-positioning test content) may need to be repeated in order to download additional tests that become available; for example, Operational Tests may become available at a later date than Practice Tests, depending on how your testing program is set up.

## **Minimum Technology Requirements List**

The Minimum Technology Requirements are available on <https://www.ctb.com/> [*your organization's page*] (Refer to Chapter 6, *Minimum Technical Requirements*, on page 27 for a sample.) The Minimum Technical Requirements list includes requirements for all three platforms: PC, MAC, and Linux.

## **Document Notations**



Caveats and other suggestions of caution.



Notes to remember, may have implications to other tasks.

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### 3. CONFIGURATION CHECK

This chapter contains the technical requirements for Administrator Desktop and Student Workstation. It also includes Network and Security requirements that will enable connection with the OAS server in CTB’s data center.

Please review your technical environment against the guidelines contained in this chapter and ensure that at least the minimum technical requirements are met for all testing sites.

Meeting minimum technical requirements will serve as a basis for your Site Readiness.

If you are unsure how your computer is set up, it is recommended that you consult with your site’s technical support analyst for assistance.

#### **Administrator Desktop Technical Requirements**

A machine that is used strictly for administrative tasks (managing users or students, scheduling tests, printing test tickets, and so forth) must be connected to the Internet. However there are no specific requirements for a particular operating system or Web Browser. Adobe Reader is required for printing test tickets or reports.

Administrative workstations that are not used for student testing do not need to be “locked down” by disabling other applications as required under “Security and Others” on the Workstation Technical Requirements.



Software that is listed in this section has been tested for correct operation with OAS. Later versions of these applications may work with OAS but they have not been tested and are not guaranteed to work.

#### **Student Workstation Technical Requirements—Windows PC**

A PC student workstation that is used to download test content must have Internet Explorer (IE) resident on the workstation. For more information on downloading test content to student workstations, see *Downloading Tests* on page 19.

Workstations on which encrypted content will be pre-positioned using the “bulk pre-positioning” method do not require IE. See “*Bulk Pre-Positioning*” of *Test Content* on page 21.

<b>Workstation Technical Requirements (Windows PC)</b>	
	<b>Required</b>
<b>Hardware &amp; Memory</b>	1.3 GHz processor 2 GB of memory 1 GB disk space available
<b>Display Monitor</b>	Set to a minimum of 1024 x 768 pixels Minimum color display: 256 colors (8-bit)
<b>Operating System</b>	Windows® XP SP3, Vista SP 1, Windows 7, Windows 8
<b>Additional Software</b>	Adobe® AIR® Java Runtime Environment™ 6 minimum, JRE 7 recommended, 7.51 maximum, 32- or 64-bit to match Operating System
<b>Web Browser</b>	None required for testing; IE required if downloading tests
<b>Internet Access</b>	High-speed internet connection: Minimum 1.5 Mbps upload and download –T1, high-speed cable, or high-speed DSL.
<b>Peripherals</b>	Keyboard (should not have shortcut hot keys for launching browsers)

	<p>Mouse is required for manipulatives Sound card, headphones for Screen Reader accommodation Sound card, headphones or speakers, microphone for audio recording capability (if enabled)</p>
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A link to download Adobe AIR and Java (JRE) will be provided during the download/install of the OAS testing client for PC.

### ***Student Workstation Technical Requirements—Macintosh***

<b>Workstation Technical Requirements (MAC)</b>	
	<b>Required</b>
<b>Hardware &amp; Memory</b>	1.8 GHz Intel processor 2 GB of memory 1 GB disk space available
<b>Display Monitor</b>	Set to a minimum of 1024 x 768 pixels Minimum color display: 256 colors (8-bit)
<b>Operating System</b>	OS 10.7 or 10.8 Intel
<b>Additional Software</b>	Adobe® Flash® Player 11 Java Runtime Environment™ 6 minimum, JRE 7 recommended, 7.51 maximum, 32- or 64-bit to match Operating System Adobe® AIR® - if audio recording capability enabled
<b>Web Browser</b>	Safari® 2.0
<b>Internet Access</b>	High-speed internet connection: Minimum 1.5 Mbps upload and download – T1, high-speed cable, or high-speed DSL.
<b>Peripherals</b>	Keyboard Mouse is required for manipulatives Sound card, headphones for Screen Reader accommodation Sound card, headphones or speakers, microphone for audio recording capability (if enabled)

You must use the Software Update feature on the Mac workstation to update the JRE, if necessary.

### **Student Workstation Technical Requirements--Linux**

<b>Workstation Technical Requirements (Linux)</b>	
	<b>Required</b>
<b>Hardware &amp; Memory</b>	1.3 GHz processor 2 GB of memory minimum 1 GB disk space available
<b>Display Monitor</b>	Set to a minimum of 1024 x 768 pixels Minimum color display: 256 colors (8-bit)
<b>Operating System</b>	Linux Fedora 11 (Red Hat), OpenSUSE 11.1, or Ubuntu 9.04 <i>Known exception: Ubuntu 10.04 not recommended</i>
<b>Additional Software</b>	Adobe® AIR® Adobe® Flash® Player 11 Java Runtime Environment™ 6 minimum, JRE 7 recommended, 7.51 maximum, 32 or 64-bit to match Operating System
<b>Web Browser</b>	None required for testing.
<b>Internet Access</b>	High-speed internet connection: Minimum 1.5 Mbps upload and download –T1, high-speed cable, or high-speed DSL.
<b>Peripherals</b>	Keyboard (should not have shortcut hot keys for launching browsers) Mouse is required for manipulatives Sound card, headphones for Screen Reader accommodation Sound card, headphones or speakers, microphone for audio recording capability (if enabled)

### **Network, Security and Other Considerations**

OAS uses TCP/IP protocol for all communication between the application and the customer. It is recommended that customers check the internal network to ensure that they can successfully access the test administration site at <https://oas.ctb.com>.

<b>Network Requirements</b>		
<b>Category</b>	<b>Minimum Requirements</b>	<b>Description / Instructions</b>
<b>Bandwidth</b>	1.5 Mbps upload and download – T1, high-speed cable, or high-speed DSL Recommended	The test content averages around 7 MB per test. A dedicated T1 internet connection can support up to 50 simultaneous initial download connections.  For an assessment of your network’s capacity, we suggest that you run the Network Utility Tool provided with the testing software as described in <i>Checking Network Connectivity</i> , on page 10.  <b>Note</b> It is highly recommended that the testing client and test content be pre-downloaded or pre-positioned on the student computers during Site Preparation.
<b>Firewalls</b>	Port 80 and 443 must be	Port 80 is used to establish an initial

	open	connection (HTTP) then 443 is used to secure the connection with SSL (HTTPS) between the client and the server. Add *.ctb.com to white list.
<b>Proxy Servers</b>	Dynamic pages are not to be cached	Proxy servers must not be allowed to cache requested pages that are dynamic and based on user credentials.
	Allow <b>both HTTP and HTTPS</b> traffic for *.ctb.com	Add *.ctb.com to white list.  Proxy servers must be configured to allow <b>both HTTP and HTTPS</b> traffic for ctb.com. Therefore, add the rule to allow requests to *.ctb.com to bypass the proxy server.
	Prioritize traffic to and from *.ctb.com	Traffic to and from oas.ctb.com should be given the highest priority within your network settings. In addition, content from *.ctb.com should be excluded from content filtering to ensure the highest throughput for traffic from CTB.
	Users must have credentials if proxy authentication is enabled.	If proxy authentication is enabled, populate the proxy.properties file with your proxy authentication details.
<b>Web Browser</b>	The Web Browser must be configured to be SSL capable (SSL 2.0 and SSL 3.0).	See your browser's Help system for instructions.
<b>Web Content Filtering</b>	Allow <b>both HTTP and HTTPS</b> traffic for *.ctb.com	Exclude *.ctb.com from web filtering  To enable Screen Reader functionality for accommodated students, ensure that no filtering of MP3 content (*.mp3 files) is being done within your network infrastructure.
<b>Security</b>	Test Administrators must ensure that instant messaging must be turned off (signed out) during the test.	If instant messaging is turned on, the client will not open fully for the student to log in and begin a test. In this case, the client will give a warning message asking that the student shut the client down, sign out of instant messenger and re-launch the client.



We recommend turning off "Deep Freeze" and other system restore software during the set up and testing windows. Those systems that must use "Deep Freeze" or other system restore software daily must turn off the system restore software during setup and installation and content pre-positioning. It can be on during testing, but only if the image contains both the client and pre-positioned content. To be certain the system is working correctly, it is best to try a few practice test deliveries in succession with restores in between, prior to actual testing.

### ***Checking Network Connectivity***

CTB provides a Network Utility which can be used to troubleshoot connectivity issues. This utility is installed along with the Online Assessment software, and is located in the Start/All Programs/CTB/Online Assessment menu on PC, or in the Applications/Online Assessment/Network Utility folder on MAC, or in the [installation folder]\Online Assessment\Network Utility on Linux.

- Open the Network Utility and click **Start**. The Utility automatically checks to see if the workstation can connect to the CTB servers, makes sure the workstation is not caching active pages, and tests how long it takes to download a 5 MB file to the workstation.
- Click **Save Results** to save a "log" file of the results. You will need this log if you have to call your system administrator or CTB Product Support.
- Remember that running the Network Utility gives you a "snapshot" of the conditions at the time you run it. If your network is down or is running slowly due to high traffic, you will get different results than at another time. You can run the Network Utility whenever you want to check connectivity between a workstation and the CTB servers.
- Click **Exit** when you are finished.

### ***Troubleshooting with the Network Utility***

In addition to checking network connectivity as described above, the Network Utility also offers the options to perform a bandwidth simulation for your network, and to test your network's connection with the text-to-speech server for use with the Screen Reader accommodation. Open the Network Utility and click the tab for the test you want to perform and follow the instructions. Additional instructions are available in the "Network Utility Guide" posted at <https://www.ctb.com/> [*your organization's page*]

## 4. WORKSTATION SET UP

For Site Readiness, workstation set up involves downloading and installing the Online Assessment software, and downloading and/or bulk pre-positioning of the scheduled test content on student workstations (or custom configuring workstations to download the content from a server). Before proceeding, the following must be completed:

- Configuration Check completed successfully. The computer workstation must meet minimum requirements or workstation set up will fail and the OAS Online Assessment software will not install properly.
- OAS Login and Password received. Workstation Set Up is an Administration function on OAS's Home Page. Thus, an OAS User Account is required.
- If a previous version of the Online Assessment software is already installed, it may be necessary to **uninstall** the old version of the Online Assessment software, if a major update has been released. When you click the Online Assessment icon on the student workstation desktop, the application will tell you if you need to uninstall and download the new software.

### **If it is necessary to uninstall:**

-On PC, use Uninstall Online Assessment which is located in the Start>Programs>CTB>Online Assessment menu. Alternatively, you can use the Add/Remove Software feature in your Windows Control Panel.

-On MAC, use the Uninstall Online Assessment.app found in the Applications/Online Assessment/Uninstall Online Assessment folder.

-On Linux, use the Uninstall Online Assessment.bin found in the [installation folder]/Online Assessment/Uninstall Online Assessment folder.

Once these prerequisites are fulfilled, Workstation Set Up can begin.

### ***Install Online Assessment Software***

The Online Assessment test delivery client (TDC) software must be downloaded and installed for each computer workstation that will be used by students for testing. The Online Assessment software allows the students to take their tests in a secure environment. Through its locked-down browser, the software prevents students from searching the web or messaging through the web for help with response to the test.

There are two methods of installing testing software on student workstations: the **Standard Interactive Install**, and the **Custom Configuration Install**. The method you will use depends on your network/workstation schema, security restrictions, and your staff technical expertise.

Whether you use the Standard Interactive Install or the Custom Configuration Install, instructions include the steps to install the Online Assessment software on PC, MAC, or Linux workstation.



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**To install on multiple workstations quickly**, follow the instructions to install on one workstation. Then you can copy the Online Assessment Software (*InstallOnlineAsmt.exe for PC, InstallOnlineAsmt.app for Macintosh, InstallOnlineAsmt.bin for Linux*) using jump drive, tape backup, "ghosting," or other means, and double-click the icon on each machine to run the software.



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On Linux, to install the software in the default location and allow it to be used by all users of the system, you must execute the installation process

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with **root** access, either by logging in as **root** before running the installer, or by executing the installer with "**sudo ./InstallOnlineAsmt.bin**" from a terminal session. If you cannot obtain root access, you must choose a different location during the installation process, to which your user has write permissions, and the installed software may only work if started by the user performing the installation.

## Installing Prerequisite Software

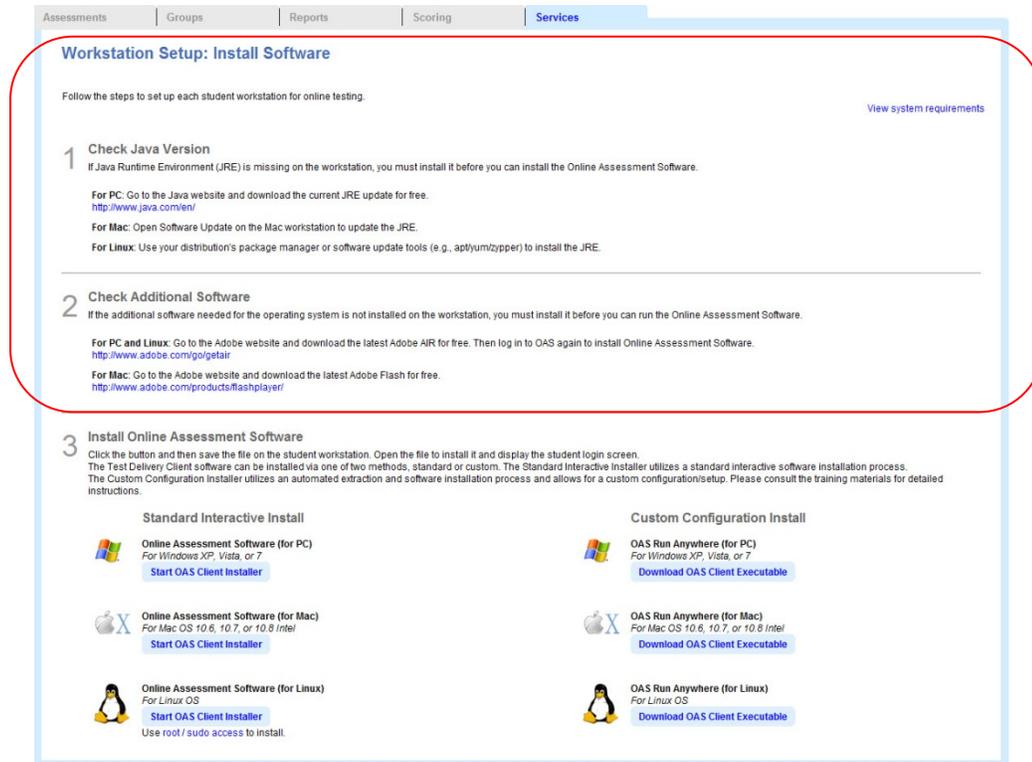
Whether you use the Standard Interactive Install or the Custom Configuration Install, the first step is to install the prerequisite software on each workstation.

Following are the steps to install the prerequisite software on a PC, MAC, or Linux workstation.

1. **Log into OAS (<https://oas.ctb.com>) and select *Workstation Setup*>*Install Software* on the *Services* tab.**



The *Workstation Setup: Install Software* page opens. This page offers links to all necessary prerequisite software, and links to both installation methods: Standard Interactive Install, and Custom Configuration Install described beginning on page 17.



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## 2. Install Missing Prerequisite Software.

Each computer must have the following software installed, if it is not already present. If the computer is not set up to run with the proper versions, the student will not be able to log in to take the test on that computer.

a) Install Java Runtime Environment™ (JRE) 6 or 7, 7.51 maximum

**PC and Linux:** Click the link to the JAVA web site to locate the correct version of JRE. Download and install it following the instructions on the JAVA site for installing the appropriate version for the computer's operating system.

**MAC:** To install or update the JRE on a Macintosh, you must use the workstation's Software Update feature:

- Click the Apple logo in the upper left corner of the desktop title bar and select **Software Update**. Software Update checks to see if there are newer versions of installed software available. If the software is up-to-date, a message dialog tells you so. Click **OK** to close the dialog.
- If there are any newer versions of installed software available, they are listed. Select the most current version and then click **Install**.

b) Install Adobe® Flash® Player 11

**PC, MAC, and Linux:** If the computer has no Flash Player or has a version earlier than Flash 11, under **Check Flash Version**, click the link to the Adobe web site and select the correct version of Flash for your operating system. Follow the instructions provided by Adobe.

c) Install Adobe® AIR®

**PC and Linux:** Click the link to the Adobe web site and follow the instructions provided by Adobe to install the latest version of Adobe AIR.

**MAC:** Go to the Adobe web site, choose Downloads, and select Adobe® AIR® for MAC. Follow the instructions provided by Adobe.

### ***Installing Assessment Software (Standard Interactive Install)***

After the prerequisite software is installed on student workstations, use these steps for installing the lockdown browser testing software using the **Standard Interactive Install** procedure.

1. **Log into OAS (<https://oas.ctb.com>) and select *Workstation Setup*>*Install Software on the Services* tab.**



The **Workstation Setup: Install Software** page opens.

Assessments | Groups | Reports | Scoring | **Services**

### Workstation Setup: Install Software

Follow the steps to set up each student workstation for online testing. [View system requirements](#)

- 1 Check Java Version**  
If Java Runtime Environment (JRE) is missing on the workstation, you must install it before you can install the Online Assessment Software.  
**For PC:** Go to the Java website and download the current JRE update for free.  
<http://www.java.com/en/>  
**For Mac:** Open Software Update on the Mac workstation to update the JRE.  
**For Linux:** Use your distribution's package manager or software update tools (e.g., apt/yum/zypper) to install the JRE.
- 2 Check Additional Software**  
If the additional software needed for the operating system is not installed on the workstation, you must install it before you can run the Online Assessment Software.  
**For PC and Linux:** Go to the Adobe website and download the latest Adobe AIR for free. Then log in to OAS again to install Online Assessment Software.  
<http://www.adobe.com/go/getair>  
**For Mac:** Go to the Adobe website and download the latest Adobe Flash for free.  
<http://www.adobe.com/products/flashplayer/>
- 3 Install Online Assessment Software**  
Click the button and then save the file on the student workstation. Open the file to install it and display the student login screen. The Test Delivery Client software can be installed via one of two methods, standard or custom. The Standard Interactive Installer utilizes a standard interactive software installation process. The Custom Configuration Installer utilizes an automated extraction and software installation process and allows for a custom configuration/setup. Please consult the training materials for detailed instructions.  

<b>Standard Interactive Install</b>	<b>Custom Configuration Install</b>
<b>Online Assessment Software (for PC)</b> For Windows XP, Vista, or 7 <a href="#">Start OAS Client Installer</a>	<b>OAS Run Anywhere (for PC)</b> For Windows XP, Vista, or 7 <a href="#">Download OAS Client Executable</a>
<b>Online Assessment Software (for Mac)</b> For Mac OS 10.6, 10.7, or 10.8 Intel <a href="#">Start OAS Client Installer</a>	<b>OAS Run Anywhere (for Mac)</b> For Mac OS 10.6, 10.7, or 10.8 Intel <a href="#">Download OAS Client Executable</a>
<b>Online Assessment Software (for Linux)</b> For Linux OS <a href="#">Start OAS Client Installer</a> Use root / sudo access to install.	<b>OAS Run Anywhere (for Linux)</b> For Linux OS <a href="#">Download OAS Client Executable</a>

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## 2. Install Online Assessment Software

### a) Lockdown Browser Set Up

On the **Install Software** page, click [Start OAS Client Installer](#) for the appropriate operating system in the **Install Online Assessment Software** section.

**Note:** Alternatively, your organization may have a website where a custom URL or link for each platform is posted from which you can download the installation software. Click the appropriate link for the platform on which the client will run.

### b) **PC and Linux:** When the standard File Download dialog opens, choose to **Save** the file to the workstation desktop on PC, or to your preferred location on Linux.

Upon completion of download, the *InstallOnlineAsmt.exe* icon will be on the desktop (PC) or the *InstallOnlineAsmt.bin* will be in the chosen location (Linux).



**MAC:** An **InstallOnlineAsmt.zip.download** icon is placed on the desktop.



Click the icon to unzip the installer. If you are asked to confirm the download, click **Download**. The *InstallOnlineAsmt.app* icon replaces the zip file icon.



- c) Install Online Assessment Software (*Online Assessment* icon)

**PC and Mac:** Click (or double-click) the *InstallOnlineAsmt.exe* icon to begin installation.

**Mac:** Click the lock in the lower left corner of the security dialog, and then enter your system administrator credentials.

**Linux:** Navigate to the location in which you saved the file and launch the **InstallOnlineAsmt.bin** to install begin installing.

*The installation software immediately checks the system of the workstation on which you are about to install to be sure the system-recommended requirements are met. If they are not, the installer shows a list of the missing requirements and software. You will not be able to install the Online Assessment Software until the system requirements are met and prerequisite software has been installed.*

- d) If system requirements are met, the installation software leads you through installing the test client software on the workstation.

**PC and Mac:** Click **Next** at the first two prompts, click **Install** at the third prompt, and then click **Done**.

Upon completion of installation, you will see the *Online Assessment* icon on the desktop.



Online  
Assessment

**Linux:** We recommend that you accept the suggested location for each of the files if possible: Click **Next** in the introduction dialog, click **Next** in the Destination Folder dialog to accept the default location (or if necessary, choose your preferred installation location, and then click **Next**), click **Install** at the third prompt, and then click **Done**.

Upon completion of installation, you will see a Linux-provided *Online Assessment* icon on the desktop.



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The Install Online Assessment dialog box has a  (close box) in the upper right corner that appears to be active, but it will not close the dialog box. You must close the dialog box using one of the command buttons at the bottom of the dialog (**Cancel** or **Done**).

---

### 3. Edit Proxy Information

**PC:** Find the "proxy.properties" file in the C:\Program Files\CTB\Online Assessment\etc folder.

**Mac:** Find the "proxy.properties" file in the Macintosh HD\Applications\Online Assessment\etc folder.

**Linux:** Find the "proxy.properties" file in the [installation location]/Online Assessment/etc folder.

**If the computer has a proxy that does not require authentication:**

Edit the file and place the corresponding proxy details next to the following items within the file:

proxy.host=

proxy.port=

**If the computer has a proxy that requires authentication:**

Edit the file and place the corresponding proxy details next to the following items within the file:

proxy.host=

proxy.port=

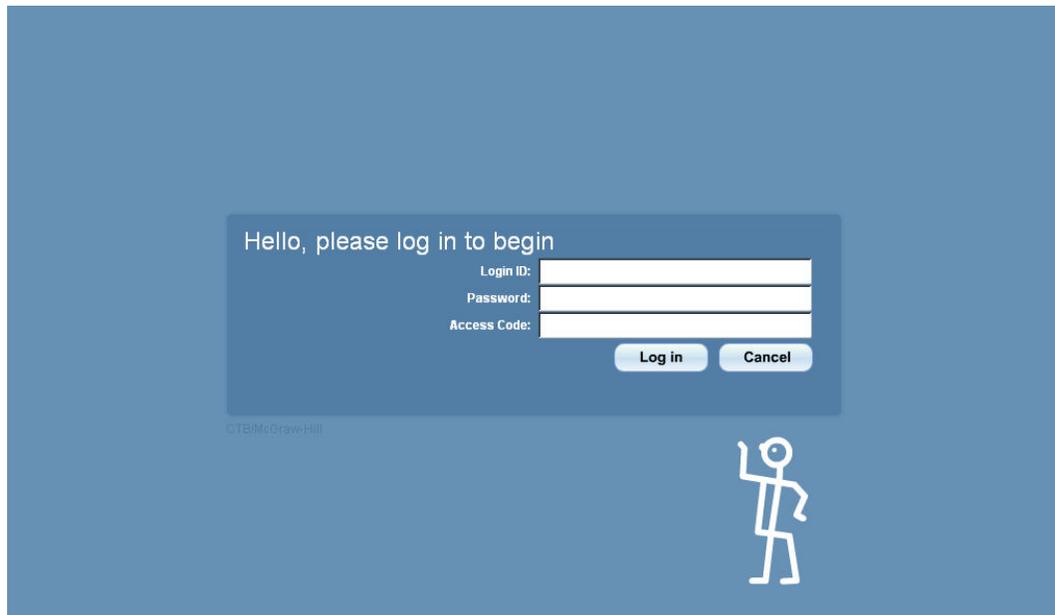
proxy.username=

proxy.password=

**Linux Note:** If any proxy is configured, add **127.0.0.1** on the "ignored hosts" settings. Make sure the setting persists for all users across restarts.

**4. Confirm successful install**

Click the *Online Assessment* icon on your desktop. After a few seconds, the Online Assessment login page appears.



**5. Install Online Assessment software is now complete.**

Click **Cancel** to close the Online Assessment software until it is time for testing.



---

**Linux:** In the rare instance that the Online Assessment software on a Linux workstation suddenly stops and closes shortly after starting to open, reinstall required software prerequisites, and then reinstall the Online Assessment software. Start the Online Assessment software again. Alternatively, call Technical Support.

---

## Installing Assessment Software (Custom Configuration Install)

After the prerequisite software is installed on student workstations, use these steps for installing the lockdown browser testing software using the **Custom Configuration Install** procedure.

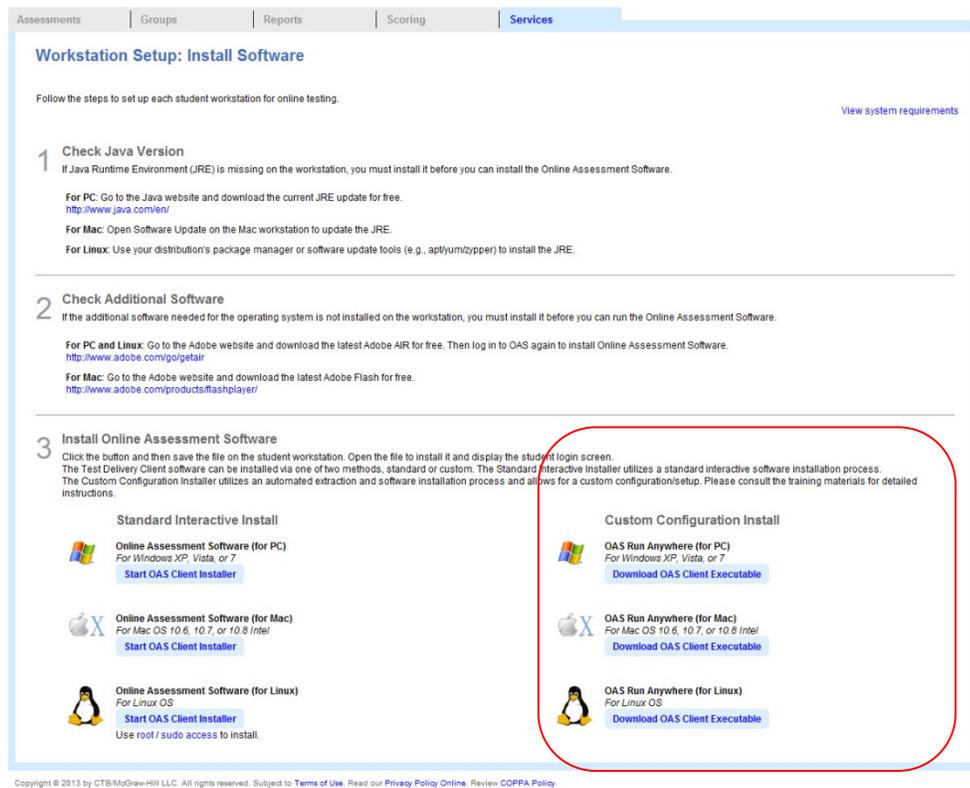
There are several options for using the custom installation method to install student workstation software. The custom configuration method presumes a level of expertise with installing and configuring software. Here are three common setups:

- Install from **Server**
- Install from **Workstation**
- Install from **Workstation with Content on a Server**

### 1. Log into OAS (<https://oas.ctb.com>) and select **Workstation Setup>Install Software** on the **Services** tab.



The Workstation Setup: Install Software page opens.



### 2. Install Online Assessment Software

a) Lockdown Browser Set Up

On the **Install Software** page, click [Download OAS Client Executable](#) for the appropriate operating system in the **Install Online Assessment Software** section.

**Note:** Alternatively, your organization may have a website where a custom URL or link for each platform is posted from which you can download the executable file. Click the appropriate link for the platform on which the client will run.

b) Click **Save** and save the executable file.

To install from **Workstation**, or from **Workstation with Content on Server**, save the executable file on the workstation desktop.

To install from **Server**, save the executable file on a server accessible by the testing workstations.

c) Click **Close** to dismiss the Download dialog upon completion.

**3. Create a content folder.**

To install from **Workstation**, create the folder on the workstation.

To install from **Workstation with Content on Server**, create the folder on the server.

To install from **Server**, create the folder on your network. Testing workstations must be able to access this folder. It is acceptable to use a UNC path or mapped drive when you set up the configuration later. If you use a mapped drive, that drive must be mapped on the workstation.

In the examples below, the content folder is named "Test\_Content" but you can name it simply "Content" or something similarly generic, as you will use this folder for all test content.

**4. Download the test content .zip file and unzip into the content folder you created.**

For specific steps, see *Download Test* on page 19.

**5. Create shortcut.**

Right-click on the test delivery client **.exe** from Step 2 and select "Create Shortcut."

If installing from **Workstation**, or from **Workstation with Content on Server**, now there are two icons on the workstation desktop.

If installing from **Server**, now there are two icons on the server.

**6. Right-click on the shortcut and choose "Properties." Set configuration switches for the content (and proxy settings, if needed).**

a) If you are setting configuration switches for content only, your configuration would look something like the following examples.

If installing from **Workstation**:

```
"C:\Documents and Settings\[your computer]\ Desktop\OAS_[Test Program].exe"  
/CONTENT=C:\Test_Content
```

If installing from **Workstation with Content on Server**:

```
"C:\Documents and Settings\[your computer]\ Desktop\OAS_[Test Program].exe"  
/CONTENT=C:\\Testing\ Server1\TDCLocation\Test_Content
```

If installing from **Server**:

```
"\\Testing\Server1TDCLocation"/content=\\TestingServer1\TDCLocation  
\Test_Content
```

- b) If you are setting configuration switches for content and proxy settings, your configuration would look something like the following examples.

If installing from **Workstation** or from **Workstation with Content on Server**:

```
"C:\Documents and Settings\[your computer]\ Desktop\OAS_[Test Program].exe"  
/proxy=[domain]\[user]: [password] @hostname:port/CONTENT=C:\Test_Content
```

If installing from **Server**:

```
\\Testing\Server1TDCLocation /proxy=[ domain] \ [user]: [password] @hostname:  
port/content= \\TestingServer1\TDCLocation\Test\_Content
```

**7. Click Apply and OK to save and close the shortcut.**

**8. Optionally, copy shortcut and/or content folder to other workstations.**

If installing from **Workstation** or from **Workstation with Content on Server**:

Copy the content folder and shortcut you created, along with the OAS Client Executable, to other testing workstations that operate on the same platform, rather than repeat these steps on all machines.

**Note:** If you have workstations that are a mix of PC, Mac, and/or Linux, you must repeat these steps once for each platform, and then you can copy to other workstations of the same type.

If installing from **Server**:

Copy the shortcut to all testing workstation desktops.

**9. Students will click the shortcut to run the application.**

On first run, the shortcut will access the server executable and locally install the testing software, access the content from the location you indicated and copy to the objectbank folder on the workstation, set proxy (if added to the configuration) and launch the testing software. The student can then begin the test.

If installing from **Server**, on subsequent runs, the application will verify the content and only download locally if newer content exists on the server.

### ***Downloading Tests***

Pre-positioning the test content on the student workstations is highly recommended to minimize use of network capacity during those peak use times. The OAS test interface provides a rich, multi-media experience and, as such, the content files can be sizable, requiring some time to download.

The Online Assessment requires a single download of each test for the entire test window. Test content is cached on the workstation and secured via encryption. This practice results in sustainable, predictable network performance for all test takers as well as other users of the local area network and Internet connection.

You must follow the Download Test process at least once to download the test content, after which you may choose to use the expedited "bulk" pre-positioning method on page 21 to position test content on remaining workstations.

The encrypted content then resides on the workstation to be used for subsequent test sessions for up to 60 days, or until the software is uninstalled.

## Download Test

Following are the steps to download tests and cache them on the workstation.

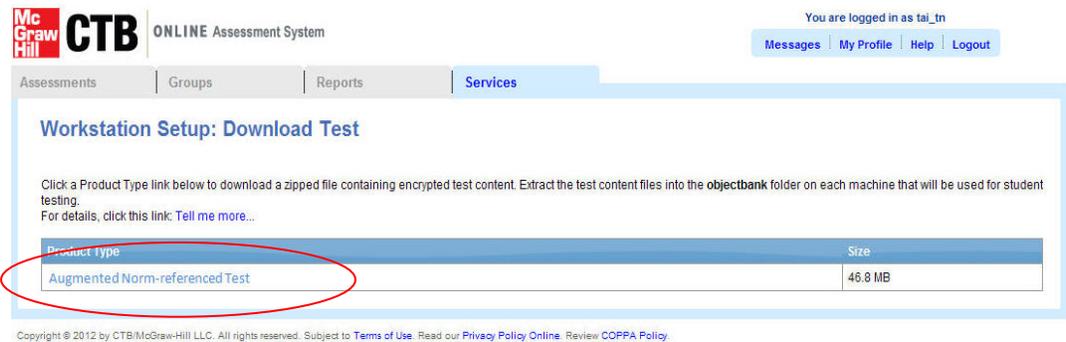
1. Log into OAS (<https://oas.ctb.com>) and select **Workstation Setup>Download Test** on the Services tab.



The Download Test page opens.

2. Select tests.

Click the [product name] link for the Product Type (tests) you want to download.



A standard **File Download** dialog asks whether to Open or Save the .zip file containing the content.

3. Click **Save**.
4. Select a location to save the file temporarily, such as your **Desktop**.
5. Position the content for testing.

### Custom Configuration Install:

When the download is complete, open the .zip file and **Extract** or **Copy** the contents into the test\_content folder you created and specified in your configuration switches.

### Standard Interactive Install:

When the download is complete, open the .zip file and **Extract** or **Copy** the contents into the "objectbank" folder on the workstation.

The default location of the "objectbank" folder is as follows:

On PC: **C:\Program Files\CTB\Online Assessment\data\objectbank**

On Mac: **/Applications/Online Assessment/data/objectbank**

On Linux: **/usr/local/Online Assessment/data/objectbank**

If you changed the default software location during installation, the object bank path still will be **...\Online Assessment\data\objectbank**

## **Download New Tests**

Tests that are available for downloading are shown on the OAS **Download Test** page.

Not all tests may be available at the same time for downloading. For example, if your organization has Practice Tests and Operational Tests, the Practice Tests may be available for scheduling before the Operational Tests are available. Perform the Download Test steps for new tests as they become available.



---

Pre-loading the test content on the student computers is highly recommended to minimize use of network capacity during peak use times. However, if a test session is scheduled and a student logs on to take a test which is not on the student workstation, the test will automatically load.

---

## **"Bulk Pre-Positioning" of Test Content**

Once you have downloaded test content to a single workstation, you can use a shortcut to place the encrypted content on the other student workstations.

**Note:** While you can **download** or **copy** the content .zip file to any workstation without first installing the testing software, you cannot pre-position the content for use until you have installed the testing software on the workstation.

### **1. Navigate to the folder to which you downloaded the test on the first workstation.**

By default, the location on a

**PC** is **C:\Program Files\CTB\Online Assessment\data\objectbank**

**Mac** is **/Applications/Online Assessment/data/objectbank**

**Linux** is **/usr/local/Online Assessment/data/objectbank**

If you changed the default software location during installation, the object bank path still will be ...\**Online Assessment\data\objectbank**, or the file location you specified in your switch configuration.

### **2. Copy the entire contents of the objectbank folder to a jump drive, CD-ROM, tape backup, or other storage media you will use to pre-position the test content on other workstations.**

### **3. Copy the contents of the object bank from the storage media to each new workstation into the objectbank folder, using the exact same file structure as the original.**

The file structure on Mac and Linux machines is the same as PC, but the location will vary as follows:

The default location on a PC is **C:\Program Files\CTB\Online Assessment\data\objectbank**

The default location on a Macintosh is **Macintosh HD/Applications|Online Assessment/data/objectbank**.

The default location on Linux is **...usr/local/Online Assessment/data/objectbank**.

If you changed the default software location during installation, the object bank path still will be **.../Online Assessment/data/objectbank**, or the file location you specified in your switch configuration.

Alternatively, copy the downloaded test content .zip file to all workstations ahead of installing the testing software. At the time you install the testing software on a workstation, you can then open the .zip file and **extract** or **copy** the contents to the "objectbank" folder location given in step 3 above.

## 5. UPDATING WORKSTATIONS TO HOST MULTIPLE TEST PRODUCTS

### Overview

Customers who use more than one OAS-based product now can have multiple versions of the student test delivery client (TDC) on the same workstation at the same time. In some cases, you can simply install the additional TDCs in the usual way—download and install the TDC from the OAS Install Software page, or from another site where customer-specific URLs allow direct download.

The table below shows the product TDC versions that can be co-resident on the same workstation. There is no particular order in which any combination of these products must be installed.

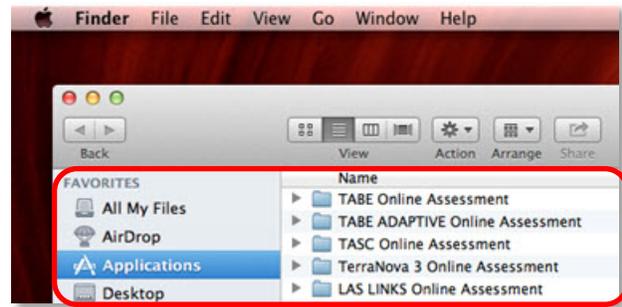
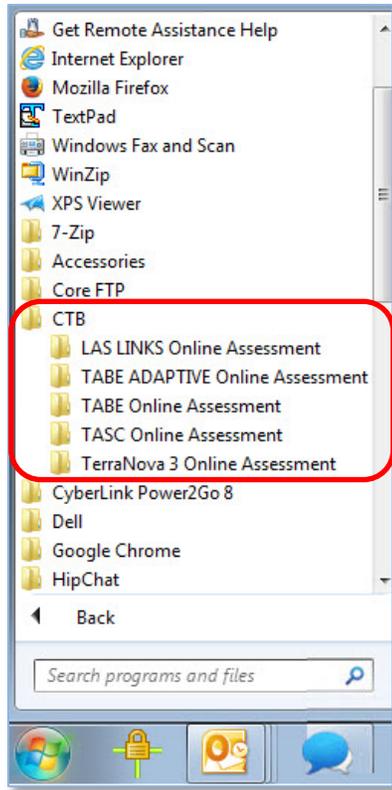
PRODUCT	INSTALLER NAME	FOLDER NAME	ICON	VERSION
<b>TABE ONLINE</b>	InstallOAS_TABE	TABE Online Assessment		18.0
<b>TABE ADAPTIVE</b>	InstallOAS_CAT	TABE ADAPTIVE Online Assessment		17.0
<b>TASC</b>	InstallOAS_TASC	TASC Online Assessment		11.0
<b>LAS LINKS</b>	InstallOAS_LASLINKS	LAS LINKS Online Assessment		12.3
<b>TerraNova 3/ ACUITY</b>	InstallOAS_TERRANOVA 3	TerraNova 3 Online Assessment		16.0

Depending on the version of the product currently residing on the workstation, you may need to uninstall an older version of the same product before installing a new version. **It is never a good practice to overwrite a new version of a TDC on top of an older version of the same product.**

Let's look at an example of a TABE Online customer that already has an older version of TABE Online on the workstation.

- In order to install TABE Online 18.0, you would need to uninstall the previous version of TABE Online before installing TABE 18.0.
- However, if you have the older TABE Online version and want to install another product, say LAS Links Online 12.3 on the same workstation, it is not necessary to uninstall TABE Online first. You can just download and install LAS Links Online 12.3.
- If you then want to update the TABE Online version for a new test year, you would still need to uninstall the old TABE Online TDC and then install TABE Online 18.0. However, it is not necessary to uninstall and reinstall LAS Links Online 12.3.

After installing multiple TDCs, the Start menu on the workstation will list each version by product name. The image on the next page illustrates the Start menu on a PC.



At the same time, an icon representing that product is placed on the desktop. See table on page 1 for the icons for each product. This is how the icons will look on the desktop when the products are installed.



### ***Positioning Content for Multiple Products***

Once you have installed a TDC, you must download and position the content for that product.

When you install a product TDC, a folder is created to hold the content (item bank) for that product. Folders are named so that you can clearly see which folder is to be used to hold the product's content.

When you download content, a .zip file is placed on the desktop. Open the .zip file and copy the content into the objectbank folder for the product.

For example, you have installed LAS LINKS Online Assessment on a workstation. An icon that represents that product is placed on the desktop, and a folder is created to hold LAS Links content. The file path for LAS Links content on a PC, assuming you use the default installer location, would be:

**C:\Program Files\CTB\LAS LINKS Online Assessment\data\objectbank**

Similarly, the path for TABE Online Assessment content would be:

**C:\Program Files\CTB\TABE Online Assessment\data\objectbank**

See the table on page 22 for each product and its corresponding folder name.

The default file path for a Mac or Linux machine will follow the same naming conventions for the objectbank folders. For example,

Mac: **Macintosh HD/Applications|LAS LINKS Online Assessment/data/objectbank**

**Macintosh HD/Applications|TABE Online Assessment/data/objectbank**

Linux: **...usr/local/LAS LINKS Online Assessment/data/objectbank**

**...usr/local/TABE Online Assessment/data/objectbank**

Once the content has been positioned, you are ready to allow students to test on the workstation.

### ***Finding the Version of the Currently Installed Software***

If you are not sure which version of a product is currently installed on a workstation, look in the "version.properties" file. It is located under "etc" folder in the program's file path.

For example, to check the version of LAS Links Online on a PC workstation, look in

**C:\Program Files (x86)\CTB\LAS LINKS Online Assessment\etc\version.properties**

and find the entry "tdc.version="—in this example, perhaps it shows **tdc:version=12.3.0**.

## 6. COMMON PROBLEMS

Below is the List of some common Site Readiness related problems that occur during or prior to testing, and their resolutions.

### ***Common Error Messages (Student Workstations)***

Following is a list of common error messages that may be seen on student workstations during testing, and suggested actions for resolution by test examiners in the classroom and support personnel at the school and system-wide levels.

<b><i>Error Message</i></b>	<b><i>Explanation and Resolution</i></b>
<b><i>Error 461</i></b>	<p>The application is out of date. The student workstation has not been properly set up for testing.</p> <p><b><u>Test Examiner</u></b></p> <ul style="list-style-type: none"> <li>• Report the problem to your School Coordinator. Move the student to another properly configured workstation if one is available.</li> </ul> <p><b><u>School Coordinator</u></b></p> <ul style="list-style-type: none"> <li>• Contact your Technology Coordinator or CTB Technical Support at your state's, school's, or corporation's special Online Support phone number, as appropriate.</li> </ul>
<b><i>Error 471</i></b>	<p>The student username, password, or test access code is incorrect.</p> <p><b><u>Test Examiner</u></b></p> <ul style="list-style-type: none"> <li>• The student's username and/or password were typed incorrectly. Usernames and passwords are not case-sensitive. Verify that the usernames and passwords are identical to those on the test tickets.</li> <li>• Verify that the <i>Caps Lock</i> key is not engaged.</li> <li>• Verify that the students are using the dash (-) and not the underscore ( _ ) key.</li> <li>• Verify that the correct Test Access Code is being used. Compare the information on the Individual Test Ticket to the Summary Test Ticket.</li> </ul> <p><b><u>School Coordinator</u></b></p> <ul style="list-style-type: none"> <li>• Log in to the Test Administration Site to verify that the student was not removed from the test session after the Test Tickets were printed.</li> </ul>
<b><i>Error 472</i></b>	<p>The student session is already or is still in progress. This typically happens when the student loses network connectivity.</p> <p><b><u>Test Examiner</u></b></p> <ul style="list-style-type: none"> <li>• Have the student wait for up to 60 seconds for the system to attempt to reconnect. At the end of that time, if connection is unsuccessful, click Exit Test. Report the problem to your School Coordinator. Move the student to another properly configured workstation if one is available. The student should be able to log in and resume testing at the point of interruption. If the student is unable to log in, contact the School Coordinator.</li> </ul>

	<p><b><u>School Coordinator</u></b></p> <ul style="list-style-type: none"> <li>Log in to the Test Administration Site to check the student Online Test Status as described in "Monitoring a Test Session" in Chapter 7 of the User's Guide.</li> </ul>
<p><b>Error 474</b></p>	<p>The test session is not available at this time. This means that the test session date or time window is no longer available for the student to log in.</p> <p><b><u>Test Examiner</u></b></p> <ul style="list-style-type: none"> <li>Please check the dates and times on the Summary Test Ticket.</li> </ul> <p><b><u>School Coordinator</u></b></p> <ul style="list-style-type: none"> <li>Log in to the Test Administration site to edit dates or time if possible, or re-schedule students for a make-up session as described in Chapter 2 of the User's Guide.</li> </ul>
<p><b>Error 475 or 476</b></p>	<p>Student has completed this test.</p> <p><b><u>Test Examiner</u></b></p> <ul style="list-style-type: none"> <li>If the student has not taken this test, make sure that the username, password, and Test Access Code are correct.</li> </ul> <p><b><u>School Coordinator</u></b></p> <ul style="list-style-type: none"> <li>If this is a practice session and the student would like to take the practice test again, a new test session needs to be scheduled to provide the student with new login information.</li> <li>If this is the actual test, the student cannot take the test again. Log in to the Test Administration Site to check the student roster of other sessions for that subject area.</li> <li>Please call CTB Product Support at your state's, school's, or corporation's special Online Support phone number, if you believe that the student has a valid login and cannot access the system.</li> </ul>
<p><b>Unexpected Online Assessment Software Behavior</b></p>	<p><b><u>Test Examiner</u></b></p> <p>Report the problem to your School Coordinator.</p> <p><b><u>School Coordinator</u></b></p> <p>Contact your Technology Coordinator or CTB Technical Support at your state's, school's, or corporation's special Online Support phone number, as appropriate.</p> <p><b><u>Technology Coordinator</u></b></p> <p>Contact your next higher level Technology Coordinator or CTB Technical Support at your state's, school's, or corporation's special Online Support phone number.</p>

## 7. MINIMUM TECHNICAL REQUIREMENTS

A printable PDF version of these requirements can be downloaded from your organization's web page on [ctb.com](http://ctb.com), or from the Install Software page of the OAS application.

### ***OAS Configuration Checklist (PC, Mac, and Linux)***

 		<b>Online Assessment System</b> <b>MINIMUM TECHNOLOGY REQUIREMENTS</b>
<b>Requirements for Student Workstations</b>		
<b>HARDWARE/SOFTWARE - PC</b>		
1	<b>Hardware &amp; Memory</b>	1.3 GHz processor 2 GB of memory 1 GB disk space available
2	<b>Operating System</b>	Windows XP SP3, Vista SP1, Windows 7, Windows 8
3	<b>Additional Software</b>	Adobe® AIR® Java Runtime Environment™ 6 minimum, JRE 7 recommended, 7.51 maximum, 32- or 64-bit to match OS
<b>HARDWARE/SOFTWARE – LINUX</b>		
1	<b>Hardware &amp; Memory</b>	1.3 GHz processor 2 GB of memory minimum 1 GB disk space available
2	<b>Operating System</b>	Linux Fedora 11 (Red Hat), OpenSUSE 11.1, or Ubuntu 9.04 <i>Known exception: Ubuntu 10.04 not recommended</i>
3	<b>Additional Software</b>	Adobe® AIR® Adobe® Flash® Player 11 Java Runtime Environment™ 6 minimum, JRE 7 recommended, 7.51 maximum, 32- or 64-bit to match OS
<b>HARDWARE/SOFTWARE – MAC</b>		
1	<b>Hardware &amp; Memory</b>	<b>Minimum:</b> 1.8 GHz Intel processor 2 GB of memory 1 GB disk space available
2	<b>Operating System</b>	OS X 10.7, 10.8 Intel
3	<b>Additional Software</b>	Flash® Player 11 Java Runtime Environment™ 6 minimum, JRE 7 recommended, 7.51 maximum, 32- or 64-bit to match OS Adobe® AIR® - if audio recording capability enabled
4	<b>Web Browser</b>	Safari® 2.0
<b>HARDWARE/SOFTWARE – Common to all Machines and Operating Systems</b>		
5	<b>Display Monitor</b>	Set to minimum of 1024 x 768 pixels Minimum color display: 256 colors (8-bit)
6	<b>Internet Access</b>	High-speed internet connection (see below)
7	<b>Peripherals</b>	Keyboard (should not have shortcut hot keys enabled) Mouse is required for manipulatives Sound card, headphones for Screen Reader accommodation Sound card, headphones or speakers, microphone for audio recording capability *If audio is enabled, verify that the sound is not muted and the sound card is configured to use the headset and microphone in computer control panel



**CTB**

Online Assessment System  
**MINIMUM TECHNOLOGY REQUIREMENTS**

NETWORK CONNECTIVITY		
8	<b>Bandwidth</b>	Minimum 1.5 Mbps upload and download – T1, high-speed cable or high-speed DSL required for every 50-100 concurrent users
9	<b>Firewalls</b>	Port 80 and 443 must be open
10	<b>Proxy Servers</b>	Dynamic pages are not to be cached Allow both HTTP and HTTPS traffic for *.ctb.com Allow traffic from app.readspeaker.com (for screen reader accommodation) Exclude *.ctb.com addresses from filters— <i>highly recommended</i>
SECURITY AND OTHERS		
11	<b>Instant Messaging</b>	Instant messaging and e-mail notification disabled
12	<b>Screensavers</b>	Screen savers and power savers disabled
13	<b>System Scans</b>	Anti-virus system scans and/or auto-updates set to run when testing will not be taking place
14	<b>System Restore</b>	System restore utilities, e.g. Deep Freeze, disabled during setup and testing, so that new data remains in place after system reboot
15	<b>Remote Desktop</b>	Remote desktop access disabled
16	<b>Web Content Filtering</b>	Exclude *.ctb.com from web filtering
17	<b>Others</b>	Other automatic software that needs to be disabled

**Note:**

*The software listed above has been tested for correct operation with the online system. Later versions of these applications may work but they have not been tested and are not supported by CTB.*

*Software applications that would interfere with secure, locked-down browser application must be disabled/ turned off (not uninstalled); they must be set to run outside the testing window for security.*