



Clear Ballot

Write-in Tool 1.4

Preparation and Installation Guide

Write-in Tool Preparation and Installation Guide

Clear Ballot Part Number: 100087-10010

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Preface

This section defines the purpose of this document. It contains the following subsections.

- About this document
- Scope of this document
- Intended audience
- Contact us

About this document

This document describes how to install the Write-in Tool and prepare to use it.



A ClearVote™ system can comprise the ClearAccess™, ClearAudit™, ClearCast™, ClearCount™, and ClearDesign™ products. Jurisdictions are not required to purchase all products. You can ignore references to any ClearVote components that are not part of your voting system. Also ignore implementation options that are not relevant to your policies and procedures.

Scope of this document

This document contains the following chapters:

- [Chapter 1. Installation and hardening](#)
- [Chapter 2. Preparations for adjudicating contests](#)

Intended audience

The document is for state and federal election officials and their voting system test laboratories as part of the Technical Data Package (TDP) required to certify the ClearVote system for use. This document is also used by Clear Ballot personnel who support election officials and staff.

Contact us

Clear Ballot Group welcomes your feedback on our documentation. Please send comments to Documentation@ClearBallot.com.

If you have questions about using your product, contact your Clear Ballot representative.

Chapter 1. Installation and hardening

This chapter describes how to install the Write-in Tool (WIT) and harden the ClearCount election administration station where it is installed.



This document applies when you install and use WIT with ClearCount version 1.4.

1.1 Installing WIT on an existing election administration station

This section assumes that the election administration station has been hardened.

If the election administration section has not been hardened and you intend to harden it, see the ClearCount Election Preparation and Installation Guide for hardening instructions.

For more information on hardening options, see Appendix A.

1.2 Installing WIT

Clear Ballot provides WIT as an ISO file that should be burned to a DVD.

To install WIT:

1. Log into the election administration station where you want to run WIT as the Windows administrator.
2. Insert the DVD into the DVD drive.
3. Open File Explorer and select "This PC" on the left side.
The main (right) panel shows the DVD drive under the Devices and drives section.
4. Double-click on the DVD drive entry.
The contents of the DVD appear.
5. Right-click the WIT installer and select "Run as Administrator."
6. When the User Account Control dialog appears, click **Yes** to confirm that you want to proceed.
The dialog indicates that the publisher is unknown.
7. When the InstallShield wizard appears, follow the InstallShield sets and click **Next** when appropriate.

If you change the destination folder, write down the new destination folder and path for the white-listing step. The default path is:

C:\Program Files (x86)\Clear Ballot Group\Write-in Tool\

8. Deselect (uncheck) **Launch the program** before you click **Finish**.

If you do not deselect **Launch the program**, WIT starts, but may not operate correctly until you add it to the hardening white list. If WIT opens, close it by clicking the **X** in upper right corner.

The installation adds a shortcut to the desktop and an entry in the Apps list under "C" for Clear Ballot Group.

9. Eject the DVD.

Repeat this procedure for each election administration station where the write-ins will be adjudicated.

1.3 Adding WIT to the hardening whitelist

You must add WIT and its location to the whitelist, which specifies the list of programs that are allowed to run on the election administration station.

To add WIT to the whitelist:

1. Log in as the Windows administrator.
2. In the Windows Search bar, type **gpedit.msc** to search for the Local Group Policy Editor.

The Local Group Policy Editor console appears in the search results with a subtitle of "Microsoft Common Console Document."

3. Double-click the entry for the Local Group Policy Editor in the search results.
4. Click Yes in the User Account Control dialog for the Microsoft Management Console.

The Local Group Policy Editor appears (Figure 1-1).

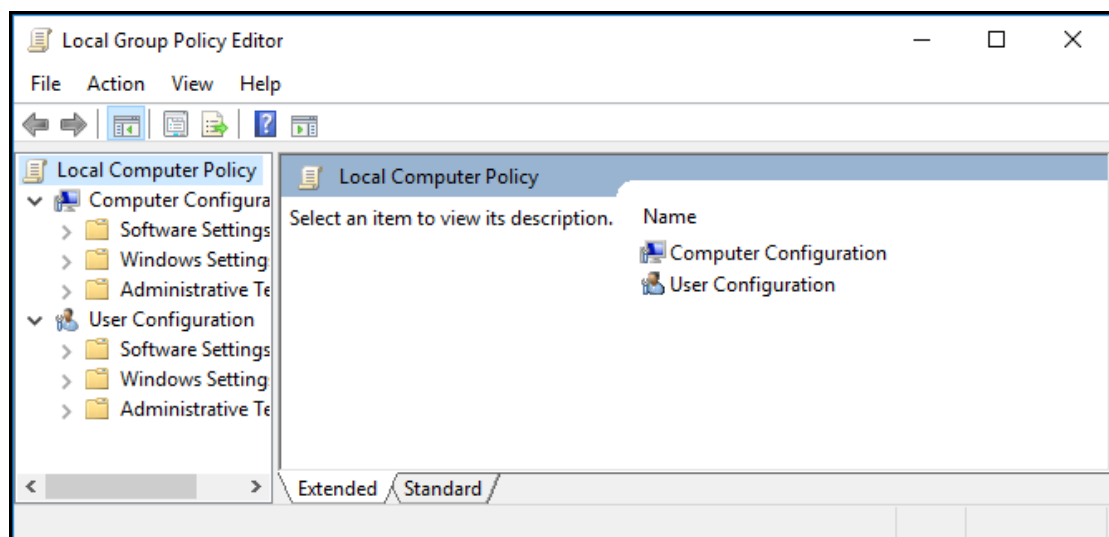


Figure 1-1. Local Group Policy Editor

5. In the left pane, under Computer Configuration, select **Windows Settings** (Figure 1-2).

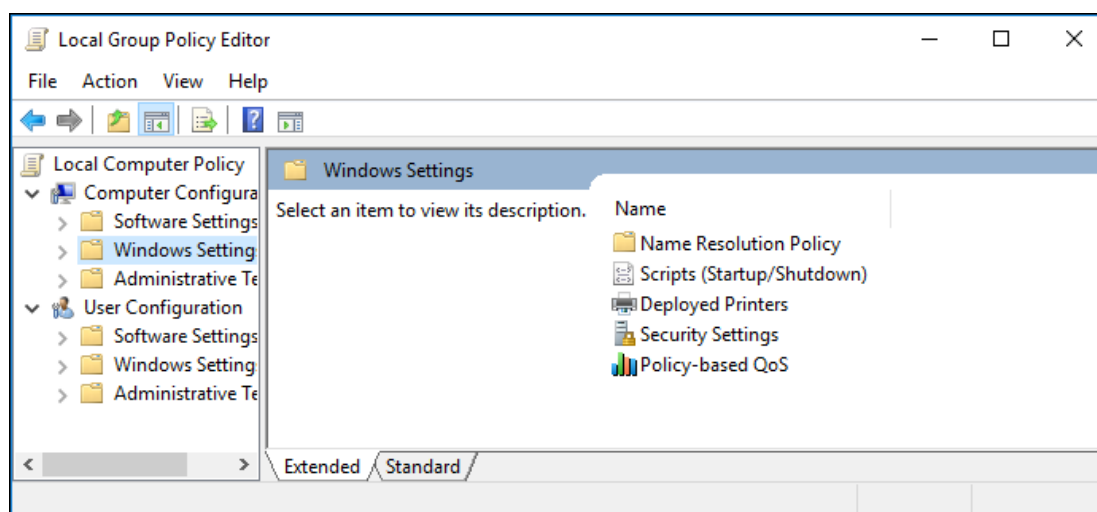


Figure 1-2. Selecting Windows Settings

6. Double-click **Security Settings** in the right pane (Figure 1-3).

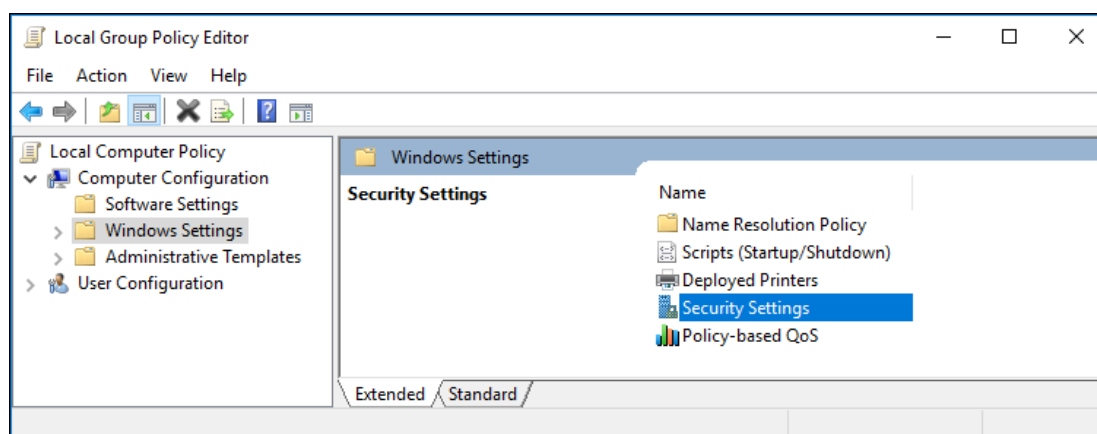


Figure 1-3. Selecting Security Settings

7. Double-click **Software Restriction Policies** in the right pane (Figure 1-4).

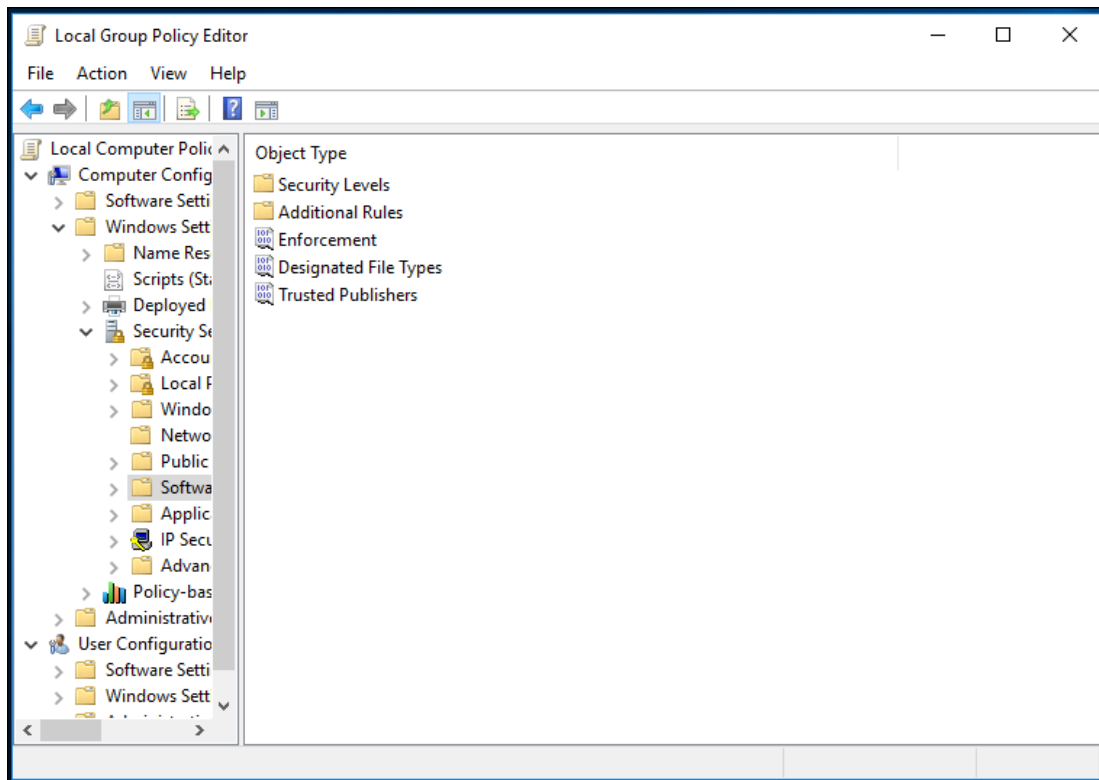


Figure 1-4. Selecting Software Restriction Policies

8. Double-click **Additional Rules** (Figure 1-5).

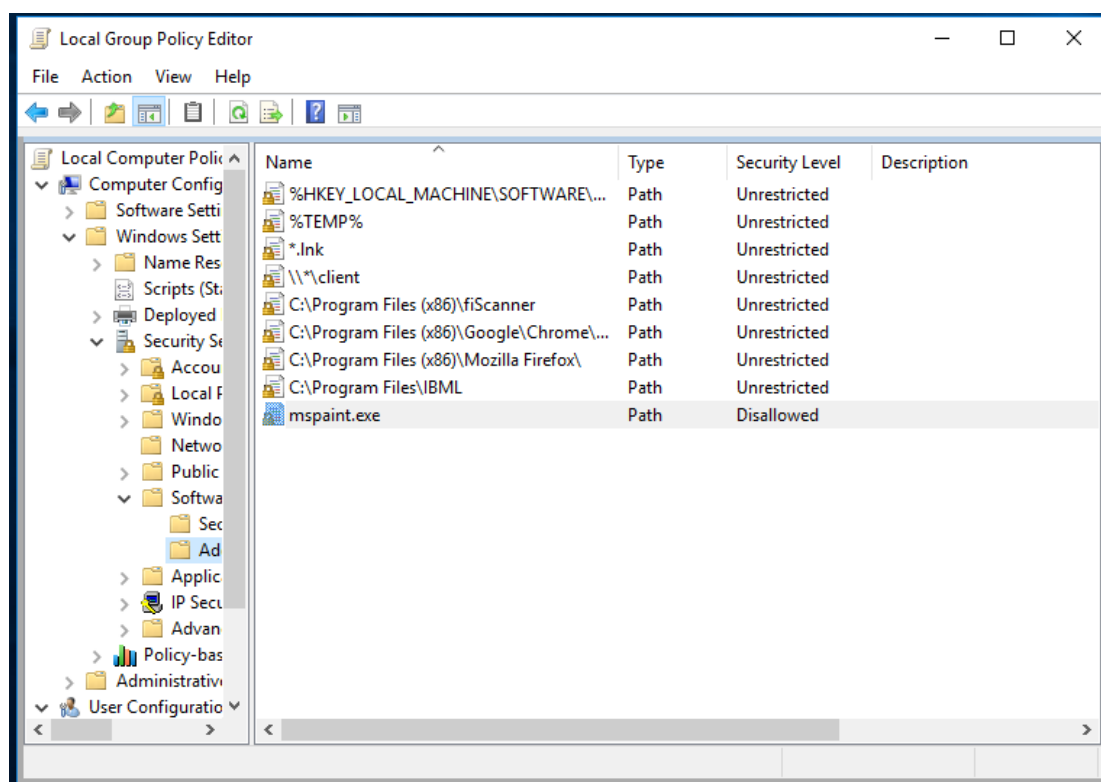


Figure 1-5. Selecting Additional Rules

The hardening script created the Additional Rules.

9. In the right pane, right-click and select **New Path Rule** (Figure 1-6).

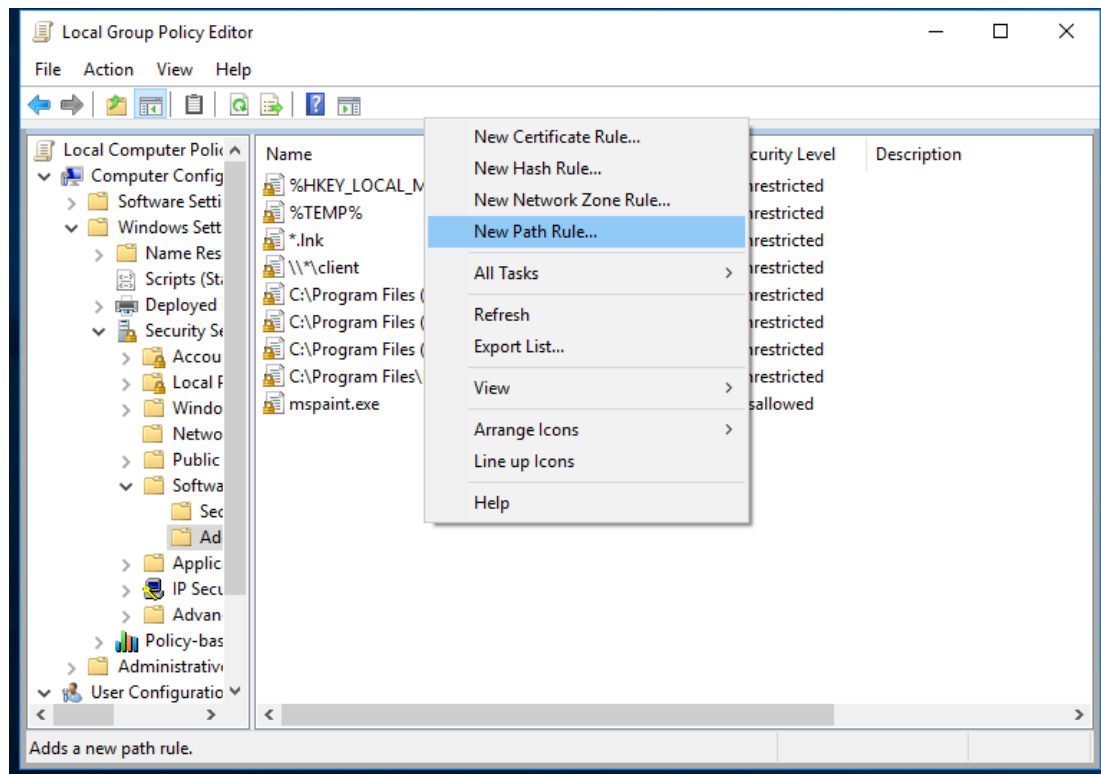


Figure 1-6. Selecting New Path Rule

10. When the New Path Rule dialog appears (Figure 1-7), enter the following information:

Path

Security Level

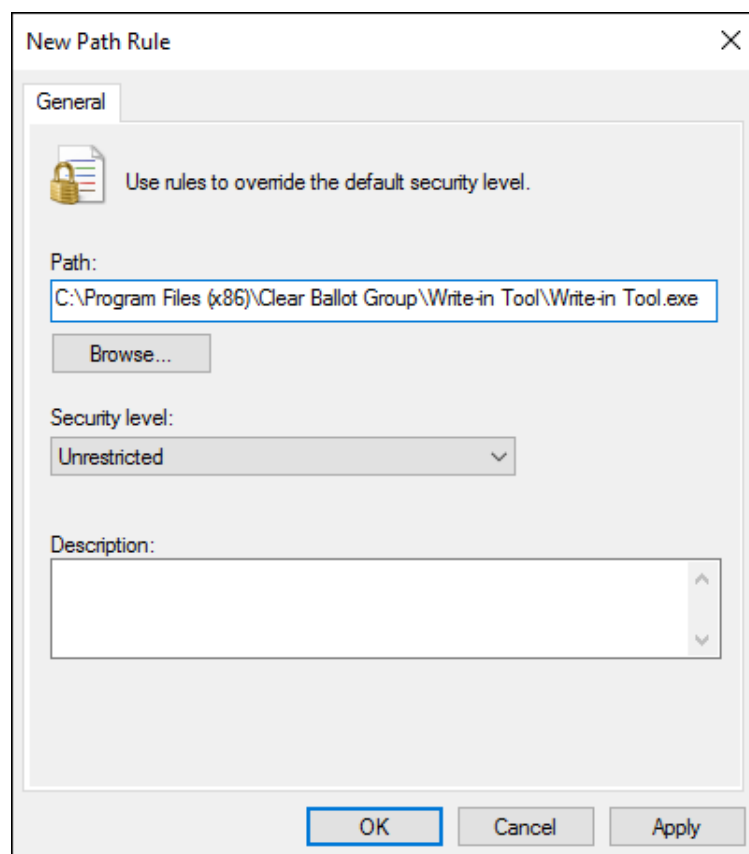


Figure 1-7. New Path Rule dialog

If you used a different path when you installed WIT, use that path instead of the path shown in Figure 1-7.

Enter the path exactly as it appears in File Explorer.

Enter an optional **Description** if desired.

11. Click **Apply** to save your changes and then click **OK** to close the New Path Rule dialog.
The new path rule is now visible in the list of rules.
12. Close the Local Group Policy Editor and restart the election administration station.

Chapter 2. Preparations for adjudicating contests

This chapter describes how to prepare for adjudicating contests.

Clear Ballot recommends that you review the prerequisites for using WIT listed in the *Write-in Tool User Guide*. This chapter lists some additional preparations for using WIT.

2.1 Allocating machines and contests

Depending on the size of the election and the number of number of contests requiring the adjudication of write-ins, your jurisdiction can install WIT on multiple admin stations to adjudicate multiple contests at once. Planning which users on which computers will adjudicate which contests ahead of time allows for efficient processing of write-ins. Planning the setup and workflow for adjudication also makes creating and assigning users easier. (See "Creating users for WIT and adding an election" on the next page.)



A single contest can be adjudicated only on one admin station. However, multiple election administration stations can adjudicate multiple contests at once.

2.2 Reviewing oval visualization and noting any contests that need special handling

It is rare that undervoted write-ins (where a name is written but no oval is filled in) are not included in the 500 choice zones that are loaded by default with each election. However, in contests where there are many more than 500 undervoted write-ins, the recommended best practice is to review the oval visualizations within ClearCount.

The Vote Visualization page in ClearCount (accessed from the Statement of Votes Cast report and other ClearCount reports) allows you to view many choice zones by using the **# of ovals** field. After a thorough review of the undervotes for all contests, you may decide to modify the default value when loading an election in WIT in one of two ways:

- Change the number (*nn*) in the **Load Max *nn* Undervoted Write-ins** field
- Deselect **Load Max *nn* Undervoted Write-ins** field to load all undervotes

See the *Write-in Tool User Guide* for more information on loading elections in WIT.

The number of undervotes is loaded on a per-election basis. Therefore, analyze the undervotes for an election after completing the adjudication in ClearCount, but before loading the election into WIT.

2.3 Creating users for WIT and adding an election

For security and accounting purposes, you must create new WIT users with Read access on the User Administration Page of ClearCount. This arrangement separates the WIT processing from other post-election processing (clarifies log entries, for example).

For example, you can associate user names with one of the following:

- The team who performs the adjudication
Example: Wit_Team1
- The election administration station used for adjudication
Example: Admin3-WIT

To create users, see the *ClearCount Election Preparation and Installation Guide*.

2.4 Copying data from one election administration station to another

When multiple election administration stations adjudicate contests in the same election, you can copy the election data from one election administration station to the others. Consider this option when it takes a long time to load the election.

When you copy an election to multiple election administration stations for adjudication, you must install and whitelist WIT on each election administration station and create the appropriate users.

Copying from the election administration station where the election has been loaded

1. Log in as administrator on the election administration station where the election has been loaded
2. Navigate to C:\Program Files (x86)\Clear Ballot Group\Write-in Tool\data\server_name
3. Copy the server_name folder and all the folders below it to a USB drive.

On all other election administration stations used to adjudicate the election:

1. Install WIT on all the other election administration stations and add it to the white-list as described in Chapter 1.
2. Copy the server_name folder and its subfolders from the USB drive to the directory C:\Program Files (x86)\Clear Ballot Group\Write-in Tool\data\

When the users log in to WIT, the election will already be loaded and they can choose the contest they have been assigned to adjudicate.

If you installed WIT to a different location on any computer, navigate to that path instead of C:\Program Files (x86)\Clear Ballot Group\Write-in Tool\data and copy the server_name directory to or from that location.

Appendix A. Hardening a new election administration station

This appendix describes how to harden a new ClearCount election administration station. You harden the new election administration station before installing WIT.

Hardening the election administration station consists of minimizing routes of access to them and implementing malware protections.



Hardening includes procedural and environmental elements that may be governed by local statute. Follow all steps to harden your system. No steps are recommended or optional. Be sure to consult local regulations as part of the hardening process. Local voting system security regulations may dictate that you do more than described in this section.

A.1 Updating Windows Defender Antivirus

Microsoft provides the Windows Defender Antivirus program with its Windows operating system. To keep the virus definitions up-to-date, you must update the program. Microsoft recommends that Windows Defender Antivirus be updated at least once a week. Clear Ballot recommends that the Windows Defender Antivirus program be updated on every ScanStation and election administration station prior to each election.

Because computers used in elections must never be connected to the Internet, the virus definition update must be done offline using removable media.

To download antivirus definitions:

1. On a computer outside the closed ClearCount network, and that has a USB port and Internet connection, navigate to <https://www.microsoft.com/security/portal/definitions/adl.aspx>.
2. Download the antivirus definitions according to the instructions on that site for your operating system and bit version. The software is delivered as a single file named mpam-fe.exe or something similar.
3. Insert a USB drive into a USB port on the computer you downloaded the software to, copy the file to the USB drive and then eject the USB drive.

If Windows software restriction policies are in effect on the computer being updated, disable the restrictions or add a temporary path rule to allow the update to run. See the information about updating third-party software in the *ClearCount Election Preparation and Installation Guide*.

To update Microsoft antivirus software offline:

1. Log in to the computer as the Windows administrator.
2. From the task bar, type defender into the Search field and then select Windows Defender Security Center from the search results.
3. Click Virus & threat protection.
4. Click Protection Updates and note the date and time that the definitions were created. Do not close the Protection Updates window.
5. Insert the USB drive into a USB port on the computer and browse to the file.
6. Right-click the file and select the Run as Administrator option from the pop-up menu.
7. When the User Account Control dialog appears, click Yes to run the update. You may see the mouse pointer spinning as the update progresses. If not, wait 30 seconds.
8. Return to the Protection Updates window and check the date and time that the definitions were created. The date should be the date you downloaded the file. Close the Protection Updates window.

Repeat the update process on each election administration station and ScanStation computer.

Maintain the history and archive copies of each update.

A.2 Election administration station hardening

Hardening the ClearCount system makes it more secure from threats. The election administration station hardening script performs several critical procedures on the computer, including the following:

- Enables FIPS 140-2 security mode
- Disables the wireless and Bluetooth Internet services
- Disables the autoplay feature
- Disables the Edge browser
- Disables Cortana
- Disables Microsoft consumer experiences
- Enables the software execution control for non-administrator accounts and only allows the programs that are in the Windows system32 directory to run, along with Google Chrome and Mozilla Firefox
- Disables browser updates

Before installing, ensure that the computer has the correct Microsoft Windows operating system installed.

To run the hardening script:

1. Log in to the computer as an administrator.
2. Insert the ClearVote Tools DVD into the disc drive and navigate to the Hardening Scripts folder.
3. Copy the AdminStation Harden folder to the election administration station desktop.
4. Open the AdminStation Harden folder, right-click the harden.bat file and select **Run as administrator** from the pop-up menu.
5. Restart the computer so that the changes take effect.
6. Delete the AdminStation Harden folder from the desktop, and empty the recycle bin.

A.3 Restricting access to the BIOS

Access to the BIOS is restricted by implementing an administrator password. The behavior of the BIOS depends upon the computer make and model. Consult your computer's documentation or contact Clear Ballot Technical Support for details.

The following procedure for a Dell Latitude E5580 computer is an example.

To restrict access to the BIOS:

1. Press the Shift key while shutting down the computer.
The computer shuts down.
2. Press the F2 key while starting up the computer.
The BIOS manager appears.
3. Set the BIOS password.
All user names and passwords must satisfy the rules and guidelines provided in the *ClearCount Election Administration Guide*.
 - a. Using the arrow keys, navigate to the Security screen and select Admin Password.
 - b. Enter and confirm the password.
 - c. Record the BIOS password on the Installation checklist provided in the *ClearCount Election Preparation and Installation Guide*.
4. To save your changes, click **Apply** and then click **Exit**.
5. Restart the computer and verify that the changes have been implemented.