ClearVote™ Election Preparation and Installation Guide

Version 1.9

Clear Ballot

ClearVote Election Installation and Preparation Guide

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Preface

ClearVote is a central count paper-based optical scan voting system. ClearVote utilizes modern software architecture and scalable unmodified commercial-off-the-shelf (COTS) hardware to provide a faster, lower cost, and higher performing election experience.

Audience and scope

This guide describes how to install and configure ClearVote software and supporting hardware and software in preparation for an election. The intended audience includes system administrators and election officials.

For information on working with the ClearVote system during an election, please see *ClearVote Election Administrator's Guide*.

Using this guide

This guide describes how to install and configure the ClearVote system and prepare for an election.

Chapter 1. About Ballot Definition Files

Describes how Ballot Definition Files are created and used.

Chapter 2. Installing ClearVote software

Explains how to install ClearVote software on the system ScanServer.

Chapter 3. Configuring ScanStations

Explains how to install and configure scanner software on ScanStation computers.

Chapter 4. Configuring Election Administration Stations

Explains how to install and configure software on Election Administration stations.

Chapter 5. Hardening, validating, and securing the system

Explains how to secure the ClearVote system and ensure it is operating properly.

Chapter 6. Setting up the scanning location

Explains how to prepare physical elements of a site for scanning ballots.

Chapter 7. About target cards and box labels

Explains how to prepare physical target cards and box labels for the scanning process.

Chapter 8. Creating elections and users

Explains how to create and manage elections and users.

Chapter 9. ClearVote readiness testing

Explains how to ensure the ClearVote system is in proper working order prior to the start of the election.

Chapter 10. ClearVote logic and accuracy testing

Explains how to verify that ClearVote is tabulating ballots as expected.

Chapter 11. Uninstalling ClearVote

Explains how to remove ClearVote and supporting software.

Chapter 12. Breakdown and storage

Explains how to break down and store ClearVote equipment after an election.

Appendix A. Installation checklist

Provides a printable checklist for recording user names and passwords entering in the process of installing ClearVote software.

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Chapter 1. Defining elections

For each election audit, jurisdiction officials must work with Clear Ballot to create a Ballot Definition File (or BDF). In addition, jurisdictions must share the results from the comparison system prior to the audit, so that Clear Ballot can convert them to its Comparison Results File (CRF) format.

1.1 About Ballot Definition Files

The BDF is a unique file for each election that records all necessary options for casting and recording votes. BDFs enable the ClearVote software to successfully register ballot images and tabulate vote targets. Registering a ballot image consists of matching its coordinates to the normalized coordinate system for the ballot type in question.

The BDF uses the standard comma separated value (CSV) format to describe such things as the ballot style, the precinct, and each contest name and its associated choice names, and the coordinates of the corresponding vote targets.

Clear Ballot creates the BDF by analyzing and interpreting the election's ballot style PDFs, which are supplied by the jurisdiction. When the election is created, the ClearVote software processes the BDF in order to create and initialize a MySQL database on the ScanServer™.

1.1.1 Scheduling BDF creation and transfer

The following table details the schedule and steps for software and ballot installation, including key dates, events, and deliverables.

Table 1-1. BDF Workflow

Date	Event	Related deliverable
At least 45 days before Election Day	Election officials use their primary EMS to produce ballot style PDFs, and then securely transmit ballot style PDFs to Clear Ballot Group.	Ballot style PDFs for each precinct in the election.
	Election officials install ClearVote software and verify that is has been properly installed.	Expected hash code and version information.
30 days before the election	Clear Ballot Group creates a Ballot Definition File (BDF) from the ballot style PDFs and transmits it securely to the election officials.	Completed BDF.
30 to 15 days before the election	Perform readiness and L&A testing on software and BDF.	Readiness and L&A test results.

1.1.2 Transferring files with Clear Ballot

When the jurisdiction engages with Clear Ballot, Clear Ballot establishes an account and emails the jurisdiction a link to its secure download utility. The jurisdiction uses this utility to send its ballot style PDFs to Clear Ballot as well as to retrieve the BDF from Clear Ballot.

To send your ballot style PDFs to Clear Ballot:

1. Click the link in the PDF solicitation email you receive from Clear Ballot.
2. Sign in on the **Your Information** page.

3. Click **Continue to Download Page**.

Figure 1-1. Clear Ballot Your Information page

4. In the **Upload Files** page, click **Choose Files**.
5. Browse to the archive (.zip) file of your PDFs and click **Open**.

Figure 1-2. Clear Ballot Upload Files page

6. Click **Upload Files**.
7. After you receive the **Files Uploaded Successfully** page, close the browser.

When the BDF is ready to download, Clear Ballot sends an email message to the jurisdiction. The message contains a download link to the secure download utility, as well as two SHA-256 digests, one for the PDF zip file you uploaded, and one for the downloaded BDF zip file. These digests, which consist of a string of letters and numbers and the file name, can be used with any SHA-256 compliant hash tool to validate these files. If you note any discrepancies, contact Clear Ballot immediately.

To obtain your BDF:

1. Click the link in the email your received from Clear Ballot.
2. Sign in on the **Your Information** page, and click **Continue to Download Page**.

Figure 1-3. Clear Ballot Your Information page

3. From the **Download** page, locate the BDF zip file and click **Download**.
4. In the **Opening** dialog, select **Save File** and click **OK**.
5. Close the browser.

1.1.3 Logging the BDF

ClearVote logs the file digest of the BDF used to create the election, so that you can verify that you installed the same BDF that Clear Ballot transmitted.

When the election is created, the SHA-256 file digest of the BDF is logged to both the Election Activity Log and the Web Activity Log, as shown in the following example:

Figure 1-4. BDF File Digest in the Election Activity Log

This file digest *must* match the one sent by Clear Ballot. If it does not, contact Clear Ballot immediately.

1.2 About Comparison Result Files

A Comparison Result File, or CRF, is a file that presents the results export of the comparison system in a canonical import format that ClearVote can consume. It allows jurisdictions to compare ClearVote results with the results of the comparison system.

By their nature, comparison results are not available until after the close of polls.

1.2.1 Scheduling transfer of comparison system results

Jurisdictions should sent the results export of their comparison system to Clear Ballot as soon as results are available after the close of polls. Clear Ballot creates the CRF from these results and sends it to the jurisdiction. The CRF can then be imported into ClearVote as long as the corresponding election exists in the system. The CRF can be imported either before or after ballots are scanned and tabulated by ClearVote.

1.2.2 Sharing results files with Clear Ballot

The jurisdiction uses the secure download utility described in Sharing ballot-related files with Clear Ballot to send its comparison results to Clear Ballot.

Comparison results, in whatever file format created by the comparison system, should be collected in a zip file.

To send your comparison results to Clear Ballot:

1. Click the link in the CRF solicitation email you receive from Clear Ballot.
2. Sign in on the **Your Information** page, and click **Continue to Download Page**.

Figure 1-5. Clear Ballot Your Information page

3. In the **Upload Files** page, click **Choose Files**.

4. Browse to the archive (.zip) file of your CRFs and click **Open**.

Figure 1-6. Clear Ballot Upload Files page

5. Click **Upload Files**.
6. After you receive the **Files Uploaded Successfully** page, close the browser.

When the CRF is ready to download, Clear Ballot sends an email to the jurisdiction. This email message contains a download link to the secure download utility, as well as two SHA-256 digests, one for the zip file you uploaded, and one for the downloaded CRF zip file. These digests, which consist of a string of letters and numbers and the file name, can be used with any SHA-256 compliant hash tool to validate these files. If you note any discrepancies, contact Clear Ballot immediately.

To obtain your CRF:

1. Click the link in the email your received from Clear Ballot.
2. Sign in on the **Your Information** page, and click **Continue to Download Page**.
3. From the **Download** page, locate the CRF zip file and click **Download**. CRF archive files are named using the convention *Election_Name*.crf.zip (for example, fl_leon_2010g.crf.zip).
4. In the **Opening** dialog, select **Save File** and click **OK**.
5. Close the browser.

Chapter 2. Installing ClearVote software

A complete ClearVote system consists of one ScanServer™, one or more ScanStations™, and one or more Election Administration Stations, joined together by a closed, wired Ethernet network. The ClearVote software itself is installed only on the ScanServer, not on the ScanStations or Election Administration Stations.

- Minimum computing hardware and operating system specifications are provided in *Supported Configurations, ClearVote*. This document is available from Clear Ballot service personnel.

- As part of the installation process, the ClearVote software overwrites the existing operating system on the ScanServer computer with its own Ubuntu Linux operating system. If necessary, back up data that resides on the computer before launching the ClearVote installer.

- Maintain this information in a safe and secure location.

In general, if you make a mistake at any point in the installation, the best practice is to quit the installation and start again from the beginning. There is no need to uninstall. The **Go Back** options in this installation wizard sometimes lead to a summary of the preceding steps rather than to the previous screen.

2.1 Installing ClearVote

To run the ClearVote installation wizard on the ScanServer computer:

1. Ensure data residing on the computer is backed up.

   Election data *must* be archived through ClearVote before installing the upgrade. See **Backing Up an Election** in *ClearVote Election Administrator's Guide* for instructions.

2. Ensure no external drives are mounted.

3. Start the installation:

   a. Turn on the ScanServer computer. (Press the power button if the computer is already on.)

   b. *Immediately* press the key that accesses the startup menu. (For example, if using an HP computer, press **Esc** to access the startup menu.)

      The key used depends upon computer make and model; consult your computer's documentation for details. To access the startup menu, you must press the key very quickly. If Windows begins to launch, it is too late. Restart the computer and try again.

   c. Insert the ClearVote DVD into the CD/DVD drive on the ScanServer computer.

   d. Press the function key that accesses the BIOS boot menu. (For example, if using an HP computer, press **F9**.)

   e. From the BIOS boot menu, select the CD/DVD drive. (For example, if using an HP computer, select **Optical Disk Drive** and press **Enter**.)

      Later in this procedure, the computer boots from DVD *instead* of the hard drive.

      The installation wizard launches.

      The installation procedure advances from screen to screen. Delays can occur between screens.

Chapter 6. Setting up the scanning location

This chapter describes how to prepare your physical location for the ballot scanning operation.

Before setting up the scanning location, please familiarize yourself with the physical security requirements described in Chapter 5. Hardening, validating, and securing the system.

6.1 Planning considerations

Before you begin setup, you need to determine the scale of your project.

6.1.1 Number of scanners needed

The number of scanners and ScanStations required depends on several factors, including the:

- Number of ballots to be scanned.
- Time constraints on completing the scanning operation.
- The municipality’s budgetary constraints.

6.2 Planning location requirements

Along with determining staffing and equipment levels, you must also plan the layout of the physical location where scanning takes place. Once the number of scanners and ScanStations has been calculated, the physical location requirements can be determined. The following are the recommended specifications for physical location of the scanning operation as well as the specifications for each of the associated stations.

6.2.1 Workstations in a scanning operation

An end-to-end scanning operation requires the following work stations:

ScanStation

Consists of a scanner, a laptop or desktop computer, associated cables, and a surface (typically a portable table) used to place the equipment and to provide space for inbound and outbound ballots. A scanning operation might feature one or more ScanStations.

ScanServer

Consists of a laptop or desktop computer, associated cables and a surface. This station can use a smaller surface than a ScanStation, because no ballots or scanners are present. A scanning operation features a single ScanServer.

Election Administration Station

Consists of a laptop or desktop computer and a surface. This station can use a smaller surface than a ScanStation, because no ballots or scanners are present. A scanning operation might feature one or more Election Administration Stations.

Ballot Preparation/Jogging Station

Consists of a ballot jogger (used to align ballots prior to scanning, helping to eliminate misfeeds and ensuring consistent ballot speed throughput) and space for pre- and post-jogged ballots. This station typically uses a surface the same size as the ScanStation.

Ballot Handling Station

Consists of a flat, clear surface. The purpose of this station is to unseal ballot boxes (if required), apply box labels, stage ballots for the preparation/jogging station and to reseal ballot boxes. Additionally, all ballot box record keeping occurs here as required.

For both security and organizational reasons, there should be no extraneous items such as notebooks, folders, or coffee cups on any of these surfaces.

6.2.2 Physical location considerations

The following factors should be considered when choosing the physical location for the scanning operation:

Proximity of ballots

Depending on the scale of the election jurisdiction, consideration should be made for the transfer of ballots to the physical scanning location if required. The scanning location should either be located adjacent to the ballot boxes or the scanning location should have the capacity to securely store and manage all the ballots to be scanned.

ScanStation space

Four feet of space behind each station is recommended so that scanning operators and support personnel can pass unobstructed to and from ScanStations and preparation/jogging station to deliver and retrieve ballots.

Electricity

Each ScanStation requires two electrical sources. The ScanServer station, Election Administration Station, and preparation/jogging stations require one each. Be prepared with extension cords and power strips to suit the scale of your scanning operation. Consider the number of electrical outlets as well as their proximity to the scanning operation.

6.2.3 Physical requirements for workstations

The workstations in a scanning operation have the following physical requirements:

6.2.3.1 ScanStation physical requirements

Weight	Surface dimensions
The surface or table must be capable of supporting the weight of the scanner, computer, and ballots. The heaviest component is typically the scanner. Here are the scanner weight specifications: • fi-5950: 110 lb • fi-6670: 37 lb • fi-6140: 10 lb • fi-6800: 70 lb • fi-7180: 10 lb	A minimum of six linear feet and a depth of no less than 2.5 feet per ScanStation is recommended.

6.2.3.2 ScanServer/Election Administration Station physical requirements

Weight	Surface dimensions
Minimal.	Sufficient space for a large laptop computer. (If the ScanServer is running on a desktop computer, determine required space accordingly.)

6.2.3.3 Preparation/Jogging Station physical requirements

Weight	Surface dimensions
30 lbs.	Six linear feet and a depth of no less 2.5 feet per station is recommended.

6.2.3.4 Ballot Handling Station physical requirements

Weight	Surface dimensions
30 lb	Six linear feet and a depth of no less 2.5 feet per station is recommended.

6.2.4 Scanning operation physical layout best practices

The following figure illustrates the best practice physical layout for a scanning operation, assuming four ScanStations, one ScanServer station, one Election Administration Station, one jog station, and a ballot prep station. All four ScanStations are connected to the ScanServer station using a router and an Ethernet network.

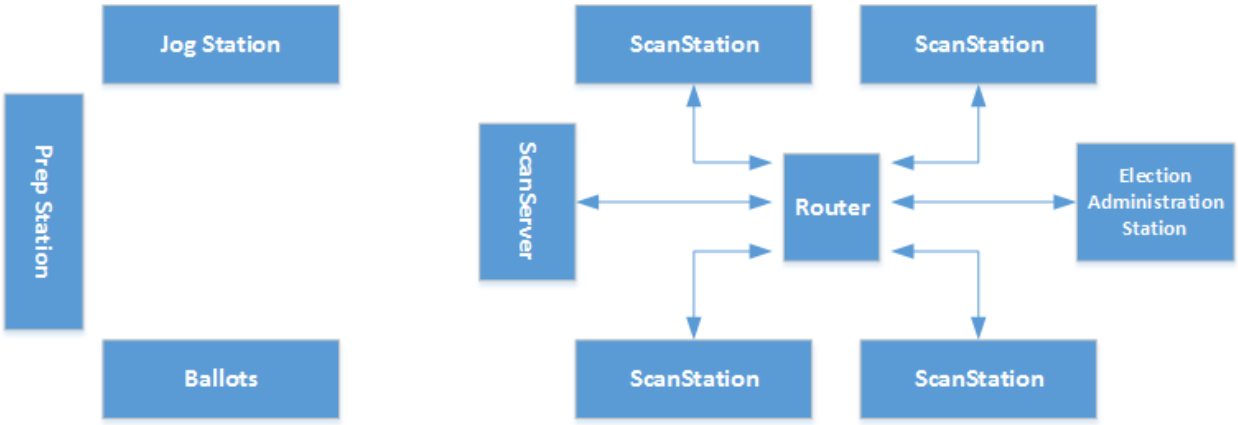

Figure 6-1. Example of scanning area physical layout

6.2.5 Scanner area guidelines

The scanning area is where the ballot scanning process takes place. The area must hold computers, scanners, boxes, labels, and thousands of ballots. You need approximately six feet of table space in order to accommodate a ScanStation's computer, scanner, and ballots. Lack of space can lead to disorganization and mistakes.

There should be a logical flow to the layout of your equipment. The ScanStation layout should match the order of the steps of scanning. The scanning process begins with receipt from the prep station of a labeled box containing ballots and a target card. These ballots become the input to the scanner, so the box should be unpacked and the ballots placed to the left of the scanner. The empty box should then be moved to the right of the scanner, either on the table or on the floor directly in front of it. The ScanStation computer, meanwhile, should be either in front of or directly beside its scanner. After the ballots are scanned, the scanner operator places them, face down, into the output box. Upon completion of the box, the scanner operator should initial the box label on the box, to indicate that the box has been scanned.

6.2.6 ScanServer area guidelines

The ScanServer connects physically to all ScanStations through the router, so it needs to be located in close proximity to them. However, the scanning team does not physically interact with the ScanServer.

6.2.7 Election Administration Station area guidelines

The Election Administration Station does not require a large surface, because it does not have to hold a scanner or ballots. However, users interact with the Election Administration Station, so it should be placed in an area with enough space for one or two chairs to be placed in front of it.

6.2.8 Preparation station guidelines

This is the location where the process begins, with ballots being delivered in boxes from the election committee. The ballot prep station consists of a surface only, because the purpose of this station is simply to unseal ballot boxes (if required), stage ballots for the jogging station, and reseal ballot boxes after scanning. Additionally, any required ballot box record keeping occurs here.

The record keeper records all activity surrounding opening, recording, and resealing sealed ballot boxes or bags.

6.2.9 Jogging area guidelines

A stack of ballots might not be in optimal condition for scanning. As a result, you may need to "jog" the ballots (that is, adjust them so they form a more orderly, uniform stack) before placing them into the box. A properly jogged stack of ballots is much less likely to result in a paper jam or misfeed. Within the jogging area, there needs to be a centralized jogging machine to jog the ballots.

Additionally, target cards and box labels are affixed here. Affixing the box label coincides with assigning a target card to a batch of ballots, as they both contain the batch IDs. For example, if the target card indicates a batch ID of ED-11, then you would affix a label marked ED-11 to the box where the ballots are to be placed. This helps to identify the location of the ballots during the ballot verification process.

The key tasks of the jogging area staff include:

a. Jogging the ballots.

b. Assigning a target card to each batch of ballots.

c. Affixing all labels to boxes.

d. Delivering boxes to and retrieving them from each ScanStation.

6.2.10 Security considerations

For security purposes, there *cannot* be WiFi components on the computers used in the ClearVote system. The connection between the ScanStations and the ScanServer must always be by wired Ethernet.

6.3 ScanStation equipment connections

After the equipment is set up, it must be connected as follows:

- Each scanner must be connected to its ScanStation computer.
- Each ScanStation computer must be connected to the Ethernet network.

Each scanner has a number of ports on the rear panel, as shown in the following figures. The Power and USB ports are used.

Scanner models fi-6800 and fi-6700 may have two square USB ports on the rear panel. These ports are not interchangeable. The USB cable must be plugged into the correct USB port as indicated by the highlighted squares in the following photos.

Model fi-6800

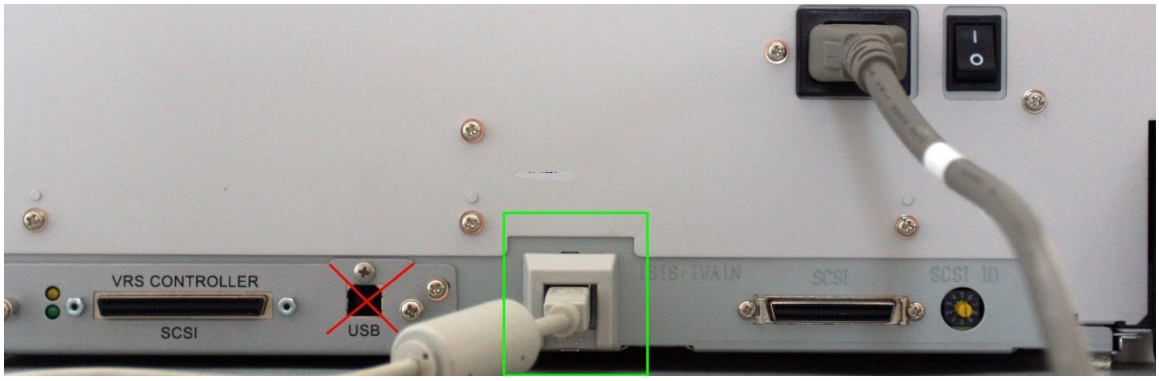

Figure 6-2. USB Port for the fi-6800

Model fi-6670

Figure 6-3. USB Port for the fi-6670

Model fi-7180

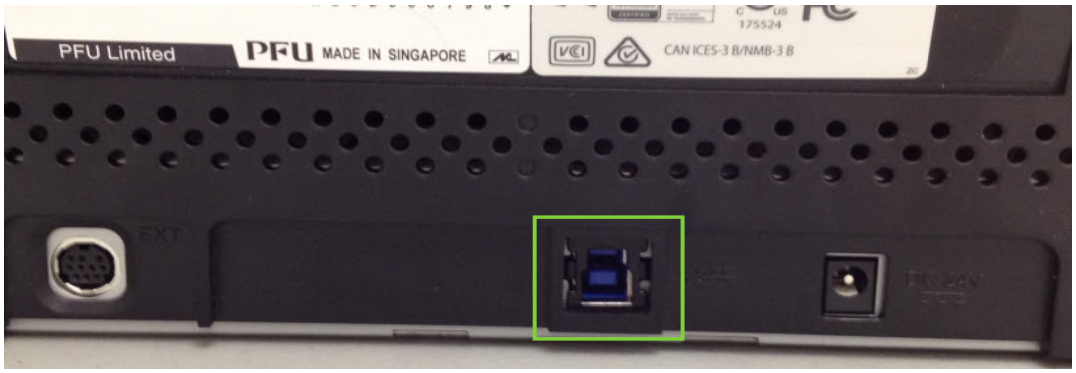

Figure 6-4. USB Port for the fi-7180

Model fi-6140z

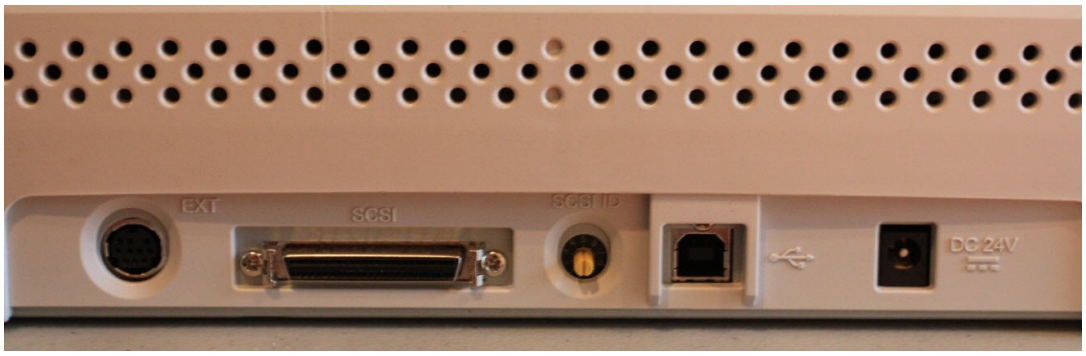

Figure 6-5. USB Port for the fi-6140z

Model fi-5950

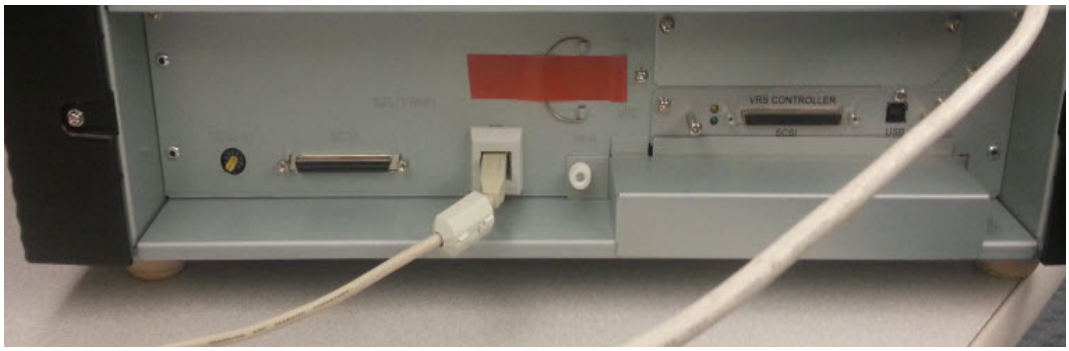

Figure 6-6. USB Port for the fi-5950

Two cables are required for each scanner:

- The power cable, which must be attached to the three prong male outlet on the back and then to a working power supply. The following figure shows the cable for fi-6670 and fi-6800. (The fi-7180 uses a circular pin-type electrical connector with adapter.)

Figure 6-7. Power Cord

- A USB cable, which has a small square connection on one end and a flat, rectangular connector on the other. The square end is placed into the similarly sized outlet on the back of the scanner, while the flat, rectangular connector should be placed into a USB port typically found on the back or sides of the computer.

Figure 6-8. USB Cable

The following figure shows a USB cable inserted into the USB connection on a laptop.

Figure 6-9. USB Cable in a Laptop

Finally, the computer must be connected to the network so the scanned images and data files can be sent to the ScanServer. The cable used is a standard Ethernet network cable as shown in the following figure.

Figure 6-10. Ethernet Network Cable

Each end of the Ethernet network cable is identical. One end is inserted into the network port on the computer and the other end is inserted into the router.

The following figure shows an Ethernet cable inserted into a laptop.

Figure 6-11. Ethernet Cable in a Laptop

The following figure shows an Ethernet cable inserted into a network router.

Figure 6-12. Ethernet Cable in the Network Router

Additionally, the computer power cable must be attached to a working power supply.

6.3.1 Turning On the hardware

After all the cables are connected, you can power on the elements of the ClearVote system.

- To turn on the router, press its power switch.
- To turn on the scanner, press the power switch at the back of the scanner AND the power button.

The power button is located on the front of the fi-6800 and fi-7180, and on the side of the fi-6670.

- To turn on each computer, press its power switch.

6.4 Preparing the scanner input and output mechanisms

After setting up the scanners, you need to configure a few of their physical aspects.

6.4.1 Automatic document feeder setup on the fi-6800

For the scanner to successfully complete a batch scan on the fi-6800, the Automatic Document Feeder (ADF) lever in the input hopper must in the down position. When the gray lever is up (that is, within the housing case), the ADF is not ready to guide documents into the scanner, and the scanner cannot function properly.

The following shows the ADF lever in the up position (not ready to scan):

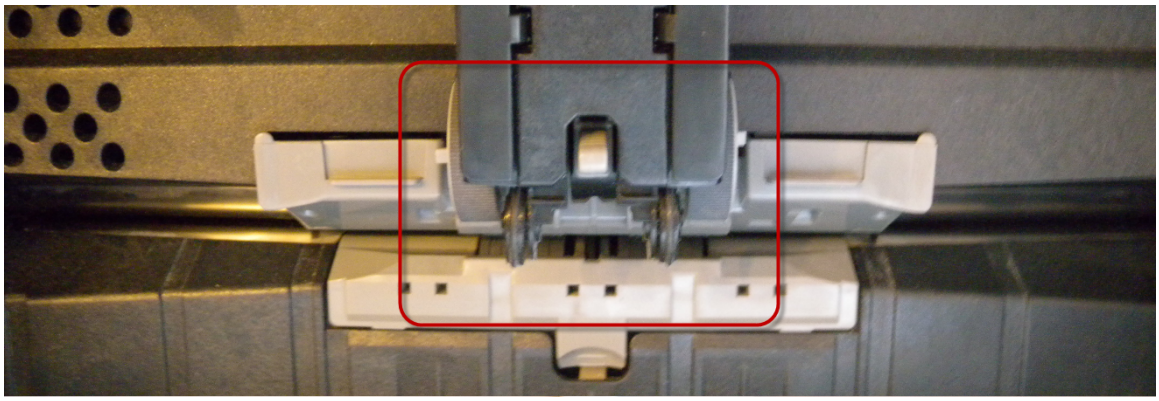

Figure 6-13. ADF lever in the up position on the fi-6800 scanner

Pull the gray lever down as shown to allow the ADF to assist in gathering documents to ensure the scanner can function properly.

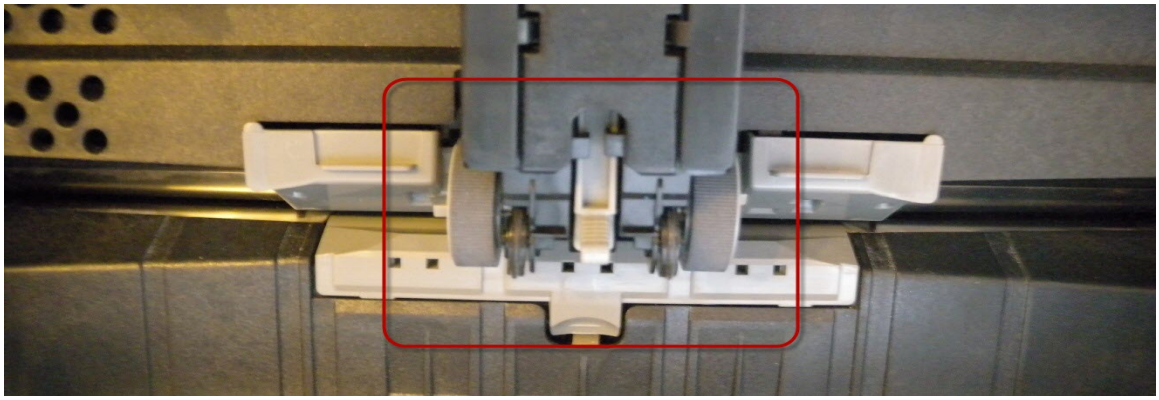

Figure 6-14. ADF lever in the down position on the fi-6800 scanner

6.4.2 Input and output tray setup

It is important to adjust the input and output trays or hoppers to accommodate the ballots being scanned. Ensure the trays are extended enough to properly hold the full length of the ballot. Adjust the wings of the tray to loosely touch the edge of the

ballots. Wings that are too tight can result in twisted images, and wings that are too loose can increase the risk of multifeeds and paper jams.

The following figure shows the trays and wings of a scanner.

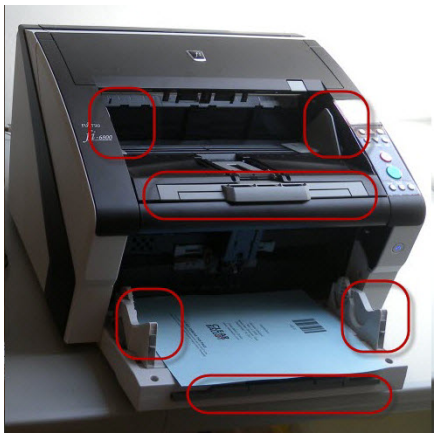

Figure 6-15. Scanner Trays and Wings

Chapter 7. About target cards and box labels

Before beginning the scanning process, you must print target cards and box labels.

- A *target card* identifies a batch or box of ballots. It informs the scanner that a new box is being scanned and assigns the value of the barcode as the box ID prefix for all subsequent ballots. (It is similar to the header card used in other election systems.) A target card is typically printed on letter- or legal-sized card stock.
- A *box label* physically identifies each box and the corresponding ballots. Like target cards, box labels contain unique identifiers. The box label is affixed to the outside of the ballot box and should be consistently placed in the same location (such as the upper right corner) to aid in quickly identifying ballot boxes. Box labels are typically printed on Avery 5163 (2 inches x 4 inches) label stock, with 10 labels per sheet.

Ballots within a box are in sequential order starting with the target card at the bottom of the box. When a ballot is scanned, the front and back images are each given a unique identifier (such as ED-001+00001 and ED-001+00002) corresponding to the batch or box (ED-001) and image file (+00001).

The following figures show examples of a target card and box labels.

Chapter 9. System readiness testing

This chapter describes the recommended workflow for ClearVote readiness testing. Readiness testing ensures the system is in proper working order prior to the start of the election.

All hardware that may be used in the election must go through readiness testing, and data that verifies equipment must be obtained for it. Therefore, if the jurisdiction intends to keep backup hardware on hand, the backup hardware must go through readiness testing.

While not required, Clear Ballot recommends that the jurisdiction run additional test ballots through the system to confirm that all ballot styles and counter groups are handled appropriately.

Readiness testing parameters may be governed by local statute. Make sure you take local regulations into account as part of this process.

9.1 Retesting the scanner cameras

The accuracy of the system depends not only on the correctness of the election definition, but also on the proper functioning of the scanning equipment. The following test ensures the scanners' cameras accurately record the images on both sides of the ballots. This test requires a calibration card and one representative ballot of the same size planned for the upcoming election.

Obtaining the calibration card

Print the two-sided calibration card at actual size (*not* fit to page) in landscape orientation from Clear Ballot's website (www.ClearBallot.com/Support/CalibrationCard). Depending on your browser, you may need to print using the system dialog in order obtain the landscape orientation option.

Testing the cameras

To test the cameras, do the following for each scanner in the ClearVote system:

1. Run the update script to configure scanner settings.
2. Run the calibration card and the representative ballot card through the scanner. This produces four JPEG (.jpg) files, one for each side of each card.
3. Open the folder C:\CBGBallotImages and examine the four JPEG files that start with the prefix SEPARATOR. Look for the following:

- Both the front and back image of the calibration card are examined for any distortion in the image. Lines should be sharp and straight. If there is distortion, contact Fujitsu to service the scanner prior to using it in the election.
- Both the front and back image of the representative ballot are examined to ensure the entire ballot image is visible and that nothing was cropped out by the scanner. If the ballot image appears cropped, contact Clear Ballot Customer Support.

4. When the test is complete, delete the four images from C:\CBGBallotImages.

Chapter 10. ClearVote Logic and Accuracy testing

Performing Logic and Accuracy (L&A) testing on the ClearVote system consists of scanning a set of test ballots into the database created for the upcoming election and then backing up and deleting the test data. This test must be performed on at least one ScanStation. This test should be performed after readiness testing has been completed.

Before doing L&A testing, do readiness testing to ensure every scanner works.

L&A testing parameters may be governed by local statute. Make sure you consult with election officials as part of this process.

10.1 Logic and Accuracy testing workflow

After you install the ClearVote software, use the following steps to test the system.

1. Create an election using the BDF provided by Clear Ballot. This election is used for the L&A test as well as for the election itself. For details on how to create an election, see 1.
2. On the Election Administration Station, log in to the Election Reports and open the Statement of Votes Cast report. For details on accessing ClearVote Election Reports, see *ClearVote Election Administrator's Guide*. Use this report to check that all contests and choices:
   - Are accurate.
   - Have zeroes in their totals. (The empty Statement of Votes Cast is the zero report for the ClearVote system. The report can be printed or exported if needed.)

   Report any problems or unexpected results to Clear Ballot Technical Support.
3. Log out of the Election Reports.
4. Mark a set of test ballots, making sure that each position is marked and each vote rule tested for each ballot style.
5. Print one target card for each counter group being used in the audit part of this election. For details on printing target cards, see Chapter 7.

6. For each ScanStation being used for the L&A test, verify the following:
    a. Using any of the target cards, scan the entire test deck. For details on scanning ballots, see the **ClearVote Election Administrator's Guide**.
    b. On the Election Administration Station, log in to the Election Reports and open the Statement of Votes Cast report.
    c. Verify that the total results match the expected results for the test deck. (The report may be printed or exported if needed.)
    d. From the Election Administration page, back up the election, as documented in the **ClearVote Election Administrator's Guide**.
    e. Log out of the ClearVote web applications.
    f. Delete the box. For details on deleting a box, see the **ClearVote Election Administrator's Guide**.
7. After all scanners are tested, ensure all boxes are deleted by logging in to the Election Reports, opening the Statement of Votes Cast report, and making sure that all contests and choices have zeroes in their totals.
8. Following the test, secure the ScanStation and ScanServer computers until they are needed to process the audit.

Chapter 12. Breakdown and storage

This chapter describes how to break down and store the ClearVote equipment after an election.

Breaking down the ClearVote system

After the election, all ClearVote hardware components should be powered down, physically unplugged from their power supply and from the router, and packed. Clear Ballot recommends that jurisdictions pack, transport, and store the hardware used in the ClearVote operation in its original boxes. Alternatively, jurisdictions have the option of purchasing custom scanner storage cases from a third-party manufacturer. For details, contact your Clear Ballot representative.

The scanners used with ClearVote *must* be cleaned before being stored, following the procedures outline in the **Fujitsu Scanner Operator's Guide** for that scanner model. In addition, while the scanners are opened for cleaning, check the rollers for unevenness or other signs of wear, and if necessary, schedule a Fujitsu service visit for prior to the next election.

Storing the ClearVote system

In between elections, jurisdictions are expected to store computers and scanners in a secure, climate-controlled location. Jurisdictions should consult the model-specific documentation for their commercial hardware to obtain specific guidance. At a minimum, the following conditions for storage are required:

- 15 – 35 degrees C
- 20 – 80% humidity

Appendix A. ClearVote installation checklist

Individuals who install ClearVote software can use this form to record the various user names and passwords they create during the installation.

The ClearVote administrator or other responsible person must store this confidential information in a safe and secure location.

1. **IP Address for the Server**	
2. **IP Address for the Router**	
3. **ScanServer Hostname**	
4. **Linux Local Account Username**	
5. **Linux Local Account Password**	
6. **Database Root User Password**	
7. **ClearVote Admin Username**	
8. **ClearVote Admin Password**	
9. **ScanStation Password**	
10. **BIOS Password**	

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