



Clear Ballot

ClearVote 2.3

ClearCount System Operations Procedures

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Clear Ballot Part Number: 100024-10020

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Preface

This section defines the purpose of this document.

About this document

This document provides information about using the ClearCount system. Taken together with the *ClearCount Installation Guide* and the *ClearCount Election Administration Guide*, it corresponds to the *Voluntary Voting Systems Guidelines (VVSG) 2005, Volume 2 Section 2.8* requirement for the technical data package (TDP).

Scope of this document

This document provides summary information about the following aspects of the ClearCount system:

- Chapter 1. Operating functions
- Chapter 2. Operational environment
- Chapter 3. System installation and test specification
- Chapter 4. Operational features
- Chapter 5. Operational procedures
- Chapter 6. Operations support

Intended audience

This document is for election officials and election staff who are responsible for operations and maintenance before, during, and after an election. Clear Ballot personnel also use this document to support election officials and election staff.

Conventions

This section describes conventions used in this document.

References to ClearVote products

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

BDF and ADF

ClearAccess imports an election definition contained in an accessible definition file (ADF) created by ClearDesign. ClearCount and ClearCast import an election definition contained in a ballot definition file (BDF) created by ClearDesign.

Versions of ClearDesign earlier than 2.0 created unencrypted ADFs and BDFs. ClearDesign 2.0 and later versions produce encrypted ADFs and BDFs. You can distinguish between unencrypted and encrypted ADFs and BDFs by the ending of the filename.

File type	Filename ends in
Unencrypted accessible definition file	adf.zip
Encrypted accessible definition file	adfx.zip
Unencrypted ballot definition file	bdf.zip
Encrypted ballot definition file	bdfx.zip

In this document, the general terms ADF and BDF can refer to both the unencrypted and encrypted versions of these files.

For the specifics of the ADF and BDF file formats, see the following:

- *ClearDesign Accessible Definition File Guide*
- *ClearDesign Ballot Definition File Guide*

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

Chapter 1. Operating functions

This chapter summarizes the operating functions of the ClearCount system and identifies relevant personnel. Where applicable, this chapter points to specific ClearCount documentation that contains procedures for the identified functions.

ClearCount is not a precinct-count system and is not intended for direct voter interaction.

The ClearCount software runs on unmodified commercial off-the-shelf (COTS) computers running the Windows and Linux operating systems and supports several models of high-speed scanners.

1.1 Categories of operating functions

End-to-end, the ClearCount system consists of the following categories of operating functions:

- Pre-election functions:
 - Creating a ballot definition file (BDF) based on the jurisdiction's election definitions
 - Setting up the central-count location, including tables and accommodating electrical outlets
 - Setting up the COTS hardware on which the ClearCount system runs
 - Installing the ClearCount software (along with supported third-party software)
 - Administrative tasks, such as creating users with appropriate access levels and creating the election database
 - Laser printing the target cards and box labels from PDFs provided by Clear Ballot
 - Completing readiness testing
 - Completing logic and accuracy (L&A) testing, as required by statute
- Election functions:
 - Ballot scanning and tabulation
 - Administrative tasks, such as monitoring system logs and changing the election phase
- Postelection functions:
 - Adjudicating unreadable cards
 - Issuing election reports for review
 - Sharing election reports
 - Backing up the election database
 - Breaking down and storing the ClearCount hardware

1.2 Required facilities, furnishings, fixtures and utilities

For a full list of ClearCount hardware components, see the *ClearVote Approved Parts List*. For a list and explanation of the full requirements of the facilities, furnishing, fixtures, and utilities, see the *ClearCount Election Administration Guide*.

Chapter 2. Operational environment

This chapter describes the ClearCount operational environment.

2.1 Operating phases

The following procedural documentation is associated with different operating phases:

- The *ClearCount Installation Guide* covers the pre-election phase.
- The *ClearCount Election Administration Guide* covers the election phase and postelection tasks.

2.2 Operating modes

The ClearCount system consists of a single operating mode. Distinction between phases and activities is made procedurally.

The ClearCount system does not contain a dedicated test mode. To test the system, a test election is created and used with actual voted ballots. This election should include the word *test* in its name. After testing is completed, the test election is backed up and then deleted from the ClearCount system.

2.3 Roles of operating personnel

The ClearCount system identifies the following user roles for a jurisdiction:

- Principal supervisor
- Assistant supervisor
- IT/System administrator
- Scanning supervisor
- Scanner operator
- Ballot preparation personnel
- Recordkeeper
- Ballot resolution personnel
- Polling-place results aggregation personnel (only applicable for jurisdictions using ClearCast)
- Election reporter
- Public relations official
- Scanner maintenance and troubleshooting personnel

The following section aligns the user roles to system interfaces and functions.

2.4 ClearCount roles

The following sections describe how different user roles interact with the ClearCount system components and identifies where the associated procedures are documented.

Note: One individual can perform more than one user role during the election. For example, someone with a principal supervisor role might also take on the tasks of the public relations official.

The ClearCount system access levels are hierarchical, with each subsequent level containing all of the privileges of the levels below it. In the tables below, access level indicates the minimum level to access the interface or perform the task.

For more information about ClearCount user roles and the training associated with them, see the *ClearVote Personnel Deployment and Training Plan*.

2.4.1 Principal supervisor

Table 2-1. Principal supervisor role

Task/Interface	Access level	Documentation
Pre-election phase		
Oversee the ballot design and election creation in the ClearDesign EMS.	NA	<i>ClearDesign User Guide</i>
Perform L&A testing.	dbadmin	Local statute documentation <i>ClearCount Election Administration Guide</i>
Obtain necessary election resources (equipment, location).	NA	<i>ClearCount Election Administration Guide</i>
Secure the central-count location, equipment and supplies.	NA	<i>ClearCount Election Administration Guide</i>
Create users and assign/change their access levels and passwords.	useradmin	<i>ClearCount Installation Guide</i> <i>ClearCount Election Administration Guide</i>

Table 2-1. Principal supervisor role (continued)

Task/Interface	Access level	Documentation
Election phase		
Oversee central-count scanning operations.	NA	<i>ClearCount Election Administration Guide</i>
Monitor staff adherence to local election and ClearCount processes and procedures.	NA	Local election process and procedure documentation
Review and produce ClearCount election reports.	read	<i>ClearCount Reporting Guide</i>
Postelection phase		
Oversee aggregation of precinct results from ClearCast	NA	<i>ClearCount Election Administration Guide</i>
Review and produce ClearCount election reports.	read	<i>ClearCount Reporting Guide</i>
Publicize results.	NA	Local election process and procedure documentation
Ensure the secure transport of ballots and equipment.	NA	Local election process and procedure documentation
Oversee breakdown of scanning location.	NA	<i>ClearCount Election Administration Guide</i>

2.4.2 Assistant supervisor

Table 2-2. Assistant supervisor role

Task/Interface	Access level	Documentation
Pre-election phase		
Assist principal supervisor in pre-election tasks.	NA	<i>ClearCount Installation Guide</i>
Create the election in the ClearCount system.	dbadmin	<i>ClearCount Election Administration Guide</i>

Table 2-2. Assistant supervisor role (continued)

Task/Interface	Access level	Documentation
Election phase		
Assist principal supervisor in election tasks.	dbadmin	Local election process and procedure documentation <i>ClearCount Election Administration Guide</i>
Set the election phase appropriately.	dbadmin	<i>ClearCount Election Administration Guide</i>
Set the current election as the active election.	dbadmin	<i>ClearCount Election Administration Guide</i>
Postelection phase		
Publicize results.	NA	Local election process and procedure documentation
Ensure the secure transport of ballots and equipment.	NA	Local election process and procedure documentation
Oversee breakdown of scanning location.	NA	<i>ClearCount Election Administration Guide</i>

2.4.3 IT/System administrator

Table 2-3. IT/System administrator role

Task/Interface	Access level	Documentation
Pre-election phase		
Set up hardware and scanners and install necessary software.	NA	<i>ClearCount Installation Guide</i> <i>ClearCount Election Administration Guide</i>
Validate software.	NA	<i>ClearCount System Identification Guide</i>
Set up and configure network switch.	NA	<i>ClearCount Installation Guide</i>
Test physical system prior to election. Run logic and accuracy test on system.	NA	<i>ClearCount Election Administration Guide</i>

Table 2-3. IT/System administrator role (continued)

Task/Interface	Access level	Documentation
Election phase		
Be available to address (and, if necessary, escalate) technical issues.	NA	Manufacturers' documentation for all COTS hardware in the system <i>ClearCount Election Administration Guide</i>
Diagnose faulty computer hardware, scanners, and connections.	NA	Manufacturers' documentation for all COTS hardware in the system <i>ClearCount Maintenance Guide</i> <i>ClearCount Election Administration Guide</i>
Repair faulty computer hardware or connections.	NA	Manufacturers' documentation for all COTS hardware in the system <i>ClearCount Maintenance Guide</i>
Test computer hardware, scanners, or connections that have been fixed.	NA	Manufacturers' documentation for all COTS hardware in the system <i>ClearCount Maintenance Guide</i>
Postelection phase		
Be available to address (and, if necessary, escalate) technical issues.	NA	Manufacturers' documentation for all COTS hardware in the system <i>ClearCount Maintenance Guide</i> <i>ClearCount Election Administration Guide</i>

2.4.4 Scanning supervisor

Table 2-4. Scanning supervisor role

Task/Interface	Access level	Documentation
Election phase		
Oversee ballot preparation staff and scanner operators.	NA	<i>ClearCount Election Administration Guide</i>
Ensure that Tabulator applications are open and ScanStation computers and scanners are ready for scanning.	NA	<i>ClearCount Election Administration Guide</i>
Oversee preparation of ballots before scanning to minimize jams.	NA	<i>ClearCount Election Administration Guide</i>
Assist scanner operators with scanning problems; use the DeleteBox utility as needed.	modify	<i>ClearCount Election Administration Guide</i>
Oversee usage of consumables and ensure required resources are available.	NA	<i>ClearCount Maintenance Guide</i>
Monitor staff adherence to local election and ClearCount processes and procedures.	NA	Local election process and procedure documentation <i>ClearCount Election Administration Guide</i>
Oversee proper labeling of boxes at scanning areas for storage.	NA	<i>ClearCount Election Administration Guide</i>
Review and produce ScanStation reports.	read	<i>ClearCount Election Administration Guide</i> <i>ClearCount Reporting Guide</i>
Oversee transfer of scanned ballots to designated secure area.	NA	<i>ClearCount Election Administration Guide</i>
Postelection phase		
Oversee breakdown of scanning areas.	NA	<i>ClearCount Election Administration Guide</i>

2.4.5 Scanner operator

Table 2-5. Scanner operator role

Task/Interface	Access level	Documentation
Election phase		
Scan ballots on a single scanner (associated with a ScanStation computer).	append	<i>ClearCount Scanner Operator Guide</i>
Appropriately summon scanning supervisor for help with scanning problems.	NA	<i>ClearCount Scanner Operator Guide</i>

2.4.6 Ballot preparation personnel

Table 2-6. Ballot preparation personnel role

Task/Interface	Access level	Documentation
Pre-election phase		
Print the necessary target cards and box labels from PDFs available from the Support section of www.clearballot.com .	NA	<i>ClearCount Election Administration Guide</i>
Election phase		
Jog ballots prior to scanning to minimize scanner jams.	NA	<i>ClearCount Election Administration Guide</i>
Assign a target card to each batch of ballots.	NA	<i>ClearCount Election Administration Guide</i>
Affix labels to all boxes.	NA	<i>ClearCount Election Administration Guide</i>
Deliver boxes of ballots to scanning areas.	NA	<i>ClearCount Election Administration Guide</i>
Retrieve boxes of scanned ballots from scanning areas.	NA	<i>ClearCount Election Administration Guide</i>
Postelection phase		
Break down preparation area.	NA	<i>ClearCount Election Administration Guide</i>

2.4.7 Recordkeeper

Table 2-7. Recordkeeper role

Task/Interface	Access level	Documentation
Election phase		
Record all activity regarding the opening, recording, and resealing sealed ballot boxes or bags.	NA	Local election process and procedure documentation

2.4.8 Ballot resolution personnel

Table 2-8. Ballot resolution personnel role

Task/Interface	Access level	Documentation
Election phase		
Examine cards that the ClearCount system was unable to read and either recommend to the supervisor that boxes be rescanned to correct scanning errors or use the Card Resolutions tool to resolve unreadable cards.	read to examine modify to resolve	<i>ClearCount Election Administration Guide</i>

2.4.9 Polling-place results aggregation personnel

Table 2-9. Polling-place results aggregation personnel role

Task/Interface	Access level	Documentation
Postelection phase		
Receive USB drives with polling-place results from poll worker teams.	NA	Local election process and procedure documentation.
Merge polling-place results into ClearCount using the ResultsUploader application.	append	<i>ClearCount Election Administration Guide</i>
Follow local procedures for archival of election results media.	NA	Local election process and procedure documentation

2.4.10 Election reporter

Table 2-10. Election reporter role

Task/Interface	Access level	Documentation
Postelection phase		
Generate election reports and produce results.	read	Local election process and procedure documentation <i>ClearCount Election Administration Guide</i>

2.4.11 Public relations official

Table 2-11. Public relations official role

Task/Interface	Access level	Documentation
Postelection phase		
Gather election reports and publicize results.	read	Local election process and procedure documentation

2.4.12 Scanner maintenance and troubleshooting personnel

Table 2-12. Scanner maintenance and troubleshooting personnel role

Task/Interface	Access level	Documentation
Pre-election phase		
Perform standard preventive maintenance tasks prior to the election.	NA	Manufacturers' documentation for high-speed scanners <i>ClearCount Maintenance Guide</i>
Election phase		
Troubleshoot any scanner problems that arise during the election (escalating to Clear Ballot, or scanner manufacturer, if necessary).	NA	Manufacturers' documentation for high-speed scanners <i>ClearCount Election Administration Guide</i>

Table 2-12. Scanner maintenance and troubleshooting personnel role (continued)

Task/Interface	Access level	Documentation
Clean the scanners periodically (every 4 hours or after every 10,000 ballots scanned).	NA	Manufacturers' documentation for high-speed scanners <i>ClearCount Election Administration Guide</i>
Replace scanner consumables, such as rollers, if needed.	NA	Manufacturers' documentation for high-speed scanners <i>ClearCount Election Administration Guide</i>

2.5 ClearCount system environment

The ClearCount software runs on unmodified COTS hardware. The CountServer computer runs the Linux operating system. ScanStation and CountStation computers run the Microsoft Windows operating system. Each ScanStation computer has a scanner attached to it.

Chapter 3. System installation and test specification

Responsive to VVSG 2005, Volume 2, Section 2.8.3.

Table 3-1 lists the ClearVote documents related to installation and testing.

Table 3-1. Documents related to installation and testing

Topic	Document
Installation of ClearCount	<i>ClearCount Installation Guide</i>
Software validation	<i>ClearCount System Identification Guide</i>
Readiness testing	<i>ClearCount Election Administration Guide</i>

Chapter 4. Operational features

This chapter lists the procedures required to initiate, control, and verify proper system operation.

4.1 System functions flow

Pre-election

1. Ballots in bins, boxes, or bags, arrive at the central-count location.
2. In the ballot preparation area, ballots are broken down into batches, which are then jogged, if necessary.
3. A target card and matching box label are assigned to each batch of ballots.
4. The ballots and their target cards are placed in batches, and a box label is attached to each box or bin that will contain that batch after scanning.

Election

1. Batches of ballots are delivered to the scanning areas by the ballot preparation personnel.
2. Scanner operators scan the ballots, starting each batch with its identifying target card. The target card ID becomes part of the ID for each card image.
3. Taking care not to disturb the order of the ballots, the scanner operator returns them to the bin or box in which they were delivered, and then initials the box label to indicate that the ballots have been scanned.

Postelection

1. Ballot preparation personnel pick up the scanned ballots and carry them to the scanned card area.
2. Scanned ballots are sealed, transported, and stored securely, following jurisdictional requirements.
3. For jurisdictions using ClearCast, polling-place results arrive at the central location.
4. Polling-place results aggregation personnel merge the results into ClearCount.
5. Election results media are secured following jurisdictional requirements.

Chapter 5. Operational procedures

This section summarizes the ClearCount system operations procedures.

5.1 Running the system

For a full description of how to run the ClearCount system in a central-count setting, see the *ClearCount Election Administration Guide*.

5.2 Administrative operations

ClearCount election administration consists of the following tasks:

- Creating the election and setting its status
- Backing up and restoring the election
- Backing up and deleting obsolete and unused databases

ClearCount user administration consists of the following tasks:

- Creating and deleting users
- Establishing user access levels
- Setting and changing user passwords

For information about administrative tasks related to installing and configuring the ClearCount system, see the *ClearCount Installation Guide*.

For information about administrative tasks related to running the ClearCount system in a central-count setting, see the *ClearCount Election Administration Guide*.

5.3 Sharing election results

The ClearCount system provides numerous ways to share election results in the form of election reports. Election reports can be viewed in a browser on a CountStation, or they can be copied, printed, or saved as comma-separated values (CSV) files.

For details about ClearCount election reports, see the *ClearCount Reporting Guide*.

Chapter 6. Operations support

6.1 Recovering from an abnormal state

The hallmark of a successful scanning operation is the absence of ScanStation or scanner error messages related to jams, misfeeds, and other issues. A successful scanning operation features a smooth flow of ballots. If any of the following things occur during scanning, the scanner operator knows that some sort of intervention is required:

- The scanner issues an error message on its operator panel.
- The ScanStation computer issues a warning or error message on-screen. The source of such message may be the scanner software or the ClearCount Tabulator application.
- The scanner jams.
- Card images feature smearing and other visual effects that indicate that the scanner must be cleaned.

Likewise, on the human factor side, the following situations indicate the need for an intervention:

- The scanner operator loses track of whether or not certain ballots have been scanned.
- The scanner operator does not keep the scanned ballots in the order in which they were scanned.

For more information about how to respond to these events, see "Troubleshooting scanning issues" in the *ClearCount Election Administration Guide*. For details about how to fix common scanning problems, see *ClearCount Maintenance Guide*. For additional troubleshooting assistance, refer to the applicable manufacturer's scanner documentation or contact Clear Ballot Technical Support.

6.2 Error and failure detection and recovery

For a full description of ClearCount error and failure detection and recovery, see the *ClearCount Maintenance Guide*.

6.3 System auditing and logging

The ClearCount system generates two event logs: the election activity log and the web activity log.

- The election activity log records all activity for an individual election.
- The web activity log records all web-based activity within the ClearCount system.

For information about the ClearCount logs, see the following documents:

- *ClearCount Election Administration Guide*
- *ClearCount Reporting Guide*