



Clear Ballot

## **ClearVote 2.1**

# **ClearCount System Operations Procedures**

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# ClearCount System Operations Procedures

Clear Ballot Part Number: 100024-10017

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# Table of contents

<b>Preface</b> .....	<b>6</b>
<b>Chapter 1. Operating functions</b> .....	<b>7</b>
1.1 Required facilities, furnishings, fixtures and utilities .....	7
<b>Chapter 2. Operational environment</b> .....	<b>8</b>
2.1 Operating phases .....	8
2.2 Operating modes .....	8
2.3 Roles of operating personnel .....	8
2.4 ClearCount roles .....	8
2.4.1 IT/System administrator .....	9
2.4.2 Principle supervisor .....	10
2.4.3 Assistant supervisor .....	11
2.4.4 Ballot preparation staff .....	12
2.4.5 Recordkeeper .....	13
2.4.6 Scanning supervisor .....	13
2.4.7 Scanner operator .....	14
2.4.8 Scanner maintenance and troubleshooting personnel .....	14
2.4.9 Ballot resolution personnel .....	15
2.4.10 Election reporter .....	15
2.4.11 Public relations official .....	16
2.5 ClearCount system environment .....	16
<b>Chapter 3. System installation and test specification</b> .....	<b>17</b>
<b>Chapter 4. Operational features</b> .....	<b>18</b>
4.1 System functions flow .....	18
<b>Chapter 5. Operational procedures</b> .....	<b>19</b>
5.1 Running the system .....	19



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5.2 Administrative operations .....	19
5.3 Sharing election results .....	19
<b>Chapter 6. Operations support .....</b>	<b>20</b>
6.1 Recovering from an abnormal state .....	20
6.2 Error and failure detection and recovery .....	20
6.3 System auditing and logging .....	20



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



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 products 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 provides summary information about the following aspects of the ClearCount system:

- [Operating functions](#)
- [Operational environment](#)
- [System installation and test specification](#)
- [Operational features](#)
- [Operational procedures](#)
- [Operations support](#)

### Intended audience

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

### Contact us

Clear Ballot Group welcomes your feedback on our documentation. Please send comments to [Documentation@ClearBallot.com](mailto:Documentation@ClearBallot.com).

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

# Chapter 1. Operating functions

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

The ClearCount system is a central-count-only system. It does not contain a precinct-based polling place component.

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

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

- Prevoting 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
- Voting functions:
  - Ballot scanning and tabulation
  - Administrative tasks, such as monitoring system logs and changing the election phase
- Postvoting functions:
  - Adjudicating unreadable cards
  - Issuing election reports for review
  - Sharing election reports
  - Backing up the election database
  - Breaking down and storing the ClearCount hardware

## 1.1 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 Preparation and Installation Guide*.

## Chapter 2. Operational environment

### 2.1 Operating phases

The following procedural documentation is associated with different operating phases:

- The *ClearCount Election Preparation and Installation Guide* covers the pre-election phase, as well as the breakdown and storage tasks associated with the postelection phase.
- The *ClearCount Election Administration Guide* covers the election phase, as well as postelection tasks not associated with hardware breakdown and storage, such as backing up the election.

### 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:

- principle supervisor
- Assistant supervisor
- IT/System administrator
- Scanning supervisor
- Scanner operator
- Ballot preparation staff
- Recordkeeper
- Ballot resolution personnel
- 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.





One individual can perform more than one user role during the election. For example, someone with a principle 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 IT/System administrator

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

Task/Interface	Access level	Documentation
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>
<b>Postelection phase</b>		
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>

## 2.4.2 Principle supervisor

Task/Interface	Access level	Documentation
<b>Pre-election phase</b>		
Prepare and securely transmit ballot style PDFs to Clear Ballot, which uses them to create ballot definition files (BDFs); or oversee the ballot design and election creation in the ClearDesign EMS.	NA	EMS documentation about ballot preparation <i>ClearCount Election Preparation and Installation Guide</i>
Receive and validate BDFs.	NA	<i>ClearCount Election Preparation and Installation Guide</i>
Perform L&A testing.	dbadmin	Local statute documentation <i>ClearCount Election Preparation and Installation Guide</i>
Obtain necessary election resources (equipment, location, and staffing).	NA	<i>ClearCount Election Preparation and Installation Guide</i>
Secure the central-count location, equipment and supplies.	NA	<i>ClearCount Election Preparation and Installation Guide</i>

Task/Interface	Access level	Documentation
Create users and assign/change their access levels and passwords.	useradmin	<i>ClearCount Election Preparation and Installation Guide</i> <i>ClearCount Election Administration Guide</i>
<b>Election phase</b>		
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>
<b>Postelection phase</b>		
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 Preparation and Installation Guide</i>

### 2.4.3 Assistant supervisor

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

Task/Interface	Access level	Documentation
<b>Election phase</b>		
Assist principle 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>
<b>Postelection phase</b>		
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 Preparation and Installation Guide</i>

#### 2.4.4 Ballot preparation staff

Task/Interface	Access level	Documentation
<b>Pre-election phase</b>		
Print the necessary target cards and box labels from PDFs available from the Support section of <a href="http://www.clearballot.com">www.clearballot.com</a> .	NA	<i>ClearCount Election Preparation and Installation Guide</i>
<b>Election phase</b>		
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>

Task/Interface	Access level	Documentation
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>
<b>Postelection phase</b>		
Break down preparation area.	NA	<i>ClearCount Election Preparation and Installation Guide</i>

### 2.4.5 Recordkeeper

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

### 2.4.6 Scanning supervisor

Task/Interface	Access level	Documentation
<b>Election phase</b>		
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>

Task/Interface	Access level	Documentation
Monitor staff adherence to local election and ClearCount processes and procedures.	NA	<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>
<b>Postelection phase</b>		
Oversee breakdown of scanning areas.	NA	<i>ClearCount Election Administration Guide</i>

### 2.4.7 Scanner operator

Task/Interface	Access level	Documentation
<b>Election phase</b>		
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>

### 2.4.8 Scanner maintenance and troubleshooting personnel

Task/Interface	Access level	Documentation
<b>Pre-election phase</b>		
Perform standard preventive maintenance tasks prior to the election.	NA	Fujitsu or ibml scanner documentation <i>ClearCount Maintenance Guide</i>

Task/Interface	Access level	Documentation
<b>Election phase</b>		
Troubleshoot any scanner problems that arise during the election (escalating to Clear Ballot, or Fujitsu or ibml, if necessary).	NA	Fujitsu or ibml scanner documentation <i>ClearCount Election Administration Guide</i>
Clean the scanners periodically (every 4 hours or after every 10,000 ballots scanned).	NA	Fujitsu or ibml scanner documentation <i>ClearCount Election Administration Guide</i>
Replace scanner consumables, such as rollers, if needed.	NA	Fujitsu or ibml scanner documentation <i>ClearCount Election Administration Guide</i>

### 2.4.9 Ballot resolution personnel

Task/Interface	Access level	Documentation
<b>Election phase</b>		
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>

### 2.4.10 Election reporter

Task/Interface	Access level	Documentation
<b>Postelection phase</b>		
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

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

## 2.5 ClearCount system environment

The ClearCount software runs on unmodified COTS hardware. The ScanServer computer runs the Linux operating system. Election administration station computers and ScanStation computers run the Microsoft Windows operating system. Each ScanStation computer has a scanner attached to it. For further information, see the *ClearCount Election Preparation and Installation Guide*.



## Chapter 3. System installation and test specification

*Responsive to VVSG 2005, Volume 2, Section 2.8.3.*

For details about installing the ClearCount system and performing readiness testing, see the *ClearCount Election Preparation and Installation Guide*.

For information about software validation, see the *ClearCount System Identification Guide*.

## Chapter 4. Operational features

This chapter provides a detailed description of 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 staff.
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. (Each side of a target card is captured as its own 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 staff picks up the scanned ballots and carries them to the scanned card area.
2. Scanned ballots are sealed, transported, and stored securely, 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, including creating elections and users, see the *ClearCount Election Preparation and Installation Guide*.

For information about administrative tasks related to running the ClearCount system in a central-count setting, including modifying user settings and backing up the election, 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 an election administration station, 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 the *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*