



VERITY[®]

administrator's guide

Central



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administrator's guide



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introduction

about this guide

This guide outlines the processes and steps for creating and deploying an election using the Verity Voting System. The particular software and device implementation may vary depending on your state and jurisdiction.

This document focuses on software administration for the Verity Central application. This guide is intended as an accompaniment to the Verity Central training course, as well as a practical user guide for software operation in an election setting. This document provides step-by-step instructions for each of the essential software

processes, including ballot scanning and resolution. The *Verity Administrator's Guides* are designed to be used by election officials and staff in conjunction with the *Verity Support Procedures Guide* and *Verity Polling Place Operations Guide*. Together these documents will provide a comprehensive reference for all election-related activities.

objectives of the Verity software training courses

Through the Verity Central training course associated with this document, trainees learn the procedures necessary to create and deploy a successful election with the Verity Voting System, with special attention to skills required to scan and resolve ballots in Verity Central.

election security

security features of Verity

- ▶ Verity Voting utilizes the AAA (authentication, authorization, and audit) security framework.
- ▶ All Verity software has been tested by an independent test lab to ensure proper security.
- ▶ Verity uses a multi-layered authentication process.
- ▶ Verity software is tamper evident; any attempts to alter the function of the software would be evident when tested.



- ▶ Comprehensive audit logs are generated for all login attempts, data transfers, configuration changes, and errors. Logs are stored redundantly and securely.
- ▶ Vote records are stored redundantly for security and auditability, risk mitigation and disaster recovery.
- ▶ The integrity of the data is protected from power outage, power surge, magnets, and rough handling.

Verity incorporates the latest generation of voting technology features with tamper-evident controls and non-standard port connectors. Verity's secure architecture includes trusted build software verification – if an unauthorized change is detected, the voting device will not start. Verity also offers a paper-based voting option; Paper records can solidify trust that the software is working correctly through a paper check of vote records.

Verity's easy-to-use auditing dashboard allows election officials to filter and review cast ballot vote records and ballot images, and it heightens public confidence in the election process. Officials can filter cast vote records by accessing a precinct, polling place, device, vDrive, scan batch, contest, or other user-defined variables.

Verity adheres to the most current best practices in voting technology for application security, role management, intrusion detection, software validation and data validation. Verity's audit logging features allows for independent verification of the Verity system's operation and accuracy, contributing to higher voter confidence. Verity's superior information design includes efficient audit logs in plain language, and robust filters for ballot images and cast vote record data exports.

election security recommendations

Verity provides state of the art voting system security. In addition to the security provided by the system, we also recommend jurisdictions follow standard election security procedures. Some of these include:

- ▶ Restricting access to voting equipment behind locked doors when not in use.
- ▶ Ensuring chain of custody when delivering, receiving or transporting any voting equipment or ballots.
- ▶ Never leaving voting equipment unattended when polling place is open.
- ▶ Never removing or tampering with seals except in controlled circumstances.
- ▶ Never issuing Access Codes or paper ballots until the voter has been properly qualified and there is an available voting booth.
- ▶ Reporting any suspicious activity to the local election officer.



Verity system components

hardware components

**TIP:**

The particular quantities and types of voting equipment may vary depending on your jurisdiction.

Verity vDrives

- ▶ In the Verity system, **vDrives** are used to transfer digital ballot styles from the Verity software to voting devices, and to transfer voted ballots to Verity software for tabulation.



vDrives are inserted into a standard USB port; each Verity Scan, Print, Touch Writer, and Controller voting device has its own vDrive.

hardware components, *continued*

Verity Touch Writer with Access

- ▶ Using **Verity Touch Writer**, voters mark digital ballots using a touch screen. After the voter has confirmed the selections, the voter prints the marked ballot on the attached printer. The voter then retrieves and casts the ballot.



Verity Touch Writer devices are compatible with **Verity Access**, which provides the voter with additional input options: buttons with scrolling wheel, headphones, and tactile button or sip-and-puff devices. Verity Access can be docked within the Verity Touch Writer base or held in hand.



hardware components, *continued*

Verity Scan

- ▶ **Verity Scan** is a polling-place-based digital scanner for casting ballots. Scan can be used with hand-marked ballots or with those printed using the Touch Writer. Verity Scan allows the voter the opportunity to check and correct the ballot before casting. Verity Scan deposits scanned ballots into its ballot box for secure storage.



Verity Print

- ▶ Using **Verity Print**, you can print and issue blank paper ballots to voters. The voter votes their ballot and casts it either using Verity Scan, or into a ballot box to be scanned centrally.



hardware components, *continued*

Verity Controller *and* Verity Touch

- ▶ **Verity Controller and Verity Touch** is a polling place-based Direct Record Electronic (DRE) Voting system. Using Verity Controller and Verity Touch, poll workers issue access codes with Verity Controller, which voters use to access, mark and cast digital ballots via a touch screen on a Verity Touch. Multiple Touch devices can be connected to a single Controller device. Verity Touch, like Touch Writer, is compatible with Verity Access.



hardware components, *continued*

Verity Key

- ▶ Verity Key is a small security device that is programmed for each election. Verity Key is inserted into a USB port.



Verity Key is part of Verity's two-factor authentication process. Two-factor authentication requires each user to have something (a programmed Verity Key) and to know something (the passcode associated with the Verity Key). Both the user passcode and the Verity Key must be authenticated together.

Critical operations within the Verity Voting system require the Verity Key to be inserted and the passcode to be entered. Only when the Verity system authenticates the Verity Key and password will it allow the operation to continue.

USB media

- ▶ Off-the-shelf USB media are used to archive and export data from Verity workstations. All USB media used for these tasks should be formatted as NTFS.

actions requiring use of the Verity Key

use in Verity Build

- ▶ Verity Keys are written for the current election in Verity Build. When writing the Verity Key in Build, the user will assign application and device passwords for the election. See the *Verity Administrator's Guide: Build*.

use in voting devices

- ▶ Verity Key is required to predefine voting devices with the proper polling place prior to deployment. The Verity Key is removed from the device after predefining, before the device is sealed and transported to the polling place. See the *Verity Support Procedures Guide* for predefining procedures.

use in Verity Central

- ▶ In Central, the Verity Key is required in order to import a signed election export from a Verity Build workstation. The user must know the Verity Key application password, set in Build. See page 68 of this guide.
- ▶ A Verity Key is also required in order to create a Recovery vDrive in the event of a damaged or lost vDrive in Central. The user must know the Verity Key application password, set in Build. See page 142 of this guide.

actions requiring use of the Verity Key,

continued

use in Verity Relay

- ▶ In Relay, the Verity Key is required in order to import a signed election export from a Verity Build workstation. The user must know the Verity Key application password, set in Build.

use in Verity Count

- ▶ In Count, the Verity Key is required in order to import a signed election export from a Verity Build workstation. The user must know the Verity Key application password, set in Build. See the *Verity Administrator's Guide: Count*.
- ▶ Verity Key is also required in order to read the first vDrive for an election into Count. See the *Verity Administrator's Guide: Count*.

the Verity software suite

Verity Data

- ▶ In Verity Data, you can enter, import and manage election and jurisdiction data, enter translations, and record audio. Verity Data allows you to choose ballot templates, preview ballots, and lock the election data so that it may be opened in Verity Build.

Verity Build

- ▶ In Verity Build, you can open an election, proof data, print ballots, and write vDrives. In Build, you will perform the final steps to prepare the ballot for your election.

Verity Central

- ▶ Verity Central is a powerful application designed to manage central ballot scanning operations. Here you can scan, review ballots, resolve write-in votes and voter intent issues, and export cast vote records for tabulation.

Verity Relay

- ▶ Verity Relay is an application designed to receive transmissions from specially-equipped Verity Scan with Relay devices. Transmitted data is written to a transfer vDrive and taken to Verity Count for tabulation.

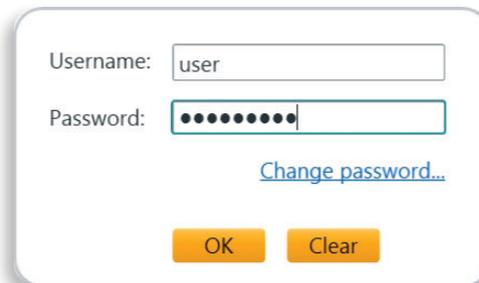
Verity Count

- ▶ Verity Count is Verity's comprehensive application for ballot tabulation. In Count, you will read vDrives, tabulate ballots, resolve write-in votes, print reports, and export election results.

getting started with Verity

logging in to Verity

Enter your User Name and Password, and then click **OK** to begin using Verity. Selecting the **Log Out** link in the upper right corner in any application will return you to this Login screen.



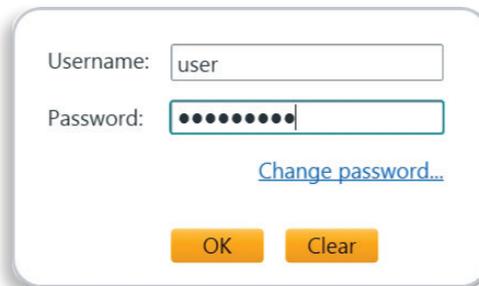
A screenshot of the Verity login interface. It features two input fields: 'Username:' with the text 'user' and 'Password:' with ten dots. Below the password field is a blue link labeled 'Change password...'. At the bottom are two orange buttons: 'OK' and 'Clear'.

logging in to Verity, *continued*

NOTE: *the first time you log in to a Verity workstation you will use a login supplied by Hart. You will then need to create your own unique login for subsequent use.*

- ▶ The first time you log in, Verity will prompt you to create a new password.
- ▶ At any time, you can use the **Change password...** link on the Login screen to create a new password:

1 Select **Change password...** ▶

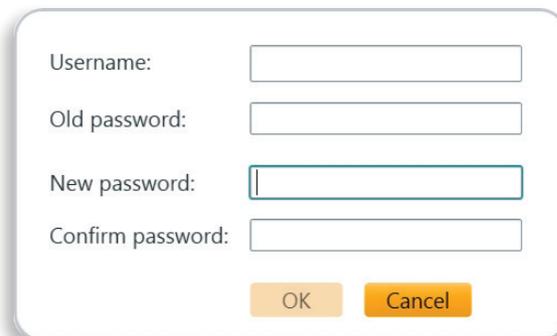


Username:

Password:

[Change password...](#)

2 Enter your existing password, and then enter a new password. Enter the new password a second time to confirm, and then click **OK**. ▼



Username:

Old password:

New password:

Confirm password:

the Verity home screen

The home screen is the first thing you will see after you log in to a Verity workstation. The home screen has several large buttons or 'tiles'.

- ▶ Selecting the **Home** link in the upper left corner in any application will return you to this screen.



- ▶ Depending on the workstation you are using, the tiles shown will vary; below, for example, is the home screen of a Verity Data/Build workstation. In this case, clicking the leftmost tile will open the Verity Data application.



- ▶ In the bottom right corner is the **Shutdown** button. Clicking this button will shut down the Verity computer workstation. For details on proper shutdown procedures for networked workstations, see page 59.

the Verity home screen, *continued*

In addition to the application tile(s) (Data, Build, Central, Relay or Count), there are three tiles labeled Desktop, Manage, and Users. Clicking these tiles will open the Desktop, Manage, or Users applications. These three applications are available to authorized users on all workstations.*



The **Desktop** application allows you to set date and time for the Verity workstation, export file hashes, enter a passcode to access the Windows operating system, or configure a printer.



The **Manage** application (**available only on server workstations, see page 55*) allows you to create, open or manage your elections. Manage is also used to archive an existing election and restore an archived election.



The **Users** application allows you to create and manage users and set user privileges.

the Desktop application



The **Desktop** application contains three tiles that allow you to set the time, export file hashes, or access the Windows operating system. To access the Desktop application, click the Desktop tile on the Verity home screen.



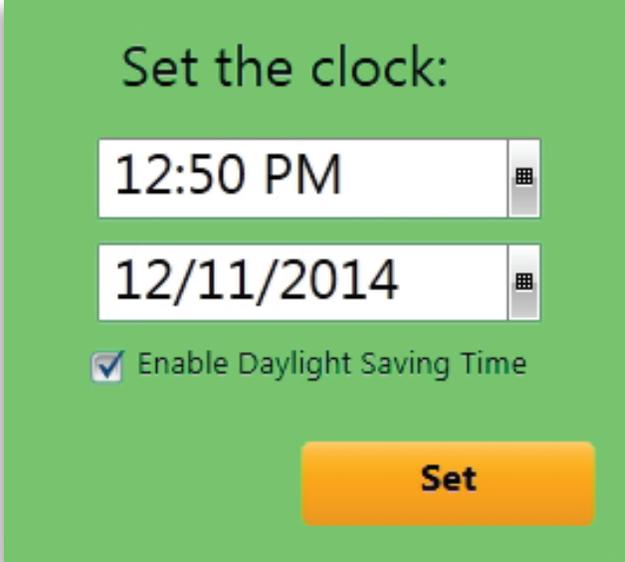
- ▶ **Setting the clock:** Setting the workstation time and date here will affect all Verity applications installed on the workstation.
- ▶ **Exporting file hashes:** Verity Desktop allows Administrator users to export file hashes to a removable drive so that a file hash test can be performed. In a file hash test, the exported data is compared against a trusted build of the software, to confirm that no unauthorized changes were made to the software components.
- ▶ **Accessing the operating system:** For security purposes, a Verity workstation normally operates in what is known as "Kiosk" mode, in which the Windows desktop is not accessible, and the user only has access to the Verity applications installed. To access the Windows desktop, you must request a code from Hart.
- ▶ **Configuring a printer:** Here you can upload a configuration file for an installed printer.

the Desktop application, *continued*

setting the system clock and date

- 1 Under **Set the clock**, you can update the time and/or date by clicking the time or date field and typing in the desired value.
- 2 Check the box to enable Daylight Savings Time, if desired.
- 3 Click **Set**.

NOTE: *When setting the time, you must include AM or PM.*



The screenshot shows a dialog box titled "Set the clock:" with a green background. It contains two input fields: the first is for the time, showing "12:50 PM", and the second is for the date, showing "12/11/2014". Below these fields is a checked checkbox labeled "Enable Daylight Saving Time". At the bottom right of the dialog is an orange button labeled "Set".

the Desktop application, *continued*

exporting file hashes

TIP:

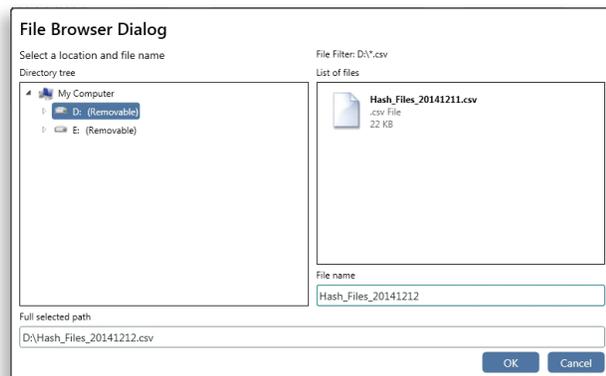
File hashes are used to verify that the Verity software has not been tampered with in any way since it was installed. For information about verifying file hashes, see the following page. For instructions on exporting file hashes on devices, see page 30.

1 Under **Export file hashes to a removable drive**, click **Export**. ▶

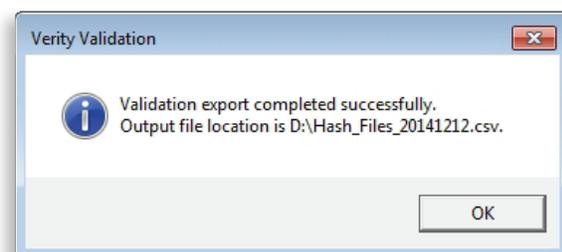
Export file hashes to a removable drive:

Export

2 Browse to the location where you would like to save the files, and then click **OK**. ▶



3 You will see the message **Validation export completed successfully...**; click **OK**. ▶



about file hashes

Verity Desktop allows Administrator users to export file hashes to a removable drive. This provides a means of verifying, using hash testing, that the software installation is identical to the certified software. The generation of hash files is a reproducible method of reading a data stream to produce a number (the “hash value”) that serves as a digital “fingerprint” of the data. Hash testing is a common method used to verify the integrity of installed software, and may be used to confirm that the voting system software running on your workstations matches the software as certified by the EAC.

To conduct hash testing, a third party program may be used to generate the hash value for installed software, and the hash value can be compared to that of the original source data to confirm that it has not been altered or corrupted. General directions for finding and downloading a third-party hash value generation tool and using that tool to verify Hart Voting System software application hash values are outlined below.

This information is being shared as a courtesy by Hart InterCivic. Contact your state’s or jurisdiction’s election authority for additional information concerning hash testing requirements in your jurisdiction. Consult your Information Technology department for assistance with hash tools.

For further information, see the Verity Knowledge Base Article *Hash Testing for Installed Software*.

exporting file hashes on Verity voting devices

As with Verity software workstations, you can also export file hashes from the Touch, Controller, Touch Writer, Print and Scan devices themselves.

- 1** On a non-Verity workstation, prepare a standard USB flash drive (*do NOT use a vDrive*): on the USB flash drive, create a folder named "**HartValidation**".
- 2** Set up the device (Touch, Controller, Touch Writer, Print or Scan) and connect it to AC power. Open the vDrive compartment. The voting device should not have a vDrive or Key inserted.
- 3** Insert the USB flash drive into one of the two USB ports inside the vDrive compartment on the voting device.
- 4** Press the red button on the back of the device to power it on. Look for the Verity Initialization screen. ▶



exporting file hashes on voting devices, *continued*

5 When you see the Verity Initialization screen, press and hold the blue Validation button inside the vDrive compartment.

6 Hold the button down until you see the message “Calculating and saving file hashes”. This may take some time.

NOTE: *If you do not see the above message, this may mean that either a) the HartValidation folder was not found on the inserted USB drive, or b) the Validation button was not pressed/held as directed. Verify the correct folder is present on the USB drive, restart the device and repeat steps 4-6.*

7 Remove the USB drive. Repeat the process with fresh USB flash drives for any additional devices.

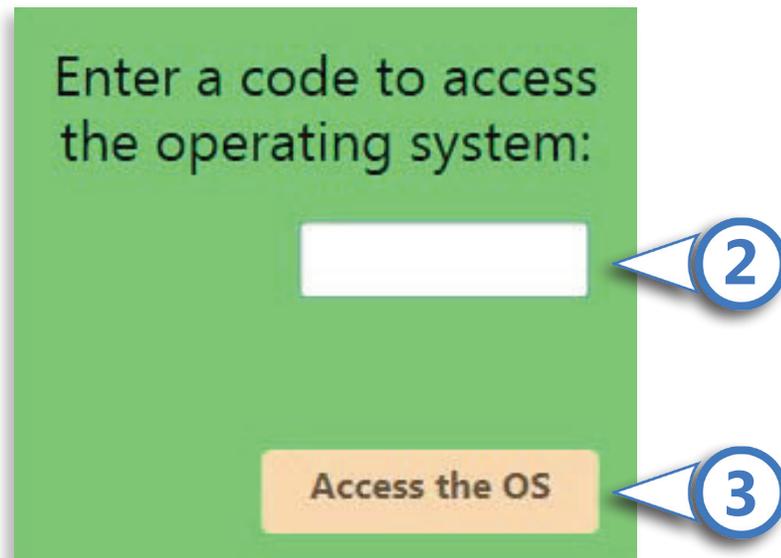
8 For information on comparing exported Hash files to the trusted software build, see the Verity Knowledge Base article *Hash Testing for Installed Software*.

the Desktop application, *continued***accessing the Windows operating system**

- 1** Contact Hart Support (1.866.ASK.HART) and request a code.
- 2** Under **Enter a code to access the operating system**, type in the code you are issued.
- 3** Click **Access the OS**.

TIP:

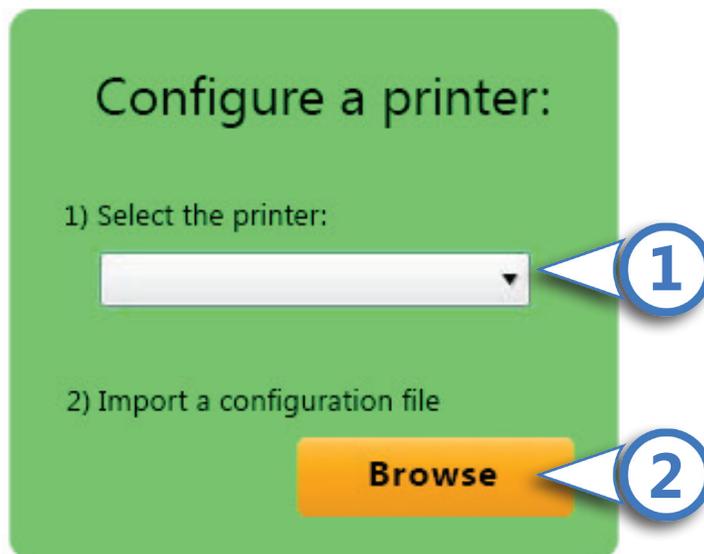
As a security measure, during normal operation, the computer desktop is not available while the Verity software is running. This ensures that access to election data is managed only through secure access to the Verity applications.



the Desktop application, *continued*

configuring a printer

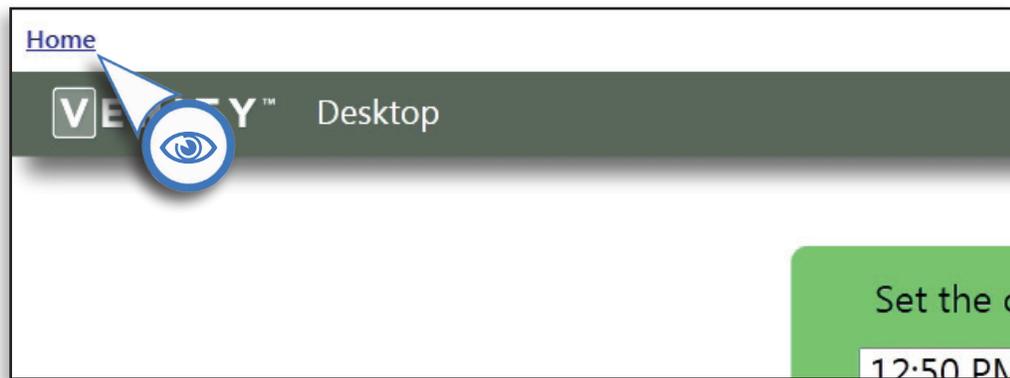
- 1 Click the drop-down menu to select a printer from the list of installed printers. The printer must be powered on.
- 2 Click the **Browse** button to browse to locate and import a printer configuration file for the printer. For questions and assistance, contact Hart Support at 1.866.ASK.HART.



the Desktop application, *continued*

returning to the Verity home screen

- ▶ To return to the Verity home screen from any application, click **Home** in the upper *left* corner.



logging out of Verity and returning to the Verity login screen

- ▶ To log out of Verity and return to the Verity login screen from any application, click **Log Out** in the upper *right* corner.



the Manage application

In the **Manage** application, administrators can add, copy, import, export, rename, delete, archive, and restore elections created in the Verity system. The Manage application is available only on server workstations (see page 55).

accessing the Manage application



► From the Verity Home page, click the **Manage** tile.

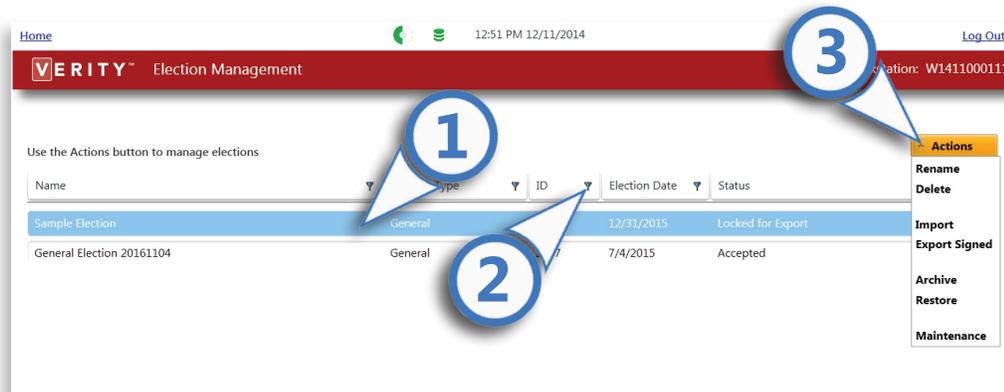
The Manage application is context-sensitive, meaning the management features available on each Verity workstation will vary depending on the Verity application installed. For instance: on a workstation equipped with Verity Data, you can add a new election; on a Verity Count workstation, you can import a signed election export.

You will use the Manage application throughout the election process to manage the transfer of the election database from one Verity workstation to another; each step will be covered in this guide in the appropriate sequence.

the Manage application, *continued*

using the Manage application

1 Clicking an election name from the list selects an existing election.



2 Clicking one of the filter icons  in one of the column headers filters the list by category.

3 Clicking **Actions** allows you to choose a desired action for the selected election. Available actions vary depending on the applications installed on the workstation. Actions that may be available are listed and described below:

- ▶ **Add:** *(Data/Build workstations)* Adds a new election to the Election Management screen.
- ▶ **Copy:** *(Data/Build workstations)* Creates a new election, in Open status, from the copied election. The new election will have a different Election ID.
- ▶ **Rename:** *(all workstations)* Renames the selected election. The election ID does not change.

the Manage application, *continued*

using the manage application, *continued*

- ▶ **Delete:** (*all workstations*) Removes the selected election from the election list and the workstation or network.
- ▶ **Import:** (*Data/Build workstations*) Imports an election. May be used for integration with a third-party system.
- ▶ **Export:** (*Data/Build workstations*) Exports an election. Exported elections may be used for integration with third-party systems. An exported election cannot be imported on a Relay, Central or Count workstation (a signed election export is required, see below).
- ▶ **Import Signed:** (*Relay, Central and Count workstations*) Imports a signed election export from a Verity Build workstation.
- ▶ **Export Signed:** (*Data/Build workstations*) Signs and exports the finished and accepted election. Signed election exports are imported on Relay, Count and Central workstations.
- ▶ **Archive:** (*all workstations*) Creates an archival copy of the selected election on an inserted removable USB media. The election status does not change.
- ▶ **Restore:** (*all workstations*) Restores an archived election without changing the election status. An archive can be restored only for the same type of system on which the archive was created (e.g., an archive from a Central system cannot be restored on a Count system).
- ▶ **Maintenance:** (*all workstations*) Runs a database optimization program to ensure that Verity runs quickly and efficiently.

best practices: archiving elections

It is important to archive your election in Verity regularly to provide protection against the loss of important data in the event of damage to the computer hard drive. In addition, archiving your election regularly provides a convenient method of restoring previous states of an election so that changes can be made if necessary. Using the Manage application, you can archive any election in its current state to removable USB media, and restore the archived version if needed.

NOTE: *Archives can only be restored on the same type of system they were created (e.g. a Central archive cannot be restored on a Count workstation).*

An election can be archived at any time. Examples of *some* key archive points are noted below:

- ▶ Before importing election data in Data
- ▶ Before an election changes status:
 - Before Locking an election for export in Data
 - Before Accepting an election in Build
- ▶ After Accepting an election in Build
- ▶ Before performing Manual Vote Recording in Count
- ▶ After completing tabulation in Count

the Manage application, *continued*

archiving elections in the Manage application

1 Open the Manage application.



2 Insert a removable USB media device into an available port on the workstation.

The screenshot shows the VERITY Election Management application interface. At the top, there is a red header bar with the VERITY logo and "Election Management" text. Below the header, there is a navigation bar with "Home" and "Log Out" links. The main content area displays a table of elections with columns for Name, Election Type, ID, Election Date, and Status. A blue callout bubble with the number "3" points to the "Sample Election" row. To the right of the table, an "Actions" menu is open, showing options: Rename, Delete, Import, Export Signed, Archive, Restore, and Maintenance. A blue callout bubble with the number "4" points to the "Archive" option in the menu.

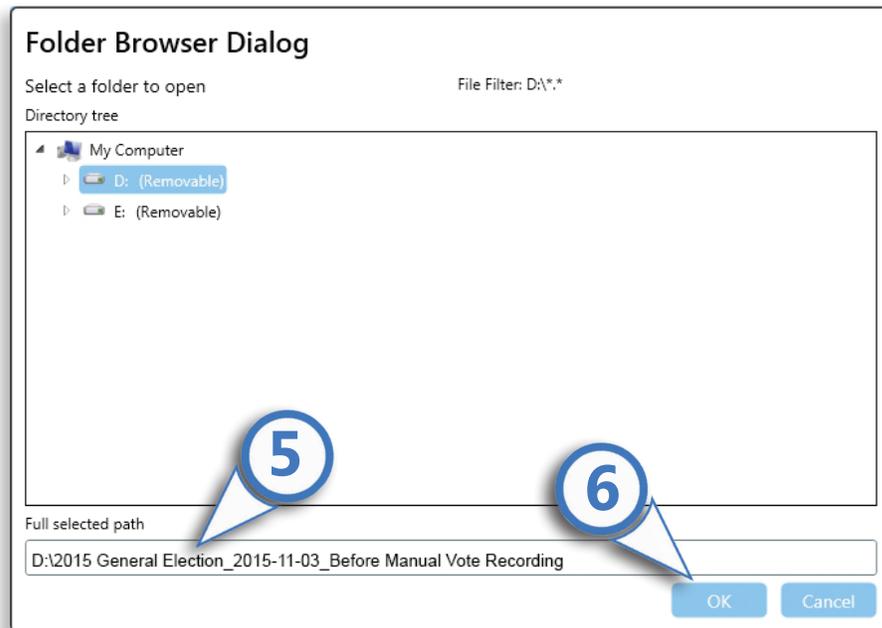
Name	Election Type	ID	Election Date	Status
Sample Election	General	19193	12/31/2015	Locked for
General Election 20161104	General	2967	7/4/2015	Accepted

3 Select the election to be archived.

4 Under the Actions menu, select **Archive**.

the Manage application, *continued*

5 Browse to the location of the removable media where you would like to save the file.



6 Click **OK**. The election will be saved in its current state in the location you have chosen.

7 Label the USB media clearly with the election name, date, and election status.

the Manage application, *continued*

restoring an archived election

To restore an archived election, the same election cannot already exist in the Manage application.

NOTE: *Archives can only be restored on the same type of system they were created (e.g. a Central archive cannot be restored on a Count workstation).*

- 1** Open the Manage application.
- 2** Insert the removable USB media containing the archived election to be restored.
- 3** Under the Actions menu, select **Restore**.
- 4** Browse to the location on the removable USB media and select the archive folder.
- 5** Click **OK**. The archived election now appears in the Manage application.
- 6** To load the archived election, select the election in the Manage application, and then click **Open**.

the Manage application, *continued***maintaining the election database**

The Maintenance operation optimizes the database so Verity can run more efficiently. To run the Maintenance operation, follow the steps below:

NOTE: *If user workstations are networked, ensure that all users are logged out of Verity client workstations before running the Maintenance operation. If a user is not logged out of Verity, the Maintenance operation will not complete its tasks.*

- 1** Open the Manage application.
- 2** Under the Actions menu, select **Maintenance**. A Warning dialog window displays.
- 3** Click **Yes** to launch the Maintenance program.

NOTE: *A rotating progress wheel may display while Verity performs maintenance, depending on how long the operation takes.*

the Disk and RAID indicators

At the top center of the Verity workstation screen are two icons, the Disk icon (A) and the RAID icon (B).



the Disk icon

In configurations with only a single workstation, this icon represents the available hard drive space on that workstation. In configurations with two or more networked workstations, the icon represents the hard drive space on the server, or primary, workstation. If server hard drive space is low, archival of older election data may be required before creating or editing a new election.



More than 20% of the free hard drive space remaining.



WARNING: remaining hard drive space is limited to between 5%-20%. Archive and delete some elections to increase available free space.



WARNING: remaining hard drive space is less than 5%. You must archive and delete some elections before continuing to use the software.



Unable to determine the amount of free disk space. Please contact Hart Support.

the Disk and RAID indicators, *continued*

the RAID icon

Hovering the mouse over the RAID icon displays the status of the RAID array on the workstation. RAID is an acronym for Redundant Array of Independent Disks; Verity utilizes RAID technology to store data on the server using multiple disk drives to provide redundancy and improve performance. The RAID icon indicates whether both independent drives are functioning properly, and whether they are synchronized. If the RAID drives become desynchronized, Verity will automatically rebuild them. If one drive fails, you can continue to use the system, however you will need to contact Hart for a replacement.



The hard drive array is working correctly



WARNING: The hard drive array is repairing itself. The system may run slowly while it is being repaired.



WARNING: One of your hard drives is not functioning. Please contact Hart Support.



Unable to determine the status of the hard drive array. Please contact Hart Support.

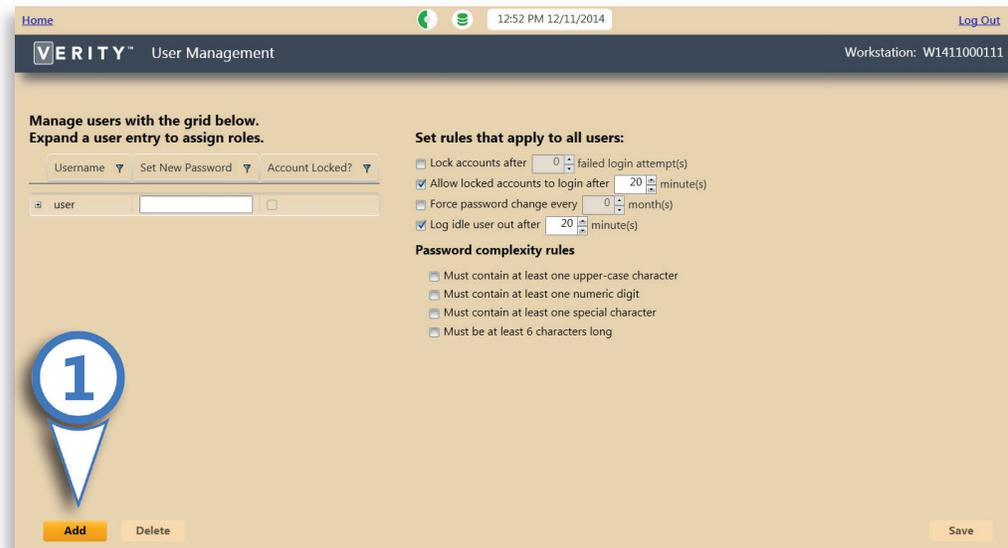
the Users application



The **Users** application allows an administrator-level user to add users and define user roles, disable or remove users, and manage user rules. Administrators can also manage user passwords, and users can update their own passwords. To open the Users application, click the **Users** tile on the Verity home screen.

adding a user and defining user roles

1 Click Add. ▼



Home 12:52 PM 12/11/2014 Log Out

VERITY™ User Management Workstation: W1411000111

Manage users with the grid below.
Expand a user entry to assign roles.

Username ▼	Set New Password ▼	Account Locked? ▼
user		<input type="checkbox"/>

Set rules that apply to all users:

- Lock accounts after failed login attempt(s)
- Allow locked accounts to login after minute(s)
- Force password change every month(s)
- Log idle user out after minute(s)

Password complexity rules

- Must contain at least one upper-case character
- Must contain at least one numeric digit
- Must contain at least one special character
- Must be at least 6 characters long

1

Add Delete Save

the Users application, *continued*

3 Type a User Name (A) and Password (B). ▼

Manage users with the grid below.
Expand a user entry to assign roles.

Username ▼ Set New Password ▼ Account Locked? ▼

+	user		<input type="checkbox"/>
+	Operator	•••••	<input type="checkbox"/>

4 To define user roles, expand a user profile by clicking the + (A) and use the drop down menu to assign the user a role for each of the Verity applications (B). For a description of each type of user role, see page 47. ►

Manage users with the grid below.
Expand a user entry to assign roles.

User ▼ Set New Password ▼ Account Locked? ▼

Application ▼	Role
Verity Count	Count Operator
Verity User Manager	Count Election Media Reader
Verity Desktop	Count Admin
Verity Build	
Verity Election Manager	

5 Click **Save** in the bottom right corner.

user roles in Verity

The specific user roles available vary for each Verity application. Each user role has specific privileges, or abilities, within that application. Below are the user roles available for each application, and the privileges available to each user role. In addition to performing the actions themselves, Administrator users can also authorize actions not available to other user roles. For example, an Administrator can give on-the-spot authorization for an Operator user to perform Manual Vote Recording in Count.

Verity Data user roles

- ▶ **Viewer:** Can view all of the screens in Data, print reports, and print ballot previews; Viewers cannot change election data.
- ▶ **Operator:** Can perform all Viewer operations and add, change, and delete election data.

Verity Build user roles

- ▶ **Viewer:** Can open elections, preview ballots, and print reports for proofing purposes. Viewers cannot modify content, configurations, or elections.
- ▶ **Media Creator:** Can perform all Viewer tasks. In addition, can create Keys and vDrives, and print ballots.
- ▶ **Operator:** Has full access to Verity Build; only one Operator can open a given election at a given time.

user roles in Verity, *continued*

Verity Central user roles

- ▶ **Viewer:** Can open elections and tasks, and print and export reports. Cannot modify content, configurations, or elections.
- ▶ **Resolution Board:** Can open and view ballots with voter intent issues to determine validity, resolve ballots, and run reports.
- ▶ **Operator:** Has full access to Verity Central, including the ability to review ballots with voter intent issues, change election status, restore elections, and perform all tasks for ballot scanning and generating reports.
- ▶ **Administrator:** Has all of the abilities of Operators, plus additional access for administrative setup and closing polls.

Verity Count user roles

NOTE: *In Count server/client configurations, no more than one Administrator or Operator can be logged in to a given Task at the same time.*

- ▶ **Election Media Reader:** Can open elections and tasks to read vDrives.
- ▶ **Operator:** Can open and manage elections and tasks, generate reports, and update polling place data, and precincts. Users can import and export data, resolve ballots, and access the audit dashboard. Users can manually record votes only with Administrator authorization.
- ▶ **Administrator:** Users have unrestricted access to all aspects of Verity Count. Can manually record votes, access all aspects of reports and the auditing dashboard, and import and export data.

user roles in Verity, *continued*

Verity Relay user roles

- ▶ **Operator & Administrator:** Has full access to all functions in Relay. While Relay has two roles, the access privileges are identical.

disabling a user account

1 Check the box next to the user name, under the **Account Locked** column.

2 Click **Save** in the bottom right corner.

Manage users with the grid below.
Expand a user entry to assign roles.

Username ▼ Set New Password ▼ Account Locked? ▼

user		<input checked="" type="checkbox"/>
Application ▼	Role	
Verity Count	Count Admin	
Verity User Manager	UserManager Admin	
Verity Desktop	Desktop Admin	
Verity Build	Build Operator	
Verity Election Manager	ElectionManager Admin	



NOTE: *this feature may be useful if an account will be used again, but only at specific times.*

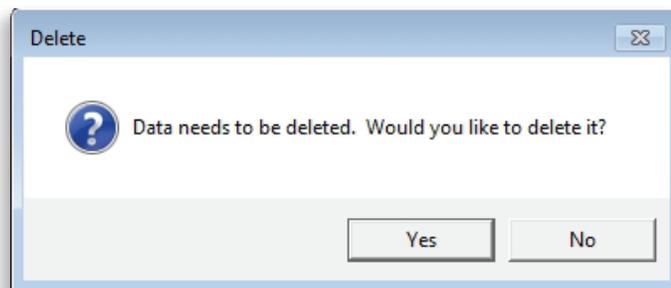
the Users application, *continued*

removing a user account permanently

- 1 Click a user account to select it. ▼
- 2 Click **Delete** on the bottom of the screen. ▼



- 3 Click **Yes** to confirm. ▼



- 4 Click **Save** in the bottom right corner.

the Users application, *continued*

setting rules that apply to all users

- 1 Set the number of failed login attempts before the account is locked.
- 2 Set the period of time a locked account will remain locked.
- 3 Set the frequency with which passwords must be changed.
- 4 Set the idle user log out time.
- 5 Set rules regarding password complexity.
- 6 Click **Save** in the bottom right corner.

1 **Set rules that apply to all users:**

- Lock accounts after failed login attempt(s)
- Allow locked accounts to login after minute(s)
- Force password change every month(s)
- Log idle user out after minute(s)

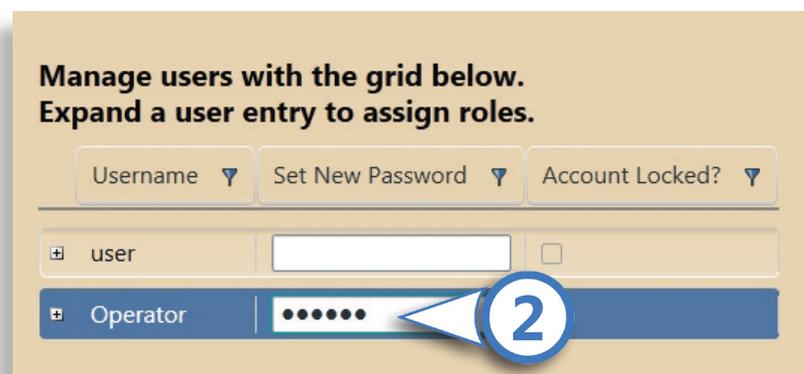
4 **Password complexity rules**

- Must contain at least one upper-case character
- Must contain at least one numeric digit
- Must contain at least one special character
- Must be at least 6 characters long

5

the Users application, *continued***changing user passwords**

- 1 Click in the password field next to the user name.
- 2 Type the desired password.



- 3 Click **Save** in the bottom right corner.

best practices: user passwords

- ▶ Passwords should contain at least 6 characters.
- ▶ Passwords should contain both numbers and letters.
- ▶ Passwords should contain both uppercase and lowercase letters.

managing passwords in Verity

The Verity voting system requires the use of passwords and passcodes to ensure security throughout the election definition, voting, ballot processing, and tabulation processes. In addition to the user passwords required to access the Verity software applications discussed on the previous pages, there are a number of other passwords and passcodes that the system administrator must create and manage. The process of creating passwords in Verity Build is discussed in the *Verity Administrator's Guide: Build*. For further information on Verity password management, see the Verity Knowledge Base article *Verity Password Management*.

- ▶ In Build, you must create separate device passcodes for administrators, maintenance and warehouse personnel, and poll workers. These passcodes allow you to manage the ability of staff to access different menus and functions on the devices themselves.
 - **Poll worker passcodes** give access to poll workers to create access codes, print reports, and perform certain other actions related to the voting process.
 - **Maintenance passcodes** give access to warehouse personnel and technical support personnel to predefine and calibrate devices, and change certain device settings.
 - **Administrator passcodes** allow administrators to change certain device settings, such as changing ballot rules.

managing passwords in Verity, *continued*

- ▶ In addition, you will create additional device passcodes for opening, suspending, and closing polls for each voting type in the election.
- ▶ Finally, you must create and manage the passcodes associated with the Verity Key, including an administrator passcode for the Key itself, and device and application passcodes.
 - The Key administrator passcode is required to write the Key for each election. It cannot be recovered if forgotten.
 - Device and application passcodes are used, in conjunction with the physical Key itself, to authorize certain actions, such as predefining devices, and importing elections exported from the Build workstation.
 - A complete list of actions requiring the use of the Verity Key is found on page 19.

It is important to carefully manage these passwords and passcodes to ensure that the authorized personnel know their required passcodes when needed. Log all passcodes in a secure location and limit access.

It is important to note that device passcodes can be unique, or shared across functions (e.g., you can use the same passcode for opening polls across all voting types, or create a unique passcode for each). You can create a new set of passcodes for each election, if desired. Remember that creating unique codes increases security, but also requires more careful management.

networking and servers

Depending on your jurisdiction's particular implementation, you may have one or more networked workstations for each of the Verity software applications*. For example, you could have a Build server workstation with a networked Build client workstation. A server-client configuration consists of two or more workstations for a single application, with all data for that application stored on the server workstation. This allows multiple users to work with the application simultaneously.

However, there are restrictions on the number and type of users (administrators, operators, etc.) that can access a networked setup simultaneously. For example, in a networked Count configuration, there can be only one Administrator or Operator user logged in at any given time, yet there can be multiple Media Reader users logged in simultaneously. These restrictions reflect the software privileges associated with each user role. For a description of the software privileges accorded to each user role, see page 47. Examples of possible network configurations are given on the following pages.

**Verity Build, Central and Count workstations all support server-client configurations; Verity Relay does not.*

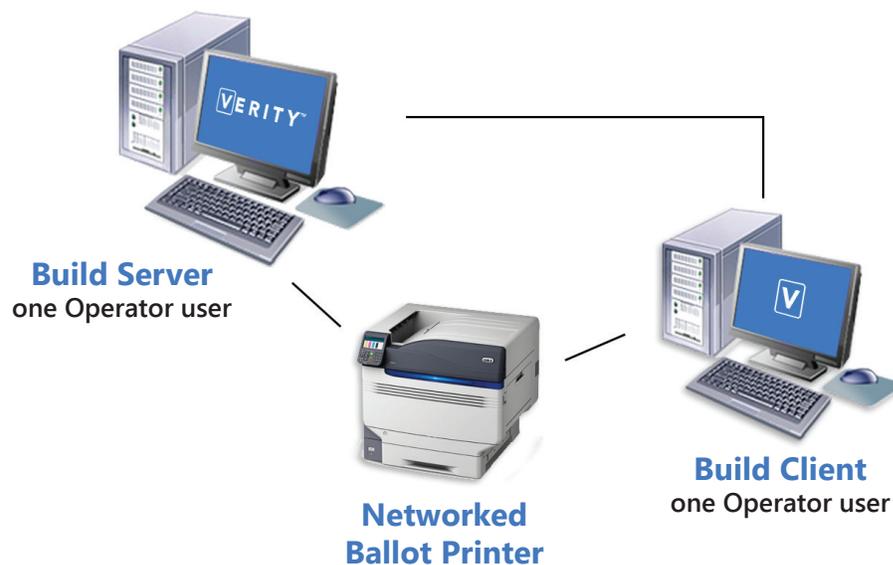
sample network configurations

The configurations illustrated below are samples only; your jurisdiction's configuration may vary, and the below diagrams are not intended to illustrate all possible configurations.

NOTE: *an individual user can only be logged into one workstation at a time.*

sample configuration #1

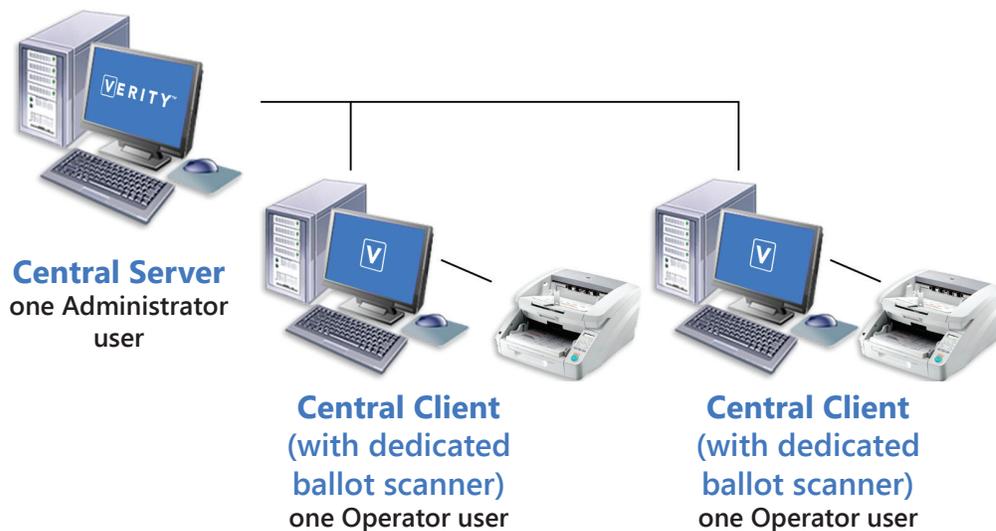
Below is a sample configuration with one Verity Build server and one Build client, with a networked ballot printer. In the sample configuration shown, two Operator users can be logged in simultaneously. Print jobs can be sent from either workstation.



sample network configurations, *continued*

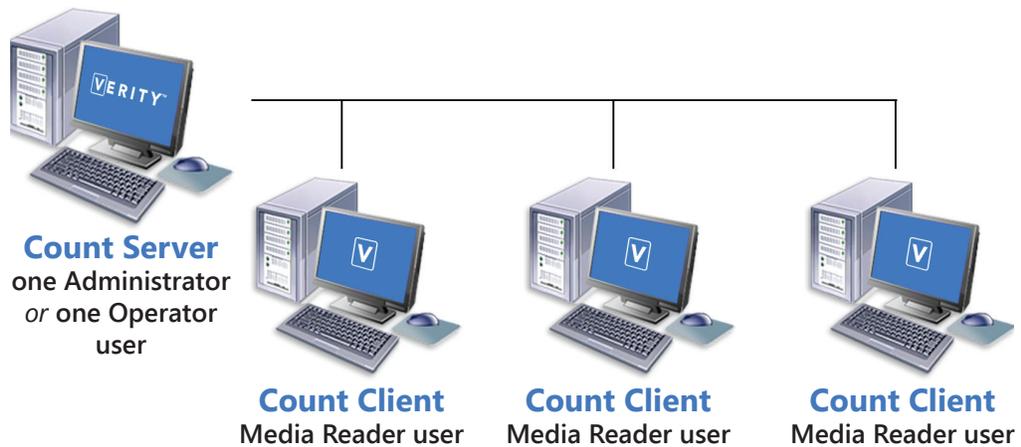
sample configuration #2

Below is a sample configuration with one Verity Central server and two Central clients, each with a dedicated ballot scanner. In the sample configuration shown, one Administrator user and up to two Operator users can be logged in simultaneously.



sample network configurations, *continued***sample configuration #3**

Below is a sample configuration with one Verity Count server and three Count clients. In the sample configuration shown, one Administrator or Operator user and up to three Election Media Reader users can be logged in simultaneously.



shutdown procedure for Verity server-client networks

The procedures to use to execute a controlled shut down and restart for any Verity Computer System (Data, Build, Central, or Count) are straightforward. Click the Shutdown button on the Verity home screen of the workstation to ensure smooth power down and protection of data.



Verity computer systems do not require power down or power up of peripherals (scanners or printers) in any kind of order. However, if you need to restart a workstation that is connected to other workstations as part of a server-client network, always use the following procedure to restart the entire network:

Step	Server	Clients
1 Problem is identified that requires one or more stations to be rebooted		
2 Shut down all of the client workstations		
3 Shut down the server workstation		
4 Power on the server workstation, and wait for it to boot fully		
5 Power on the client workstations		

verity **central**



version 2.X

verity central

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1

getting started

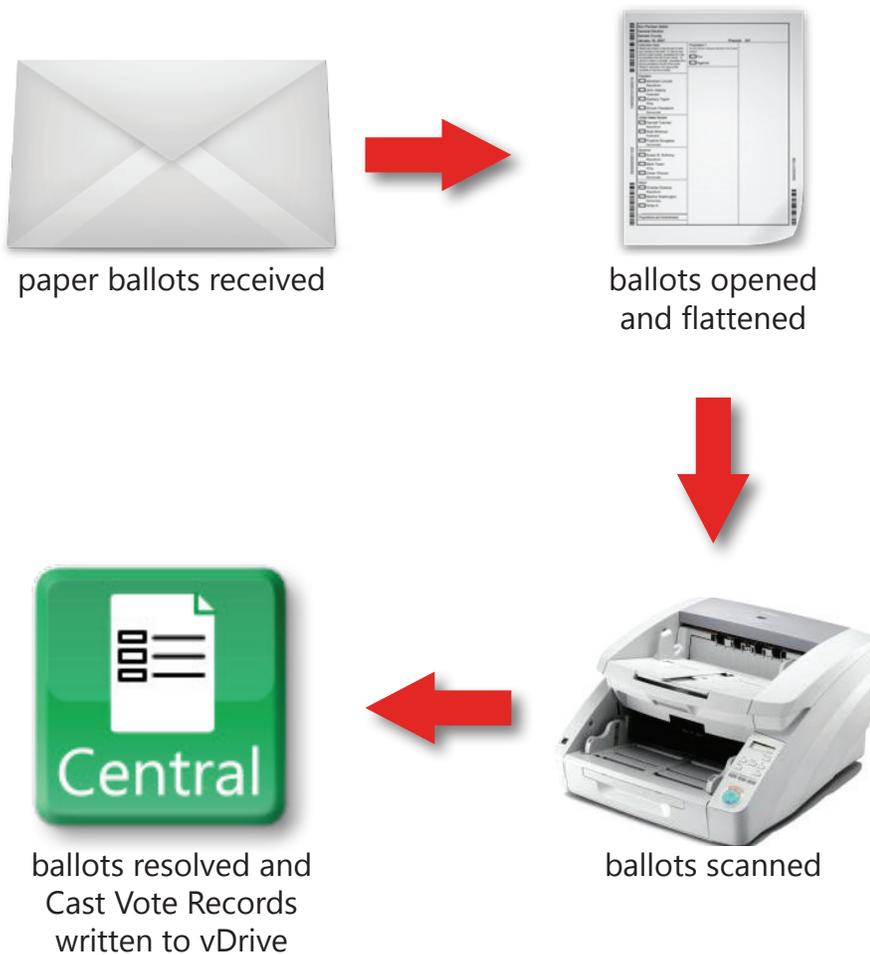
verity central: an overview



In Verity Central, you will run voted paper ballots through your Verity Central scanner, review and resolve ballots, and write the cast vote records to a vDrive in preparation for Verity Count vote tabulation.

verity central: an overview, *continued*

Verity Central workflow



importing an election on the Central workstation

To open an election in Verity Central, you first must import the election in the Manage application on that workstation.

1 Insert a Verity Key (created in Build) for the election.



2 Insert the removable media (USB) containing the signed export from Build into an available USB port on the Central workstation computer.

3 Log in to the Verity Central workstation.

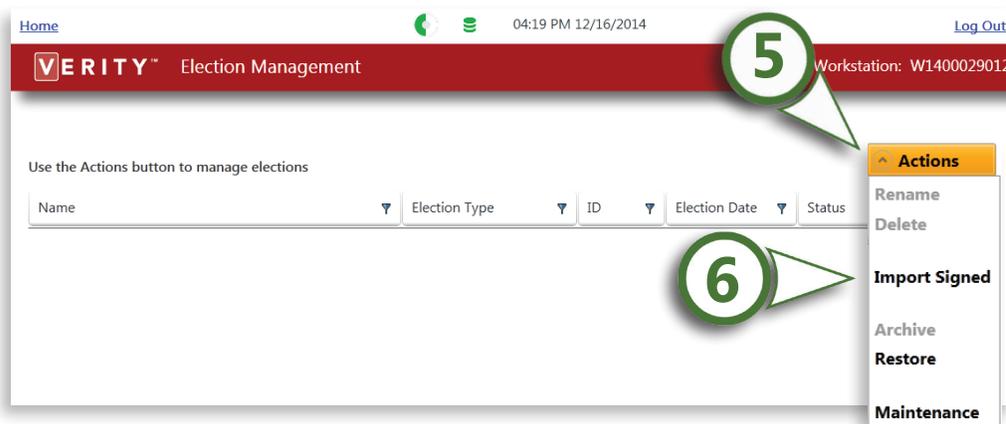
A login form with a white background and a light gray border. It contains two input fields: 'Username:' with the text 'user' and 'Password:' with a masked password of ten dots. Below the password field is a blue link that says 'Change password...'. At the bottom are two yellow buttons: 'OK' and 'Clear'.

4 On the Verity home page, click the **Manage** tile.



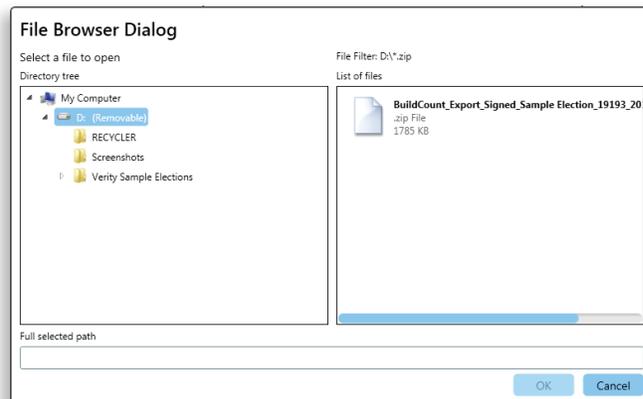
importing an election on the Central workstation, *continued*

5 In the Manage application, click **Actions**.



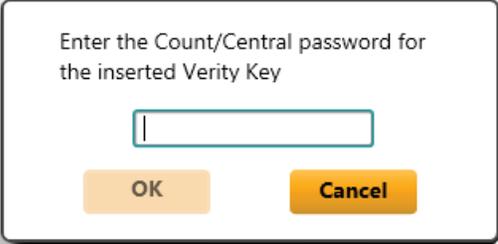
6 Select **Import Signed** from the Actions drop-down menu.

7 Browse to the location of the removable media and select the election to import. Click **OK**. ▼



importing an election on the Central workstation, *continued*

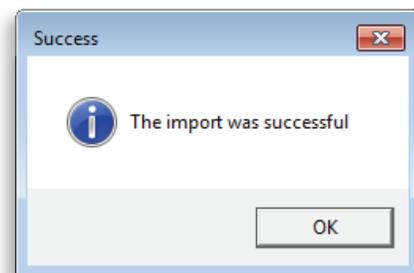
8 Enter the Verity Key application password for Central, and then click **OK**.



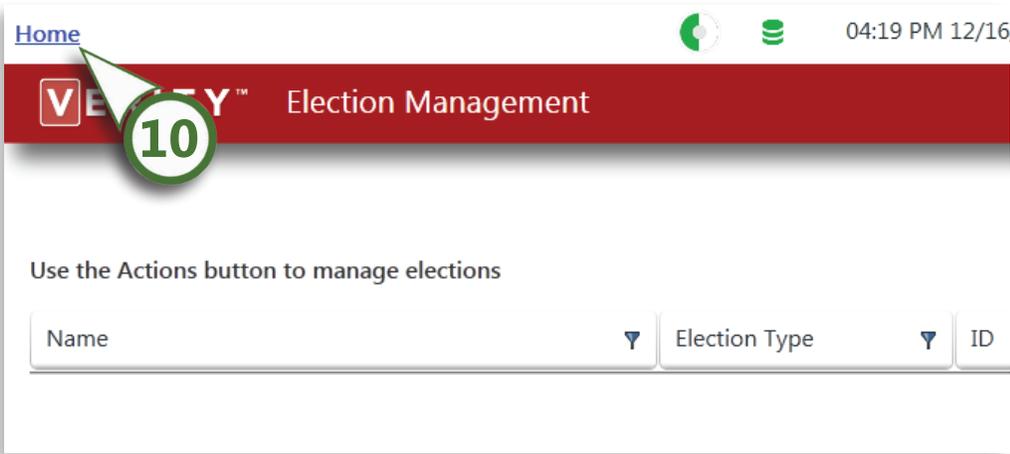
Enter the Count/Central password for the inserted Verity Key

OK **Cancel**

9 Click **OK**.



10 Click **Home** in the upper left corner to return to the Verity Home screen.



Home

04:19 PM 12/16

V **ERITY™** Election Management

10

Use the Actions button to manage elections

Name	Election Type	ID
------	---------------	----

about election status

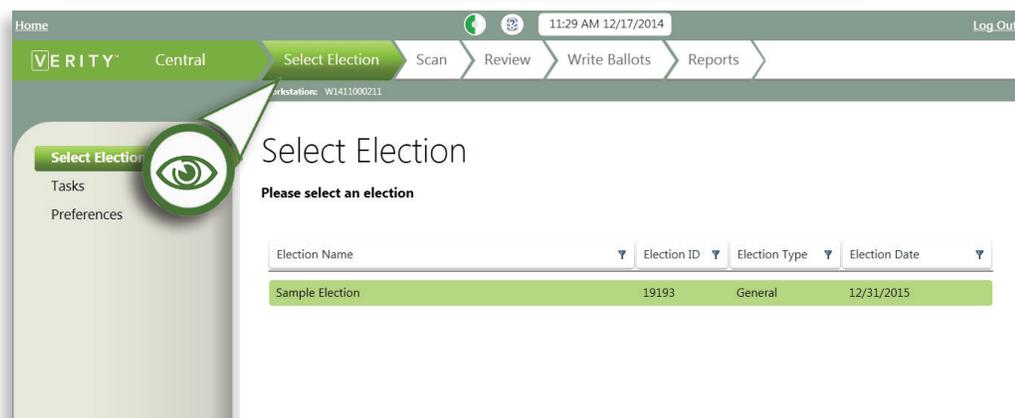
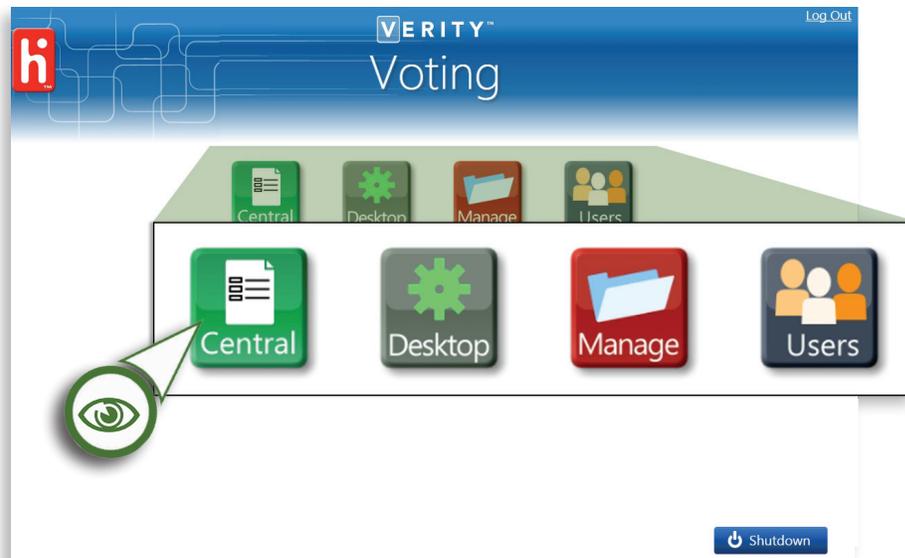
The status given for each election in the Manage application indicates at what point the election is in the election definition process.

- ▶ **Open for Editing:** The election is in the process of being created and can be edited in Verity Data.
- ▶ **Locked for Export:** The election has been locked in Verity Data, and is now ready to open in Verity Build.
- ▶ **Accepted:** The election has been proofed in Verity Build and you can now print ballots and create vDrives and Keys. The election is now ready for export to Verity Relay, Central or Count.

Verity Relay, Central, and Count require a signed election export from the Build workstation (the process for creating a signed export is discussed in the *Build Administrator's Guide*). The act of creating a signed export on the Build workstation creates the election definition. Importing a signed export on a separate Verity Relay, Central or Count workstation requires the user to insert a Verity Key for that election (created in Build) and also enter the Verity Key application password.

opening the Central application

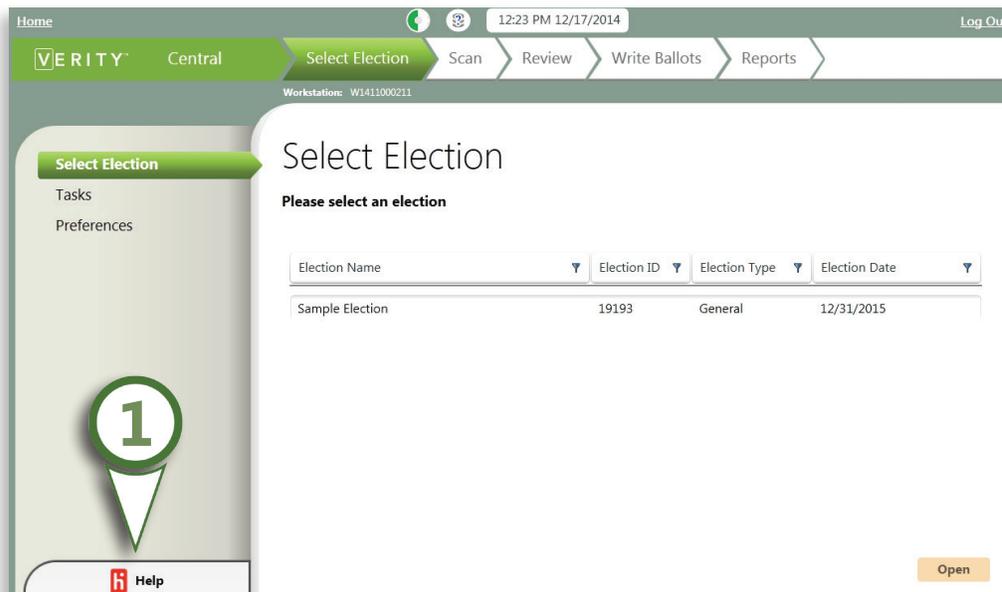
On the Verity home screen, click the Central application tile to open Central. The Central application contains five chevron-shaped tabs: Elections, Read, Resolve, Results, and Import/Export.



using on-screen help

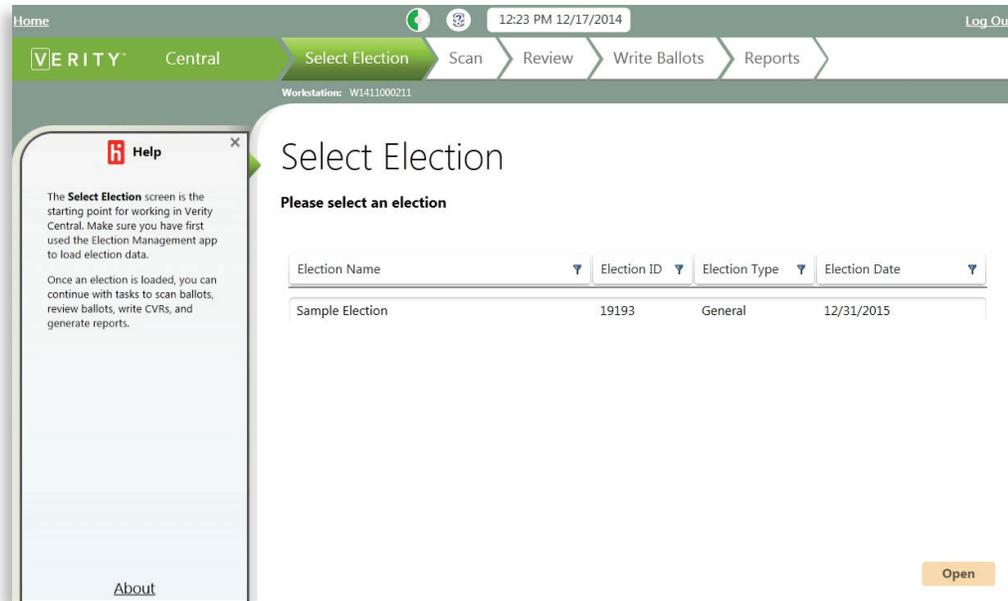
Help is available on every screen of the Central application; it will contain information related to the current screen, including instructions, notes, and important information regarding the steps you must complete on that screen.

- 1 Click the tab labeled **Help** at the bottom left of the screen to expand the help tab. ▼

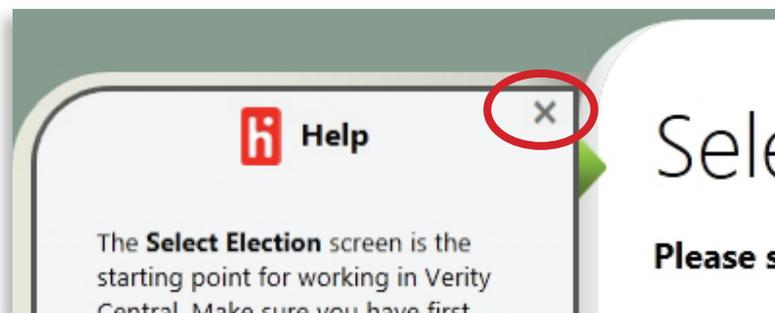


using on-screen help, *continued*

2 The help tab will display information about the current screen. ▼



3 Click the **X** in the upper right corner to close the help tab. ▼



Central checklist: getting started

- 1** Insert the removable USB media containing the signed export from Build into an available port on the Central workstation.
- 2** Log in to Verity on the Central workstation.
- 3** Open the Manage application.
- 4** Under the Actions menu in Manage, choose Import Signed. Browse to and select the export file to be imported from the removable USB media.
- 5** Click Home to return to the Verity home screen.



select election

the select election tab



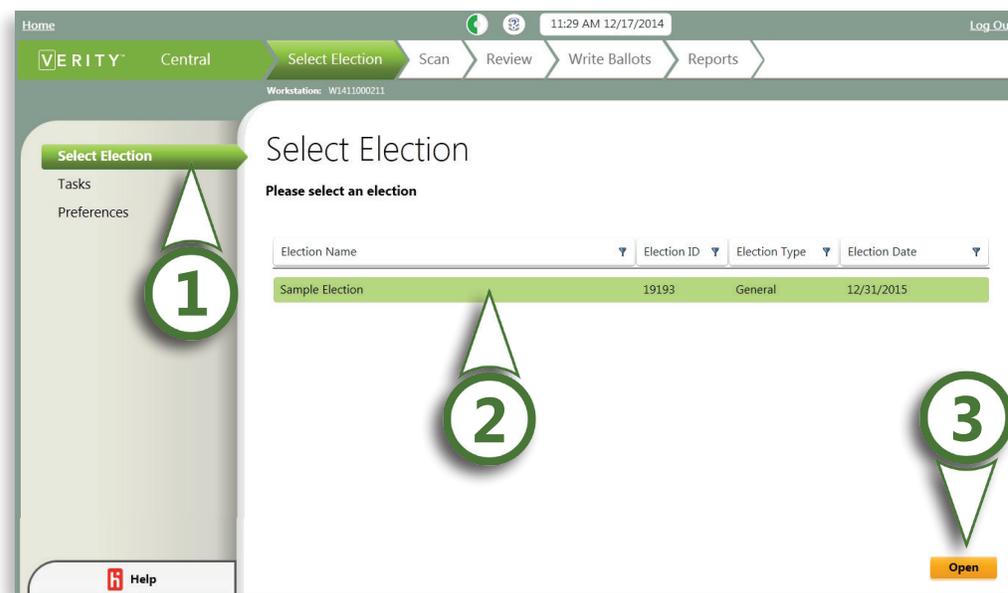
Under the **Select Election** tab, you will open the election, create tasks for scanning, and set your basic preferences for default voting type and ballot resolution. The following menus are available in the Select Election tab:

- **Select Election:** select and open an election.
- **Tasks:** create and manage election tasks associated with Central scanning.
- **Preferences:** set default preferences for elections before importing them into the Central workstation.

selecting and opening an election

The **Select Election** menu lets you select and open an election that you have imported from the Build workstation.

- 1** Open the Central application and select the **Select Election** menu.
- 2** Select the election you need to work with.
- 3** Click **Open** in the bottom right of the screen.



creating and managing tasks

The **Tasks** menu allows you to create and manage various election tasks associated with Central scanning. The ballots you will scan must be associated with a particular task. "Logic & Accuracy Test" and "Election Results" are examples of Tasks. You will create and open a task before you begin scanning ballots.

what is a task?

- ▶ A task is a new instance of a particular election. Each task can be created as either Test or Official type.
- ▶ For example for the election "General Election 2015" you may have the following tasks:
 - General Election 2015 LAT1 – Test
 - General Election 2015 Official results
- ▶ Note: if using a configuration with multiple networked Central workstations: If a task is created on another workstation *while you are viewing the Tasks menu*, the newly added Task will appear on your workstation only once you have left the Tasks menu and returned.

creating and managing tasks, *continued*

1 Use the **Tasks** menu to create a task and choose task settings.

A) Select the **Tasks** menu

B) Click **Actions**.

C) Select **New** under the Actions drop-down menu to open the New Election Task window.

Home 11:30 AM 12/17/2014 Log Out

VERITY Central Select Election Scan Review Write Ballots Reports

Workstation: W1411000211 Current Election: Sample Election Election ID: 19193 Election Date: 12/31/2015 Current Task: <none>

Select Election
Tasks
Preferences

A

Task Management

Please select a task, or use the Action

Name	Type	
Official - Central 1	Official	Offici
Official - Central 2	Official	Offici

B

Actions

- Open
- New**
- Rename
- Change label
- Close Polls
- Delete

C

Help

creating and managing tasks, *continued*

in the New Election Task window:

D) Give the task a name.

E) Assign the task a type (Official or Test). Official should be used for scanning Official mode ballots. Test should be used in testing only, such as when performing an LAT with Test mode ballots.

F) Define a Report Label (optional). A Report Label will appear on reports generated under that task.

G) Decide how Central will handle write-ins for this task.

- **Manage in Verity Central:** If you choose this option, you will resolve all Write-in votes in Verity Central. Write-ins must be resolved in Central before any ballots from that batch can be tabulated in Count.
- **Defer to Verity Count:** If you choose this option, you will defer write-in resolution to Count. All write-ins will be resolved in the Verity Count application.

The screenshot shows a dialog box titled "New Election Task". It contains the following fields and options:

- Task Name:** A text input field with callout **D**.
- Task Type:** A dropdown menu with "Official" selected and callout **E**.
- Report Label:** A text input field with callout **F**.
- Write-In Resolution:** A dropdown menu with "Manage in Verity Central" selected and callout **G**.
- Buttons:** "OK" and "Cancel" buttons at the bottom right.

TIP:

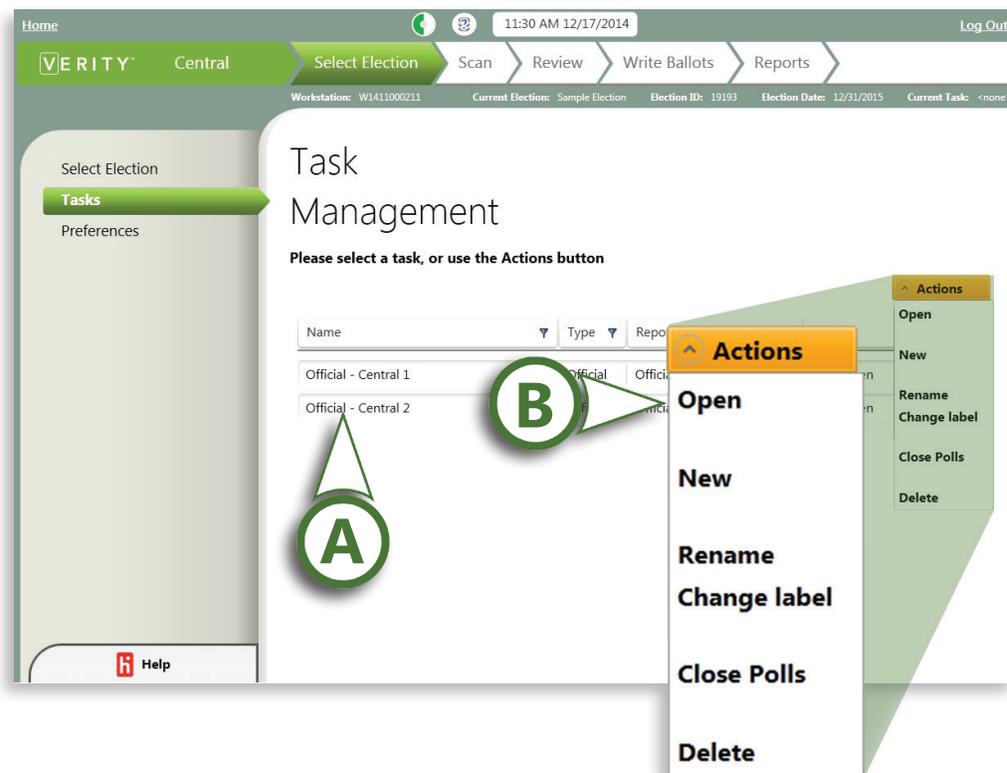
You can use the **Report Label** option to enter a description of the task that will appear on reports generated under that task.

creating and managing tasks, *continued*

2 Open the task you would like to work on.

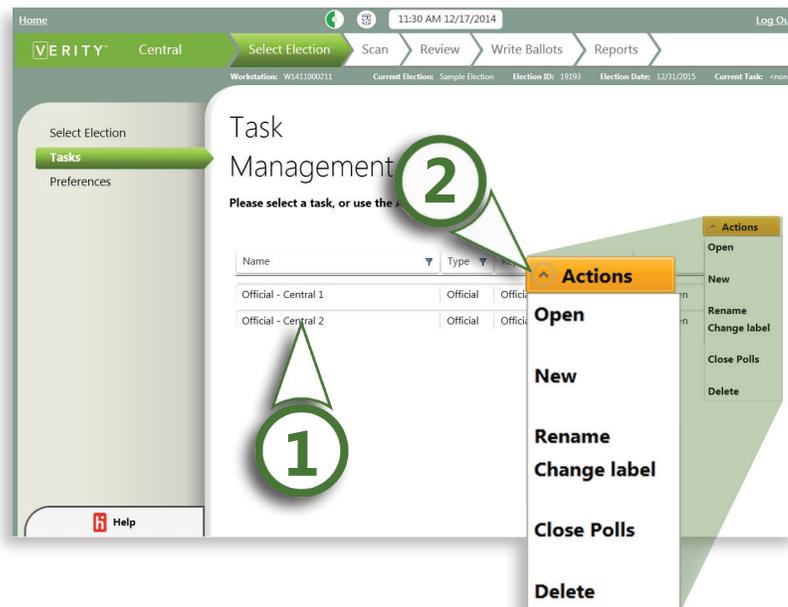
A) Select the task to open from the list.

B) Under the Actions drop-down menu, select **Open**.



creating and managing tasks, *continued***additional task management options**

- 1 Select a task to manage that task.
- 2 From the **Actions** drop-down menu, you can also:
 - ▶ Select **Rename** to rename a task
 - ▶ Select **Change label** to change a task's report label
 - ▶ Select **Delete** to delete a task



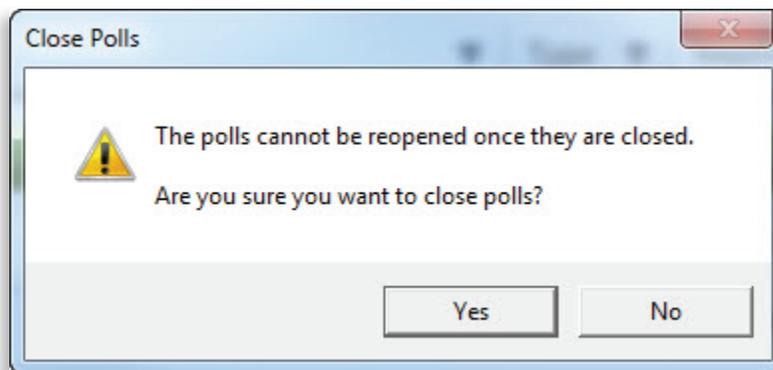
! IMPORTANT: If you delete a task, it cannot be retrieved.

creating and managing tasks, *continued*

closing polls

- 1 Select a task to manage.
- 2 From the **Actions** drop-down menu, select **Close Polls**.

! IMPORTANT: Once polls are closed, they cannot be reopened for that task. Once polls are closed for a task, you may no longer scan ballots in that task. Polls cannot be closed for a task if there are batches remaining that have not yet been written to vDrives.



- 3 If you are certain that you wish to close polls for that task, select **Yes**.

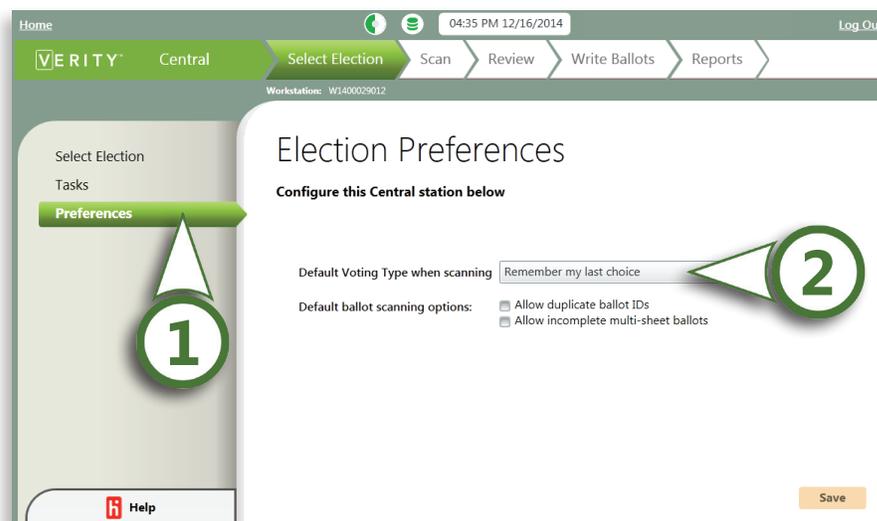
setting preferences

The **Preferences** menu allows you to set default preferences for Verity Central. Preferences set here will apply to all elections, including the current one.

1 Select the **Preferences** menu.

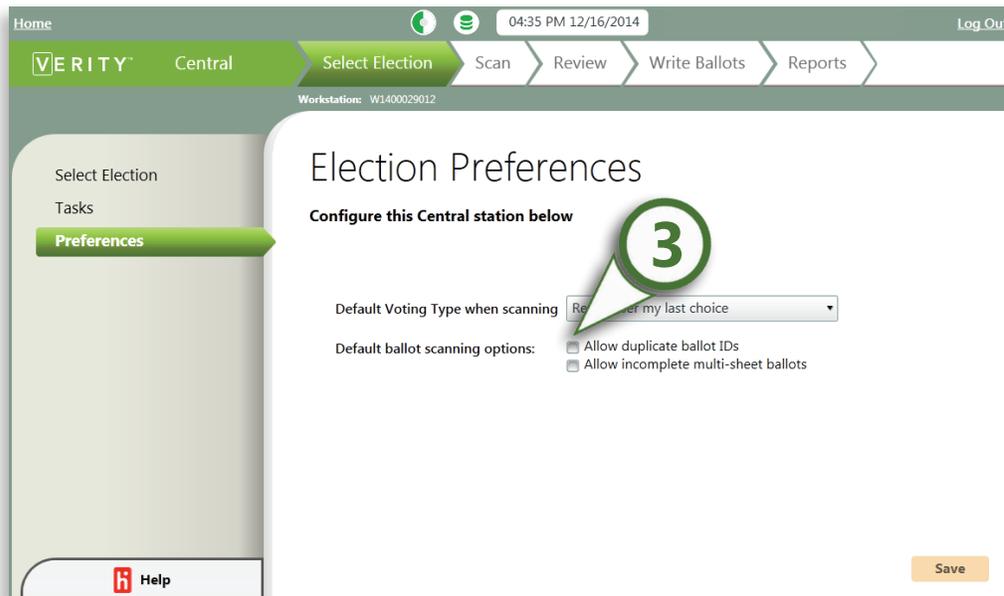
2 Choose the default voting type behavior.

- **Make me choose each batch** (*default*): This will force the Central operator to choose what Voting type they are scanning (i.e., Absentee, Election Day, Early Voting) each time they begin a batch.
- **Remember my last choice**: this option will automatically assign each batch to the same voting type that was used in the previous batch.



setting preferences, *continued*

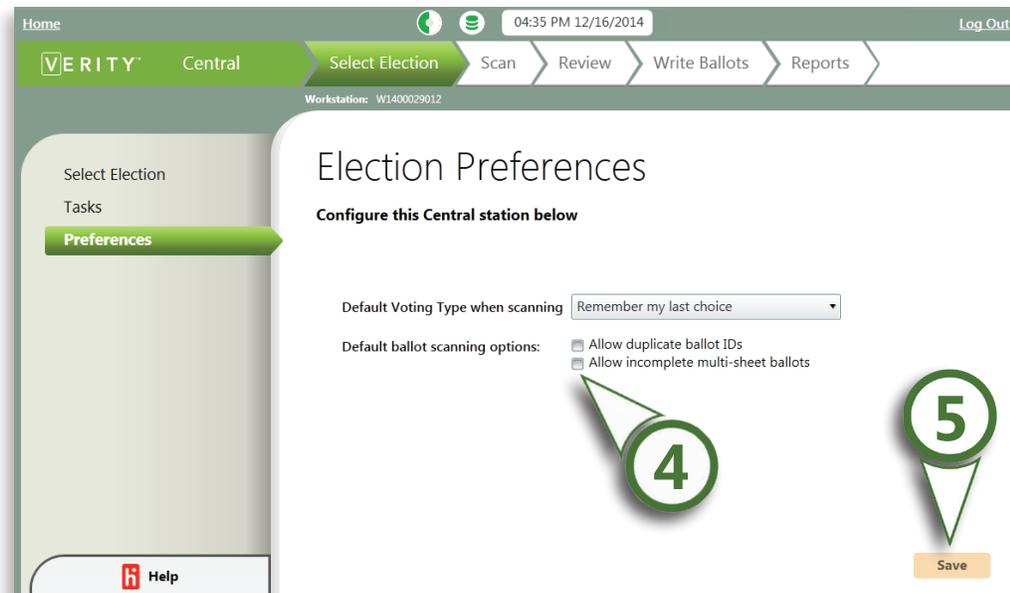
3 Click the box next to **Allow duplicate ballot IDs** only if you assigned unique identifiers to your ballots, but you have duplicate ballots (if, for instance, there was a printing mistake, or duplicate unique identifiers were intentionally used). If you check this box, Central will not reject ballots with duplicate unique identifiers.



4 If desired, check the box next to **Allow incomplete multi-sheet ballots**; if checked, Central will not reject multi-sheet ballots that are missing one or more sheets. You might want to check this box if you have ballot pages that may be spread across multiple batches (e.g. the second page of the ballot is separated from the first).

setting preferences, *continued*

5 If you have made changes, click **Save** to save your preferences.



multi-select functionality in Verity

Where multi-select functionality is allowed, the multi-select behavior follows standard Windows conventions:

- To select a range of items, select the first item, then hold down SHIFT while clicking the last item
- To select multiple individual items, hold down CTRL while clicking on each item
- To mark the check boxes on all selected items, press the space bar

Central checklist: the select election tab

- 1** Log in to Verity on the Central workstation.
- 2** Open the Central application and click the Select Election tab.
- 3** Under the Preferences menu, you can choose your preferences for the Central application. Changes made here will affect the current election.
- 4** Under the Select Election menu, select the election you need to work with from the list, and click Open.
- 5** Under the Tasks menu, create and manage election tasks. Be sure to choose the proper task type (Official or Test) for each task you create.
- 6** Under the Tasks menu, select the first task you need to work on. Under Actions, choose Open to open the task.

3

scan

the scan tab



Under the **Scan** tab, you will scan ballots, manage batches of ballots, search and view scanned ballot images, and set up scanners. The following menus are available in the Scan tab:

- **Scan:** scan batches of ballots.
- **Manage Batches:** manage scanned batches of ballots.
- **Search Ballots:** search for and view individual scanned ballots.
- **Settings:** Setup scanners, test scanners, and choose scanning settings.

scanning a batch

The **Scan** menu is where you will begin scanning ballots. If this is the first time you are using Central, you will want to set up the ballot scanner first *before* you begin scanning ballots. See page 99 for information on scanner settings.

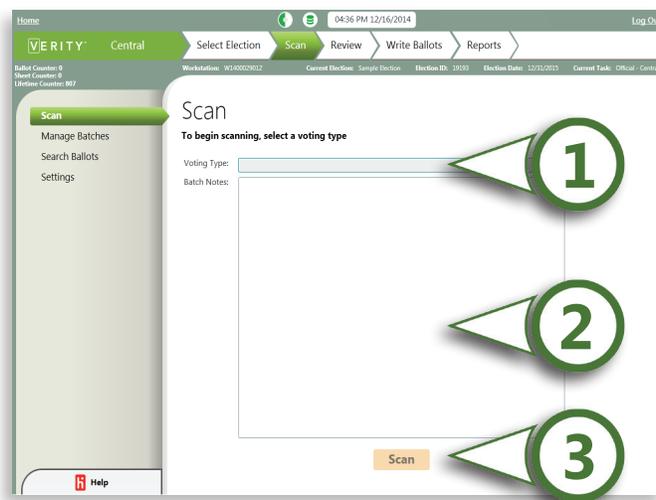
NOTE: *Your jurisdiction may require that a Zero report (or equivalent) be created prior to scanning. For information on available reports in Central, see page 149.*

1 Choose the voting type for the batch (e.g. Absentee, Election Day, or Early Voting).

NOTE: *If you selected Remember my last choice when setting Preferences (page 84), this choice will default to the voting type of the last batch that was scanned.*

2 Type a description or notes for the batch, if desired (*optional*).

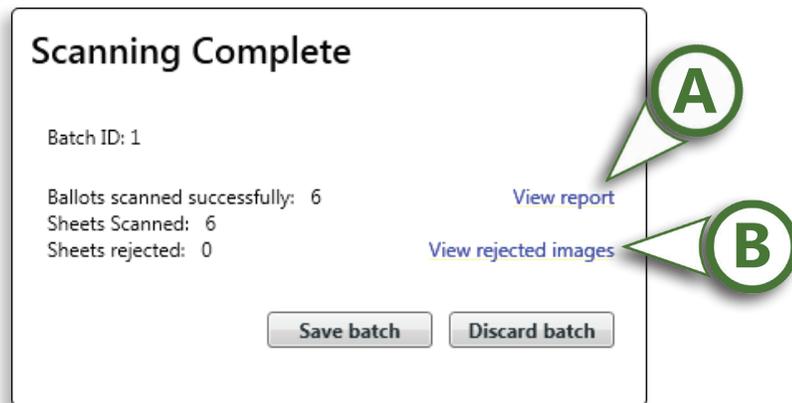
3 Click **Scan** to start scanning. A preview of each scanned ballot will appear on the right-hand side of the screen as it is scanned.



TIP:
You'll be reminded to print the Zero report before scanning the first batch.

scanning a batch, *continued*

4 When scanning is complete, the **Scanning Complete** window will appear. Check the batch report and view any rejected images.



A) Click **View report** to see the batch report. Check to make sure the numbers of ballots and pages scanned equals the numbers expected. The report will also tell you which ballots or sheets were rejected, if any.

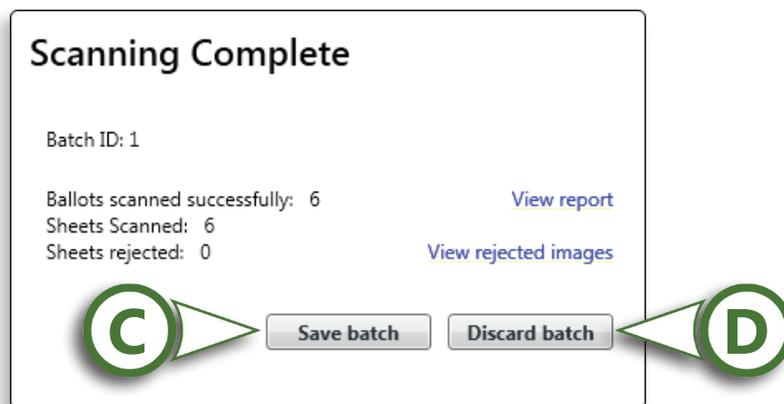
B) Click **View rejected images** (if any). Rejected images are ballots that cannot be read. Reasons could include:

- The ballot is damaged or torn, or the ballot barcodes are obscured or misprinted.
- The ballot was mis-fed in the scanner.
- A multi-sheet ballot is incomplete/missing sheets (Central can be set to accept or reject ballots with missing sheets; see setting preferences, page 86).
- The ballot has already been scanned (depending on how you set up your ballots, Central can be set to accept or reject ballots with duplicate ballot IDs; see page 85).

scanning a batch, *continued*

C) If there are rejected images, you can choose **Discard batch** to rescan the entire batch. Choose **Save Batch** if you prefer to remove only the rejected ballots and correct/rescan them in a later batch.

D) If the number of ballots and pages scanned equals the number expected and there are no rejected images: Print the batch report and clip it to the ballots scanned in that batch. Click **Save Batch**. The Scanning Complete window will close.



5 To scan additional batches, repeat steps 1-4 after you have saved the first batch.

managing batches

The **Manage Batches** menu displays a list of all batches scanned, and includes the following information:

- ▶ Batch ID
- ▶ Status
 - **OK as scanned** = batch is ready to write to vDrive.
 - **Deleted** = batch was deleted.
 - **Written** = cast vote records written to a vDrive.
 - **Resolved** = no ballots in the batch require resolution.
 - **Unresolved** = the batch contains at least one ballot requiring resolution.
- ▶ Voting Type (i.e. Absentee, Election Day, etc.)
- ▶ Time Scanned (when the ballots were scanned)
- ▶ Workstation ID (where the ballots were scanned)

The screenshot shows the 'Manage Batches' interface in the VERITY Central application. The interface includes a navigation menu on the left with options like 'Scan', 'Manage Batches', 'Search Ballots', and 'Settings'. The main content area displays a table of scanned batches. The table has the following columns: Batch ID, Status, Voting Type, Date/Time Scanned, and Workstation. There are three rows of data, all with a status of 'Unresolved'.

Batch ID	Status	Voting Type	Date/Time Scanned	Workstation
1	Unresolved	Election Day Voting	12/16/2014 4:39:33 PM	W1400029012
2	Unresolved	Election Day Voting	12/16/2014 4:41:11 PM	W1400029012
3	Unresolved	Election Day Voting	12/16/2014 4:41:49 PM	W1400029012

managing batches, *continued*

- 1 Select the Manage Batches menu.
- 2 Select the batch you would like to manage from the list. You can click the + next to the batch ID to view any batch notes.

Home 11:31 AM 12/17/2014 Log Out

VERITY Central Select Election Scan Review Write Ballots Reports

Ballot Counter: 0
Sheet Counter: 21
Lifetime Counter: 0

Workstation: W1411000211 Current Election: Sample Election Election ID: 19193 Election Date: 12/31/2015 Current Task: Official - Central 1

Scan
Manage Batches
Search Ballots
Settings

Manage Batches

Select a batch, or use the Actions button

Batch ID	Status	Voting Type	Date/Time Scanned	Workstation
1	Unresolved	Election Day Voting	12/16/2014 4:39:33 PM	W1400029012
2	Unresolved	Election Day Voting	12/16/2014 4:41:11 PM	W1400029012
3	Unresolved	Election Day Voting	12/16/2014 4:41:49 PM	W1400029012

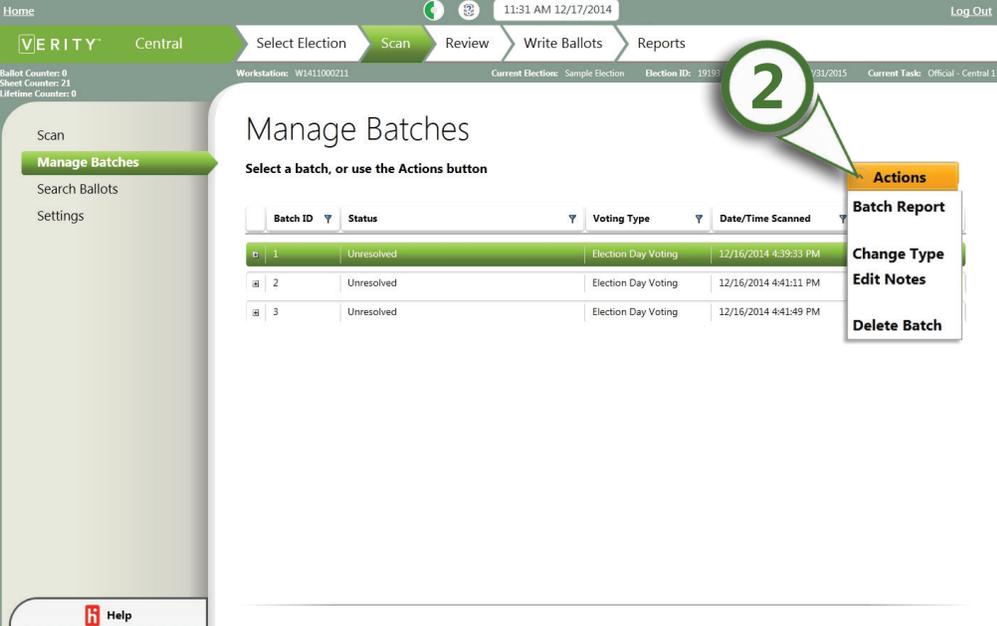
Actions

Help

managing batches, *continued*

3 Click **Actions**. Under the Actions drop-down menu, you have the following options:

- **Batch Report:** allows you to view and print a report showing the number of ballots, sheets, and status of the ballots in the selected batch.
- **Change type:** allows you to change the voting type for the selected batch (e.g. from absentee to early voting, etc.).
- **Edit notes:** allows you to change the batch notes.
- **Delete batch:** allows you to delete a scanned batch of ballots.



Home 11:31 AM 12/17/2014 Log Out

VERITY Central Select Election Scan Review Write Ballots Reports

Ballot Counter: 0
Sheet Counter: 21
Lifetime Counter: 0

Workstation: W1411000211 Current Election: Sample Election Election ID: 1919 12/16/2015 Current Task: Official - Central 1

Scan
Manage Batches
Search Ballots
Settings

Manage Batches

Select a batch, or use the Actions button

Batch ID	Status	Voting Type	Date/Time Scanned
1	Unresolved	Election Day Voting	12/16/2014 4:39:33 PM
2	Unresolved	Election Day Voting	12/16/2014 4:41:11 PM
3	Unresolved	Election Day Voting	12/16/2014 4:41:49 PM

Actions

- Batch Report
- Change Type
- Edit Notes
- Delete Batch

Help

! IMPORTANT: If you delete a batch, it cannot be retrieved; the ballots will need to be re-scanned.

best practices for processing paper ballots

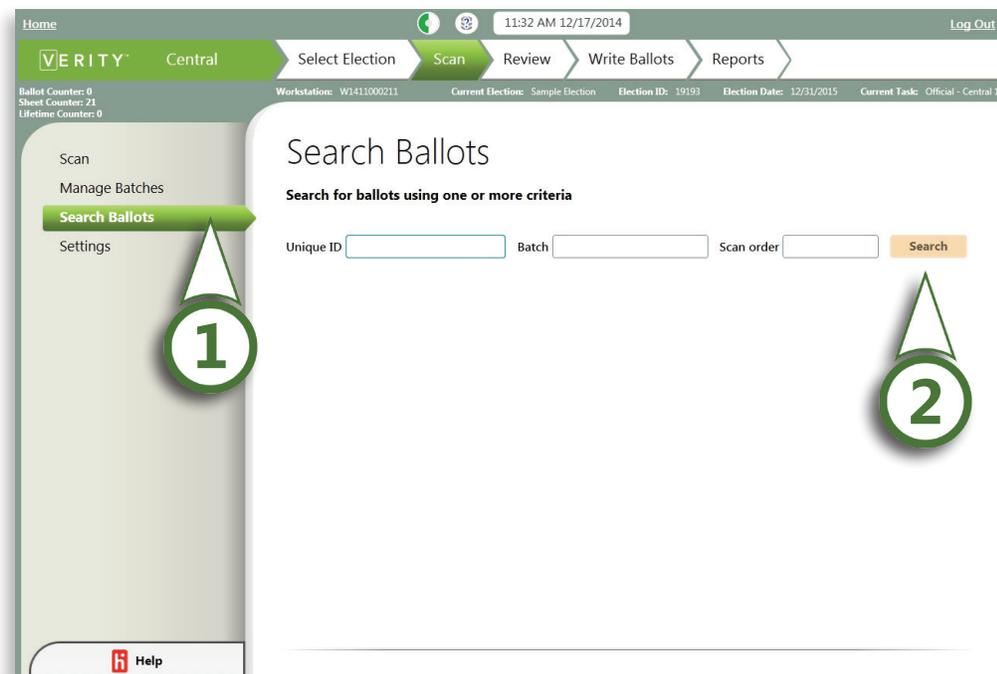
- ▶ Best practices for scanning paper ballots starts with proper management of print files from Build (observing proper naming conventions for ballot files and proper print settings, whether delivering to a ballot printer or printing directly to an in-house printer).
- ▶ For mailing ballots, proper folding techniques are also critical: Don't fold through option boxes or barcodes, and avoid folding against the grain of the paper.
- ▶ Be sure to properly unfold and flatten ballots prior to scanning.
- ▶ Assess and plan the workspace to efficiently and securely deliver voted ballots to and from the scanning station.
- ▶ Properly fan ballots prior to scanning to eliminate excess paper dust feeding into the scanner.
- ▶ Properly maintain your ballot scanner. Clean the scanner using a PC vacuum regularly and cover scanner when not in use to limit dust and debris.

searching ballots

The **Search Ballots** menu allows you to search for individual scanned ballots within a batch by one or more criteria, so that you can view page images of the ballots.

1 Select the **Search Ballots** menu.

2 Type the desired search criteria, and then click **Search**. You can search by unique identifier, batch, or by scanning order; search results will display below the search fields.



searching ballots, *continued*

3 Click a ballot on the list to select it.

4 Under the **Actions** drop-down menu, choose **View Ballot**. You can also choose **Delete Ballot** to permanently delete a ballot from the batch.

The screenshot shows the VERITY Central web application interface. The top navigation bar includes 'Home', 'Log Out', and a breadcrumb trail: 'Select Election > Scan > Review > Write Ballots > Reports'. The current page is 'Search Ballots'. The search criteria are: Unique ID (empty), Batch 3, and Scan order (empty). The search results table is as follows:

Unique ID	Ballot	Status	Batch	Voting Type	Party	Workstation	Actions
3	6	Resolved	3	Election Day Voting		W1400029012	View Ballot Delete Ballot
	7	Resolved	3	Election Day Voting		W1400029012	
	2	Resolved	3	Election Day Voting		W1400029012	
	3	Ok As Scanned	3	Election Day Voting		W1400029012	
35	1	Resolved	3	Election			
47	4	Resolved	3	Election			
49	5	Resolved	3	Election			

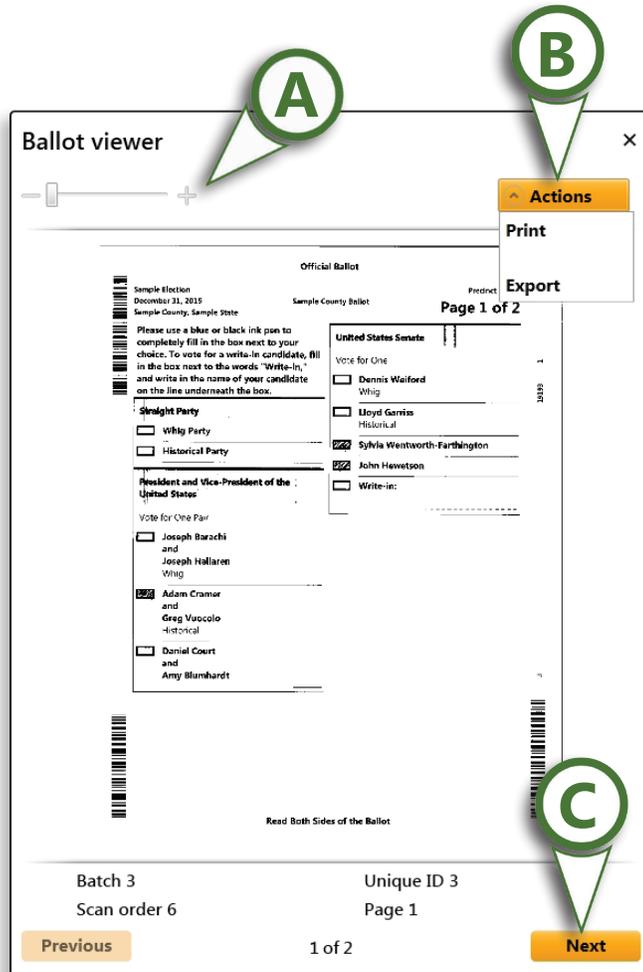
The 'Actions' dropdown menu for the first row is open, showing the following options:

- View Ballot
- Delete Ballot

searching ballots, *continued*

5 View the ballot.

A) Use the zoom slider to magnify the ballot image.



B) Click **Actions**, and you can **Print** the ballot image or **Export** the ballot image to PDF.

C) Click **Next** or **Previous** to navigate to other pages in the batch.

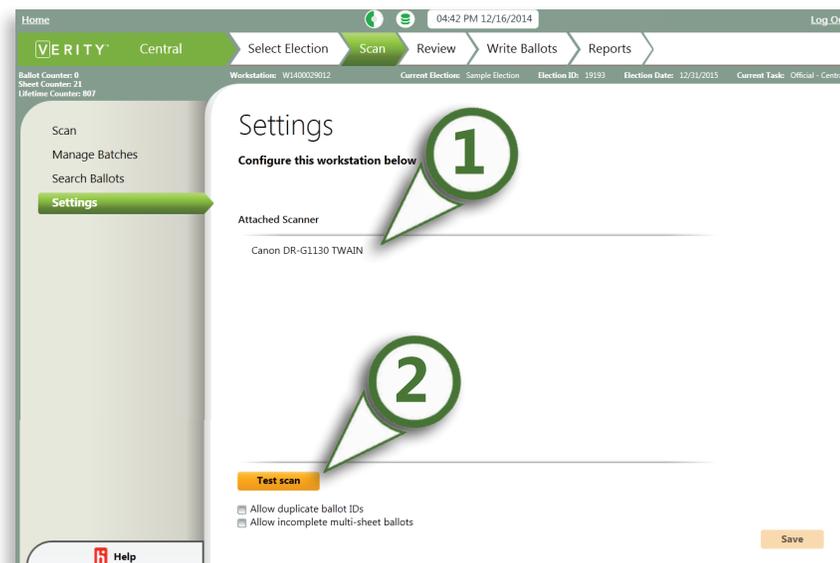
scanner settings

The **Settings** menu allows you to perform a test scan, as well as set scanning preferences.

1 The top portion of the screen displays the scanner currently attached to the workstation or network.

2 Click **Test scan** to perform a test scan. Ensure the test scan sheet is loaded in the scanner and the scanner is turned on. Any sheet (including a ballot) may be used to test the scanner.

NOTE: *the test scan feature only tests whether the workstation recognizes the scanner, and that the scanner is able to scan. It is not intended to test the scanning of actual ballots.*



scanner settings, *continued*

3 Check the box next to **Allow duplicate ballot IDs** only if you assigned unique identifiers to your ballots, but you have duplicate ballots (if, for instance, there was a printing mistake, or duplicate unique identifiers were intentionally used). If you check this box, Central will not reject ballots with duplicate unique identifiers.

The screenshot shows the VERITY Central web interface. The top navigation bar includes 'Home', 'Central', and a breadcrumb trail: 'Select Election' > 'Scan' > 'Review' > 'Write Ballots' > 'Reports'. The 'Scan' step is currently active. The main content area is titled 'Settings' and contains the following elements:

- Left sidebar menu: Scan, Manage Batches, Search Ballots, **Settings** (highlighted).
- Header information: Workstation: W140029012, Current Election: Sample Election, Election ID: 19193, Election Date: 12/31/2015, Current Task: Official - Central 1.
- Section: **Settings**
Configure this workstation below
- Attached Scanner: Canon DR-G1130 TWAIN
- Buttons: **Test scan** (highlighted with callout '3'), **Save**
- Checkboxes:
 - Allow duplicate ballot IDs
 - Allow incomplete multi-sheet ballots
- Footer: **Help**

scanner settings, *continued*

4 If desired, check the box next to **Allow incomplete multi-sheet ballots**; if checked, Central will not reject multi-sheet ballots that are missing one or more sheets. You might want to check this box if you have ballot pages that may be spread across multiple batches (e.g. the second page of the ballot is separated from the first).

5 Click **Save** to save any changes.

The screenshot displays the VERITY Central interface. The top navigation bar includes 'Home', 'Log Out', and a breadcrumb trail: 'Select Election' > 'Scan' > 'Review' > 'Write Ballots' > 'Reports'. The 'Scan' step is currently active. Below the navigation, the workstation details are shown: 'Workstation: W140029012', 'Current Election: Sample Election', 'Election ID: 19193', 'Election Date: 12/31/2015', and 'Current Task: Official - Central 1'. On the left sidebar, the 'Settings' menu item is highlighted. The main content area is titled 'Settings' and contains the heading 'Configure this workstation below'. Under 'Attached Scanner', the device 'Canon DR-G1130 TWAIN' is listed. At the bottom of the settings area, there is a 'Test scan' button and two checkboxes: 'Allow duplicate ballot IDs' and 'Allow incomplete multi-sheet ballots'. A green callout bubble with the number '4' points to the 'Allow incomplete multi-sheet ballots' checkbox. To the right, another green callout bubble with the number '5' points to the 'Save' button.

Central checklist: the scan tab

- 1** When you select and open a task, the Scan tab will open.
- 2** Under the Scan menu, choose a voting type and scan a batch of ballots under the current task.
- 3** Continue scanning additional batches of ballots as needed.
- 4** Under the Manage Batches menu, you can edit batch notes, delete batches, view batch status, edit the voting type for each batch, and print batch reports.
- 5** Under the Search Ballots menu, you can search for individual ballots within scanned batches by entering search criteria.
- 6** Under the Settings menu, you can choose basic scanner settings and perform a test scan.



4

review

the review tab



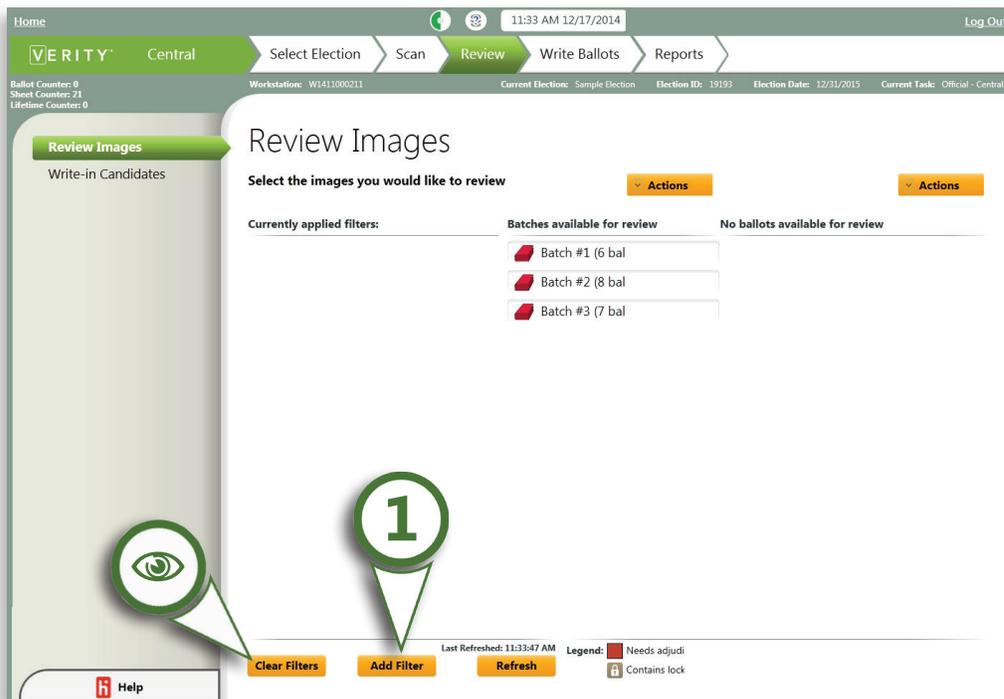
Under the **Review** tab, you will review ballot images, manage ballot filters, resolve ballots and contests, and review and manage write-in choices. You can also export ballot images singly or in bulk. The following menus are available in the Review tab:

- **Review Images:** filter scanned ballots by criteria, view ballots, and resolve ballots.
- **Write-in Candidates:** define certified write-in candidates for the election.

reviewing images

The **Review Images** menu allows you to filter ballots by criteria, view ballot pages and contests, and resolve contests for voter intent issues and write-ins.

- 1 Click **Add Filter** to open the Add Filter menu begin the ballot review process.



Note: You can click **Clear Filters** to remove all previously applied filters.

reviewing images, *continued*

2 Use the **Add Filters** menu to create and apply filters.

- A)** Select the Filter Type to be added.
- B)** Select the Filter Contents.
- C)** Click **Add filter**.
- D)** Currently applied filters appear on the right.

Add Filters

Select a filter type:

- ▼ **Adjudication Criteria**
 - Ballot Status
 - Voter Intent Issues
 - User Action**
- ▼ **Ballot Criteria**
 - Precinct
 - Unique ID Range
 - Contest(s) Included
- ▼ **Batch Criteria**
 - Scanning Workstation
 - Voting Type
 - Batch ID
 - Batch Status

Select filter contents:

- Accepted By User
- Resolved By User
- Not Modified

Currently applied filters:

4 User Action (1 item)
Resolved By User

Cancel **Add Filter** **Save & Exit**

Filter Types in Verity Central, showing the Filter Contents for the Filter Type User Action.

reviewing images, *continued*

E) To view Filter Contents: under Currently applied filters, click the filter category to expand.

F) To remove an applied filter: under Currently applied filters, click the **X** next to the filter you want to remove.

G) When you have added all desired filters, click **Save & Exit**. You will return to the Review Images menu.

The screenshot shows the 'Add Filters' dialog box. It is divided into three main sections: 'Select a filter type:', 'Select filter criteria:', and 'Currently applied filters:'.
1. 'Select a filter type:' contains three expandable sections: 'Adjudication Criteria' (with sub-items: Ballot Status, Voter Intent Issues, and 'User Action' which is highlighted with a green arrow), 'Ballot Criteria' (with sub-items: Precinct, Unique ID Range, Contest(s) Included), and 'Batch Criteria' (with sub-items: Scanning Workstation, Voting Type, Batch ID, Batch Status).
2. 'Select filter criteria:' has three checkboxes: 'Accepted By' (unchecked), 'Resolved By User' (checked), and 'Not Modified' (unchecked). A green callout 'E' points to this section.
3. 'Currently applied filters:' shows a list with one item: 'User Action (1 item) Resolved By User'. A green callout 'F' points to an 'X' icon next to this item.
At the bottom, there are three buttons: 'Cancel', 'Add Filter', and 'Save & Exit'. A green callout 'G' points to the 'Save & Exit' button.

how filters work

Filters in Verity Central work using **Filter Types** and **Filter Contents**. It is important to note that all filtering applies at the **BALLOT** level, not the page or contest level.

filter types

Filter Types use an “AND” logic; this means that choosing two different Filter Types will retrieve ballots that meet the first Filter Type criteria **AND** the second Filter Type criteria.

For example: If you add a Voter Intent Issues filter for Over Votes, and a User Action filter of Resolved by User, you will retrieve all ballots that contain at least one over-voted contest **AND** at least one contest that was resolved by a user.

NOTE: *The ballots retrieved will not necessarily contain exclusively over-voted contests that are also resolved by a user. Filtering applies at the ballot level.*

filter contents

Filter Contents use an “OR” logic; this means that choosing two different Filter Contents will retrieve ballots that meet the first Filter Content criteria **OR** the second Filter Content criteria.

For example: If you add a Voter Intent Issues filter type,

how filters work, *continued*

and select Filter Contents of both Over Votes and Voted Write Ins, you will retrieve all ballots that contain at least one over-voted contest OR at least one voted write-in contest.

NOTE: *The ballots retrieved will not necessarily contain exclusively over-voted contests that also contain a voted write-in. Filtering applies at the ballot level.*

Ex. 1: two filter types

Filters added:

- Adjudication Criteria>Voter Intent Issues>Over Votes
- Adjudication Criteria>User Action>Resolved By User

Retrieves all ballots in the selected batch(es) that contain:

- At least one over-voted contest AND
- At least one contest that was resolved by user

Ex. 2: one filter type with two filter contents

Filters added:

- Adjudication Criteria>Voter Intent Issues>Over Votes
- Adjudication Criteria>Voter Intent Issues>Voted WriteIns

Retrieves all ballots in the selected batch(es) that contain:

- At least one over-voted contest OR
- At least one contest with a voted write-in

available filters

The tables below list the **Filter Types** and **Filter Contents** available in Verity Central, along with a description of which ballots each Filter Content will retrieve.

adjudication criteria

Filter Type	Filter Contents	Filter Content Description
Ballot Status	Has Unresolved Voter Intent Issues	retrieves all ballots that contain unresolved voter intent issues
	No Unresolved Voter Intent Issues	retrieves all ballots that do not contain unresolved voter intent issues
Voter Intent Issues	Blank Ballots	retrieves all blank ballots
	Over Votes	retrieves all ballots containing overvoted contest(s)
	Under Votes	retrieves all ballots containing undervoted contest(s)
	Voted WriteIns	retrieves all ballots containing voted write-in contest(s)
	Invalid Votes	retrieves all ballots contain invalid voted contest(s)
User Action	Accepted By User	retrieves all ballots containing contest(s) that have been accepted ("as-is") by a user
	Resolved By User	retrieves all ballots containing contest(s) that have been resolved/edited by a user
	Not Modified	retrieves all ballots that have not been modified by a user

available filters, *continued*

ballot criteria

Filter Type	Filter Contents	Filter Content Description
Precinct	(list of all precincts in the election)	retrieves all ballots for the selected precinct(s)
Party	(list of all parties in the election)	retrieves all ballots for the selected party/parties (closed primary elections only)
Unique ID Range	(enter range from low to high)	retrieves all ballots with a Unique ID within the entered range (only applicable if you are using Unique Identifiers on your ballots)
Contest(s)	(list of all contests in the election)	retrieves all ballots that contain the selected contest(s)

batch criteria

Filter Type	Filter Contents	Filter Content Description
Scanning Workstation	(list of all scanning workstations by ID)	retrieves all ballots scanned on the selected workstation(s)
Voting Type	(list of all voting types defined)	retrieves all ballots cast during the selected voting type(s)
Batch ID	(list of all batches by batch ID)	retrieves all ballots within the selected batch(es)
Batch Status	OK As Scanned	retrieves all ballots in batches that, as scanned, did not require any resolution of issues
Batch Status	Resolved	retrieves all ballots in batches that no longer contain any ballots requiring resolution
Batch Status	Unresolved	retrieves all ballots in batches that contain at least one unresolved ballot
Batch Status	Written	retrieves all ballots in batches that have been written to vDrive

reviewing images, *continued*

3 Once you have applied your filter, click a batch to view the ballots contained within that batch (A). The batches will be filtered to show only those that contain ballots meeting the filter criteria. The far right column (B) will show the specific *ballots* that meet the filter criteria.

Home 11:34 AM 12/17/2014 Log Out

VERITY Central Select Election Scan Review Write Ballots Reports

Ballot Counters: 0
Sheet Counters: 21
Lifetime Counters: 0

Workstation: W1411000211 Current Election: Sample Election Election ID: 19193 Election Date: 12/31/2015 Current Task: Official - Central 1

Review Images
Write-in Candidates

Review Images

Select the images you would like to review

Currently applied filters: Voter Intent Issues (1 item)

Batches available for review

- Batch #1 (1 ballots)
- Batch #2 (2 ballots)
- Batch #3 (1 ballots)

Batch #1 ballots available for review

- Unique ID7 Ballot 2

Clear Filters Add Filter Refresh

Last Refreshed: 11:34:34 AM

Legend: Needs adjudication Checked out
Contains locked contests Written to vDrive

reviewing images, *continued*

4 Select a ballot to review.

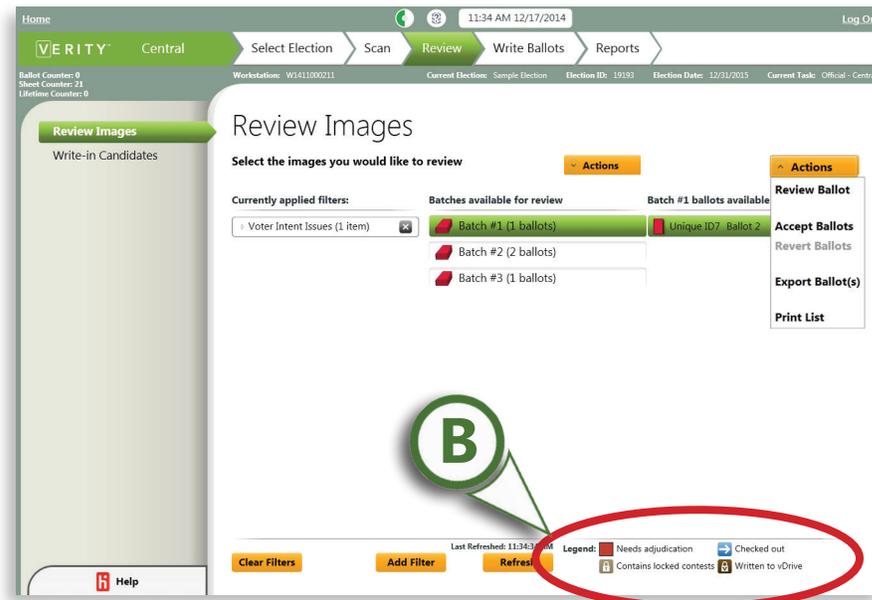
The screenshot shows the VERITY Central application interface. The top navigation bar includes 'Home', 'Log Out', and a breadcrumb trail: 'Select Election' > 'Scan' > 'Review' > 'Write Ballots' > 'Reports'. The 'Review' step is currently active. Below the navigation, the page title is 'Review Images'. A sidebar on the left contains 'Review Images' and 'Write-in Candidates'. The main content area is titled 'Select the images you would like to review' and features two 'Actions' buttons. Under 'Currently applied filters', there is a filter for 'Voter Intent Issues (1 item)'. The 'Batches available for review' section lists three batches: 'Batch #1 (1 ballots)', 'Batch #2 (2 ballots)', and 'Batch #3 (1 ballots)'. A callout 'A' points to a red icon next to 'Batch #1'. The 'Batch #1 ballots available for review' section shows 'Unique ID7 Ballot 2'. At the bottom, there are buttons for 'Clear Filters', 'Add Filter', and 'Refresh', along with a legend for 'Needs adjudication', 'Checked out', 'Contains locked contests', and 'Written to vDrive'.

A) The symbol next to a ballot indicates the ballot status. Click a ballot to select it for review.

reviewing images, *continued*

► selecting a ballot for review, *continued*

B) The different ballot status indicators are described in the legend on the bottom right.



-  **Needs adjudication:** This ballot contains a contest that requires adjudication to determine voter intent.
-  **Checked out:** a user has begun the review process for this ballot. A ballot is checked back in when it is either resolved, or the user leaves the Ballot Review window. The ballot cannot be accessed by other users or written to a vDrive while it is checked out.
-  **Contains locked contests:** A user has manually locked one or more contests on this ballot.
-  **Written to vDrive:** this ballot has been resolved and written to a vDrive for tabulation.

reviewing images, *continued*

► selecting a ballot for review, *continued*

C) Click the **Actions** menu.

D) Select **Review Ballot**; the Ballot Review window will open.

E) If using a configuration with multiple networked Central workstations: select refresh to update status of ballots and batches resolved on other workstations.

The screenshot shows the VERITY Central software interface in the 'Review Images' section. The top navigation bar includes 'Home', 'VERITY Central', and a breadcrumb trail: 'Select Election > Scan > Review > Write Ballots > Reports'. The current page title is 'Review Images' with the subtitle 'Select the images you would like to review'. On the left sidebar, 'Review Images' is selected, and 'Write-in Candidates' is listed below. The main content area shows 'Currently applied filters' with 'Voter Intent Issues (1 item)'. Under 'Batches available for review', there are three entries: 'Batch #1 (1 ballots)', 'Batch #2 (2 ballots)', and 'Batch #3 (1 ballots)'. An 'Actions' dropdown menu is open, displaying options: 'Review Ballot', 'Accept Ballots', 'Revert Ballots', 'Export Ballot(s)', and 'Print List'. At the bottom, there are buttons for 'Clear Filters', 'Add Filter', and 'Refresh'. A legend at the bottom right explains symbols: a red square for 'Needs adjudication', a blue square for 'Checked out', a padlock for 'Contains locked contests', and a document icon for 'Written to vDrive'. Callout boxes labeled C, D, and E are overlaid on the interface. Callout C points to the 'Actions' dropdown, callout D points to the 'Review Ballot' option, and callout E points to the 'Refresh' button.

resolving pages and contests

In the Ballot Review window, you can manually resolve entire ballot pages or individual contests.

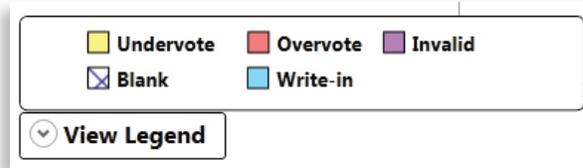
1 Review ballot pages in the page-level view.

A) Contests requiring adjudication are color-coded by the type of issue.

B) Click **View Legend** to see the meaning of each color code.

The screenshot displays the 'Ballot Review' application window. On the left, there is a sidebar with the following information: 'Batch 1', 'Scan order 2', 'Page 1', and 'Unique ID 7'. Below this is a text input field with a note icon and the text 'type here to add notes...'. There are also two small icons representing different ballot types. At the bottom of the sidebar is a 'View Legend' button. The main area of the window is titled 'Select a contest' and shows a preview of an 'Official Ballot' for 'Sample County, Sample State'. The ballot is labeled 'Page 1 of 2'. It contains instructions for voters and lists several contests. One contest, 'United States Senate', is highlighted in red. Another contest, 'President and Vice-President of the United States', is also visible. A green callout bubble with the letter 'A' points to the red highlight. At the bottom of the window, there are 'Previous' and 'Next' buttons. A green callout bubble with the letter 'B' points to the 'View Legend' button.

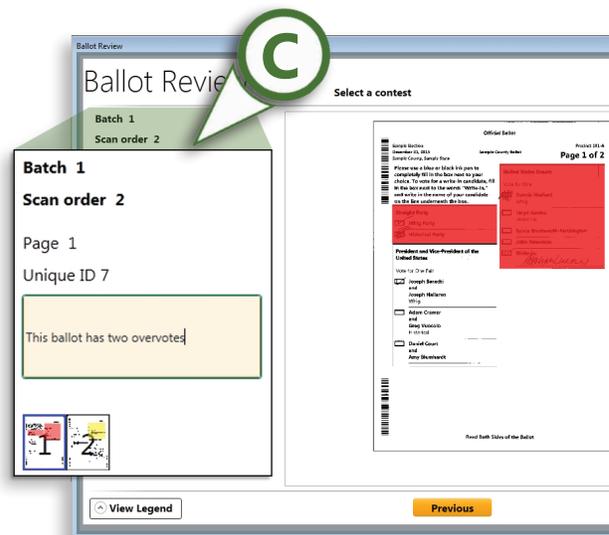
resolving pages and contests, *continued*



- **Undervote:** The voter has chosen fewer than the allowed number of choices.
- **Overvote:** The voter has chosen more than the allowed number of choices.
- **Invalid:** (Open Primary Elections only) The voter has voted in multiple partisan primaries.
- ☒ **Blank:** The voter has made no choices for the entire ballot page.
- **Write-in:** The voter has entered a write-in candidate for the contest.

C) The upper left side of the Ballot Review window displays:

- the batch and ballot information
- a field for entering notes
- thumbnails of the ballot pages



resolving pages and contests, *continued*

D) Click Actions. From the Actions menu, you can:

- **Print Page:** Prints the current ballot page image.
- **Export Page:** Exports the current ballot page image.
- **Hide Annotations/View Annotations:** toggles viewability of the color coding on the page image.
- **Lock Page:** Locks the page for review; useful if you are using multiple stations for ballot review. When a page is locked, it cannot be modified without first unlocking it (see page 129).
- **Accept Page:** Accepts all contests on the page in their current state.
- **Revert Page:** Returns the page to its original scanned state.

E) Use the zoom slider to magnify a page.

The screenshot shows the 'Ballot Review' application window. The main area displays a scanned ballot page titled 'Official Ballot' for 'Sample County Ballot' and 'Precinct 101 A', 'Page 1 of 2'. The ballot contains several contests, including 'United States Senate' with candidates Dennis Wolford and Ulysses S. Grant, and 'President and Vice-President of the United States' with candidates Joseph Berardi and Joseph Mallares, Adam Cramer and Greg Vucolo, and David Court and Amy Stumhardt. A green circle with the letter 'D' points to the 'Actions' menu on the right. Below the 'Actions' menu, a red circle highlights a zoom slider, with a green circle containing the letter 'E' pointing to it. The interface also shows a 'Batch 1' section with 'Scan order 2', 'Page 1', and 'Unique ID 7'. At the bottom, there are 'View Legend', 'Previous', and 'Next' buttons.

resolving pages and contests, *continued*

2 Click a contest to review and resolve it in contest-level view.

A) From the Ballot Review page, click an individual contest to enter the Contest View.

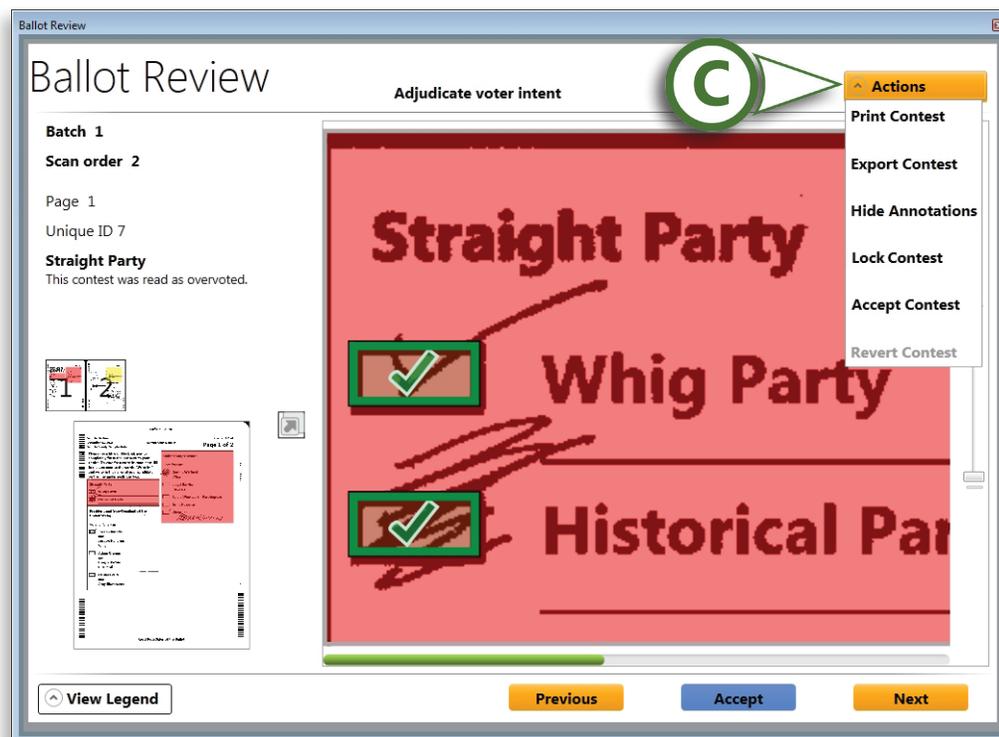
B) The current active page now appears as a thumbnail in the lower left corner. You can click the maximize button to return to the page view.

The screenshot displays the 'Ballot Review' application interface. On the left, a sidebar shows a list of contests, including 'Straight Party', 'Whig Party', and 'Historical Party'. A green callout 'A' points to the 'Straight Party' contest in this list. The main area shows the 'Ballot Review' window for 'Straight Party', with the text 'This contest was read as overvoted.' A large image of the ballot is shown, with a green callout 'B' pointing to the 'Straight Party' option, which has a checkmark. Below the ballot image are 'Previous', 'Accept', and 'Next' buttons. A 'View Legend' button is also visible at the bottom left. A green arrow points from the text 'Click a contest to enter the Contest View.' towards the 'Straight Party' contest in the sidebar.

resolving pages and contests, *continued*

C) Click **Actions**. From the Actions menu, you can:

- **Print Contest:** Prints the current contest image.
- **Export Contest:** Export the current contest image to PDF.
- **Hide Annotations/View Annotations:** toggles visibility of the color coding on the contest image.
- **Lock Contest:** Locks the contest for review; useful if you are using multiple stations for ballot review. When a contest is locked, it cannot be modified without first unlocking it (see page 129).
- **Accept Contest:** Accepts the contest in its current state.
- **Revert Contest:** Returns the contest to its original scanned state.



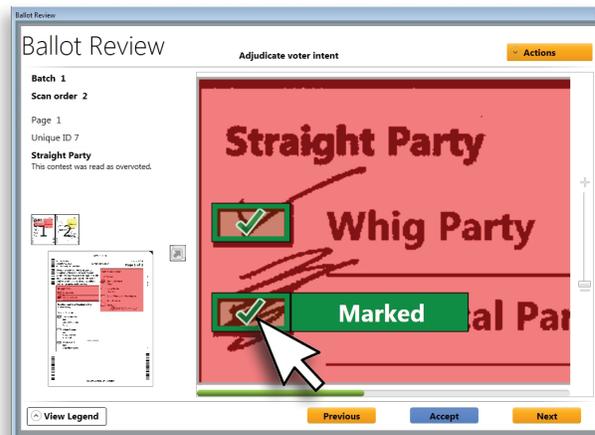
resolving pages and contests, *continued*

3 Resolve the contest for voter intent, if required.

A) Click a selection box to mark or unmark a selection.

- A marked box is green with a small check mark; An unmarked box is gray.
- Hovering over a selection box with the mouse reveals the current state of the selection (e.g. "Marked", "Not Marked").

Click a **Marked** selection box to change it to **Not Marked**. ►

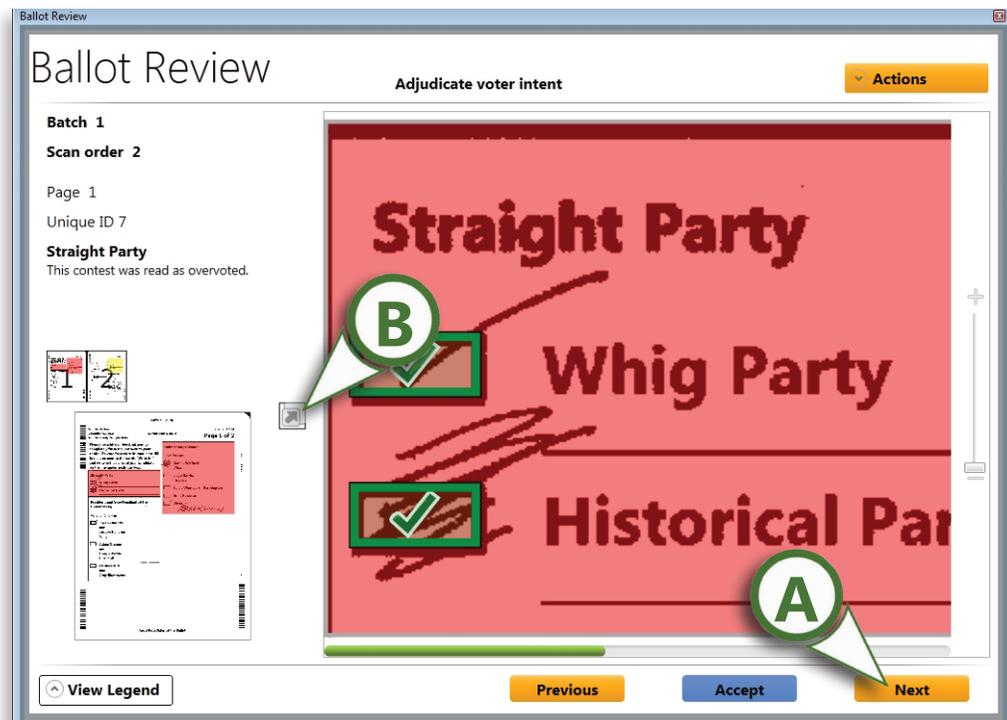


In the examples to the right, clicking the Historical Party selection box changes the selection to **Not Marked**; the vote will now be recorded for Whig Party. ►



resolving pages and contests, *continued*

4 Click **Next** to go to the next contest (**A**). You can also click the maximize button (**B**) to return to the page-level view and select a different contest.



resolving pages and contests, *continued*

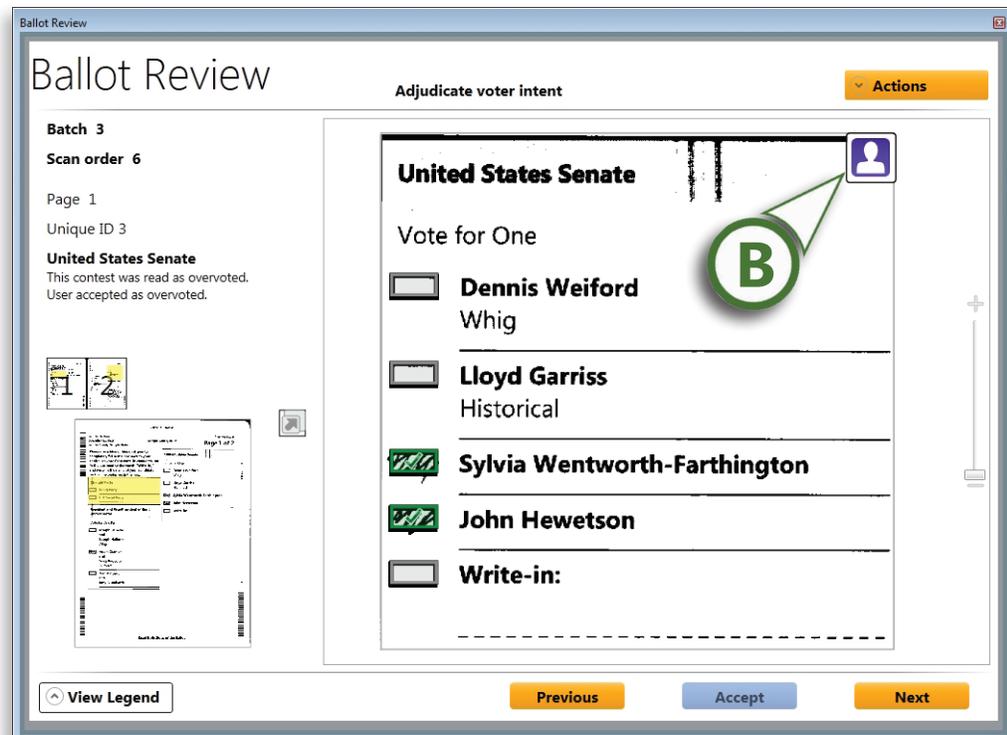
5 Click **Accept** to accept the existing state of the contest as-is.

A) In the example below, clicking **Accept** will record this contest as an overvote (no vote will be recorded for this contest).

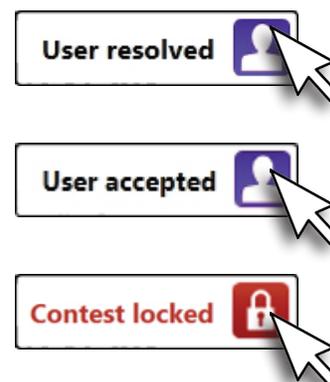
The screenshot displays the 'Ballot Review' software interface. The main window is titled 'Ballot Review' and contains a sidebar on the left with the following information: 'Batch 3', 'Scan order 6', 'Page 1', 'Unique ID 3', and 'United States Senate' with a note 'This contest was read as overvoted.' Below this is a thumbnail of the scanned ballot. The main area is titled 'Adjudicate voter intent' and shows a red-tinted image of a ballot for the 'United States Senate' with the instruction 'Vote for One'. The ballot lists five options: 'Dennis Weiford Whig', 'Lloyd Garriss Historical', 'Sylvia Wentworth-Farthington', 'John Hewetson', and 'Write-in:'. The 'Accept' button at the bottom is highlighted in blue and has a green callout bubble with the letter 'A' pointing to it. Other buttons include 'Previous', 'Next', and 'View Legend'.

resolving pages and contests, *continued*

B) The icon at the top right of the contest indicates the status of the contest.



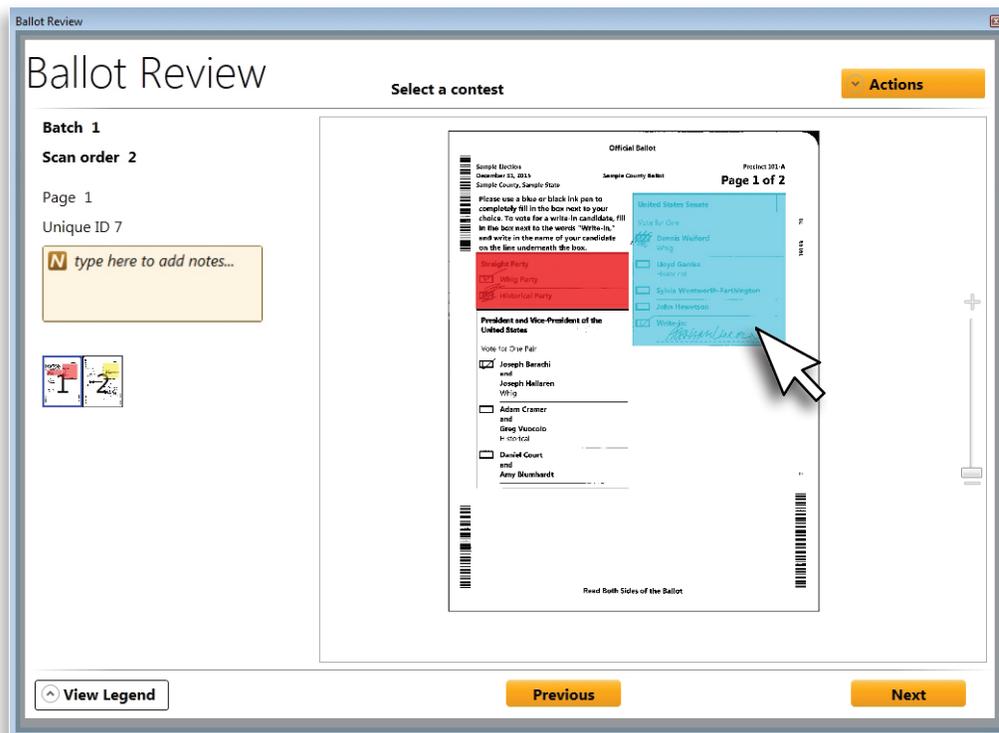
Hovering the mouse pointer over the icon reveals the state of the contest (e.g. "User resolved", "User accepted", "Contest locked"). ►



resolving write-ins

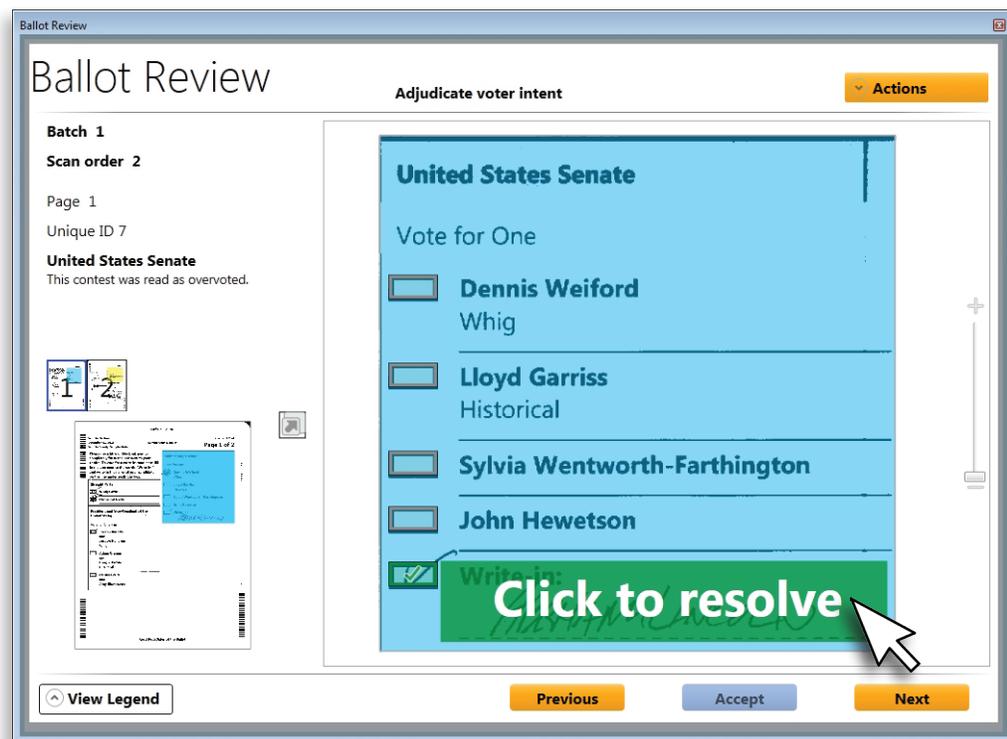
The process for resolving write-in votes is the same as the process for resolving other contests, with the additional step of assigning the vote to a write-in candidate. If you have certified write-in candidates, define those first (see page 131).

1 In the page level view of the Ballot Review window, click a contest with a write-in vote to open the contest in contest-level view.



resolving write-ins, *continued*

- 2** Click the write-in name to resolve it.



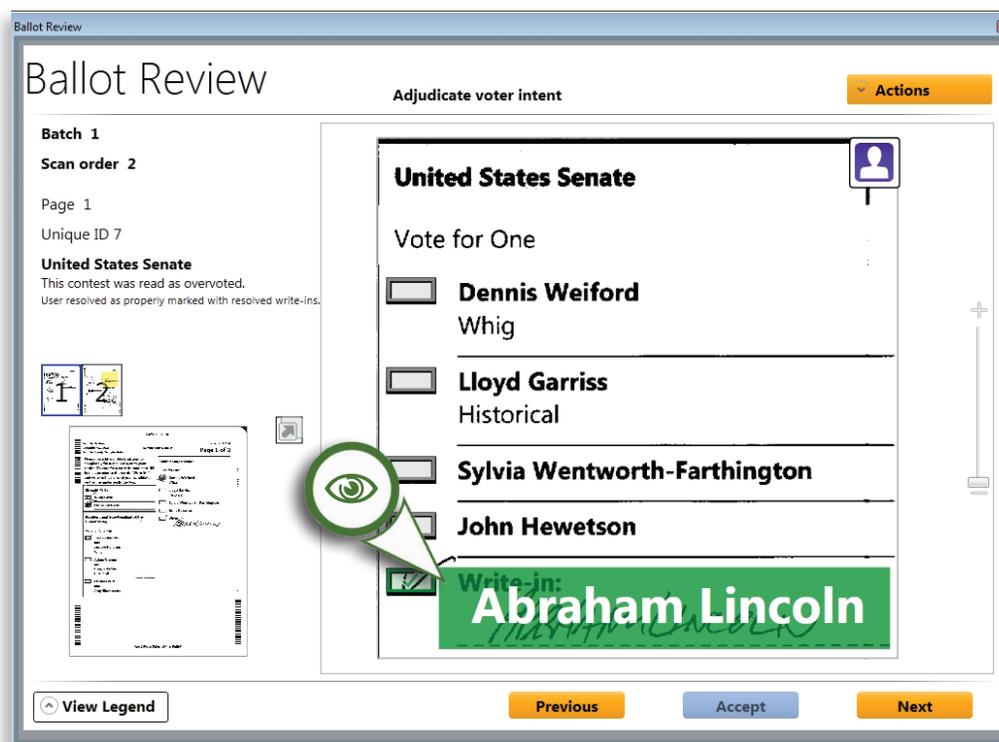
resolving write-ins, *continued*

3 Choose from the list of certified write-in choices (if applicable). You can also select **Enter a new candidate...** to enter a new write-in name.

The screenshot displays the 'Ballot Review' software interface. The main window is titled 'Ballot Review' and has a sub-header 'Adjudicate voter intent'. On the left side, there is a sidebar with the following information: 'Batch 1', 'Scan order 2', 'Page 1', 'Unique ID 7', and 'United States Senate' with a note 'This contest was read as overvoted.' Below this is a small thumbnail of the scanned ballot. The main area shows a 'Vote for One' section for the 'United States Senate'. A dropdown menu is open over the 'Write-in' field, listing options: 'Enter a new candidate...', 'Reject this write-in', 'Abraham Lincoln', 'Dennis Weiford', 'John Hewetson', 'Lloyd Garriss', and 'Sylvia Wentworth-Farthington'. Below the dropdown, the names 'Sylvia Wentworth-Farthington' and 'John Hewetson' are listed with checkboxes. The 'Write-in:' field is checked and contains the handwritten name 'Abraham Lincoln'. At the bottom of the interface, there are three buttons: 'View Legend', 'Previous', 'Accept', and 'Next'.

resolving write-ins, *continued*

4 The entered text will appear superimposed over the write-in. Click **Next** to advance to the next contest requiring review.



resolving remaining contests

Apply new filters, if desired, and continue the ballot review process until all ballots have been resolved.

- ▶ All ballots must be checked in and resolved before they can be written to a vDrive.

checking in and checking out ballots and contests

- ▶ A ballot or contest is automatically checked out to the user when they open the ballot or contest in the Ballot Review window.
- ▶ The ballot or contest is automatically checked back in when the ballot or contest is resolved, or when the Ballot Review window is closed, or another batch is chosen.

locking ballot pages or contests

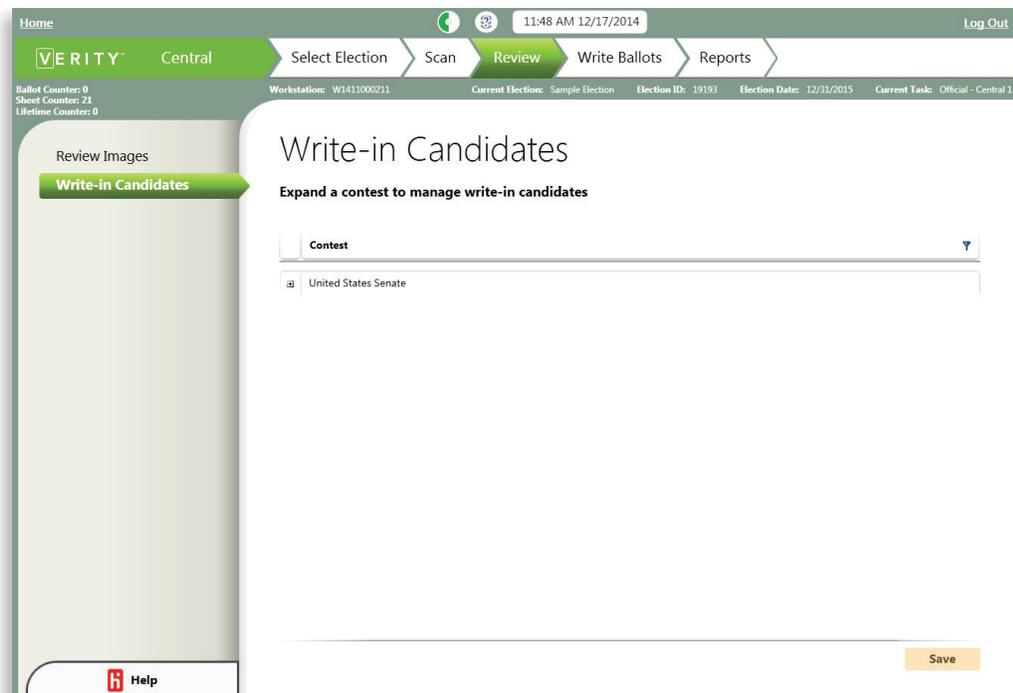
- ▶ A user can manually lock a ballot page or contest to prevent other users from modifying that ballot page or contest.
- ▶ In the Ballot Review window, click **Actions** and choose **Lock Page** (or **Lock Contest**) to lock the current ballot page or contest. To unlock a locked page or contest, choose **Unlock Page** (or **Unlock Contest**).

managing certified write-ins

The **Write-in Candidates** menu allows you to view, add or delete certified write-in candidates.

viewing certified choices for each contest

Click the  symbol to the left of a contest to expand and view certified choices for that contest.

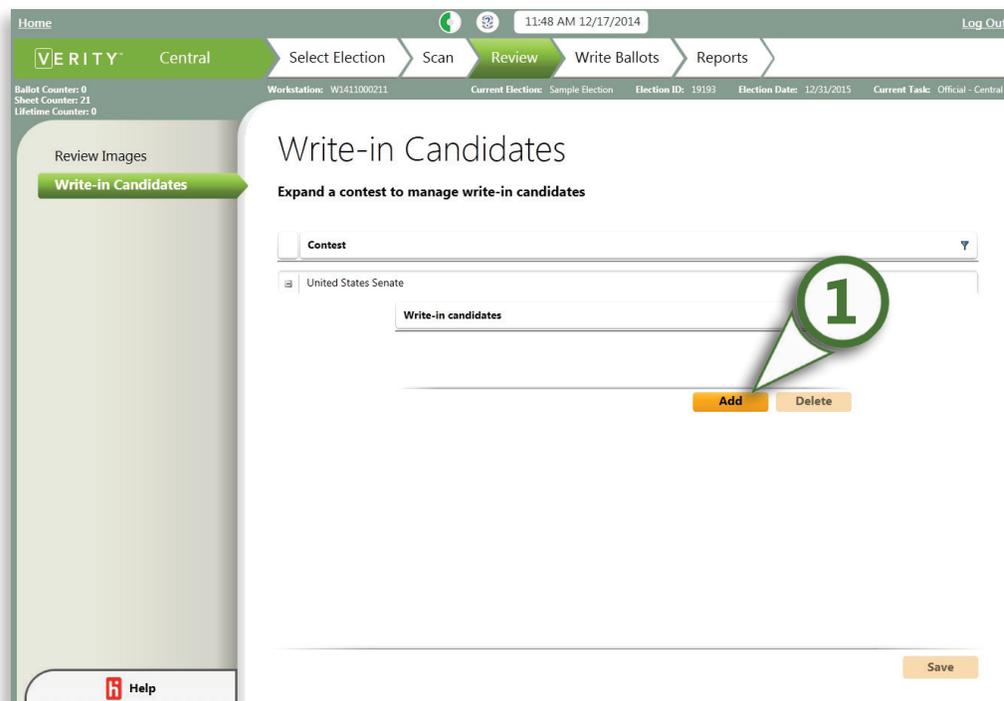


The screenshot displays the VERITY Central software interface. The top navigation bar includes 'Home', 'Log Out', and a breadcrumb trail: 'Select Election' > 'Scan' > 'Review' > 'Write Ballots' > 'Reports'. The 'Review' step is currently active. Below the navigation bar, a status bar shows 'Workstation: W1411000211', 'Current Election: Sample Election', 'Election ID: 19193', 'Election Date: 12/31/2015', and 'Current Task: Official - Central 1'. On the left sidebar, there are buttons for 'Review Images' and 'Write-in Candidates', with the latter being highlighted. The main content area is titled 'Write-in Candidates' and contains the instruction 'Expand a contest to manage write-in candidates'. Below this, there is a table with a header 'Contest' and a search icon. The table lists one entry: 'United States Senate'. At the bottom right of the main area, there is a 'Save' button. A 'Help' icon is located in the bottom left corner of the interface.

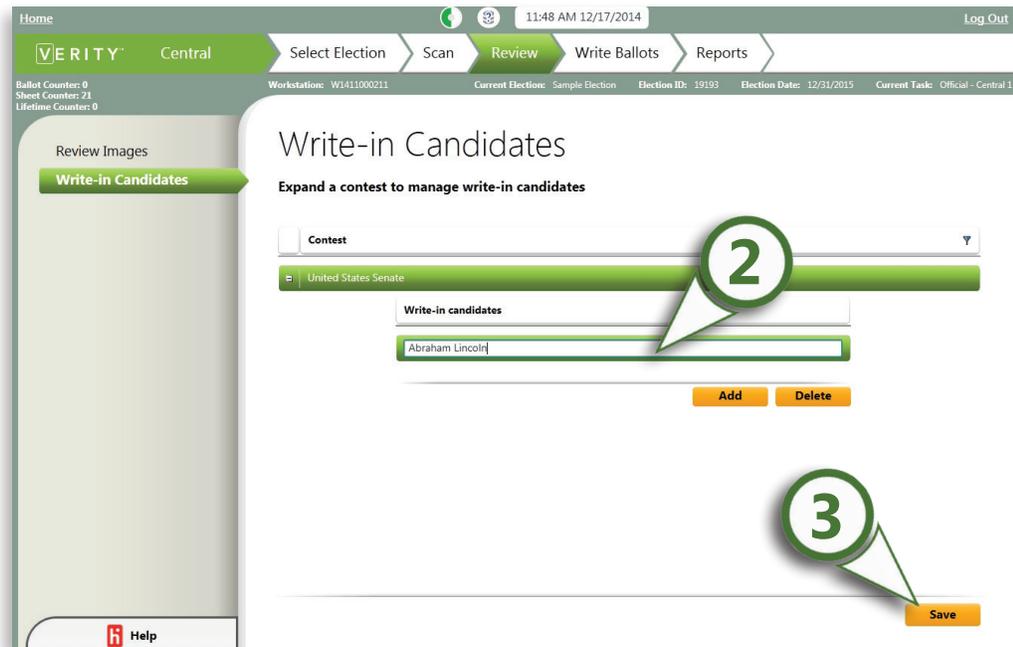
managing certified write-ins, *continued*

adding new certified choices

- 1 Click **Add** to add a new certified choice for the contest.



managing certified write-ins, *continued*



2 Type the candidate name.

3 Click **Save** in the lower right corner.

deleting existing certified choices

Select the choice to delete, and then click **Delete** to delete the choice from the list. Click **Save** when done.

exporting ballot images

You can also use the Review Images menu to export ballot images, singly or in bulk, for auditing purposes.

- 1 Select the **Review Images** menu and choose your desired filter(s).
- 2 Select the ballots you would like to export.
- 3 Under the actions menu, select **Export Ballot(s)**. Choose the location of the removable media where you would like to save the PDF file.

The screenshot displays the 'Review Images' interface in the VERITY Central application. The top navigation bar includes 'Home', 'VERITY Central', and a breadcrumb trail: 'Select Election' > 'Scan' > 'Review' > 'Write Ballots' > 'Reports'. The current page title is 'Review Images'. On the left sidebar, 'Review Images' is highlighted, with 'Write-in Candidates' listed below it. The main content area is titled 'Review Images' and contains the instruction 'Select the images you would like to review'. Below this, there are sections for 'Currently applied filters' (showing 'Voter Intent Issues (1 Item)') and 'Batches available for review' (listing 'Batch #1 (1 ballots)', 'Batch #2 (2 ballots)', and 'Batch #3 (1 ballots)'). A callout box with the number '3' points to the 'Export Ballot(s)' option in the 'Actions' menu for the selected batch. The interface also includes a 'Legend' at the bottom with icons for 'Needs adjudication', 'Checked out', 'Contains locked contests', and 'Written to vDrive'. A 'Help' button is located in the bottom left corner.

ballot resolution: a sample scenario

When resolving ballots for voter intent, you must follow the regulations set forth by your jurisdiction and state in regards to how when to adjudicate ballots for voter intent. Following these rules, you should create an adjudication plan that allows you to efficiently resolve all ballots in a timely manner. ***The scenario described below is intended as an example only;*** your adjudication plan may differ.

Sample County, USA scenario:

In Sample County, USA, regulations state that all blank ballots, overvotes, and certified write-in votes must be adjudicated on Election Night. Regulations for Sample County also state that undervotes can be safely ignored, and that uncertified write-in votes can be rejected. For Sample County, a Verity Central ballot resolution plan might be as follows:

1 Filter for ballots with blank, overvoted, and/or voted write-in contests.

- Add a Voter Intent Issues filter; in the filter contents, check Blank Ballots, Over Votes, and Voted Write Ins.

2 Open the first ballot.

ballot resolution sample scenario, *continued*

3 Resolve or accept all blank ballots, overvotes, and voted write-ins:

- Resolve or accept all blank ballots (blue cross-hatch pattern).
- Resolve or accept all over votes (highlighted in red).
- Resolve or reject all write-in votes (highlighted in blue).

4 Verify only undervotes remain (highlighted in yellow) when viewing the entire ballot page.

5 Accept the page.

6 If there are multiple pages in the ballot, repeat steps 3-5 with the second and subsequent pages.

7 Go to the next ballot and repeat steps 3-6.

8 Clear all filters. All remaining ballots in the batch that you have not resolved/accepted should have only undervote issues, if any.

9 Accept the batch.

10 Repeat steps 1-9 for each batch.

Central checklist: the review tab

- 1** Log in to Verity on the Central workstation.
- 2** Open Central and select the Review tab.
- 3** Under the Review Images menu, create filters to manage the ballot review process. You can filter by multiple criteria to access only the ballots you want to review.
- 4** Select a ballot to review by choosing Review Ballot under the Actions menu. The Ballot Review window will open.
- 5** Use the tools in the ballot review window to resolve ballot pages and contests for voter intent according to the rules set forth by your jurisdiction.
- 6** Close the ballot review window to apply new filters in the Review images menu. Repeat steps 4, 5 & 6 until all ballots requiring review have been resolved.
- 7** If you have certified write-in candidates, add and manage them under the Write-in Candidates menu.



5

write ballots

the write ballots tab



Once you have finished reviewing the ballots, in the **Write Ballots** tab you will write the accepted cast vote records to a vDrive for tabulation in Verity Count. The following menus are available in the Write Ballots tab:

- **Write Ballots:** write batches of ballots to vDrives for tabulation in Count.
- **Recovery vDrive:** create a recovery vDrive from previously written ballot data.

writing ballots to a vDrive

The **Write Ballots** menu allows you to write batches of ballots to a vDrive for tabulation in Verity Count.

1 Insert an unused vDrive for your election into an available USB port on the Central workstation. The screen will show whether a vDrive is inserted.

2 Select the batches to write.

3 Click **Write**.

Home | VERITY Central | Select Election | Scan | Review | **Write Ballots** | Reports | Log Out

Ballot Counter: 0
Sheet Counter: 21
Lifetime Counter: 0

Workstation: W1411000211 | Current Election: Sample Election | Election ID: 19193 | Election Date: | Current Task: Official - Central

Write Ballots to vDrive

Recovery vDrive

Select batches to write to a vDrive

1 vDrives currently inserted

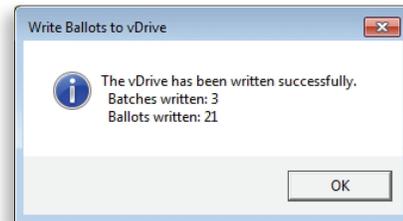
Batch ID	Voting Type	Total ballots	Notes	Workstation
1	Election Day Voting	6	Batch one contains 6 ballots	W1400029012
2	Election Day Voting	8	Batch 2 contains 8 ballots	W1400029012
3	Election Day Voting	7	Batch 3 contains 7 ballots	W1400029012

Total ballots written: 0
Total batches written: 0
Total vDrives written: 0

Write **Close vDrive**

writing ballots to a vDrive, *continued*

4 When the batch has finished writing, click **OK**. If desired, you can repeat steps 2-4 to write additional batches to the vDrive. ►



5 Once you have finished writing batches to the vDrive, click **Close vDrive**. Once you have closed the vDrive, no additional batches can be written to that vDrive.

! IMPORTANT: Only close the vDrive if you no longer wish to write ballots to the vDrive. Once the vDrive is closed, no additional batches can be written.

Home 11:56 AM 12/17/2014 Log Out

VERITY Central Select Election Scan Review Write Ballots Reports

Ballot Counter: 0 Worksheet: W141100021 Current Election: Sample Election Election ID: 10193 Election Date: 12/31/2015 Current Task: Official - Central
Sheet Counter: 21
Lifetime Counter: 0

Write Ballots
Recovery vDrive

Write Ballots to vDrive

Select batches to write to a vDrive **1 vDrives currently inserted**

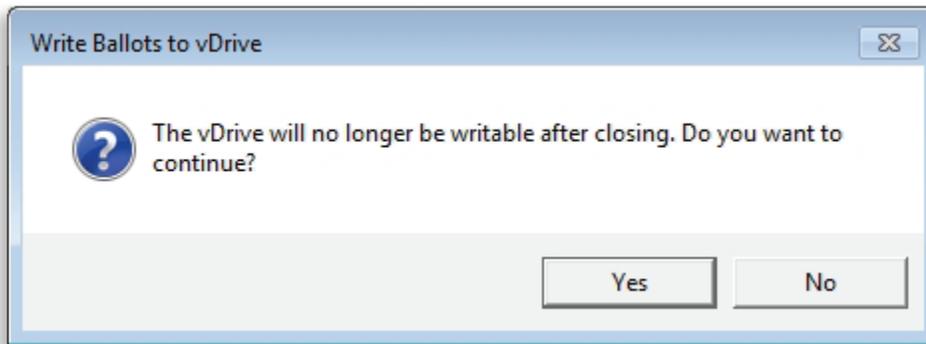
Batch ID	Voting Type	Total ballots	Notes	Workstation
1	Election Day Voting	6	Batch one contains 6 ballots	W1400029012
2	Election Day Voting	8	Batch 2 contains 8 ballots	W1400029012
3	Election Day Voting	7	Batch 3 contains 7 ballots	W1400029012

Total ballots written: 0
Total batches written: 0
Total vDrives written: 0

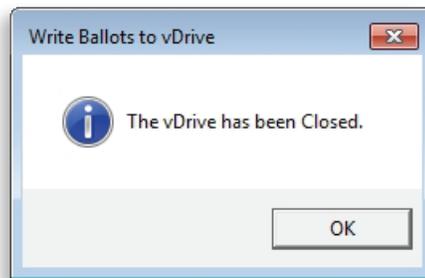
Write Close vDrive

writing ballots to a vDrive, *continued*

- 6 Click Yes. Once you have closed the vDrive, no additional batches can be written to that vDrive.



- 7 The vDrive has been closed. Click OK.



NOTE: *In order to ensure quick read time in Verity Count, Verity Central enforces a limit of 20,000 ballots per vDrive. If the batch you have chosen to write exceeds this limit, you will be prompted to insert a vDrive with adequate capacity remaining.*

creating a Recovery vDrive

The **Recovery vDrive** menu allows you to create a replacement for a damaged or lost vDrive using backup data from a previously written vDrive.

- 1 Select the Recover vDrive menu.
- 2 Insert an a vDrive into an available USB port on the Central workstation. **The vDrive must not have been previously used in any devices or applications for the current election.**



- 3 Select the vDrive data from the list that you would like to recover.

creating a Recovery vDrive, *continued*

- 4** Click **Recover**. The new vDrive will be written with the data selected.

Home 11:57 AM 12/17/2014 Log Out

VERITY Central Select Election Scan Review Write Ballots Reports

Ballot Counter: 21
Sheet Counter: 21
Lifetime Counter: 21

Workstation: W1411000211 Current Election: Sample Election Election ID: 19193 Election Date: 12/31/2015 Current Task: Official - Central 1

Write Ballots
Recovery vDrive

Create Recovery vDrive

Select vDrive data to recover **1 vDrives currently inserted**

vDrive ID	Number of batches	Number of ballots	Workstation
6	3	21	W1411000211

4 Recover

Help

notes regarding recovery vDrives:

- A recovery vDrive contains the ID of the original vDrive.
- The recovery and the original cannot be read into a single Count task. Therefore, if the original vDrive has already been read into Count, a recovery vDrive made using the same source cannot be read into the same election task in Count.
- A recovery vDrive can only be used to transfer ballots to Count, and cannot be used to continue voting on a device.

Central checklist: the write ballots tab

- 1** Log in to Verity on the Central workstation.
- 2** Open Central and select the Write Ballots tab.
- 3** Insert a blank vDrive for the current election.
- 4** Under the Write Ballots menu, select batches of ballots and click Write to write them to the vDrive.
- 5** When you have finished writing batches to the vDrive, click Close vDrive. Once a vDrive has been closed, no additional batches can be written to that vDrive.
- 6** You can use the Recover vDrive menu to create a replacement for a lost or damaged vDrive.





reports

the reports tab



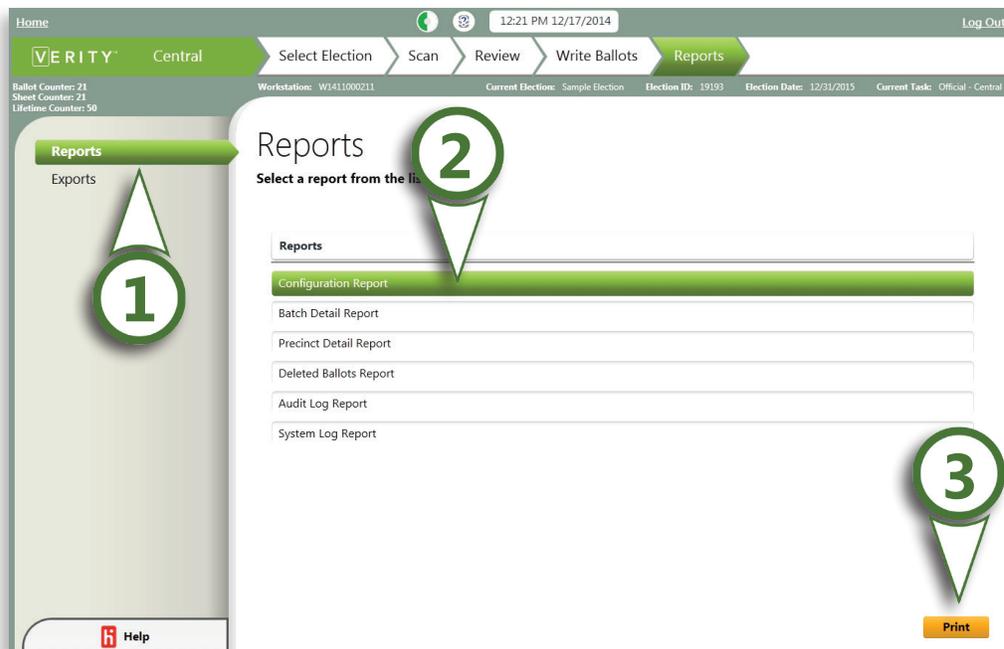
In the **Reports** tab, you can create reports for batches, precincts, and more. You can also export data including provisional ballot status and registered voter information. The following menus are available in the Report tab:

- **Reports:** view and print election reports from Verity Central
- **Exports:** export data from Verity Central.

reports

The **Reports** menu allows you to print a variety of reports; a list of each available report with descriptions is located on page 149.

- 1 Select the **Reports** menu.
- 2 Select the desired report from the list.
- 3 Click **Print**.



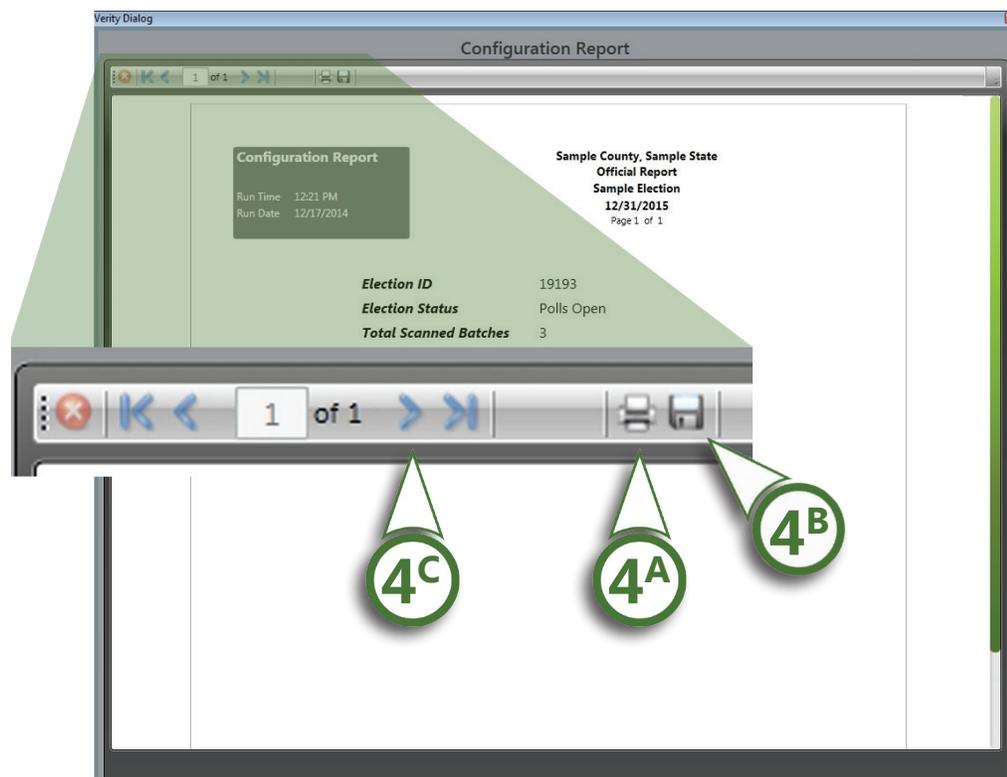
reports, *continued*

4 View, Print or Save the report.

A) To Print, click the Printer icon.

B) To Save to file, click the Disk icon.

C) You can view additional pages of the report using the blue arrow buttons.



available reports: Central

The following reports are available in Central; the contents of each report are listed below. These reports cannot be deleted or edited by the user. All Central reports contain the following information in their header:

- Report title
- Election title
- Election date
- Current task's report label
- Jurisdiction name
- Date and time the report was generated
- Page numbering

Audit Log report

The Audit Log report is a comprehensive log of all activity that has occurred in the Central application on that workstation. Each entry includes the following detail:

- Date/time of event
- User logged in at time of event
- Application name and full version number
- Device serial number or workstation ID
- Event name (in plain text)
- Event detail data (in plain text)
- Election ID
- Tags

System Log report

The System Log report is a comprehensive log of all activity that has occurred on the workstation or network that is not election-specific. Each entry includes the same details as the Audit Log, listed above.

available reports: Central, *continued***Configuration report**

Contains the following election information:

- Task status
- Election ID
- Total number of batches scanned
- Total number of batches written to vDrives
- Public (election) count
- Private (lifetime) count
- Sheet count

Scanned Batch report

NOTE: *the Scanned Batch report is available in the Scan tab, when you have finished scanning a batch (page 90), and under the Manage Batches menu (page 94).*

Contains the following information for a single scanned batch:

- All batch data
- A list for each scanned image in the batch that displays:
 - Scan sequence number
 - Precinct or precinct split name
 - Page number
 - Unique identifier
 - Variation number
 - Language
 - Party (if this is a closed primary election)
 - Scan status (accepted or rejected)
 - If scan status is rejected, the reason for the rejection
- Totals for the batch:
 - Total images scanned
 - Total images accepted
 - Total images rejected
 - Total ballots scanned
 - Total ballots accepted
 - Total ballots rejected

available reports: **Central**, *continued*

Batch Detail report

Contains the following information for each batch:

NOTE: *The Batch Detail report is sorted by Batch ID, and then by Scan Sequence Number.*

- Batch ID
- Date and time batch was scanned
- User who scanned the batch
- Workstation where the batch was scanned
- Voting type (Election Day, Absentee, etc.)
- Number of ballots scanned in the batch
- Number of ballots deleted from the batch
- Current number of ballots in the batch
- Number of ballots with unresolved voter intent issues
- Number of ballots without unresolved voter intent issues
- Number of ballots written to a vDrive
- Batch notes
- For each batch, the following information for each ballot image scanned:
 - Scan sequence number
 - Precinct or precinct split name
 - Page number
 - Unique identifier
 - Variation number
 - Language
 - Party (if this is a closed primary election)
 - Status (accepted or rejected)
 - If the status is rejected, the reason for rejection
 - Whether ballot has been deleted
 - Whether ballot contains unresolved voter intent issues
 - vDrive ID, if the ballot has been written to a vDrive

available reports: Central, *continued***Precinct Detail report**

Contains the following information for each precinct or precinct split:

- Precinct or precinct split name
- Batch IDs that contain ballots from this precinct or precinct split
- Date and time the batches were scanned
- Workstation where the batches were scanned
- Number of ballots scanned in the batch
- Number of ballots deleted from the batch
- Current number of ballots in the batch
- Number of ballots with unresolved voter intent issues
- Number of ballots without unresolved voter intent issues
- Number of ballots written to a vDrive
- Information for each ballot image scanned in the batch:
 - Scan sequence number
 - Precinct or precinct split name
 - Page number
 - Unique identifier
 - Variation number
 - Language
 - Party (if this is a closed primary election)
 - Status (accepted or rejected)
 - If the status is rejected, the reason for rejection
 - Whether if ballot has been deleted
 - Whether ballot contains unresolved voter intent issues
 - vDrive ID, if the ballot has been written to a vDrive

available reports: **Central**, *continued*

Deleted Ballot report

Contains the following information for each ballot that has been deleted after scanning:

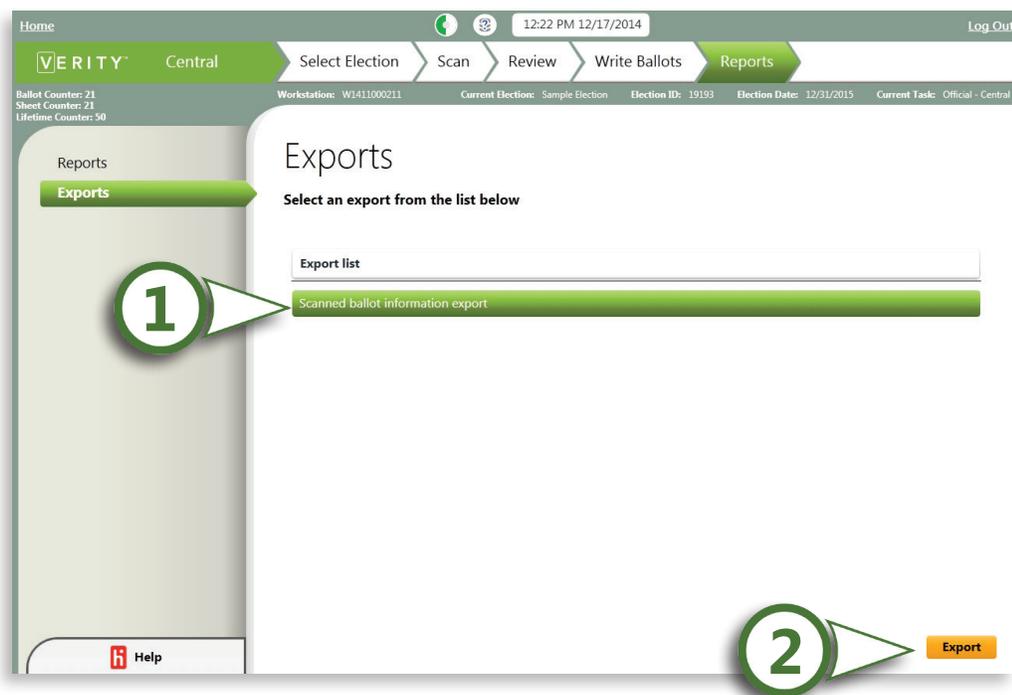
NOTE: *the Deleted Ballot Report is grouped by Batch ID, and sorted by Unique Identifier*

- Unique identifier
- Batch ID
- Voting type (Election Day, Absentee, etc.)
- Date and time the ballot was deleted
- User who deleted the ballot
- Workstation where the ballot was deleted
- Precinct or precinct split name
- Party (if this election is a closed primary)
- The following totals for each batch:
 - Total number of ballots scanned in the batch
 - Number of ballots deleted from the batch
 - Current number of ballots in the batch

exports

The **Exports** menu allows you to export selected data from Central to a removable drive. A list of available exports with descriptions is located on page 155.

- 1 Select the **Exports** menu, and then select the data to be exported from the Export List.
- 2 Click **Export**. You will be prompted to choose an export location.



available exports: Central

The following exports are available in Central; the contents of each export are listed below. These exports cannot be deleted or edited by the user:

Scanned ballot information export

Contains the following information for each ballot image:

- Scan sequence number
- Precinct or precinct split name
- Page number
- Unique identifier
- Variation number
- Language
- Party (if this is a closed primary election)
- Status (accepted or rejected)
- If the Status is rejected, the reason for rejection
- Whether ballot contains unresolved voter intent issues
- vDrive ID, if the ballot has been written to a vDrive

Central checklist: the reports tab

- 1** Log in to Verity on the Central workstation.
- 2** Open Central and select the Reports tab.
- 3** Under the Reports menu, you can view and print election reports from the Central workstation.
- 4** The Exports menu allows you to export scanned ballot information for each scanned image.





appendix A: Logic and Accuracy Testing

A Logic and Accuracy test (LAT or L&A) is a test of the tabulation accuracy of a voting system. The LAT is designed to verify that, for the election being tested, a vote for any ballot option will tabulate as expected for that ballot option. A Logic and Accuracy test is not a test of device functionality or an acceptance test. State and local guidelines dictate the time frame for performing Logic and Accuracy Tests; however, Hart InterCivic recommends that a Logic and Accuracy Test is performed, at a minimum, before any ballot, in any form, goes to any voter, and that a Logic and Accuracy Test include votes cast on every type of device/software that will be used to capture cast vote records in the upcoming election (e.g., Verity Controller/Touch, Verity Scan, Verity Central), as well as any software used for vote tabulation (e.g., Verity Count).

logic and accuracy testing: an overview

! IMPORTANT: All LAT recommendations and procedures presented here are superseded by your State election law, rule, and code.

A properly run LAT tests the logic of tabulation system-wide, and includes the following:

- Voting on devices that capture Cast Vote Records (e.g. Verity Controller/Touch, Verity Scan), and scanning of paper ballots in Verity Central (if applicable).

NOTE: *In accordance with Hart best practices, the Touch Writer is not a required component in an LAT, since it does not capture Cast Vote Records. Each jurisdiction must, of course, follow state and local guidelines.*

- Tabulating the votes in Verity Count and comparing Count application reports to expected outcomes.

When conducting the LAT, consider the following:

- Perform the LAT with Test mode vDrives. Use the vDrive Planning Worksheet and remember to plan for an appropriate number of Test mode vDrives.
- Run the complete LAT from the same Verity Build database used for the Official election.
- In Verity Data, create an Election Day Polling Place specifically for the LAT and assign all precincts to this polling place (or, work with Hart Ballot Production Services to do so, if applicable). Predefine your LAT device(s) with this Polling Place using Test mode vDrive(s).

suggested materials and supplies

- LAT Checklist
- LAT Log
- LAT labeled envelope
- Test mode vDrives created in Verity Build (or provided by Hart)
 - 1 per voting device used in the LAT (vDrives not required for Verity Touch)
 - 1 per Verity Central workstation used in the LAT
- Test deck of ballots printed from Verity Build (or provided by Hart) and marked according to State requirements
- Spare blank test ballots
- At least one Verity Controller/Touch and/or Verity Scan (more as needed according to your LAT plan)
- Verity Central workstation and scanner (if applicable)
- Verity Count workstation

Hart recommended procedures for performing an LAT

Complete the following steps to perform an LAT. Follow state requirements governing the prior announcement and publication of the test date, time, and location.

hand-count the Test Deck

Hand count the test deck of pre-voted paper ballots, taking overvotes and blanks into account. If you use Hart Ballot Production Services, Hart will provide the pre-voted ballots. If creating your own test deck, you may wish to keep a spreadsheet or matrix of the votes marked in the test deck for each ballot option, according to your state requirements.

prepare the equipment

NOTE: *for instructions on predefining voting devices, see the Verity Support Procedures Guide.*

Predefine the Verity voting devices. You must make sure each device being used in the LAT is predefined with your Election Day LAT Polling Place ID. You may use more than one set of Verity voting devices in order to speed up the testing, but you do not need to test each device in an LAT. Each voting device *does* need to be tested if performing functionality testing (see the *Verity Support Procedures Guide* for functionality testing procedures). Again, all LAT procedures presented here are superseded by State election law, rule, and code.

appendix A: Logic and Accuracy Testing

Hart recommended procedures for performing an LAT, *continued*

vote on the Verity Controller/Touch and/or Verity Scan using the test deck

NOTE: *for instructions on voting using the Verity Controller/Touch or Verity Scan, see the appropriate Verity Polling Place Operations Guide.*

- 1 Print the Zero report on the Verity voting device(s).
- 2 Open polls on the voting device(s).
- 3 Scan the test deck using the Verity Scan/Vote the test deck using the Verity Controller/Touch.
- 4 Close polls on the voting device(s).
- 5 (Optional) Print and save the device Tally report if you would like to check accuracy of the test against the expected results prior to tabulation in Count.
- 6 Remove the vDrive from Verity Controller and/or Verity Scan and take to the Count workstation for tabulation.

NOTE: *the Tally report will only be available if you have checked "Allow Tally" when configuring the election in Build (see the Verity Administrator's Guide: Build).*

! IMPORTANT: In Build, if you set the device reporting detail for the Tally Report to "Summary", the report will contain only the totals for the device. If, however, you set reporting detail to "By precinct/split", a detailed report will print showing the results for all contests, by each precinct; this may take a very long time to print if you have many precincts. Therefore, if you chose "By precinct/split" in Build, you may wish to skip this step in the interest of time. See the *Verity Administrator's Guide: Build*.

Hart recommended procedures for performing an LAT, *continued*

process ballots in Verity Central

NOTE: For instructions on processing ballots using Verity Central, see page 61 of this guide.

- 1** On the Central workstation, insert a Test vDrive into the USB port.
- 2** Log into Verity and import the signed election export file from Build using the Manage application.
- 3** Log out of Manage and log in to Central.
- 4** Open the election in Central.
- 5** Create and open a task for LAT 1 (Task type: Test).
- 6** Print and file a Zero report, if required.
- 7** Scan the test deck in Central.
- 8** Resolve undervotes, overvotes, damaged contest and write-ins (if applicable), according to the test plan.
- 9** Write all ballots to vDrive.
- 10** Print and save a Batch Detail report for later reference.
- 11** Remove vDrive and take to the Count workstation for tabulation.

Hart recommended procedures for performing an LAT, *continued*

tabulate in Verity Count

NOTE: For instructions on tabulation using Verity Count, see the Verity Administrator's Guide: Count.

- 1** On the Count workstation, import the signed export file from Build using the Manage application, if you have not already done so.
- 2** Exit Manage and open Verity Count.
- 3** Open the election in Count.
- 4** Create and open a task for **LAT 1**. (Task type: **Test**)
- 5** Print and file a Zero report.
- 6** Read in vDrives from the Verity Controller and/or Verity Scan device(s) and Verity Central.
- 7** Tabulate the vDrives in Count.
- 8** Resolve write-ins in Count (if applicable).
- 9** Print and file a Cumulative report, including overvotes, undervotes, and write-ins (if applicable).

compare results

Compare the Cumulative report from Count and the reports from Controller, Scan and Central against the expected results based on the test deck. The reports should match exactly the expected results from the test deck. If the results do not match, identify the discrepancy and reconcile or re-run the LAT.

the LAT Log

The LAT log includes a checklist of reports that should be printed and filed with the LAT materials and a place to record the pertinent LAT data and signatures of participants. Complete and file the LAT log and other paperwork in the LAT-labeled envelope with the vDrives used for the LAT. In some jurisdictions a second read of the LAT vDrives (sometimes referred to as the "LAT 2") is required before tabulating election results. If this is the case in your jurisdiction, you will use the vDrives and reports you file from the first LAT to complete the LAT 2. For instructions on performing an LAT 2, see the next page.

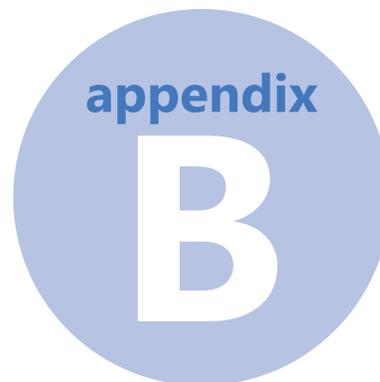
performing an “LAT 2”

If your jurisdiction requires a second read of the LAT vDrives on Election Day, follow the recommended procedures below. The second LAT, if performed, must be done prior to tabulating official election results. Again, all LAT procedures presented here are superseded by State election law, rule, and code.

NOTE: *For instructions on tabulation using Verity Count, see the Verity Administrator’s Guide: Count.*

- 1** Open the election in Count.
- 2** Create and open a task for **LAT 2**. (Task type: **Test**)
- 3** Print and file a Zero report.
- 4** Read in vDrives from the first LAT.
- 5** Tabulate the vDrives in Count.
- 6** Resolve write-ins in Count (if applicable)
- 7** Print and file a Cumulative report, including overvotes, undervotes, and write-ins (if applicable).
- 8** Compare the Cumulative report against the reports from the first LAT and reconcile if necessary.





appendix B: Verity system limits & access

The tables on the following pages list the Verity system limits for user names and passwords, maximum limits for election data, character limits for text elements, and device passcode access requirements.

user names and passwords

Item	Character Range
User Name	1-50
User Password	1-50
Device and Application Passcodes	6 (numeric)

election data limits

Item	Upper Limit
Precincts	2,000
Splits per Precinct	20
Total Precincts and Splits in an Election	2,000
Districts	75
Polling Places	1200
Parties in a General Election	24
Parties in a Primary Election	10
Contests and Propositions (combined)	200
Contest Choices (voting positions) in a Contest	75
Total number of Contest Choices in an Election (independent from ballot size)	600
Number of Write-in Options	75
Voting Types	5
Tasks per Election (Central, Count)	15
Sheets per vDrive: Scan	9999*
Sheets per vDrive: Central	80,000**
Number of Voters Definable per Election	1,000,000
Maximum Sheets per ballot	4
Ballot Stubs per ballot	2
Number of ballots: Scan (1 sheet ballot)	9999
Number of ballots: Scan (2 sheet ballot)	4999
Number of ballots: Scan (3 sheet ballot)	3333
Number of ballots: Scan (4 sheet ballot)	2499
Number of ballots: Central	1,000,000
Number of CVRs (sheets): Count	4,000,000
Number of vDrives: Count	1200
Ballot Sizes - Build, Central, Print, Touch Writer, Scan	8.5"x11", 8.5"x14", 8.5"x17"
Ballot Sizes - Build, Central (also includes)	11"x17"

* The sheet limit for Verity Scan represents a **recommended** limit for the number of sheets scanned on an individual Verity Scan during a single election.

**20,000 4-sheet ballots

appendix B: Verity system limits & access

system character limits

Item	Character Limit
Election ID	99,999 (digits)
Election Name	50
Election Title	100
Jurisdiction Name	100
Precinct Label	20
Write-in Label	20
Sample and Official Ballot Labels	20
Party Name	50
Party Ballot Text (Affiliation)	50
Party Abbreviation	3
Precinct Name	40
Precinct Split Name	10
District Name	100
District Description	500
Polling Place Name	50
Polling Place Notes	1,000
Voting Type Name	50
Ballot Header Label	100
Ballot Header Additional Information	100
Ballot Instruction Text	10,000
Ballot Additional Text	1,000
Contest Title	100
Contest Instruction Text	50
Proposition Title	100
Proposition Text	10,000
Proposition Notes	500
Contest Choice Name	100
Contest Choice Details	100
Write-in Choice Name (Touch/Touch Writer)	25
Ballot Stub Free Form Fields (4)	50 each

device pass code access requirements

Menus/Actions	Code(s) Required
CHANGE SETTINGS MENU	
<i>Set Clock</i>	Maintenance Code
<i>Touchscreen Calibration</i>	
<i>Set Alert Volume (Verity Scan only)</i>	
<i>Scanner Contrast Calibration (Verity Scan only)</i>	
<i>Scanner Speed Calibration (Verity Scan only)</i>	
POLL WORKER TASKS MENU (Touch Writer)	
<i>Create Ballot Access Code</i>	Poll Worker Code
<i>Deactivate an Access Code</i>	
<i>Spoil Current Ballot</i>	
<i>Print Access Code Summary</i>	
MAIN MENU (Touch)	
<i>Spoil Ballot</i>	Poll Worker Code
ADMINISTRATOR MENU	
<i>Change Ballot Rules (Verity Scan Only)</i>	Administrator Code
<i>Enable Recount Mode* (Verity Scan Only)</i>	
<i>Change Report Settings* (Verity Scan and Controller Only)</i>	
<i>Create Recovery vDrive</i>	
OTHER ACTIONS	
<i>Load Election (upon inserting a vDrive for a new election)</i>	Maintenance Code; Verity Key Password
<i>Open Polls</i>	Open Polls Code
<i>Suspend Polls</i>	Suspend Polls Code
<i>Close Polls</i>	Close Polls Code

**if available in your jurisdiction*

glossary

abandoned ballot

A ballot that the voter did not cast into the ballot box before leaving the polling place. Local election rules dictate dispensation of an abandoned ballot. In some jurisdictions, abandoned ballots must be spoiled (see also spoiled ballot).

absentee ballot

Ballot cast by a voter unable to vote in person at his or her polling place on election day.

absentee voting

A voting method by which people can cast their ballots without going to the polling place on election day. In some jurisdictions, early voting is referred to as 'absentee-in-person' or 'absentee walk-in' and by-mail voting is sometimes referred to as 'absentee-by-mail.'

acceptance testing

Examination of voting equipment and testing of basic functionality upon delivery including validation that the delivered system is, in fact, the certified system purchased.

access code

The five-digit number given to each voter that indicates to the Verity system which precinct and ballot style to display to the voter on the Touch or Touch Writer. The access code is printed by the poll worker from the Controller or Touch Writer. The access code is only valid for a limited time and does not link to any voter information.

access code summary report

A report that is printed on the Controller or Touch Writer. It lists the number of access codes issued, voted, expired, and canceled.

adjudication

The task of assigning the voter's intent to votes on ballots that contain an undervoted contest, an overvoted contest, a contest with a selected write-in, or an invalid vote. Adjudication may also be required for a completely blank ballot or a damaged ballot. Also called resolution.

air gap

A physical separation that describes how non-certified and certified voting system applications relate to each other and manage data. A variety of methods can support a physical 'air gap,' primarily the absence of any network connection between non-certified and certified applications. These air gaps act as a physical firewall for all data and access ensuring integrity and security.

Americans with Disabilities Act (ADA)

A 1990 federal act that established comprehensive standards for the treatment of persons with disabilities in employment, public accommodations, and other programs, including those operated by state and local governments.

audio ballot

A ballot in which a set of contests is presented to the voter in spoken, rather than written, form.

audio-tactile interface (ATI)

Voter interface designed to not require visual reading of a ballot. Audio is used to convey information to the voter and sensitive tactile controls allow the voter to communicate ballot selections to the voting system.

audit log

A report containing recorded information that allows elections officials to view the steps that occurred on the equipment and/or software included in an election in order to verify or reconstruct the user actions taken without compromising ballot or voter privacy.

authentication

The verification of the identity of a person or process. In a communication system, authentication verifies that messages really come from their stated source, like the signature on a (paper) letter.

ballot

The official presentation of all of the contests to be decided in a particular election.

ballot box

A secure receptacle for the Verity Scan that collects scanned paper ballots and also has an emergency compartment for temporary storage of unscanned voted ballots in case the Scan is disabled.

ballot box security seal

The seal attached to the ballot box door to secure the paper ballots. *See also security seal.*

ballot count

A number, shown on the Verity configuration reports and Polls Open screens that indicates how many ballots have been processed on that device for the current election. The ballot count of a device is reset to zero when a new election is loaded by election staff before an election.

ballot drop box

When voted ballots are collected from a physical box at a specific location, instead of by mail.

ballot image

For a paper ballot, the electronic digital picture of the ballot. For an electronic ballot, the Cast Vote Record of the electronic ballot.

ballot instructions

(1) Instructional text that appears at the top of the ballot. There are two separate types of Ballot Instruction text: (1) electronic and (2) paper ballot. There is also separate audio instruction associated with the Touch or Touch Writer ballot instruction. (2) Information provided to the voter during the voting session that describes the procedure for voting a ballot. Such material may (but need not) appear directly on the ballot.

ballot marking device (BMD)

An electronic machine at which a voter can make selections and then print a marked ballot, which the voter takes to a scanning device to be cast. No vote records are stored on the ballot marking device itself.

ballot measure

(1) A question that appears on the ballot for approval or rejection. (2) A contest on a ballot where the voter may vote yes or no.

ballot number

In Verity, a number that can be placed on the ballot but which is not digitally processed in the system and is not part of the Cast Vote Record.

ballot position

The order on the ballot in which a candidate's name appears. For example, candidate B may have the 2nd position on the ballot, meaning that there is one candidate's name ahead of candidate B for that contest.

Ballot Production Services (BPS)

The Hart InterCivic Ballot Production Service (BPS) is a fee-based service that provides ballot programming and ballot printing service for customers who use Hart InterCivic voting devices.

ballot rotation

Process of varying the order of the candidate names within a given contest. Candidate names can rotate by precinct, by ballot, or by other schema.

ballot scanner

Device used to read the voter selection data from a paper ballot.

ballot stub

A perforated, removable portion of a ballot used in some jurisdictions. The ballot stub does not contain voteable contests.

ballot style

A ballot style is a grouping of certain precincts with an identical contest configuration. Every precinct's (or split precinct's) ballot is linked to one ballot style and there may be several precincts with the same ballot style. In Verity, the ballot style information is carried on the vDrive.

ballot text

Informational text embedded in the ballot that does not have the properties of a contest and cannot be voted. Ballot text is often used to identify a section of the ballot.

bar code

A printed horizontal strip of vertical bars of varying widths, groups of which represent decimal digits. In the Verity voting system, bar codes are required in order for paper ballots to be correctly scanned.

BMD

See **ballot marking device (BMD)**.

by-mail

When voters receive ballots through the mail system, and then return voted ballots to the scanning and tabulation center via the mail system (or via drop boxes).

candidate

Person contending in a contest for office. A candidate may be explicitly presented as one of the choices on the ballot or may be a write-in candidate.

canvass

Compilation of election returns and validation of the outcome that forms the basis of the official results by a political subdivision.

cast ballot

Ballot that has been deposited by the voter in the ballot box or electronically submitted for tabulation.

Cast Vote Record (CVR)

An anonymous record of the contest options that a voter selected on his/her cast ballot (otherwise known as the voter's choice set). In the Verity voting system, Cast Vote Records are stored in electronic format. One Cast Vote Record is equivalent to one ballot, and is the permanent record of all votes produced by a single voter whether in electronic, paper or other form. Also referred to as ballot image when used to refer to electronic ballots.

central count

When the ballots are scanned and then tabulated at a central facility, and not at the polling place(s) where in-person voting took place.

certification

Procedure by which a third party gives written assurance that a product, process or service conforms to specified requirements. See also state certification and national certification.

certification testing

Testing performed under either national or state certification processes to verify voting system conformance to requirements.

challenged ballot

Terminology and rules for challenged ballots vary by state. In general, a challenged ballot results when a voter's right to cast a ballot in a certain jurisdiction is challenged for various procedural reasons. If the challenge stands, the voter may, in most cases, vote provisionally.

close polls report

Report printed by the Verity voting device when the polls are closed. This report includes a time stamp indicating the date and time printed.

closed primary

Primary election in which a voter receives a ballot listing only those candidates running for office in the political party with which the voters is affiliated. In some states, non-partisan contests and ballot issues may be included. In some cases, political parties may allow unaffiliated voters to vote in their party's primary.

CMOS battery

Coin battery within a Verity device tablet that maintains the system clock functions while the device is turned off.

commercial off-the-shelf (COTS)

Commercial, readily available hardware devices (such as card readers, printers or personal computers) or software products (such as operating systems, programming language compilers, or database management systems).

component

Element within a larger system; a component can be hardware or software. For hardware, it is a physical part of a subsystem that can be used to compose larger systems (e.g., circuit boards, internal modems, processors, computer memory). For software, it is a module of executable code, that can be moved around as a whole that performs a well-defined function and interacts with other applications.

contest

A choice to be made on the ballot; a race. Contest types include offices, issues, referendums, measures, and propositions.

count

Process of totaling votes. Also the name of Verity's tabulation software application. *See* **tabulation**.

credentials

Authentication information that enables access to operations in the system or associated databases. Credentials typically include user IDs and passwords.

cross filing

Also referred to as cross-party endorsement, this is the endorsement of a single candidate or slate of candidates by more than one political party. The candidate or slate appears on the ballot representing each endorsing political party.

cryptographic key

Value used to control cryptographic operations, such as decryption, encryption, signature generation or signature verification.

cryptography

Discipline that embodies the principles, means, and methods for the transformation of data in order to hide their semantic content, prevent their unauthorized use, prevent their undetected modification and establish their authenticity.

cumulative voting

A method of voting exclusive to multi-member district election (e.g. county board) in which each voter may cast as many votes as there are seats to be filled and may cast two or more of those votes for a single candidate.

CVR

See Cast Vote Record (CVR).

damaged ballot

A paper ballot that has been torn or otherwise damaged to the extent that it cannot be read using an optical or digital scanning device.

digital scan

A process where ballots are scanned and the electronic, or digital, images of the ballot are captured in whole (as opposed to optical scan, where the image is not captured but light reflected off of or absorbed by marked surfaces is used to collect vote data).

digital signature

An asymmetric key operation where the private key is used to digitally sign an electronic document and the public key is used to verify the signature. Digital signatures provide data authentication and integrity protection.

direct record electronic (DRE)

The term for an electronic machine at which a voter can view, vote, and cast a ballot.

district

A selection of precincts and/or split precincts that determine a voting group.

DRE

See direct record electronic (DRE).

duplex

Two-sided. In Verity ballots are printed and scanned on both sides of the ballot sheet. The Verity Scan scans both sides of the ballot sheet.

duplicate ballot

If a jurisdiction chooses to include unique identifiers on their printed ballots, Verity will search the database for an identical unique identifier every time a ballot is scanned, and disallow the ballot if it is a duplicate.

early voting

A term for votes cast in-person prior to election day. Nomenclature for early voting varies from state to state in the U.S. (absentee in-person, absentee walk-in, etc.).

election

A formal process of selecting a person for public office or of accepting or rejecting a political proposition by voting.

Election Assistance Commission (EAC)

Federal agency created by HAVA and chartered with, among other things, overseeing the testing and certification of voting systems.

election database

In Verity Data and Build, a data file or set of files that contain information about political subdivisions and boundaries, all contests and questions to be included in an election, and the candidates for each contest.

election day

A specific day, set by federal or state statute, when voting takes place and results tabulation and reporting begins.

election ID

An identification code assigned to an election by Verity Data and Build that is unique for every election. The election ID is used internally by the software applications.

election management system (EMS)

A set of processing functions and databases within a voting system that define, develop, and maintain election databases; perform election definition and setup functions; format ballots; count votes; consolidate and report results; and maintain audit trails.

election preferences profile

A profile that retains jurisdiction-specific preferences concerning election rules and settings. The purpose of the profile is to minimize a user's need to keep re-entering data that is applicable to most of the user's elections. Information stored in an election preferences profile typically does not change frequently, and the profile is user-editable.

emergency ballot slot/emergency ballot bag

A special receptacle in the Verity ballot box, with its own unique access door, that can be used to securely store unscanned ballots.

EMS

See **election management system (EMS)**.

encryption

Process of obscuring information by changing plain text into cipher text for the purpose of security or privacy. *See also* **cryptology**.

firmware

Computer programs (software) stored in read-only memory (ROM) devices embedded in the system. A Verity device's firmware version is displayed on the Power On Self Test report.

functionality test

Testing of hardware functionality (e.g., testing to see that a Verity Access button responds correctly when pressed). Functionality tests are built into the Verity voting devices.

general election

Election in which voters, regardless of party affiliation, are permitted to select candidates to fill public office and vote on ballot issues. In the U.S., federal general elections are held on the first Tuesday after the first Monday in November, in every even-numbered year.

graphic user interface (GUI)

The human-computer interface in software applications.

hash testing

A test run to check that installed software has not been altered since its initial installation. The installed software is compared against a 'trusted build' of the software that has been certified by an regulatory agency.

Help America Vote Act (HAVA)

Signed into law October, 2002, HAVA intends to assist states in the administration of federal elections and establishes 'minimum standards for states and units of local governments with the responsibility for the administration of federal elections.' Most importantly, HAVA mandates that each polling place in the United States have a federally approved handicap accessible voting system.

help button

Button on the Verity Access; when pressed, the Verity Touch or Touch Writer screen will display contextual help text.

incomplete ballot

A multi-sheet ballot being scanned in a scan batch that is missing one or more, but not all, sheets.

invalid vote

An instance where a voter in an open primary has voted for a candidate for an opposing party after first declaring affiliation with another party.

key management

Activities involving the handling of cryptographic keys and other related security parameters (e.g., access to the physical keys and passwords) during the entire life cycle of the keys, including the creation, inventory and storage, re-writing, and use of the keys throughout an election cycle.

lifetime count

A number, shown on the Verity device touch screens, that indicates how many ballots (Cast Vote Records) have been voted on the device over its lifetime. The lifetime count cannot be reset.

logic and accuracy test (LAT or L&A)

In the context of an election, a test to check the accuracy of the voting system tabulation. An LAT is accomplished by submitting test ballots for which the results are already known (i.e., a 'test deck') through the ballot counting system and comparing the results with the expected results. If an error occurs (i.e., the actual test deck count does not match the expected count), then the problem is investigated and corrected, and the test is repeated.

move wheel

The rotary wheel on the Verity Access that allows a voter to navigate the ballot and highlight choices by turning the wheel.

multi-seat contest

Contest in which multiple candidates can run, up to a specified number of seats. Voters may vote for no more than the specified number of candidates.

non-partisan office

An elected office for which candidates run independent of political party affiliation.

nonvolatile memory

Memory in which information can be stored indefinitely with no power applied. ROM is an example of nonvolatile memory.

open polls report

Report printed by the Verity voting device when the polls are opened. This report includes a time stamp indicating the date and time printed.

open primary

Primary election in which any voter can participate, regardless of their political affiliation. In the U.S., states that have open primaries do not require voters to register by party. Some states require voters to publicly declare their choice of party ballot at the polling place, after which the poll worker provides or activates the appropriate ballot. Other states allow the voters to make their choice of party ballot within the privacy of the voting booth.

option

A choice on a ballot.

option box

The target area where a voter marks in order to make a selection on a ballot.

overvote

An instance where a voter has marked more than the allowed number of options for a given contest. On the Verity Touch or Touch Writer it is not possible to overvote.

page

In reference to paper ballots, one side of sheet of paper.

paper-based voting system

Voting system that records votes, counts votes, and tabulates the vote count, using one or more ballot cards or paper ballots. In some regions, the term paper ballot is equivalent to hand counted ballot.

partisan office

An elected office for which candidates run as representatives of a political party.

party

A political party, for example Democratic or Republican.

political subdivision

Any unit of government, such as counties and cities, school districts, and water and conservation districts having authority to hold elections for public offices or on ballot issues.

poll worker button

A button located on the back panel of the Verity device used to access poll worker and administrator functions.

polling location

Physical address of a polling place.

polling place

The area within the polling location where voters cast ballots. Sometimes, a single polling place supports several precincts.

power on self test report

A report printed from the Verity voting device any time the device is powered on. This report shows a time stamp, firmware version, and diagnostic test result. A self-diagnostic test is run on the system, and the result is indicated as either a pass or fail on the report.

precinct

Election administration division corresponding to a contiguous geographic area that is the basis for determining which contests and issues the voters legally residing in that area are eligible to vote on. In traditional election nomenclature, precinct was once equivalent to polling place. This is not necessarily the case any longer.

primary election

Election held to determine which candidate will represent a political party for a given office in the general election.

primary presidential delegation nomination

Primary election in which voters choose the delegates to the presidential nominating conventions allotted to their states by the national party committees.

provisional ballot

A ballot provided to individuals who claim they are eligible to vote but whose eligibility cannot be confirmed when they present themselves to vote. Once voted, such ballots cannot be included in the tabulation until after the voter's eligibility is confirmed.

race

A choice to be made on the ballot; a contest. Race types include offices, issues, referendums, measures, and propositions.

ranked choice voting

Practice that allows voters to rank candidates in a contest in order of choice 1, 2, 3, and so on. A candidate receiving a majority of the first choice votes wins that election. If no candidate receives a majority, the last place candidate is deleted, and all ballots are counted again, with each ballot cast for the deleted candidate applied to the next choice candidate listed on the ballot. The process of eliminating the last place candidate and recounting the ballots continues until one candidate receives a majority of the vote. The practice is also known as instant runoff voting, preferences or preferential voting, or ranked order voting.

recount

Re-tabulation of the votes cast in an election.

referendum

Process whereby a state law or constitutional amendment may be referred to the voters before it goes into effect.

replacement ballot

A ballot that is designated by the election authority to be a replacement for a damaged ballot.

resolution

See **adjudication**.

runoff election

Election to select a winner following a primary or a general election, in which no candidate in the contest received the required minimum percentage of the votes cast. The two candidates receiving the most votes for the contest in question proceed to the runoff election.

sample ballot

A ballot printed as a sample of the real election ballot. Sample ballots contain a special barcode which prevents them from being counted by the Verity system.

security controls

Management, operational, and technical controls (such as safeguards or countermeasures) prescribed for an information system to protect the confidentiality, integrity, and availability of the system and its information.

security seal

Tamper-evident seals put in place by the jurisdiction on voting devices and ballot boxes to restrict access to voted ballots and compartments containing voted ballots.

select button

Button on the Verity Access; a voter presses this button to select an option or ballot choice highlighted by the move wheel.

sheet

In reference to paper ballots, one piece of paper printed on both sides, i.e., duplex.

sheet count

On the Verity Scan device, a number, shown on the touch screen, that indicates how many physical ballot sheets have been scanned on that device for the current election. The sheet count of a device is reset to zero when a new election is loaded by election staff before an election.

sip-and-puff

A voter's personal input device that connects to the Verity Access using the disabled access jack. This enables disabled voters with extremely limited mobility to vote with a mouth-controlled device.

software license

The right-to-use a software (or firmware) application.

split precinct

When a precinct is divided to accommodate non-standard division of boundaries within it (i.e. when sub-jurisdiction districts affect the ballot styles within a parent jurisdiction precinct).

spoiled ballot

A ballot that has been rendered invalid, either by a voter who is still present at the polling place (making it necessary to give the voter a new ballot) or by virtue of being abandoned by the voter. *See also* **abandoned ballot**.

straight party voting

A voting method that presents a contest at the top of the ballot that allows selection of a single political party in order to automatically select candidates of that party in contests that allow straight party voting.

stub number

A number that can be placed on the ballot stub. In Verity, the stub number is not tied to the ballot number.

suspend polls report

A report that automatically prints when suspending polls during early voting.

system audit log

Captures system-specific information, such as operating system login or logout and operating system alerts, faults, and failures (that is, running on battery).

system battery

Rechargeable battery pack used in Verity voting devices.

tabulation

Process of totaling votes. *See also* **count**.

tactile switches

Also called 'dual mode switches,' or 'jelly switches,' these red and green 'paddles' enable voters with disabilities to vote without using the touch screen, move wheel or select button on the Verity Access. Voters without fine motor control may use these. The red tactile switch allows voters to navigate through the ballot, similar to turning the move wheel in a clockwise direction. The green switch is similar to pressing the select button.

tally report

An report that may be printed from a Verity voting device after polls are suspended closed. It includes the date, time, precinct, a tally of votes for each contest, and an access code or ballot summary. Use of this report may vary by jurisdiction.

thermal printer

Roll-feed printer built in to each Verity voting device used to print reports and, on the Controller or Touch Writer, access codes. This printer uses heat to print on the paper, and thus does not use ink or toner.

top-two primary

A primary election in which the top two vote-getters are the winners, regardless of their party preference, and in which all voters vote the same ballot.

touch screen voting machine

A voting machine that utilizes a computer screen to display the ballot and allows the voter to indicate his or her selections by touching designated locations on the screen.

undervote

An instance where the number of choices selected by a voter in a contest is less than the maximum number allowed for that contest, or when no selection is made for a single choice contest.

uninterruptible power supply (UPS)

A device that maintains AC power for a connected device during a power outage.

unique identifier

A number placed on the sheets of a ballot that uniquely identifies the ballot in order to prevent scanning of duplicate paper ballots. Within the Verity system, unique identifiers are optional and cannot be tied to an individual voter (as there is no individual voter data in the Verity system). Unique identifiers contain no serial (i.e. sequential) data.

universal serial bus (USB)

An external peripheral interface standard for communication between a computer and other devices. In the Verity voting system, the vDrive and Verity Key connect to a USB port.

usability

Effectiveness, efficiency, and satisfaction with which a specified set of users can achieve a specified set of tasks in a particular environment. Usability in the context of voting refers to voters being able to cast valid votes as they intended quickly, without errors, and with confidence that their ballot choices were recorded correctly. It also refers to the usability of the setup and operation in the polling place of voting equipment.

Verity Access

Verity's audio-tactile interface device.

Verity Build

Verity ballot production software. Build allows you to review and proof ballots, print ballots, and generate vDrives and Verity Keys for running the election.

Verity Central

Verity vote resolution software. Central processes high volumes of paper ballot scanning to compile and send to Verity Count for tabulation and results.

Verity Controller

Verity polling place device for issuing access codes for and managing Verity Touch direct record electronic voting devices.

Verity Count

Verity vote tabulation software. Count receives, reads, aggregates, and reports on election results. The system analyzes results, providing deeper details based on specified options such as the types of votes and elections.

Verity Data

The Verity application used to manage data such as ballot content, ballot formats, and ballot style previews.

Verity Key

Verity election cryptographic module. Provides secure authentication of critical actions within the Verity voting system.

Verity Print

Verity device for on-demand selection and printing of paper ballots.

Verity Relay

Verity application designed to receive transmissions from specially-equipped Verity Scan with Relay devices. Transmitted data is written to a transfer vDrive and taken to Verity Count for tabulation.

Verity Scan

Verity polling place scanning device. These devices scan physical printed and marked ballots for collecting and tabulating votes.

Verity Scan with Relay

Verity Scan device modified with Relay modem kit upgrade. Scan with Relay is a Scan device equipped and configured for Relay transmission.

Verity Touch

Verity polling place direct record electronic voting device.

Verity Touch Writer

Verity polling place ballot marking device, with print capabilities for paper ballots.

Verity vDrive

In the Verity system, the electronic media used for transferring of election definitions and data, CVRs, and device audit logs between the Verity software workstations and voting devices.

Voluntary Voting System Guidelines (VVSG)

Standards created by the National Institute of Science and Technology and used by the EAC to test and certify voting systems.

vote center

Sometimes called super precincts or county-wide polling places. A polling place where all or a large set of election precincts and ballot styles are available for voters from a large area to come in-person to vote on election day.

vote drop-off

The difference between the number of people who turned out for an election and the total number of votes cast for a particular office. Sometimes referred to as 'residual votes'. Reasons for vote drop-off may include overvoted or undervoted contests.

vote for n of m

A ballot choice in which voters are allowed to vote for a specified number ('n') of candidates in a multi-seat contest where 'm' is the number of valid choices.

voted ballot

A ballot that has been cast.

voting position

Specific response field on a ballot where the voter indicates the selection of a candidate or ballot proposition response.

voting system

The total combination of mechanical, electromechanical or electronic equipment (including the software, firmware, and documentation required to program, control, and support the equipment) that is used to define ballots, cast, and count votes, report or display election results; and to maintain and produce any audit trail information; and the practices and associated documentation used to identify system applications and versions of such applications; to test the system during its development and maintenance; to maintain records of system errors and defects; to determine specific system changes to be made to a system after the initial qualification of the system; and to make available any materials to the voter (such as notices, instructions, forms or paper ballots).

voting system software

All the executable code and associated configuration files needed for the proper operation of the voting system. This includes third party software such as operating systems, drivers, and database management tools. See also dynamic voting system software, semi-static voting system software, and static voting system software.

Voting System Test Laboratory (VSTL)

An independent test laboratory accredited by the Election Assistance Commission and qualified to test voting systems to approved voting system standards.

warranty

Guarantee that a piece of hardware or software will work to certain standards for a certain period of time.

write-in

A name of a candidate entered by the voter in order to vote for a candidate that is not listed in that contest.

write-in, certified

A candidate that has been certified by the election authority as being a valid write-in candidate for the election.

WYSIWYG

What You See Is What You Get. Term used to describe a visual method of rendering ballot styles, to see an accurate representation of how ballots are laid out.

zero report

A voting device report that must be printed before polls are opened on the first day of early voting and on election day. A zero report must also be printed from the tabulation workstation prior to counting ballots on election day. This report lists the time, the number of precincts at the polling place, the contests and candidates on the ballot, and verifies that the current number of votes for each candidate or option is zero.

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Verity documentation

Verity Software Administrator Guides

These are your go-to guides for software operation and election management using Verity software; there is one guide for each of the major Verity software applications.

6641-009 Verity Administrator's Guide: Data
6641-010 Verity Administrator's Guide: Build
6641-011 Verity Administrator's Guide: Central
6641-012 Verity Administrator's Guide: Count

Verity Support Procedures Guide

Your primary guide to equipment management, functionality testing, warehouse procedures, and voting device tasks and troubleshooting.

6643-002 Verity Support Procedures Guide

Verity Polling Place Operations Guides

Your primary guide for polling place operations, designed with Poll Workers in mind. Includes procedures for setting up equipment, opening polls, assisting voters, and closing polls. Choose the version according to the type of equipment used in your jurisdiction:

6642-002 Verity Polling Place Operations Guide - Scan & Touch Writer
6642-003 Verity Polling Place Operations Guide - Print
6642-004 Verity Polling Place Operations Guide - Controller & Touch

Verity Field Guides

Condensed guides for quick reference in a more portable format. The Poll Worker's Field Guides are condensed versions of the Polling Place Operations Guides; the Troubleshooting Field Guide is a condensed version of the Troubleshooting section of the Support Procedures Guide.

6651-002 Verity Poll Worker's Field Guide - Scan & Touch Writer
6651-003 Verity Poll Worker's Field Guide - Print
6651-004 Verity Poll Worker's Field Guide - Controller & Touch
6653-002 Verity Troubleshooting Field Guide

Verity Training Course Packs

Course packs are available for each of Verity training courses; each course pack include a PowerPoint presentation as well as a trainer's Agenda.

6661-010 Verity Course Pack: Data
6661-011 Verity Course Pack: Build
6661-018 Verity Course Pack: Central
6661-019 Verity Course Pack: Count
6661-012 Verity Course Pack: Polling Place Operations - Scan & Touch Writer
6661-013 Verity Course Pack: Polling Place Operations - Print
6661-014 Verity Course Pack: Polling Place Operations - Controller & Touch
6661-015 Verity Course Pack: Assisting Persons with Disabilities
6661-017 Verity Course Pack: Support Procedures
6661-020 Verity Course Pack: Train the Trainer
6661-021 Verity Course Pack: Management & Best Practices

Verity Knowledge Base

In addition to the core documents listed above, Hart InterCivic is committed to providing a growing knowledge base of articles. Knowledge Base articles are targeted towards specific election-related topics, best practices, and recommended procedures, updated in response to feedback from our customers. For a current list of available Knowledge Base articles, please contact Hart Support at 1 (866) ASK HART.

Hart Support

Note: the following contact information is for use by election officials and staff only; poll workers should not be encouraged to call the Hart CSC Help Desk.

Hart Customer Support Center (Help Desk)

1.866.ASK.HART

hartsupport@hartic.com





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