Hart InterCivic Quality and Information Security Policy

Hart InterCivic is committed to consistently providing high quality products and services for its customers through adherence to its established hardware and software Quality Management Systems, complying with customer, statutory, and regulatory requirements, and a commitment to continual improvement. Hart InterCivic is also committed to the integrity and the security of the information used in the product development process, in the products themselves, and in our management of customer data during the implementation process.

This DOCUMENT and the SOFTWARE, HARDWARE, and FIRMWARE to which it pertains contain confidential and proprietary information belonging exclusively to Hart InterCivic, Inc. No part of this publication may be modified, reproduced, stored in a retrieval system, or transmitted in any form, distributed by any electronic or mechanical means, photocopied, recorded, or otherwise reproduced or distributed without prior written permission from authorized personnel at Hart InterCivic, Inc. Any person receiving this document has a duty to take reasonable precautions preventing unauthorized use or disclosure of the contents.

Trademarks

Hart InterCivic and Verity are registered trademarks of Hart InterCivic, Inc.

Hart InterCivic disclaims any proprietary interest in the marks and names of others.
contents

introduction

about this guide

objectives of the Verity software training courses

election security

security features of Verity

election security recommendations

10

10

11

12

12

14
getting started with Verity

logging in to Verity

the Verity home screen

the Desktop application

setting the system clock and date
exporting file hashes
about file hashes
exporting file hashes on voting devices
accessing the Windows operating system
returning to the Verity home screen
logging out of Verity

the Manage application

accessing the Manage application
using the Manage application
best practices: archiving elections
archiving elections in Manage
restoring an archived election

the Disk and RAID indicators

the Users application
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 Build, Central, and Count applications. This guide is intended as an accompaniment to the Verity Build, Central, and Count training courses, 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 processes related to ballot proofing and media creation in Build, ballot scanning and resolution in Central, and tabulation and election reporting in Count. The *Verity Administrator’s Guide* is 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 Build, Central, and Count training courses 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 proof print ballots and write election media in Verity Build, scan and resolve ballots in Verity Central, and tabulate cast vote records and generate reports in Verity Count.
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 software build 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.
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.
benefits of Verity

**Usability** – Verity makes election administration and voting easier, by providing user-friendly tools that reduce complexity and streamline productivity.

- Modern, intuitive, friendly software design.
- Innovative hardware that is easy to store, transport, set up, and operate.
- Usable, plain language ballot design and reporting.
Adaptability – Verity is designed to support any kind of election, and to be flexible enough to change as your needs change.

- Verity Election Office election management and the Verity Voting system follow a unique “ecosystem” approach that can respond to legislative changes and support new applications over the long term.

- Modular parts allow Hart to convert Verity devices from electronic to paper and back, as your jurisdiction’s needs evolve.

Transparency – Verity provides for open, secure, and easily auditable elections.

- Store images from Verity Scan scanning devices.

- Robust filters to print and export ballot images from Verity Central, with adjudication notes, if desired.

- Built-in Auditing Dashboard in Verity Count, to export Cast Vote Record data according to your specific needs.

- Usable, easy-to-read plain language audit reports from every software application.

- Easy, efficient methods to validate software on voting devices and desktop workstations.
benefits of Verity accessible design

- Universal design – Verity allows all voters to vote on the same common platform, with a shared, common interface design.

- The right technology – By offering innovative hybrids of electronic and paper ballots, Verity provides maximum choice for the full spectrum of voters, regardless of ability or disability.

- True equality of access – the paper ballot output from Verity Touch Writer is the same paper ballot that all voters use, without “segregation” or difference.

- Superior usability – with the modern Design for Democracy interface and an enhanced Access Controller, Verity provides simplicity, satisfaction, efficiency, and confidence.

- Flexibility, physical access and privacy – Verity Touch Writer supports frontal and parallel wheelchair access, many choices for voter personalization and comfort (video-only; audio-only; adaptive devices), and best flexibility for placement in the polling place, so there are no bottlenecks (as with all-in-one devices) and maximum quiet and privacy.
Verity hardware advantages

- Latest technology in smaller footprint means much easier transport, set up, use, and storage.

- Modular design approach delivers longer product life cycle; Hart can help customers adapt the equipment to stay current with changing needs.

- Verity has the flexibility to support all accessible voting needs and provides equality of access for all voters.

Verity software advantages

- Intuitive, approachable interface makes training and utilization faster and easier.

- High degree of flexibility, allowing election data import from multiple customer sources and supporting any election type.

- Best-in-class security, privacy, transparency, and reporting features.
Verity system components

hardware components

Verity vDrives

- In the Verity system, vDrives are used to transfer ballots 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 voting device has its own vDrive.

TIP:
The particular quantities and types of voting equipment may vary depending on your jurisdiction.
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.
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 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.
actions requiring use of the Verity Key

Use in Verity Build

- Verity Keys are written for the current election in Verity Build. Writing Verity Keys requires the Operator or Media Creator user to know the Verity Build administrator password. When writing the Verity Key in Build, the user will assign application and device passwords for the election. See page 112 of this guide.

Use in voting devices (Touch Writer and Scan):

- Verity Key is required to predefine Touch Writer and Scan 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 from Verity Build. A signed election is one that has been proofed and accepted in Build. The user must know the Verity Key application password for Central. See page 150 of this guide.
actions requiring use of the Verity Key, continued

- 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 for Central. See page 222 of this guide.

Use in Verity Count

- In Count, the Verity Key is required in order to import a signed election from Verity Build. A signed election is one that has been proofed and accepted in Build. The user must know the Verity Key application password for Count. See page 248 of this guide.

- Verity Key is also required in order to read the first vDrive for an election into Count. The user must know the Verity Key application password for Count. See page 286 of this guide.
the Verity software suite

**Verity Layout**
- In Verity Layout, you can import or enter election data and ballot translations, and record audio. Layout includes robust ballot design, layout, and proofing features, and is flexible to adapt as your needs change.

**Verity Build**
- In Verity Build, you can import an election database, 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 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.
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**...

2. Enter your existing password, and then enter a new password. Enter the new password a second time to confirm, and then click **OK**.
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 Build workstation. In this case, clicking the leftmost tile will open the Verity Build application.

- In the bottom right corner is the **Shutdown** button. Clicking this button will shut down the Verity computer workstation.
the Verity home screen, continued

In addition to the application tile(s) (Layout, Build, Central 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 on all workstations.*

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

The **Manage** application (*available only on server workstations, see page 59) 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.
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.
Exporting file hashes

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

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 36.
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 NASED or 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 of Hart InterCivic. Contact your Secretary of State’s office 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 Writer and Scan voting 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 voting device (Touch Writer 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 “Hash values have been calculated and stored”. This may take some time.

**Note:** if you see the message No vDrive Found, this means 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

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, import, export, rename, delete, archive, and restore elections created in the Verity system. The Manage application is available only on server workstations (see page 59).

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 Layout, you can add a new election; on a Verity Build workstation, you can import an election; on a Verity Count workstation, you can import a signed election.

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. To the right are examples of actions available for a Build workstation and for a Count workstation.
The following **Actions** may be available in the Manage application, depending on the workstation:

- **Add**: creates a new election (only available on a Layout workstation).
- **Copy**: creates a copy of an existing election (only available on a Layout workstation).
- **Rename**: Renames the selected election. The election ID does not change.
- **Delete**: Removes the selected election from the election list and the workstation.

**Note**: Hart recommends that you **archive all elections before deleting**.

- **Import**: Imports an election.
- **Import Signed**: Imports a signed election (only available in Central and Count). A signed election is one that has been accepted in Verity Build. Requires **Verity Key**.
- **Export Signed**: Exports the finished and accepted election (only available in Build). Signed elections are used by Count and Central.
- **Archive**: Creates an archive copy of the election. The election status does not change.
- **Restore**: Restores the archived election from saved records without changing the election status.
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.

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

- Before importing election data in Layout
- Before an election changes status:
  - Before Locking an election for export in Layout
  - Before Accepting an election in Build
- After Accepting an election in Build
- Before performing Manual Vote Recording in Count
- After completing tabulation in Count
Archiving elections in the Manage application

1. Open the Manage application.

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

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. Enter a name for the archived election. The name should include the Election name, date, and current state of the election (i.e. Open, Locked, or Accepted, before MVR, etc.).

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.
Restoring an archived election

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

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 election ZIP file.

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 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).

![Image of icons A and B with date 12/11/2014]

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.
the Users application, continued

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

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 51.

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 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.

#### 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.
User Roles in Verity, continued

Verity Central user roles, continued

- **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. In addition, Administrators have additional access for administrative setup and closing polls.

Verity Count user roles

**Note**: In Count, only one Administrator or Operator user can be logged at a given 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 cannot manually record votes.

- **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.
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.

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

Set rules that apply to all users:
- [ ] Lock accounts after [0] failed login attempt(s)
- [x] Allow locked accounts to login after [20] minute(s)
- [ ] Force password change every [0] month(s)
- [x] Log idle user out after [20] 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
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.

- 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. (See page 112.)
  - **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.

- In addition, you will create additional device passcodes for opening, suspending, and closing polls for each voting type in the election. (See page 112.)

continued on next page
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. (see page 134)

- 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 signed elections from the Build workstation.
- A complete list of actions requiring the use of the Verity Key is found on page 24.

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 51. Examples of possible network configurations are given on the following pages.
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.
verity build

version 1.0
verity build, continued

setting preferences 86

Build checklist: the select election tab 87

3 proof ballots 88

the proof ballots tab 88

data validation 89

ballot preview 90

selecting a ballot 91

the ballot preview window 92

the ballot preview toolbar 93

best practices: fold lines 94

reports 95

available reports: Build 97

proofing audio 102

summary: proofing ballots 103

recommendations for proofing ballots 104

Build checklist: the proof ballots tab 105
verity build, continued

creating Verity Keys ..............................................134

actions requiring Verity Key ..................................137
  in Build..................................................................137
  in voting devices..................................................137
  in Central................................................................137
  in Count..................................................................138
  practicing Key security...........................................138

exporting a signed election from the Build workstation ........................................139

Build checklist: the create tab........................................141
getting started

verity build: an overview

In Verity Build, you will proof your ballot data and ballot layout, configure the settings for your election, and print ballots, write vDrives, and write Verity Keys. Ballot data and layout can be imported from Verity Layout, or from another source that you use to create your election.
verity build: an overview, continued

Verity Build workflow

- Layout
- other election source
- Build
- Keys
- vDrives
- paper ballots
importing an election on the Build workstation

To open an election in Verity Build, you first must import the election in the Manage application on that workstation (*Manage is available only on server workstations, see page 59).

**Note:** Before importing any elections, you can first set basic election preferences for Build, if desired (see page 77). These preferences will be applied as defaults to any imported election.

1. Insert the removable media (USB) containing the election into an available USB port on the Build workstation computer.

2. If you have already launched Verity Build, click the **Home** link in the upper left corner to return to the Verity Desktop.

3. On the Verity home screen, click the **Manage** tile.
importing an election on the Build workstation, continued

4. In the Manage application, click Actions.

5. Select Import from the Actions drop-down menu.

6. Browse to the location of the removable media and select the election to import. Click OK.
importing an election on the Build workstation, continued

7 Confirm the election to be imported is correct, and then click Yes.

8 Click Home in the upper left corner to return to the Verity Home screen.
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 Layout.

- **Locked for Export**: The election has been created using Verity Layout (or other election definition software) and is now ready to import into Verity Build.

- **Accepted**: The election has been proofed in Verity Build and you can now print ballots and create vDrives and Keys. Election is now ready for export to Verity Central or Verity Count. An election that has been accepted in Build is also termed a “signed” election.

A **signed** election has been accepted in Verity Build. Importing a signed election on a separate Verity 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 Build application

Log into the Verity workstation. On the Verity home screen, click the Build application tile to open Build. The Build application contains four tabs: Select Election, Proof Ballots, Configure Settings, and Create.
setting preferences

The Preferences menu allows you to set default preferences for all elections in Verity Build. You can set preferences at any time; however, preferences set here only affect elections that have not yet been imported in Manage. The first time you open Build you should set preferences before importing your first election onto the workstation. You can change settings for an election you have already imported on the Build workstation under Configure Settings (page 106).

1. Click the Select Election tab.

2. Select the Preferences menu.
setting preferences, continued

Set your preferences for unique identifiers on ballots. For details on unique identifiers, see page 128.

**A)** Check the box to include unique identifiers on your ballots, if desired.

**B)** Check the box to make unique identifiers human-readable, if desired.

**Note:** A human readable unique identifier will include numerals in addition to a barcode.
setting preferences, continued

4 Type your default label for sample ballots and for official ballots. This will appear in the header of the ballot.

5 Click Save to save your preferences.
Help is available on every screen of the Build 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.
Build checklist: getting started

☐ 1 Log in to Verity.

☐ 2 Open Build and set default election preferences, if you have not already done so.

☐ 3 Insert the USB media containing the election exported from Layout (or other election definition software) into an available port on the Build workstation.

☐ 4 Click Home to return to the Verity home screen.

☐ 5 Open the Manage application on the Build workstation.

☐ 6 Under the Actions menu in Manage, choose Import. Browse to and select the election on your removable USB media, and then click OK.

☐ 7 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 created in Verity Layout (or another election source) and adjust basic preferences for elections that you have not yet imported. The following menus are available in the Elections tab:

- **Election**: select and open the election you need to work with.
- **Preferences**: Set basic election preferences for Build.
selecting and opening an election

1. Select the Select Election menu.

2. Select the election you need to work with from the list.

3. Click Open in the bottom right of the screen.
setting preferences

The Preferences menu allows you to set default preferences for all elections in Verity Build. You can set preferences at any time, however preferences set here only affect elections that have not yet been imported in Manage; the first time you open Build you should set preferences before importing your first election onto the workstation. See page 77 for instructions on setting default preferences. You can change settings for an election you have already imported on the Build workstation under the configure tab (page 106).
Build checklist: the select election tab

☐ 1 Log in to Verity.

☐ 2 Open Build.

☐ 3 In the Select Election tab, select the election you need to work on from the list, and then click Open.

☐ 4 Under the Select Election tab, you can also review the default election preferences by selecting the Preferences menu, if desired. Changes made here will not affect elections that have already been imported in the Manage application.
In the **Proof Ballots** tab, you will check election data for errors, proof ballot content and layout, print reports of ballot data for review, and proof audio recordings. The following menus are available in the Proof tab:

- **Data Validation**: view and print any problems with ballot data.
- **Ballot Preview**: preview each ballot style for content and layout.
- **Reports**: create reports used to proof the ballot data for errors.
- **Proof Audio**: listen to and proof audio recordings.
data validation

The **Data Validation** menu alerts you of any problems found with the ballot data. If errors are found, the election must be corrected and then re-imported into Build. Select an item from the list to view any validation issues.

**A)** Click the + symbol next to the item to view individual issues; the number of issues is indicated in the rightmost column. Note the following indicators:

- ![Warning](image)
  = Warnings. These items should be dealt with before proceeding, but are not required.

- ![Error](image)
  = Errors. These items must be resolved before you can continue.

**B)** Click Print to save or print a report of all issues.
ballot preview

In the Ballot Preview menu, you will proof each ballot style for content and layout. The ballot preview window contains three sections:

- **(A)** The Select a ballot panel
- **(B)** The ballot preview image
- **(C)** The ballot preview toolbar

! IMPORTANT: You should proof all ballot styles for content and layout. A ballot style consists of a ballot format containing a specific subset of contests. You should also proof ballots by language & ballot type (paper/electronic).
Selecting a ballot

1 In the Select a ballot panel, select the language that you want to proof (if applicable).

2 Select the ballot type to proof (paper or electronic).

**Note:** You should proof each ballot style by language and by ballot type.

3 Select the precinct or ballot style to proof. You should proof at least one ballot of each ballot style, in all languages and ballot types.

4 Click the filter icon in a column header to filter by category.
The ballot preview window displays the current page of the ballot whose language, ballot type, and ballot style you have selected.

- The green sliders on the right and bottom allow you to adjust the view when zoomed in.
The ballot preview toolbar

A) Use the Magnifying Glass buttons to examine the ballot in greater detail.

B) Stub slider allows you to see the ballot stub.

C) Fold Lines slider allows you to see where fold lines appear on the ballot. Best practices for fold line placement can be found on page 94. Change fold line positioning by entering values in the boxes below.

D) Click Export to export the page preview image to file (PDF).

E) Click Print to print the page image.

F) Use the Page buttons to view each page of the ballot; be sure to proof all pages.
best practices: fold lines

Consider the placement of fold lines when laying out your ballot.

- Don’t fold ballots through option boxes and barcodes as dirt may accumulate in the fold.
- Use the minimum number of folds required to fit the ballot into its envelope.
- Be familiar with all of your ballot styles. Some may require a different type of fold than others.
- Avoid excessive folding and creasing.
- Avoid folding against the grain of the paper.
- Avoid any folds occurring just above or below a ballot stub perforation.
reports

The **Reports** menu contains a number of reports that can be used to proof the ballot data for errors. Available reports are listed on page 97.

1. Select the **Reports** menu.

2. Select the desired report from the list.

3. Click **Print**.

![Image of the Reports menu with a list of available reports and a 'Print' button](image-url)
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: Build

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

- Report Title
- Election Title
- Election Date
- Election ID
- Jurisdiction Name
- Date and time the report was generated

Audit log report

The Audit log report is a comprehensive log of all activity that has occurred in the Build 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 a workstation or network that is not election-specific. Each entry includes the same details as the audit log, listed above.
Jurisdiction Configuration report

Note: All lists in this report are sorted by the sequence number of the list items.

- Jurisdiction name
- List of precinct names
- List of precinct split names
- List of district names
- Precinct associations with districts
- Precinct split associations with districts

Polling Place List

This report includes a list of all polling places, with the following details for each polling place:

Note: All lists in this report are sorted by the sequence number of the list items.

- Polling place name
- Polling place notes
- Polling place to voting type associations
- Polling place to party associations
- Polling place associations with precincts (optional)
- Polling place associations with precinct splits (optional)
- Polling place associations with districts (optional)
- Items in this report can also be filtered by voting type
All Contests report

This report includes a list of all contests in the election.

**Note:** All lists in this report are sorted by the sequence number of the list items.

- Each contest includes the following details:
  - Contest title
  - Contest type
  - List of contest party associations
  - Instruction text
  - Contest notes
  - Number of valid selections
  - Number of write-in options
  - Whether contest is included in straight party
  - Whether contest is included in rotation

- A list of contest options, with the following details:
  - Option name
  - Option details
  - Option party association

- Whether contest is non-partisan
- Total count of contest that include vote-able options in this election

Contest Associations report

This report displays a list of all Contests in the election, including the following details:

**Note:** All lists in this report are sorted by the sequence number of the list items.

- Contest title
- Contest party association
- The contest’s associations with:
  - Precincts
  - Precinct splits
  - Districts

- This report can be filtered by association type
Rotation Report
This report contains information relating to rotation, organized into the following sections:

• List of all contests included in rotation
• Contest details:
  ▪ Contest title
  ▪ Contest party associations
  ▪ Option names, in rotated order, for each precinct and precinct split associated with the contest
  ▪ Write-in options

Ballots Printed
This report lists ballot print jobs that have been created in this election, with the following details for each print job:

• Precinct name
• Precinct split name
• Party
• Quantity of ballots printed
• Language
• Ballot type
• Starting ballot number for the print job (if applicable)
• Ending ballot number for the print job (if applicable)
• Date and time of the print job
• User logged in when the ballots were printed
available reports: Build, continued

vDrives Created report
This report includes the following details relating to vDrive and creation:

• Total number of vDrives created in this election
• Total number of Test vDrives created in this election
• Total number of Official vDrives created in this election
• List of all vDrives and Keys created in this election, with the following details:
  ▪ Media ID
  ▪ Media type
  ▪ User who created the media
  ▪ Date and time the media was created
proofing audio

The Proof Audio menu shows a list of all ballot items; the rightmost column indicates whether an audio recording exists for that ballot item.

1. Select the Proof Audio menu.
2. Select the desired language (if applicable).
3. Select the ballot item you would like to proof.
4. Click the Play button (triangle) to hear the audio recorded for that item.
5. Click the Stop button (square) to stop playback.
summary: proofing ballots

1 Review fold line and ballot stub positioning using the ballot preview toolbar.

2 Print and use reports to proof ballot content and associations.

3 Proof ballot content and associations for:
   - Spelling and Content
   - Contest Details
   - Contest options
   - Write-in lines
   - Party information
   - Candidate details
   - Straight party options
   - Contest instructions
   - District, Precinct, and Polling Place associations

4 Review all audio after recording.
   - Listen for any mispronunciations, especially with candidate names.
   - Listen for truncated words at the beginning and ending of audio strings.
   - Listen for extreme changes in volume from string to string.
   - Confirm that all audio strings are clear, audible, and associated with the appropriate text.

TIP:
Customers using Hart’s Ballot Production Service should test vDrives as soon as they are received. Notify BPS as soon as possible with edits and changes.
general recommendations for proofing ballots

- Proof ballot content carefully; try reading the ballot upside-down or from bottom to top to encourage careful examination. Be sure to check all spelling.

- Proof ballot layout aesthetics and usability; ballots should be simple, well-spaced, and easy to understand.

- Ballot content should be laid out evenly throughout the page.

- Verify that all contests and candidate names appear without avoidable truncation or needlessly small font size.

- Assess fold patterns on different ballot styles.
Build checklist: the proof ballots tab

☐ 1 Log in to Verity.

☐ 2 Open Build and select the Proof Ballots tab.

☐ 3 Under the Data Validation menu, review the list for any errors or warnings. Errors must be corrected before you can proceed.

☐ 4 Under the Ballot Preview menu, proof ballots for content and associations, and check fold line and ballot stub positioning, if applicable. Be sure to proof all ballot styles and languages.

☐ 5 Under the Reports menu, print reports to help you proof ballot content and associations.

☐ 6 Under the Proof Audio menu, check all audio strings for accuracy and clarity.
In the Configure Settings tab, you will set up your application and device options and accept the election in preparation for printing ballots and writing vDrives and Keys. The following menus are available in the Configure tab:

- **Election Settings**: set your options for printed ballots, voting types, and voting devices.
- **Accept Election**: finalize the election before you write vDrives and Keys and print ballots.
election settings

The Election Settings menu contains several tabs which allow you to set options for:

- Printed ballots
- Voting types
- Device reports
- Device passcodes
- Device options for Scan and for Touch Writer
Select the Printed Ballots tab to set your printed ballot settings, if you did not do so earlier.

A) Type your default Sample ballot label. This label will appear along the top of sample ballots.

B) Type your default Official ballot label. This label will appear along the top of official ballots.

C) Check the box if you would like to include unique identifiers on your ballots. This option adds a unique identification number to the barcode on each ballot, enabling rejection of duplicate ballots during scanning.

D) If you have made changes, click Save.
Select the **Voting Type Setup** tab to choose your options for each voting type for the election (Election Day, Early Voting, and Absentee).

**A)** Check the box under **Allow Tally** if you would like poll workers to have the option to print a daily tally report from the voting devices, for this voting type.

**B)** Click here to set the **End Date and Time** for each voting type (required).

**C)** Chose the **End of Day Type**. For Election Day, this is normally Close Polls. For Early Voting and Absentee/By-mail voting, this is usually Suspend Polls.

**D)** If you have made changes, click **Save**.
Select the **Device Reports** tab to set reporting options for the voting devices.

**A)** Choose how report results will be sorted. This determines the order in which contest choices will appear on reports. The available options are:
- By ballot order
- By votes received

**B)** Choose the level at which results will be reported. The available options are:
- At the precinct level
- **At the precinct split level** *(Note: if you choose this option, your precinct reports will be at the precinct split level.)*
**election settings, continued**

**C)** Choose how device report details will appear. Options can be set for the Zero Report, Ballot Count Report, and Tally Report. The available options are:

- **Summary**: shows only totals for the device.
- **By precinct/split**: shows totals broken down by precinct/split.

**Note:** If you set reporting detail to “By precinct/split”, a detailed report will print showing the results for all contests, by each precinct; these may take a very long time to print if you have many precincts. Please keep in mind that choosing the “By precinct/split” option may cause delays when printing reports at Early Voting or Vote Center polling places, or when performing an LAT, since all precincts would be included.

**D)** If you have made changes, click **Save**.
Select the **Device Passcodes** tab to set the device passcodes for election staff and pollworkers. Passcodes must be 6 numbers.

**Note:** Passcodes are masked when entered, but can be viewed by hovering the mouse pointer over the entry box.

- **A)** Set passcodes for Maintenance (used when devices are first powered on), Poll Workers, and Administrators.
- **B)** Set Open Polls passcodes for each voting type.
- **C)** Set Suspend Polls passcode for each voting type, or
- **D)** Set Close Polls passcode for each voting type.
- **E)** If you have made changes, click **Save**.

**IMPORTANT:** Log all passcodes and keep in a secure location.
Select the Scan tab to configure the Scan device behavior when scanning ballots with voter intent issues. These settings determine if and how second-chance voting opportunities are presented to the voter.

A) Choose if Scan will allow or reject undervotes, overvotes, blank ballots, or invalid votes.

- **Allow**: allows the device to accept any contests of that type (undervote, overvote, etc.).
- **Reject All**: sets the device to prompt the voter to correct any contests of that type (undervote, overvote, etc.) before the ballot can be cast. A rejected contest can be overridden by either the voter or the poll worker (see below).
- **Reject for some contests**: selecting this option allows you to reject undervotes only on a contest-by-contest basis.
**election settings, continued**

B) Choose whether the Voter or the Poll Worker has the ability to override rejected undervotes, overvotes, blank ballots, or invalid votes. If a voter or poll worker chooses to accept a ballot as-is, any undervoted or overvoted contests will not be counted. Otherwise, in the case of undervotes and blank ballots, the ballot can be corrected and rescanned. In the case of overvotes, the ballot can be spoiled and the voter given a new ballot, according to local jurisdiction rules.
election settings, continued

C) Check this box if you would like the Verity Scan to save a bitmap image of each ballot page scanned to the vDrive. This may be useful for election transparency initiatives (making ballot images available to the public after the election, for instance). You must check this box if your jurisdiction uses scanned ballot images for recount purposes.

D) Set the default audio volume for alerts.

E) If you have made changes, click Save.
Select the **Touch Writer** tab to set device options for the Touch Writer.

**A)** Set the number of minutes an access code will remain active before expiring.

**B)** Check the box if you would like unique identifiers to be human readable on ballots printed from the Touch Writer. This will add a human-readable unique identifier to the ballot in addition to the identifier included in the barcode, which can be useful for scan resolution in Central.

**C)** If you have made changes, click **Save**.
accepting the election

Accept the election ONLY if you are ready to write vDrives and Keys and print ballots.

- If you are not ready to accept your election, you may log out and return later, or navigate to a previous screen to make changes.

- If you are ready to accept the election, select the Accept Election menu (A), and then click Accept (B).

! IMPORTANT: After accepting the election you will not be able to make further changes to the election.
accepting the election, continued

1 If issues remain with the election data, you will see the message to the right. This message will list the items that must be fixed before you can accept the election. Click OK and correct the issues.

2 If there are no issues found, you will see a progress screen while the election is validated.

3 Once validation is complete, click OK.

4 Click OK again to confirm.
Build checklist: the configure settings tab

☐ 1 Log in to Verity.

☐ 2 Open Build, and select the Configure Settings tab.

☐ 3 Under the Elections Settings menu, review and choose election settings for printed ballots, voting types, and device reports. Set device passcodes and configure settings for the Scan and Touch Writer devices.

☐ 4 Before accepting the election, it is recommended that you first archive the election using the Manage application.

☐ 5 Under the Accept Election menu, accept the election only when you are finished making changes and are ready to print ballots and write vDrives and Keys for the election.
In the Create tab, you will print ballots, write and manage vDrives, and create and manage Verity Keys. The following menus are available in the Create tab:

- **Ballots**: print ballots and/or create ballot print files.
- **vDrives**: write the election to vDrives for use on voting devices and/or Central scanning stations.
- **Keys**: write Verity Keys for the election.
about printing

- There are two basic options when printing paper ballots:
  - Ballots can be printed on-demand and in-house, or
  - Ballots can be exported to PDF, and printed by a third-party print vendor who typically uses a commercial digital document printer.
- Hart has developed a print vendor certification process designed to standardize the various practices used by commercial print shops. If using a contract printer, be sure that they conform to the recommended guidelines.

! IMPORTANT: All ballots, whether printed in-house or by a third party, must be checked using a Ballot QC Overlay. A Ballot QC Overlay is used to verify that the printing alignment is within the necessary tolerances so that the ballot can be scanned properly in the Verity system.
Under the **Ballots** menu, select the ballot style(s) you would like to print.

**A)** Ballot style is indicated in the left column; the associated precinct is in the right column.

**B)** You can click **Go to Preview** to go to the **Ballot Preview** screen; click the **Create** tab to return to the **Ballots** menu.
printing ballots, continued

For each ballot style, select the Quantity and Type of ballots to be printed. Ballot types include Official ballots, Test ballots, and Sample ballots.

- **Test ballots** are for testing printer settings, checking ballot layout, and for use during a Logic & Accuracy Test (LAT).

- **Sample ballots** are intended as samples to be distributed to the public. Sample ballots cannot be read or counted by voting devices.

- **Official ballots** are for voting.

Other Printing options include:

- Enabling human readable unique identifiers for printed ballots.
- Including ballot numbering.
- Including ballot stubs.
printing ballots, continued

3  (optional) Print the selected ballot(s).

A) Click Print, or

B) If you wish to export the selected ballot(s) to PDF for printing at a later time, click Export.

4  (optional) Import a print queue (see the following page for instructions on creating a print queue file).
printing ballots, continued

Creating a print queue file for import

Creating a print queue is a way to automate the printing process; to create a print queue you must first create a CSV file with ballot style(s), quantities, ballot type(s), etc. This file will also specify whether Build will automatically export the print job to PDF, or print the job immediately.

1. On a non-Verity workstation, create an Excel™ spreadsheet with the following data:

<table>
<thead>
<tr>
<th>Column</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Precinct Name (*required)</td>
</tr>
<tr>
<td>2</td>
<td>Split Name</td>
</tr>
<tr>
<td>3</td>
<td>Party (*required for closed primaries)</td>
</tr>
<tr>
<td>4</td>
<td>Language</td>
</tr>
<tr>
<td>5</td>
<td>Quantity</td>
</tr>
<tr>
<td>6</td>
<td>Ballot Type (*required)</td>
</tr>
<tr>
<td>7</td>
<td>Print to file? (TRUE or FALSE)</td>
</tr>
<tr>
<td>8</td>
<td>Output File Name</td>
</tr>
</tbody>
</table>

Example:

<table>
<thead>
<tr>
<th>precinct</th>
<th>split</th>
<th>language</th>
<th>quantity</th>
<th>official</th>
<th>printToFile</th>
<th>outputFileName</th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>A</td>
<td>Spanish</td>
<td>150</td>
<td>Official</td>
<td>TRUE</td>
<td>101A_Spanish_Official.pdf</td>
</tr>
<tr>
<td>101</td>
<td>B</td>
<td>English</td>
<td>800</td>
<td>Official</td>
<td>TRUE</td>
<td>101B_English_Official.pdf</td>
</tr>
<tr>
<td>101</td>
<td>B</td>
<td>Spanish</td>
<td>50</td>
<td>Official</td>
<td>TRUE</td>
<td>101B_Spanish_Official.pdf</td>
</tr>
<tr>
<td>201</td>
<td></td>
<td>English</td>
<td>1300</td>
<td>Official</td>
<td>TRUE</td>
<td>201_English_Official.pdf</td>
</tr>
<tr>
<td>201</td>
<td></td>
<td>Spanish</td>
<td>50</td>
<td>Official</td>
<td>TRUE</td>
<td>201_Spanish_Official.pdf</td>
</tr>
<tr>
<td>243</td>
<td></td>
<td>English</td>
<td>3600</td>
<td>Official</td>
<td>TRUE</td>
<td>243_English_Official.pdf</td>
</tr>
<tr>
<td>243</td>
<td></td>
<td>Spanish</td>
<td>1500</td>
<td>Official</td>
<td>TRUE</td>
<td>243_Spanish_Official.pdf</td>
</tr>
<tr>
<td>417</td>
<td></td>
<td>English</td>
<td>900</td>
<td>Official</td>
<td>TRUE</td>
<td>417_English_Official.pdf</td>
</tr>
<tr>
<td>417</td>
<td></td>
<td>Spanish</td>
<td>100</td>
<td>Official</td>
<td>TRUE</td>
<td>417_Spanish_Official.pdf</td>
</tr>
</tbody>
</table>
printing ballots, continued

Content descriptions

- **Precinct Name**: required; precinct name of the ballot to print. Case-sensitive, may include spaces; must exactly match the Precinct Name that was used in ballot definition.

- **Precinct Split Name**: precinct split name of the ballot to print, if applicable. Must exactly match the Precinct Split name that was used in ballot definition.

- **Party**: required only for closed primary elections.

- **Language**: language of the ballot to print, if applicable.

- **Quantity**: the number of ballots to print.

- **Ballot Type**: can be “Test”, “Sample”, or “Official”.

- **Print to File**: type TRUE if you would like to output the print jobs to PDF; type FALSE if you would like to output directly to the default printer.

- **Output File Name**: The name of the PDF to be produced by the import file (Note: Print to File value must be TRUE).

! IMPORTANT: Delete any header row before saving the spreadsheet as a .csv (if using an export from Layout, you can leave the header row if desired).

2 Save the spreadsheet you created as a CSV file to a removable media (USB). Insert the USB into an available USB port on the Build workstation.
printing ballots, continued

3 Under the Printing Options panel in Build, click Import.

4 Browse to the CSV file you created and click OK.

**NOTE:** If you entered TRUE in the Print to File column of the CSV file, the ballots will be automatically saved to the export location in the file. If you entered FALSE under the Print to File column, the ballots will be sent to the printer immediately.
printing ballots, continued

Creating a print queue file for import (pre-marked ballots)

You can also create a print queue for pre-marked ballots (for use in a Logic & Accuracy Test, for example). Instructions for creating a print queue with pre-marked ballots are located in the Appendix, page 372.

unique identifiers and ballot numbering

A unique identifier can be included in a ballot barcode, and if desired, also as a human-readable number printed on the ballot margin.

- Election officials can choose to include or exclude unique identifiers from printed ballots.
- A unique identifier is a non-serial number, used during the scanning process to detect and disallow duplicate ballots.
- The unique identifier is not tied in any way to an individual voter, as there is no individual voter data stored in the Verity system.

A ballot number is a separate, human readable number that can be included in the margin of a printed ballot.

- Ballot numbering can be used in the inventory process for paper ballots.
- Numbering can be set to restart after a set number of ballots.
- Ballot numbers are not read during the ballot scanning process.
visual ballot guide: barcodes and numbering

- Precinct
- Party
- Ballot Type
- Election ID

Ballot Number (if applicable)

Election ID

Unique Identifier (if applicable)

vDrive ID

Unique Identifier (if applicable)

Language
Sheet
Page Number
creating vDrives

Before writing vDrives, you should plan the quantity of vDrives needed, using the vDrive Worksheet as a guide (see page 132). As vDrives are written, log the Polling Place and vDrive ID for each vDrive on the vDrive Tracking Log. Additional vDrives can be written at any time, as needed.

1 Write vDrives.

A) Choose the device type (Official or Test).

B) Choose the quantity of vDrives to be written. For help with planning vDrive quantities, see page 132.
creating vDrives, continued

C) To print a report of all vDrives written, click Print Report. Use this report to log vDrive IDs for future reference. Copy this data to the vDrive Tracking Log, if desired.

D) Click Write vDrive. You can insert one vDrive to be written into an open USB port at any time.

E) When prompted, you can remove the vDrive and insert the next vDrive to be written.
planning vDrive quantities

A vDrive Worksheet is included in the Logs and Labels Pack (available from Hart) to assist you with planning vDrive quantities. Requirements will vary by jurisdiction, but generally speaking you will need the following at minimum:

**Test vDrives:**

- 1 vDrive for each Touch Writer to be used in the Logic and Accuracy Test (LAT).
- 1 vDrive for each Scan to be used in the LAT.
- 1 vDrive for each Central scanning setup used in the LAT (minimum, see below under official mode vDrives).
- 1 vDrive per device in use at Help Desk, etc.
- 10% of total as spare Test mode vDrives.

**Official vDrives**

- 1 vDrive for each Touch Writer to be used in the election – Early Voting and Election Day.
- 1 vDrive for each Scan to be used in the election – Absentee, Early Voting, Election Day.
- 1 vDrive minimum for each Central scanning setup, per 10k CVRs. More if pulling incremental reports from Count, or as per local Central workflow (e.g. Absentee and Early Voting on separate vDrives, etc.).
- 20% of total as spare Official mode vDrives.
**creating vDrives, continued**

2. Record the Election Name, Polling Place Names and vDrive IDs on the vDrive Tracking Log. This log will be used when preparing equipment for deployment to the polling places. You can also click Print Report for a report of all vDrives written.

3. To read a previously written vDrive, insert the vDrive into an available USB port on the Build workstation.

   **A) Click Read vDrive.**

   **B) The details for the vDrive inserted will display.**
creating Verity Keys

1. Write Verity Keys for the election.

A) Choose the Keys menu.

B) Insert a Key into an available USB port, and then enter the administrator password. The password you enter the first time you write the Key in Build stays attached to the Key until changed. You can change the password by checking the box next to Change this password. You will be prompted to enter the current administrator password as well as the new password.
creating Verity Keys, continued

**IMPORTANT:** Do not lose or forget the administrator password, as there is no way to recover it. The administrator password is used to write and read the Key in Build; if the password is forgotten, the Key cannot be re-written or re-used again.

C) Set up other passwords for voting devices and applications. These passwords can be changed for each election. All are required.

**Note:** These are the passwords that are required when you use the Verity Key with the voting devices (for example, to redefine the polling place) and in the other Verity applications (to read in and tabulate vDrives in Count, for example). A complete list of actions requiring the Verity Key is provided on page 137.

D) Click Write.

E) Remove the Key only after you see the success message shown. Click OK.
To read a previously written Key, insert the Key into an available USB port on the Build workstation.

A) Click Read. You will be prompted to enter the administrator password for the Key.

B) The Key data will display.
actions requiring use of the Verity Key

Use in Verity Build

- Verity Keys are written for the current election in Verity Build. Writing Verity Keys requires the Operator or Media Creator user to know the Verity Build administrator password. When writing the Verity Key in Build, the user will assign application and device passwords for the election. See page 112 of this guide.

Use in voting devices (*Touch Writer and Scan*):

- Verity Key is required to predefine Touch Writer and Scan 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 from Verity Build. A signed election is one that has been proofed and accepted in Build. The user must know the Verity Key application password for Central. See page 150 of this guide.
actions requiring use of the Verity Key, continued

- 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 for Central. See page 222 of this guide.

Use in Verity Count

- In Count, the Verity Key is required in order to import a signed election from Verity Build. A signed election is one that has been proofed and accepted in Build. The user must know the Verity Key application password for Count. See page 248 of this guide.

- Verity Key is also required in order to read the first vDrive for an election into Count. The user must know the Verity Key application password for Count. See page 286 of this guide.

practicing Key security

- Limit access to Keys and maintain chain of custody logs.

- Remove Keys from equipment when not in use.

- Limit access to the Verity Key passwords, in particular the Key Administrator password.
exporting a signed election from the Build workstation

To open the election you accepted in Build on a separate Verity Central or Count workstation, you first must export the signed election in the Manage application on the Build workstation.

**Note:** *if you are using a configuration with Build and Count on the same workstation, and you do not use Central, you can skip this procedure.*

1. Insert a removable media (USB) into an available USB port on the Build workstation computer. You will save the signed election to the removable media so that you can transfer it to a Central or Count workstation.

2. Log in to the Verity Build workstation.

3. On the Verity home page, click the Manage tile.
exporting a signed election on the Build workstation, continued

4  In the Manage application, select the election (A), and then click Actions (B).

5  Select Export Signed from the Actions drop-down menu.

6  Browse to the location of the removable media (USB). Click OK.

7  Remove the removable media (USB); you will use this to transfer the election to your Central and/or Count workstation(s).
Build checklist: the create tab

☐ 1 Log in to Verity.

☐ 2 Open Build, and select the Create tab.

☐ 3 Under the Ballots menu, you can print ballots or export ballots to PDF for printing later. You can also import print queue files to streamline your printing process.

☐ 4 Under the vDrives menu, you will write vDrives for use in voting devices (and in Verity Central, if applicable). Use the vDrive planning worksheet to help you plan quantities of vDrives for your election. You can write additional vDrives at any time.

☐ 5 Under the Keys menu, you will write Verity Keys for use during the election. You must know the Administrator passcode for the Key in order to write it for an election. Practice proper Key security when handling and distributing Verity Keys.

☐ 6 Click Home to return to the Verity home screen.

☐ 7 Insert a removable USB media.

☐ 8 Open Manage and Export the signed election from Build to the removable USB media.
verity central

version 1.0
1 getting started

verity central: an overview

importing a signed election on the Central workstation

about election status

opening the Central application

using on-screen help

Central checklist: getting started

2 select election

the select election tab

selecting and opening an election

creating and managing tasks

what is a task?

the new election task window
verity central, continued

additional task management options.........164

setting preferences 165

Central checklist: the select election tab...............168

3 scan 170

the scan tab 170

scanning a batch 171

managing batches 174

best practices for processing paper ballots.........177

searching ballots 178

scanner settings 181

Central checklist: the scan tab.................................184

4 review 186

the review tab 186
verity central, continued

resolving contests for voter intent.............................187

reviewing images 188

resolving pages and contests 196

resolving write-ins 205

resolving remaining contests 209

checking out ballots and contests...............209
locking ballot pages or contests...............209

managing certified write-ins 210

viewing certified choices.........................210
adding new certified choices..................211
deleting existing certified choices.............212

ballot resolution: a sample scenario..................214
Central checklist: the review tab..................216

5 write ballots 218

the write ballots tab 218
verity central, continued

- writing ballots to a vDrive 219
- creating a recovery vDrive 222

Central checklist: the write ballots tab....................224

6 reports 226

- the reports tab 226
- reports 227
- available reports: Central 229
- exports 234
- available exports: Central 235

Central checklist: the reports tab..........................236
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

- Paper ballots received
- Ballots opened and flattened
- Ballots scanned
- Ballots resolved and Cast Vote Records written to vDrive
importing a signed 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 election from Build into an available USB port on the Central workstation computer.

3. Log in to the Verity Central workstation.

4. On the Verity home page, click the Manage tile.
importing a signed 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 a signed election on the Central workstation, continued

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

9 Click OK.

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

- **Locked for Export**: The election has been created using Verity Layout (or other election definition software) and is now ready to import into Verity Build.

- **Accepted**: The election has been proofed in Verity Build and you can now print ballots and create vDrives and Keys. Election is now ready for export to Verity Central or Verity Count. An election that has been accepted in Build is also termed a “signed” election.

A **signed** election has been accepted in Verity Build. Importing a signed election on a separate Verity 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 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 election 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 election to be imported from the removable USB media.

☐ 5 Click Home to return to the Verity home screen.
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**: open a signed election imported from Build.
- **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.
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 actual ballots. Test should be used in testing only, such as when performing an LAT.


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.
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.
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.
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 included). If you check this box, Central will not reject ballots with duplicate unique identifiers.
setting preferences, 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 If you have made changes, click **Save** to save your preferences.
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.
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 need to set up the ballot scanner first before you begin scanning ballots. See page 181 for information on scanner settings.

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

Note: If you selected Remember my last choice when setting Preferences (page 165), 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.
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 167).
- 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 166).
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.
  - **Not resolved** = 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)
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.
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.

**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/distiller 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.
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 set up your scanner and perform a test scan, as well as set scanning preferences.

1. The top portion of the screen displays the scanner(s) 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.
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 included). If you check this box, Central will not reject ballots with duplicate unique identifiers.
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).

Click **Save** to save any changes.
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.
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.
resolving contests for voter intent

Given federal, state, and local guidelines on ballot resolution and voter intent issues, use the following steps to logically process issues encountered when viewing an unresolved contest in Verity Central:

1 Identify the resolution issue for the contest, using the Central contest color coding.

2 Identify any voter marks on that contest.

3 Identify any green option boxes with a green check mark. These are the options that Verity Central has read as the voter’s choice(s).

4 Determine voter intent.

5 Resolve the contest:
   - Select a choice: click a white (unmarked) selection box to select it.
   - De-select a choice: click a green (marked) selection box to de-select it.
   - Confirm the existing choice(s): Click the Actions menu, and choose Accept contest.
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 and begin the ballot review process.

   ![Review Images Menu]

   **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 to be added.

**B)** Select the filter contents.

**C)** Click **Add filter**.

**TIP:** Use the **ballot status** filters in conjunction with the **voter intent issues** filters to easily track your progress as you resolve intent issues.
reviewing images, continued

- using the Add Filters menu, continued

E) Currently applied filters appear on the right; you can click the **X** next to the filter to remove it.

F) To view filter items: under Currently applied filters, click the **X** next to the filter category to expand.

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

► using the Add Filters menu, continued

H) When you have added all desired filters, click Save & Exit. You will return to the Review Images menu.
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.
4 Select a ballot to review.

A) The symbol next to a ballot indicates the ballot status. Click a ballot to select it for review.
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.
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.
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 to PDF.
- **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 209).
- **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.
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.
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 viewability 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 209).
- **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.
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).

![Ballot Review](image)
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”).

resolved pages and contests, continued
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 211).

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

1. Create a filter to show only ballots containing overvotes that have not been modified.
2. Adjudicate and resolve all overvoted contests.
ballot resolution: a sample scenario, continued

3 Define all certified write-in candidates.

4 Create a filter to show only ballots containing write-ins that have not been modified.

5 Perform ballot resolution to assign all votes for certified write-in candidates to the appropriate certified write-in candidate.

6 Any remaining write-in votes not for certified candidates can be rejected.

7 Filter the remaining ballots requiring adjudication for undervotes and blank ballots that have not been modified.

8 Select the batches from the filter results; click the Batch Actions button and select Accept Batches to accept all undervotes and blank ballots.

9 Remove all filters and verify there are no remaining ballots requiring adjudication.
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.
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**.
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.
writing ballots to a vDrive, continued

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

![Write Ballots to vDrive dialog]

7 The vDrive has been closed. Click OK.
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 unused vDrive not previously used for the current election into an available USB port on the Central workstation.
creating a **Recovery vDrive**, continued

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

4 Click **Recover**. The new vDrive will be written with the data selected.
## 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.
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 229.

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**
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:

- 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

*Note: The Batch Detail report is sorted by Batch ID, and then by Scan Sequence Number.*
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
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 235.

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.
verity count

version 1.0
verity count, continued

creating a new task...........................................269
opening an existing task....................................271
renaming a task...............................................272
changing a task report label..............................272
completing a task............................................273
deleting a task................................................274
preferences.........................................................275
printing a zero report.......................................276

Count checklist: the elections tab.........................280

3 read........................................................................282

the read tab............................................................282
using the dashboard.............................................283
reading vDrives.....................................................286
Administrator and operator users.......................286
Media Reader users..............................................292
Count checklist: the read tab...............................294

4 resolve....................................................................296
verity count, continued

the resolve tab 296

managing write-in candidates 297
  adding write-in candidates ...................... 297
  deleting write-in candidates .................... 299

resolving unassigned write-in votes 300

viewing assigned write-in votes 302

printing write-in assignments 303

Count checklist: the resolve tab .................. 304

5 results 306

the results tab 306

setting reporting options 308

viewing and printing standard reports 320

available reports: Count 323
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>creating and managing custom reports</td>
<td>329</td>
</tr>
<tr>
<td>editing or deleting custom reports</td>
<td>334</td>
</tr>
<tr>
<td>creating a reporting run</td>
<td>335</td>
</tr>
<tr>
<td>precincts</td>
<td>338</td>
</tr>
<tr>
<td>viewing and printing a list of precincts reporting</td>
<td>338</td>
</tr>
<tr>
<td>manually overriding precinct reporting status</td>
<td>339</td>
</tr>
<tr>
<td>polling places</td>
<td>342</td>
</tr>
<tr>
<td>viewing and printing a list of polling places reporting</td>
<td>342</td>
</tr>
<tr>
<td>manually overriding polling place reporting status</td>
<td>343</td>
</tr>
<tr>
<td>setting the expected number of vDrives for a polling place</td>
<td>346</td>
</tr>
<tr>
<td>adding registered voter numbers</td>
<td>348</td>
</tr>
<tr>
<td>manual vote recording</td>
<td>350</td>
</tr>
<tr>
<td>best practices for manual vote recording</td>
<td>351</td>
</tr>
<tr>
<td>the auditing dashboard</td>
<td>355</td>
</tr>
</tbody>
</table>
verity count, continued

Count checklist: the results tab.................................358

6 import/export

the import/export tab 360
importing data into Count 361
exporting data from Count 362
list of acceptable imports: Count 363
list of available exports 364

Count checklist: the import/export tab..................365
getting started

Verity Count: an overview

In Verity Count, you will create tasks to manage instances of a particular election (such as Logic and Accuracy tests and official elections), read and tabulate vDrives, resolve write-in votes, print reports, and export data.
Verity Count: an overview, continued

Verity Count workflow

vDrives from Polling Places → Count Reports

vDrives from Central → Count Reports
importing a signed election on the Count workstation

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

**Note:** Before importing any elections, you can first set basic election preferences for Count, if desired (see page 253). These preferences will be applied as defaults to any imported election.

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

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

3. Log in to the Verity Count workstation.

4. On the Verity home page, click the Manage tile.
importing a signed election on the Count 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 a signed election on the Count workstation, continued

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

9 Click OK.

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

- **Locked for Export**: The election has been created using Verity Layout (or other election definition software) and is now ready to import into Verity Build.

- **Accepted**: The election has been proofed in Verity Build and you can now print ballots and create vDrives and Keys. Election is now ready for export to Verity Central or Verity Count. An election that has been accepted in Build is also termed a “signed” election.

A **signed** election has been accepted in Verity Build. Importing a signed election on a separate Verity 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 Count application

Log in to the Verity Count workstation. On the Verity home screen, click the Count application tile to open Count. The Count application contains five tabs: Elections, Read, Resolve, Results, and Import/Export.
setting preferences

The Preferences menu allows you to set default preferences for all elections in Verity Count. You can set preferences at any time, however, with the exception of Application settings (the first tab), preferences set here only affect elections that have not yet been imported in Manage; the first time you open Count you should set preferences before importing your first election onto the workstation. You can change settings for an election you have already imported on the Count workstation under the Results tab, in the Reporting Options menu (page 308).

1 Select the Preferences menu.
setting preferences, continued

2 Select the Application Settings tab. Unlike other preferences, changing these settings will also apply to currently loaded elections.

A) Choose which type of report you will be using as a basis for Count zero reports, so that the application can validate that a Zero report has been printed.

B) Check the box if you would like to enter voter registration by party.
setting preferences, continued

3 Select the **General Reporting Defaults** tab to set your basic reporting preferences.

A) Choose how to report results, at the precinct or at the precinct split level.
   - At the precinct level
   - At the precinct split level (Note: if you choose this option, your precinct reports will be at the precinct split level.)

B) Choose whether to label reports **Unofficial** or **Official**.
   - Typically, reports are labeled Unofficial until the completion of final canvassing.
C) Check the box if you would like to include registered voter totals on report headers, and then enter a reporting label for registered voter totals.

- If checked, registered voter totals (turnout) will appear on reports where applicable.
- If you choose this option, you should enter your registered voter totals (page 348) before generating reports.
setting preferences, continued

D) Check the box if you would like to include either the number of precincts reporting or the number of polling places reporting on report headers.

- If checked, the number/percentage of precincts reporting (or polling places reporting) will appear in reports where applicable.
- For instructions on setting reporting status for Precincts and Polling Places, see page 248 and page 342.
4 Set reporting defaults for contests.

A) Choose how to sort contest results. The available options are:
   - By ballot order
   - By number of votes
setting preferences, continued

B) Choose how to report unassigned write-in votes, and enter a reporting label. The available options are:

- A separate category: unassigned write-ins will be reported as a separate category, in which case you can define a label for that category.
- Undervotes: unassigned write-ins will be reported as undervotes.
C) Choose how to report rejected write-in votes, and enter a reporting label. The available options are:

- **A separate category**: rejected write-ins will be reported as a separate category, in which case you can define a label for that category.
- **Undervotes**: rejected write-ins will be reported as undervotes.
setting preferences, continued

5 Click **Save** on the bottom right to save any changes you have made.
using on-screen help

Help is available on every screen of the Count 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.
Count checklist: getting started

☐ 1 Log in to Verity.

☐ 2 Open Build and set default election preferences, if you have not already done so.

☐ 3 Insert the removable USB media containing the signed election from Build into an available port on the Count workstation.

☐ 4 Click Home to return to the Verity home screen.

☐ 5 Open the Manage application.

☐ 6 Under the Actions menu in Manage, choose Import signed. Browse to and select the election to be imported from the removable USB media.

☐ 7 Click Home to return to the Verity home screen.
Under the **Elections** tab, you will open the election, create tasks for tabulation, and set your basic preferences for reporting and exporting. The following menus are available in the Elections tab:

- **Elections**: select and open an election.
- **Tasks**: create and manage tasks in Official or Test mode.
- **Preferences**: set default preferences for elections before importing them into the Count workstation.
selecting and opening an election

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

**Note:** if this is the first time you are using Count, set default preferences before importing an election. See page 253.

1. Select the Elections menu.
2. Select the election you would like to work on.
3. Click Open in the bottom right of the screen.
what is a task?

- A task is a new instance of a particular election.
- Each task can be created in Test or Official mode. The election mode of the selected task and the election mode of the vDrive(s) must match in order to read the vDrives under the selected task.
- You can create a new task for a selected election at any time.
- For example, for General Election 2014 you may have the following tasks:
  - General Election 2014 LAT1 – Test
  - General Election 2014 LAT2 – Test
  - General Election 2014 Official – Election results
managing tasks

The Tasks menu allows you to open and create tasks for the selected election.

Creating a new task

1. Select the Tasks menu.
2. Click Actions.
managing tasks, continued

4 Enter a task name, choose the task type (Test or Official) and enter a report label. Task name is used to identify the task within the application; the report label will appear on all reports printed from that task. The first time you create a task, you will also have the opportunity to select the Voting Types for the election and the tabulation date and time.

!!IMPORTANT: The Task Type you choose must match the vDrives you will be reading into Count for that task. The vDrive type is set for each vDrive when they are created in Build (see page 130). For instance, to read in Official vDrives, you will need a task with the Task Type “Official”.

New Election Task

| Task Name:  | LAT 1 |
| Task Type:  | Test |
| Report Label: | Logic and Accuracy Test |

OK   Cancel
managing tasks, continued

Opening an existing task

1 Select the Tasks menu.

2 Select the task to open.

3 Click Actions.

4 Select Open.
managing tasks, continued

Renaming an existing task

1 Select the Tasks menu.
2 Select the task to open.
3 Click Actions.
4 Select Rename.
5 Enter the new Task Name and click OK.

Changing a task report label

1 Select the Tasks menu.
2 Select the task to open.
3 Click Actions.
4 Select Change label.
5 Enter the new report label and click OK.
managing tasks, continued

Completing a task

1 Select the Tasks menu.

2 Select the task to open.

3 Click Actions.

4 Select Complete.

**IMPORTANT:** Once you have marked a task Complete, no additional vDrives can be read into that task.

5 Click Yes to mark the task as complete. Once a task is marked as Complete, no additional vDrives can be read into that task.
managing tasks, continued

Deleting a task

1 Select the Tasks menu.

2 Select the task to open.

3 Click Actions.

4 Select Delete.

**IMPORTANT:** Once you have deleted a task, it cannot be restored. If you accidentally delete a task, any vDrives read under that task will need to be re-read in a new task.

5 Click Yes to delete the task. Once a task is deleted, it cannot be restored.
preferences

The Preferences menu allows you to set default preferences for all elections in Verity Count. You can set preferences at any time, however preferences set here only affect elections that have not yet been imported in Manage; the first time you open Count you should set preferences before importing your first election onto the workstation. For instructions on choosing Application settings and setting default preferences, see page 253. You can change reporting options for an election you have already imported on the Count workstation under the Results tab, in the Reporting Options menu (page 308).
printing a zero report

Before reading in and tabulating any vDrives, you must print a zero report. The zero report is used to verify that no votes were tabulated on the Count workstation prior to the reading in of the first vDrive.

1 In Count, select the Results Tab

2 Select the Reports menu. If desired, you can set your reporting options first. For details on setting reporting options, see page 308.
printing a zero report, continued

3 From the list of standard reports, choose the report you indicated for Zero Reporting (see Application settings, page 254). In most cases this will be the Cumulative Results report.

4 Click Actions (A) and choose Print (B).
5 Choose your report filters.

A) Use the drop-down menu to include all voting types, or filter the report by a combination of individual voting types. In most cases, this should be set to “All” for zero reports.

B) Check the boxes to include overvotes or undervotes; uncheck the boxes to exclude overvotes or undervotes. For zero reports these settings can be ignored, since no ballots should be read at this time.

C) Select **Show Report** to display the report for viewing, printing, or saving to file.
printing a zero report, continued

6 Click the printer icon to print a copy of the report (A); click the disk icon to save a copy of the report to file (B). When saving the report, include the works “Zero Report” in the file name.

7 Verify that the vote count for all contests is zero. File the Zero Report as per local jurisdiction guidelines.
Count checklist: the elections tab

☐ 1 Log in to Verity on the Count workstation.

☐ 2 Open Count.

☐ 3 In the Elections tab, select the election you need to work on from the list, then click Open.

☐ 4 Under the Tasks menu, create and manage tasks for your election. Each task will have a task type (Official or Test).

☐ 5 Select the task you need to work on, and then choose Open under the Actions menu.

☐ 6 Print a Zero report: Select the Results tab, and then under the Reports menu choose the report you use as a basis for Count Zero reports. Print this report and/or export to PDF.

☐ 7 Click the Read tab to resume the Count process and begin reading in vDrives.

☐ 8 Under the Select Election tab, select the Preferences menu to review the default preferences for Count, if desired. With the exception of Application settings, changes made here will not affect elections that have already been imported in the Manage application.
In the Read tab, you will read and tabulate vDrives and monitor progress using the election Dashboard. The Dashboard provides a high-level look at Election Night progress. Depending on the user level, one of the following menus will be available:

- **Dashboard**: ability to read drives, tabulate, monitor, and report.
- **Media Reading**: ability to read in vDrives only.
using the dashboard


The **Dashboard** is available to users with Count Administrator and Operator roles.

**Note:** users with the Media Reader role will see the **Media Reading** menu instead. See page 49 for instructions on setting application user roles. The Media Reading menu is discussed on page 292.

A) On the left side, the vDrive window allows you to monitor the reading of vDrives for the current session.
using the dashboard, continued

B) The right side of the Election Dashboard contains the tabulation slider, which allows you to start and stop tabulation of vDrives that have been read. If the tabulation slider is ON, Verity will automatically tabulate vDrives as they are read.

C) The dashboard also provides progress bars for monitoring the progress of tabulation. The progress bars are, from top to bottom:

- ballots tabulated (based on registered voters/turnout)
- vDrives tabulated (based on the number of vDrives created in Build)
- precincts reporting
- polling places reporting
- write-ins resolved
D) Click **Detail** next to precincts reporting to manually update precincts reporting status (see page 338). Click the Read tab to return to the dashboard.

E) Click **Detail** next to polling places reporting to manually update polling places reporting status or set the number of vDrives expected for each Polling Place (see page 342). Click the Read tab to return to the dashboard.

F) Click **Detail** next to write-ins resolved to view and print reports and resolve unassigned write-ins (see page 296). Click the Read tab to return to the dashboard.
reading vDrives


Reading vDrives: Count administrator and Count operator users

1. Count is ready to read vDrives when you see the message shown below. ▼ Insert the Verity Key into an available USB port on your Count computer.
reading vDrives, continued

2 Enter your user name and password for the Count workstation, and then click OK.

3 Insert a vDrive into an available USB port on the Count computer.

! IMPORTANT: If the tabulation slider is ON, Verity will automatically tabulate vDrives as they are read. Please note that this may take somewhat longer. If you have many vDrives to read, you may wish to read vDrives with the tabulation slider in the OFF position, and then tabulate after the vDrives have been read.
A) The vDrive window will display the **Reading...** message while a vDrive is being read. Do not remove the vDrive while it is being read.

B) Once reading is complete, Count will display the vDrive status as **Read**, and show the ID and the number of ballots it contains.

---

! **IMPORTANT:** Do not remove a vDrive until you see the “Status: Read” message.
reading vDrives, continued

C) If you insert a vDrive that is not for the current election, Count will reject the vDrive.

D) Select Previous to see a list of vDrives previously read.

E) Select Current to return to the currently inserted vDrive.

Note: the Previous tab will only show vDrives read during the current session. For a list of all vDrives read in all sessions, see the vDrive Status report (page 327).
If you attempt to read a vDrive that was not properly closed on the device it came from, you will see the message below. An administrator’s user name and password for the Count workstation is required. Enter the administrator user name and password and click OK. Count will close the vDrive and read it automatically.

Administrator authorization required

The inserted vDrive was not properly closed on the device that it came from. To continue, administrator authorization is required.

Username: user
Password: ********
reading vDrives, continued

4. Move the Tabulate slider to the **ON** position to begin tabulation.

**A)** Change the tabulate slider at any time to start and stop tabulation.

**B)** If vDrives are read in while the tabulation is OFF, they will be reflected as “not tabulated” in the vDrives Tabulated progress bar.

**C)** Tabulation must be OFF in order to resolve write-ins.
reading vDrives, continued

Reading vDrives: Media Reader users

Users with the role of Election Media Reader have more limited access to Verity Count features; Media Reader users can perform the following:

- Open elections and create/ manage tasks (see page 266).
- Read (but not tabulate) vDrives. The Read tab for Media Reader users is shown below; the left panel (A) displays the status of the currently inserted vDrive. The right panel (B) displays previously read vDrives. The bottom panel (C) lists total vDrives read and rejected for the workstation.
**reading vDrives, continued**

To read vDrives when logged in as a Media Reader user:

1. Insert the **Verity Key** into an available USB port on the workstation.

2. Enter the user name and password for the workstation, and then click **OK**.

3. Insert the first **vDrive** to be read into an available USB port on the workstation.

4. As Count finishes reading each vDrive, the information for each vDrive read will display in the right hand panel.

5. An Administrator- or Operator-level user must log in to perform **tabulation**. (If using multiple networked workstations, tabulation can be performed on a separate workstation by an Administrator- or Operator-level user.)
Count checklist: the read tab

☐  1 Monitor election progress using the dashboard.

☐  2 Read vDrives.

☐  3 Turn the tabulate slider on to tabulate vDrives at any time.
Under the Resolve tab, you will manage certified write-in candidates as well as review and resolve any unassigned write-in votes from scanned ballots. The following menus are available in the Resolve tab:

- **Write-in Votes**: Manage write-in candidates and resolve unassigned write-ins from scanned ballots.

**IMPORTANT:** You cannot resolve write-in votes while the tabulation slider on the Dashboard is set to ON (see page 291). Change the tabulation slider to OFF to resolve write-in votes.
managing write-in candidates

Adding write-in candidates

1. Select the Write-in Votes menu.

2. Click the + sign to the left of the contest name to expand the contest and view the current write-in candidates for that contest.

3. Click Add to add a new write-in candidate.
managing write-in candidates, continued

4 Type the candidate name.

5 Click Save.
managing write-in candidates, continued

Deleting write-in candidates

1 Select the candidate you would like to delete.

2 Click Delete.
resolving unassigned write-in votes

If you have certified write-in candidates, you can define them first before proceeding (see page 297).

1 Select the Unassigned Write-ins tab.

A) The voting type (Electronic or Paper) is indicated in the top left corner.

B) Check the box next to Auto-advance in the top right corner to automatically advance to the next unassigned write-in after you resolve the first one.

C) Use the yellow arrows to manually navigate back and forth through the unassigned write-ins.
resolving unassigned write-ins, continued

2 To assign the write-in, click the Assign to drop-down and choose the correct candidate from the list. All write-in assignments you make are automatically saved.

Using the Assign To drop-down menu, You can assign a write-in vote to any candidate already on the ballot for that contest, or to any write-in candidate already defined (to define new write-in candidates, see page 297). You can also choose to leave the write-in as Unassigned, or mark it as Rejected. Unassigned and Rejected write-ins can be reported as separate categories in reports (see pages 313-314).
viewing assigned write-in votes

To view assigned write-in votes, select the **Assigned Write-ins** tab.

**A)** The current assignment is indicated in the lower left-hand corner.

**B)** You can change previously assigned write-ins by clicking **Revert**; the assignment will be removed and the write-in will now appear under the **Unassigned Write-ins** tab.
printing write-in assignments

When you have finished assigning write-ins, click Print in the bottom right corner to view and print a report of write-in assignments.
Count checklist: the resolve tab

☐ 1 Add certified write-in candidates, if any.
☐ 2 Resolve unassigned write-ins.
☐ 3 Print reports of assigned and unassigned write-ins.
results

the results tab

Under the **Results** tab, you will set your reporting options for the current election and create, view, and print reports. You will also manage precincts and polling places reporting, set registered voter totals, perform manual vote recording if necessary, and export cast vote records for auditing purposes.
The following menus are available in the Results tab:

- **Options**: set your reporting options for Count. Settings made in the Reporting Options menu affect all tasks for the current election.
- **Reports**: generate reports from the list of available options or create a custom report, and create reporting runs.
- **Precincts**: view reporting precincts and manually change precinct reporting status.
- **Polling Places**: view reporting polling places, set the number of vDrives expected per polling place, and manually change polling place reporting status.
- **Registered Voters**: set the number of registered voters for reporting voter turnout.
- **Vote Recording**: perform manual vote recording.
- **Auditing Dashboard**: filter ballot data to review and export cast vote records.
setting reporting options

1 Select the General tab under Reporting Options.

Note: Settings made in the Reporting Options menu affect all tasks for the current election. If you have set your general preferences under the elections tab before you imported the election, you do not need to set them again; you can proceed to the Contests tab.

A) Choose whether to report results at the precinct or at the precinct split level.

- At the precinct level
- At the precinct split level (Note: if you choose this option, your precinct reports will be at the precinct split level.)
setting reporting options, continued

B) Choose whether to label reports Unofficial or Official.

• Typically, reports are labeled Unofficial until the completion of final canvassing.

C) Check the box if you would like to include registered voter totals on report headers, and then enter a reporting label for registered voter totals.

• If checked, registered voter totals (turnout) will appear on reports where applicable.
• If you choose this option, you should enter your registered voter totals (page 348) before generating reports.
General tab, continued

D) Check the box if you would like to include either the number of precincts reporting or the number of polling places reporting on report headers.

- If checked, the number/percentage of precincts reporting (or polling places reporting) will appear in reports where applicable.
- For instructions on setting reporting status for Precincts and Polling Places, see page 338 and page 342.
setting reporting options, continued

E) Choose how you would like to calculate reporting numbers. Typically this is set to All Voting Types.

F) Click Save in the lower right corner.
setting reporting options, continued

2 Select the Contests tab under Reporting Options.

**Note:** if you have set your contests preferences under the elections tab, you do not need to set them again; you can proceed to the Voting Types tab.

A) Choose how to sort contest results. The available options are:

- By number of votes
- By ballot order
setting reporting options, continued

- Contests tab, continued

B) Choose how to report unassigned write-in votes, and enter a reporting label. The available options are:

- A separate category: unassigned write-ins will be reported as a separate category, in which case you can define a label for that category.
- Undervotes: unassigned write-ins will be reported as undervotes.
D) Choose how to report rejected write-in votes, and enter a reporting label. The available options are:

- **A separate category**: rejected write-ins will be reported as a separate category, in which case you can define a label for that category.
- **Undervotes**: rejected write-ins will be reported as undervotes.

E) Click *Save* in the lower right corner.
setting reporting options, continued

3 Select the Voting Types tab under Reporting Options.

A) Use the drop downs to choose whether to report Election Day, Early Voting or Absentee results separately (“As it own category”) or combined.

B) Click Save in the lower right corner.
setting reporting options, continued

4 (optional) Select the Precinct Groups tab under Reporting Options to create precinct groups (such as districts, etc.) and assign precincts to the groups you have created.

Note: Items under this tab are optional, for creating and managing precinct groups not created during the original election definition process.

A) Click Add to add a new precinct group, or select an existing group.
setting reporting options, continued

B) Enter the new precinct group name, and then click OK.

C) Check the box next to a precinct to assign that precinct to the selected group.

D) Click Save in the lower right corner.
setting reporting options, continued

5 Select the **Aliases** tab under Reporting Options to change the name that displays on reports for various elements (i.e., precincts, districts, parties, voting types, contests, or choices).

**Note:** Aliases are applied only to the cumulative, precinct, and canvass reports.

A) To create an Alias, first select the desired tab to display the original names. Locate the name that needs to be changed on reports.
setting reporting options, continued

B) Click in the Alias column for the corresponding item and type the updated name in the Alias column.

C) Click Save in the lower right corner.
viewing and printing standard reports

1 Select the Reports menu to view available reports. Standard reports are located in the left-hand column; custom reports (if any) are located in the right-hand column. See page 323 for a list of available reports.

2 Select one of the standard reports from the left-hand column that you would like to view/print.
321

standard reports, continued

3. Click the Actions menu.

4. Select Print, and the print report menu for that report will appear. You can also double-click the report name to bring up the menu. Options in the print report menu will vary for each report; choose view report to view the report for printing or export to PDF.
5 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: Count

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

<table>
<thead>
<tr>
<th>Report title</th>
<th>Total tabulated ballots</th>
</tr>
</thead>
<tbody>
<tr>
<td>Election title</td>
<td>Turnout percentage <em>(optional)</em></td>
</tr>
<tr>
<td>Election date</td>
<td>One of the following:</td>
</tr>
<tr>
<td>Report label</td>
<td>• Total precincts/splits reporting, or</td>
</tr>
<tr>
<td>Jurisdiction name</td>
<td>• Total polling places reporting</td>
</tr>
<tr>
<td>Official/Unofficial label</td>
<td>One of the following:</td>
</tr>
<tr>
<td>Date/time the report was generated</td>
<td>• Total precincts/splits in the election, or</td>
</tr>
<tr>
<td>Total registered voters in the election (optional)</td>
<td>• Total polling places in the election</td>
</tr>
<tr>
<td></td>
<td>Reporting percentage</td>
</tr>
</tbody>
</table>

Audit log report

The Audit log report is a comprehensive log of all activity that has occurred in the Count 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 a workstation or network. Each entry includes the same details as the audit log, listed above.
Device Logs

Device logs display all information contained in the voting device application and system log entries. The device log can be filtered by polling place, by device, and by date/time range.

*Note:* Entries are sorted by date/time.

Cumulative report

*Note:* The Cumulative report lists each contest in ballot sequence order. It includes one results column for each voting type (Early Voting, Absentee, Election Day).

- **Contest details:**
  - Contest title
  - Contest party affiliations (if the election is an open or closed primary)
  - Number of valid choices for that contest
- **Contest choice/candidate details**
  - Choice/candidate name
  - Choice/candidate party affiliations (if the election is a general election)
  - Vote counts for each voting type
- **Write-in details:**
  - Certified write-in name
  - Vote counts for each voting type
  - Number of unresolved write-ins in this contest for each voting type (if “report unresolved write-ins as a separate category” is enabled)
  - Number of rejected write-ins in this contest for each Voting Type (if “report rejected write-ins as a separate category” is enabled)
- **Contest overvote total for each voting type** (optional)
- **Contest undervote total for each voting type** (optional)
- **Contest undervote total for each voting type** (optional) (if election is an open primary)
- **Sum total of vote counts for each contest**
available reports: Count, continued

Precinct report
The Precinct report displays the same information and as the Cumulative report, with the exception that results for each precinct are displayed in separate sections for each precinct or precinct split.

Note: Precinct sections are in sequence order, with each precinct appearing on a separate page. All contests, counts, and totals are based only on the contests available and votes cast in that precinct or precinct split.

Canvass report
The Canvass report lists each contest in the election in ballot order. For each contest, the report displays the following information for each precinct or precinct split.

- Precinct or precinct split details (for each contest):
  - Number of ballots cast for each voting type
  - Total ballots cast
  - Number of registered voters (by party, if it is a primary election and “Register voters by party” was chosen)
  - Turnout percentage (based on number of ballots cast and number of registered voters)
  - Vote totals for each contest choice/candidate (including party, if it is a general election)
  - Vote totals for each certified write-in candidate
  - Overvotes (optional)
  - Undervotes (optional)
  - Invalid votes (optional) (if election is an open primary)
  - Number of unresolved write-ins (if “report unresolved write-ins as a separate category” is enabled)
  - Number of rejected write-ins (if “report rejected write-ins as a separate category” is enabled)
available reports: Count, continued

**Voting Device report**

The Voting Device report provides the following information about the voting devices used in the election.

- **Note:** This report includes both polling place voting devices and Verity Central scanning workstations. If a device was used in multiple polling places or voting types during the election, this report will contain multiple entries for the device.

  - Device type
  - Device serial number or Verity Central workstation ID
  - Device firmware version
  - Polling place
  - Voting type
  - Number of cast vote records recorded on this device
  - Number of audits recorded on this device

**Precincts reporting**

The Precincts report provides the following information for each precinct or precinct split:

- **Note:** This report is sorted by precinct or precinct split

  - Precinct or precinct split name
  - Registered Voters in this precinct or precinct split
  - Reporting Status
  - Total ballots read for this precinct or precinct split
  - Turnout percentage for this precinct or precinct split
  - Total number of precincts or precinct splits reporting
  - Total number of precincts or precinct splits not reporting
  - Total number of ballots read
available reports: Count, continued

Polling Places Reporting report
The Polling Places Reporting report provides the following information for each Polling Place:

- Polling place name
- Reporting status
- Party associations (if the election is a closed primary)
- Total ballots read for this polling place
- Polling place totals
  - Total number of Polling Places reporting
  - Total number of Polling Places partially reporting
  - Total number of Polling Place not reporting

vDrive Status report
The vDrive Status report provides the following details for each vDrive created for the current election.

Note: this report is sorted by polling place

- vDrive ID
- Polling Place Name/Verity Central Workstation ID
- Status (read, read and tabulated, or rejected)
- If the vDrive was rejected, the reason for the rejection
- Total number of ballots read from the vDrive
- Voting type assigned to the vDrive
- Voting device type the vDrive was used with (Touch Writer, Scan, or Central workstation)
- Voting device serial number
- Total ballots read (by polling place)
- Total vDrives read (by polling place)
- Total vDrives written in Build
- Total vDrives read
- Percentage of vDrives read
- Total number of ballots read
available reports: Count, continued

Write-in report
The Write-in report provides the following information:

Note: This report is sorted by contest in ballot order, and then by certified write-in name.

- Contest details (for each contest that includes a write-in ballot option)
- Contest title
- Certified write-in names entered for this contest
- Vote total for each certified write-in
- Number of unresolved write-ins for the Contest
- Number of rejected write-ins for the Contest
- Total votes assigned to certified write-ins
- Total unresolved write-ins
- Total rejected write-ins

Residual Votes report
The Residual Votes report displays the following information for each contest in the election:

- Total number votes counted for all ballot options combined
- Total number of undervotes
- Percentage of undervotes
- Total number overvotes
- Subtotals for each specific overvote pattern that exists in this contest
- Percentage of overvotes
- Total number of invalid votes
- Percentage of invalid votes
creating and managing custom reports

1. Under the actions menu, choose Create Custom Report. The custom report wizard will open.

2. In the custom report wizard, select Filtered Report and choose settings.
A) Check the box if you would like to use aliases on the report.

B) Create a name for the custom report.

C) Define a title for the report to appear on the report header.

D) Click Continue.
custom reports, continued

3 Select a standard report to use it as a basis of the custom report.

A) Select a base report from the list.

B) Click Continue to proceed.

C) You can also click Back to go back to Step 1 of the custom report wizard.
4 Set filters for your custom report.

A) Select a filter type.

B) Choose the filter contents.
C) Click **Add Filter**. Currently applied filters display on the right. Click the small arrow to expand an applied filter. Click the red **X** to remove an applied filter.

D) Click **Finish**. A confirmation message will display.

E) Click **Close**. The new custom report will now display in the Custom Reports list on the Reports screen.
Editing or deleting a custom report

1. On the main Reports screen, select the custom report in the right-hand column.

2. Click the Actions menu.


   - or -

4. Select Delete Custom Report. A confirmation window will appear; click Yes to confirm. Once a custom report has been deleted it cannot be restored.
creating a reporting run

The custom reports wizard can also be used to create a reporting run. A reporting run is a collection of reports run as a batch. For example, you can group a set of reports that you run for every election into a reporting run to reduce the amount of time spent on generating reports.

1 Under the actions menu, choose **Create Custom Report**. The custom report wizard will open.
creating a reporting run, continued

2 In the custom report wizard, select Reporting Run and choose settings.

A) Select Reporting Run.

B) Check the box if you would like to use aliases on the reports.

B) Create a name for the reporting run.

C) Define a title for the reporting run to appear on the report header.

D) Click Continue.
Creating a reporting run, continued

Select the reports to include in the reporting run.

**Note:** You can select multiple reports; a reporting run can include both standard and custom reports.

A) Check the box in the Include column for each report you want to include.

B) Click **Finish**.

C) Click **Close** to close the wizard. Your reporting run will now appear in the list of available reports under the custom reports column.
precincts

The Precincts menu allows you to view which precincts are reporting and manually update the reporting status for each precinct. Precinct name is in the leftmost column; current reporting status is in the rightmost column. The status bar at the top provides an overview of the precincts reporting.

Viewing and printing a list of precincts reporting

1. Select the Precincts menu to view a list of precincts and their reporting status.

2. To print a report of Precinct reporting status, click the Actions menu, then select Print Report.
precincts, continued

Manually overriding precinct reporting status

1. Select the Precincts menu.

2. Check the box corresponding to the precinct in the Manual override column.

Note: You can set status for multiple precincts by checking the boxes next to each precinct.
3 Under the Actions menu, choose Set Status, or double-click the status column in the table.

4 Choose the status to apply to the selected precincts. The following status options are available:
   - Not Reporting
   - Reporting
   - Partially Reporting

5 Click OK.

Note: Select Automatic (set by application) if you would like the Count application to automatically update reporting status for you as each vDrive is read.
precincts, continued

6 Click Save in the lower right corner when you have finished making changes.
polling places

The Polling Places menu allows you to view which polling places are reporting and manually update the reporting status for each polling place. You can also set the expected number of vDrives for each polling place and view the number of vDrives that have been read. Polling place name is in the leftmost column; current reporting status is in the rightmost column. The status bar at the top provides an overview of the polling places reporting.

Viewing and printing a list of polling places reporting

1 Select the Polling Places menu to view a list of precincts and their reporting status.

2 To print a report of Polling Place reporting status, click the Actions menu, and then select Print Report.

TIP: You may need to manually override polling place reporting status, if, for example, you have a polling place which is required by law, but which has no registered voters.
polling places, continued

Manually overriding polling place reporting status

1. Select the Polling Places menu.

2. Check the box corresponding to the polling place in the Manual override column.

Note: You can set status for multiple polling places by checking the boxes next to each polling place.
3 Under the Actions menu, choose Set Status, or double-click the status column in the table.

4 Choose the status to apply to the selected polling places. The following status options are available:
   - Not Reporting
   - Reporting
   - Partially Reporting

5 Click OK.

Note: Select Automatic (set by application) if you would like the Count application to automatically update reporting status for you as each vDrive is read.
polling places, continued

6 Click **Save** when you have finished making changes.
polling places, continued

Setting the expected number of vDrives for a polling place

You can set the number of vDrives expected from each polling place; this data is used to update the Polling Place reporting status if your status reporting is set to Automatic (page 344).

1. Select the Polling Places menu.

2. Check the box corresponding to the polling place in the Manual override column.
polling places, continued

3 Click the Actions menu.

4 Choose Set vDrives Expected.

5 Type the number of vDrives.

6 Click OK.

7 Click Save in the lower right corner when you have finished making changes.
adding registered voter numbers

Use the Registered Voters menu to update the number of registered voters. These numbers will be used to report voter turnout. The precinct name is displayed in the left-hand column; the number of registered voters appears in the right-hand column. For instructions on importing registered voter data automatically, see page 360.

1 Select the Registered Voters menu.
adding registered voter numbers, continued

2 Double-click the number in the right-hand column to select the number of registered voters and enter the new total.

3 Click Save in the lower right corner when you are finished.
manual vote recording

The Manual Vote Recording menu allows you to perform manual vote recording (MVR) if needed.

! IMPORTANT: If you have ballots requiring MVR that contain voted write-ins, you must separate these. Each voted write-in must be entered in its own Manual Vote Recording session.

1. Select the Vote Recording menu.

2. Click Start New Record to enter the Manual Vote Recording wizard.
best practices for manual vote recording

- Record the presence of observers or poll watchers.

- If using a real-time audit printer, make notes in the audit log space indicating the beginning of the process and other relevant data such as who the participants and witnesses are, what political party or organization they represent, and, if appropriate, have individuals sign the printout. If not using a real-time audit log printer, you will record this information on the audit log report from Count after completing the vote adjustment process.

- Archive the election and print reports for the election before performing Manual Vote Recording. Label these with a note such as “before starting manual recording”.

- Manually write on the reports, perform necessary calculations, and ensure any changes reconcile properly before entering the manual adjustments in the Manual Vote Recording wizard.

- After performing Manual Vote Recording, print a new report and compare against the one produced before MVR. Have all observers and staff present sign all reports.
manual vote recording, continued

3 Set up your manual vote recording session.

A) Select the precinct.
B) Select a voting type.
C) Select an adjustment type.
D) Enter the number of ballots.
E) Enter the reason for the adjustment,
F) Click Continue. You will be prompted for an administrator user name and password. Click OK.
4 Record the vote totals for the session.

A) The precinct, voting type, and number of votes remaining to be cast are indicated on the left.

B) Enter the vote totals for your recording session in the appropriate boxes on the right. Be sure to include totals of overvotes and undervotes as well. Remember, ballots with voted write-ins must be recorded each in their own recording session.

C) Click Next to go to the next contest on the ballot.

! IMPORTANT: Totals of any overvotes and undervotes must be included in any manual vote recording session.
manual vote recording, continued

6 Click Close to end the manual recording session.

Deleting an existing recording session

1 Select a vote recording session from the list.

2 Click Delete to delete the selected recording session. When a session is deleted, vote totals will revert to the state prior to the session.
**the auditing dashboard**

The **Auditing Dashboard** menu allows you to filter, review, and export Cast Vote Records (CVRs). You can filter and sort ballot data to see the records exactly how you need to see them. The status bar in the upper right displays the number of ballots included using the current filter(s); currently applied filters are shown on the right-hand side.

1. Select the **Auditing Dashboard** menu.
the auditing dashboard, continued

2 Select desired filters.

A) Filter types include Location, Voting Equipment Used, Ballot Type, and Ballot Content.

B) Click the ▶ next to each filter type to see expanded options.

C) Check the boxes to select filter contents.

3 Click Add filter.
Print/View a report, or Export CVRs.

A) Click **Print Report** to create a report of the filtered results that can be saved and/or printed.

B) For reports, you can choose whether to show 1 ballot or multiple ballots per page.

C) Click **Export CVRs** to export the CVRs to a removable media.
Count checklist: the results tab

☐ 1 View and set reporting options, if desired.
☐ 2 Manually set precinct reporting status.
☐ 3 Manually set polling place reporting status and set the number of vDrives expected from each polling place.
☐ 4 Manually set the number of registered voters
☐ 5 Perform Manual Vote Recording sessions, if needed.
☐ 6 Generate reports from the list of available standard reports.
☐ 7 Create custom reports or a reporting run (a batch of reports).
☐ 8 Use the Auditing Dashboard to review and export cast vote records.
The importance of election data cannot be overstated. Whether you’re managing a small local election or a nationwide presidential race, the quality and accuracy of your data is crucial. In this chapter, we’ll explore the import/export tab, which allows you to seamlessly transfer data between your system and other sources.

Under the Import/Export tab, you can import election data from external sources into Count, and export data from the current election in CSV format. The following menus are available in the Import/Export tab:

- **Import**: import data into Count, such as registered voter data.
- **Export**: export data from Count, such as detailed vote totals.
importing data into Count

1. Select the Import menu. For a list of acceptable imports with descriptions, see page 363.

2. Select the data set to import from the list, and then click Import.

3. Browse to locate the file to be imported, and then click OK.

! IMPORTANT: Before importing data into Count, it is recommended that you perform a backup of all election data using the Manage app.
exporting data from Count

1 Select the Export menu. For a list of each available export with descriptions, see page 364.

2 Select the data to export, and then click Export.

3 Browse to the location where you would like the exported data to be saved, and then click OK.
list of acceptable imports: Count

Registered voter information

Used to import voter registration numbers for reporting voter turnout. Import format is a .csv file, with the following data in columns, left to right:

Note: If Registered Voter data already exists, importing new data will overwrite existing data

- Precinct name
- Precinct split name
- Party code (if the “Register voters by party” enabled)
- Number of registered voters

Example:

<table>
<thead>
<tr>
<th>Precinct</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1G1 A</td>
<td>2800</td>
</tr>
<tr>
<td>1G1 B</td>
<td>1748</td>
</tr>
<tr>
<td>201</td>
<td>4200</td>
</tr>
<tr>
<td>314</td>
<td>1233</td>
</tr>
</tbody>
</table>

Certified Write-in Candidates

Used to import a list of certified write-in candidates for each contest that includes a write-in option; import format is a .csv file, with the following data in columns, left to right:

Note: If certified write-in data already exists, importing will overwrite existing data.

- Write-in candidate name
- Contest title
- Party association of the contest (if a primary)

Example:

<table>
<thead>
<tr>
<th>Write-in Candidate</th>
<th>Office</th>
<th>Party</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nikolai Tesla</td>
<td>President of the United States</td>
<td>DEM</td>
</tr>
<tr>
<td>Marie Curie</td>
<td>President of the United States</td>
<td>REP</td>
</tr>
<tr>
<td>George Carver</td>
<td>United States Senator, District 33</td>
<td>LIB</td>
</tr>
<tr>
<td>Theodore Roosevelt</td>
<td>United States Representative, District 122</td>
<td>NP</td>
</tr>
</tbody>
</table>
list of available exports

Detailed Vote Totals
This export provides a detailed view of results for each ballot option, certified write-in candidate, rejected write-in, and unassigned write-in. Results are grouped by precinct and then by contest. The following data is provided for each:

- Precinct or precinct split information:
  - Precinct or precinct split name
  - Precinct reporting status
  - Registered voters
  - Ballots cast
  - Turnout Percentage

- Contest information:
  - Contest
  - Contest party affiliation
  - Choice/Candidate name
  - Choice party affiliation

- Total votes
- Total Overvotes
- Total Undervotes
- Total Invalid Votes
- Votes (by voting type)
- Overvotes (by voting type)
- Undervotes (by voting type)
- Invalid Votes (by voting type)

Registered Voters
This export is identical to the format of the Registered Voters import, and includes the following data:

- Precinct name
- Precinct split name
- Number of registered voters
- Party code (if the “Register voters by party” is enabled)
Count checklist: the import/export tab

☐ 1 Import registered voter numbers or certified write-in candidates.

☐ 2 Export detailed vote totals and registered voter data.
creating a print queue for import (pre-marked ballots)

In addition to standard print queues (see page 125), you can also create a print queue for pre-marked ballots (for use with a Logic and Accuracy Test, for example).

1. Create a spreadsheet with the following data:

   **Precinct Name**: required; precinct name of the ballot to print. Case-sensitive, may include spaces; must exactly match the Precinct Name that was used in ballot definition.

   **Precinct Split Name**: precinct split name of the ballot to print, if applicable. Must exactly match the Precinct Split name that was used in ballot definition.
print queues with pre-marked ballots, continued

**Party:** required only for closed primary elections.

**Language:** language of the ballot to print, if applicable.

**Quantity:** the number of ballots to print.

**Ballot Type:** can be “Test”, “Sample”, or “Official”.

**Print to File:** type TRUE if you would like to output the print jobs to PDF; type FALSE if you would like to output directly to the default printer.

**Output File Name:** The name of the PDF to be produced by the import file (Note: Print to File value must be TRUE).

**Choice Name A:** Name of the first choice on the ballot; case-sensitive. For a write-in, this value will be “Write-in”.

**Value:** value of the previous choice, either 0 or 1. 0=not marked; 1=marked (for assigning Value for ranked choice contests, see page 371)

**Choice Name B:** The next choice on the ballot. Every choice in each contest must be represented in the file. If using rotation, the choices must be in the non-rotated order.

**Value:** value of the previous choice
print queues with pre-marked ballots, continued

Key to spreadsheet contents:

<table>
<thead>
<tr>
<th>Spreadsheet column</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Precinct Name (*required)</td>
</tr>
<tr>
<td>2</td>
<td>Split Name</td>
</tr>
<tr>
<td>3</td>
<td>Party (*required for closed primaries)</td>
</tr>
<tr>
<td>4</td>
<td>Language</td>
</tr>
<tr>
<td>5</td>
<td>Quantity</td>
</tr>
<tr>
<td>6</td>
<td>Ballot Type (*required)</td>
</tr>
<tr>
<td>7</td>
<td>Print to file (TRUE or FALSE)</td>
</tr>
<tr>
<td>8</td>
<td>Output file name</td>
</tr>
<tr>
<td>9</td>
<td>Choice Name A</td>
</tr>
<tr>
<td>10</td>
<td>Value (0 or 1)</td>
</tr>
<tr>
<td>11</td>
<td>Choice Name B</td>
</tr>
<tr>
<td>12</td>
<td>Value (0 or 1)</td>
</tr>
<tr>
<td>13 (etc.)</td>
<td>(etc.)</td>
</tr>
</tbody>
</table>

Finished spreadsheet example:

The sample below has been clipped to show the Choice Name and Value columns. In this example, there are five ballots: 2 with a vote for Abraham Lincoln, 1 with a vote for Amerigo Vespucci, 1 overvote, and 1 undervote.

<p>| | | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>101</td>
<td>A</td>
<td>English_Official.pdf</td>
<td>Abraham Lincoln</td>
<td>1</td>
<td>Amerigo Vespucci</td>
</tr>
<tr>
<td>101</td>
<td>B</td>
<td>English_Official.pdf</td>
<td>Abraham Lincoln</td>
<td>1</td>
<td>Amerigo Vespucci</td>
</tr>
<tr>
<td>201</td>
<td></td>
<td>English_Official.pdf</td>
<td>Abraham Lincoln</td>
<td>0</td>
<td>Amerigo Vespucci</td>
</tr>
<tr>
<td>243</td>
<td></td>
<td>English_Official.pdf</td>
<td>Abraham Lincoln</td>
<td>1</td>
<td>Amerigo Vespucci</td>
</tr>
<tr>
<td>417</td>
<td></td>
<td>English_Official.pdf</td>
<td>Abraham Lincoln</td>
<td>0</td>
<td>Amerigo Vespucci</td>
</tr>
</tbody>
</table>
print queues with pre-marked ballots, continued

2 Save the spreadsheet as a .csv file.

! IMPORTANT: Delete any header row before saving as a .csv (if using an export from Layout, you can leave the header row if desired).

3 In Build, select the Create tab (A), and then select the Ballots menu (B).
appendix A: creating a print queue for import (pre-marked ballots)

print queues with pre-marked ballots, continued

4 Under the Print Options panel, click Import.

5 Browse to the .csv file you created and click Open. The print queue will run automatically based on the settings in the imported file.
indicating value for ranked choice voting when printing pre-marked ballots

- For Ranked Choice contests, the VALUE columns indicate the rank of the previous Choice Name entry written as a series of ones and zeros.

- The number of digits in the VALUE column equals the number of Choices in the ranked choice contest, up to 5 digits.

- Each digit corresponds to a rank. For example, a rank of 2 in a 5-rank contest would be 01000.

- This is intended to match the marking pattern of a paper ballot. So, if a voter overvoted by assigning a rank of 1 and 3 to the same Choice, this could be duplicated by putting 10100 in the import file.

- A value of all zeros in this field represents a choice with no ranking (i.e. an undervote).
The Logic and Accuracy Test

A Logic and Accuracy test (LAT or L&A) is a test of the tabulation software 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 that will be used to capture cast vote records in the upcoming election (e.g., Verity Scan, Verity Central).
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 Scan), and scanning of paper ballots in 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 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 your election database software (e.g. Layout), create an Election Day Polling Place specifically for the LAT and assign all precincts to this polling place. Predefine your LAT device(s) with this Polling Place using Test Mode vDrive(s) created in Build.
Materials and supplies

- LAT Checklist
- LAT Log
- LAT labeled envelope
- Test mode vDrives created in Build (or provided by Hart)
  - 1 per Scan used in the LAT
  - 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 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 are a Hart Service Bureau customer, 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 Scan. 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 Verity Scan in order to speed up the testing, but you do not need to test each Scan in an LAT. Each Scan 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.
Hart recommended procedures for performing an LAT, continued

Vote on the Scan using the test deck

Note: for instructions on voting using the Verity Scan, see the Verity Polling Place Operations Guide.

1. Print the Zero report on the Verity Scan.
2. Open polls on the Scan.
3. Scan the test deck using the Verity Scan.
4. Close polls on the Verity Scan.
5. (Optional) Print and save the Scan Tally report if you would like to check accuracy of the test against the expected results prior to tabulation in Count.

Note: the Tally report will only be available if you have checked “Allow Tally” when configuring the election in Build (see page 111 of this guide).

! 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 page 111 of this guide.

6. Remove the vDrive from Scan and take to the Count workstation for tabulation.
Hart recommended procedures for performing an LAT, continued

Process ballots in Verity Central

Note: For instructions on processing ballots using Verity Central, see page 143 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 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 Scan the test deck in Central.

7 Resolve undervotes, overvotes, damaged contest and write-ins (if applicable), according to the test plan.

8 Write all ballots to vDrive.

9 Print and save a Configuration Report for later reference.

10 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 page 239 of this guide.

1 On the Count workstation, import the signed election from Build using the Manage application, if you have not already done so.
2 Exit Manage and open Verity Central.
3 Open the election in Count.
4 Create and open a Test task for LAT 1.
5 Print and file a Zero Report.
6 Read in vDrives from the 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 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 states 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 state, 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 state 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 page 239 of this guide.

1. Open the election in Count.
2. Create and open a **Test** task for LAT 2.
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.
Verity system limits

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

**user names and passwords**

<table>
<thead>
<tr>
<th>Item</th>
<th>Character Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>User Name</td>
<td>1-50</td>
</tr>
<tr>
<td>User Password</td>
<td>1-50</td>
</tr>
<tr>
<td>Device and Application Passcodes</td>
<td>6 (required)</td>
</tr>
</tbody>
</table>
## election data limits

<table>
<thead>
<tr>
<th>Item</th>
<th>Upper Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Precincts</td>
<td>2,000</td>
</tr>
<tr>
<td>Splits per Precinct</td>
<td>20</td>
</tr>
<tr>
<td>Total Precincts and Splits in an Election</td>
<td>2,000</td>
</tr>
<tr>
<td>Districts</td>
<td>75</td>
</tr>
<tr>
<td>Parties in a General Election</td>
<td>24</td>
</tr>
<tr>
<td>Parties in a Primary Election</td>
<td>10</td>
</tr>
<tr>
<td>Contests and Propositions (combined)</td>
<td>200</td>
</tr>
<tr>
<td>Contest Choices (voting positions) in a Contest</td>
<td>75</td>
</tr>
<tr>
<td>Total number of Contest Choices in an Election (independent from ballot size)</td>
<td>600</td>
</tr>
<tr>
<td>Number of Write-in Options</td>
<td>75</td>
</tr>
<tr>
<td>Voting Types</td>
<td>5</td>
</tr>
<tr>
<td>Sheets per vDrive: Scan</td>
<td>9999</td>
</tr>
<tr>
<td>Sheets per vDrive: Count</td>
<td>80,000 (requires 4 sheet ballots)</td>
</tr>
<tr>
<td>Number of Voters Definable per Election</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Sheets per ballot</td>
<td>4</td>
</tr>
<tr>
<td>Ballot Stubs per ballot</td>
<td>2</td>
</tr>
<tr>
<td>Number of ballots: Scan (1 sheet ballot)</td>
<td>9999</td>
</tr>
<tr>
<td>Number of ballots: Scan (2 sheet ballot)</td>
<td>4999</td>
</tr>
<tr>
<td>Number of ballots: Scan (3 sheet ballot)</td>
<td>3333</td>
</tr>
<tr>
<td>Number of ballots: Scan (4 sheet ballot)</td>
<td>2499</td>
</tr>
<tr>
<td>Number of ballots: Central</td>
<td>1,000,000</td>
</tr>
<tr>
<td>Number of ballots: Count</td>
<td>4,000,000</td>
</tr>
<tr>
<td>Number of vDrives: Count</td>
<td>1200</td>
</tr>
<tr>
<td>Ballot Sizes - Build, Central, Touch Writer, Scan</td>
<td>8.5”x11”, 8.5”x14”, 8.5”x17”</td>
</tr>
</tbody>
</table>
### system character limits

<table>
<thead>
<tr>
<th>Item</th>
<th>Character Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Election ID</td>
<td>999,999 (digits)</td>
</tr>
<tr>
<td>Election Name</td>
<td>50</td>
</tr>
<tr>
<td>Election Title</td>
<td>100</td>
</tr>
<tr>
<td>Jurisdiction Name</td>
<td>100</td>
</tr>
<tr>
<td>Precinct Name</td>
<td>40</td>
</tr>
<tr>
<td>Precinct Split Name</td>
<td>10</td>
</tr>
<tr>
<td>District Name</td>
<td>100</td>
</tr>
<tr>
<td>District Description</td>
<td>500</td>
</tr>
<tr>
<td>Polling Place Name</td>
<td>50</td>
</tr>
<tr>
<td>Polling Place Notes</td>
<td>1,000</td>
</tr>
<tr>
<td>Voting Type Name</td>
<td>50</td>
</tr>
<tr>
<td>Ballot Header Label</td>
<td>100</td>
</tr>
<tr>
<td>Ballot Header Additional Information</td>
<td>100</td>
</tr>
<tr>
<td>Ballot Instruction Text</td>
<td>10,000</td>
</tr>
<tr>
<td>Contest Title</td>
<td>100</td>
</tr>
<tr>
<td>Contest Instruction Text</td>
<td>50</td>
</tr>
<tr>
<td>Proposition Title</td>
<td>50</td>
</tr>
<tr>
<td>Proposition Text</td>
<td>10,000</td>
</tr>
<tr>
<td>Proposition Notes</td>
<td>500</td>
</tr>
<tr>
<td>Contest Choice Name</td>
<td>100</td>
</tr>
<tr>
<td>Contest Choice Details</td>
<td>100</td>
</tr>
<tr>
<td>Write-in Choice Name (Touch Writer)</td>
<td>25</td>
</tr>
<tr>
<td>Ballot Text</td>
<td>1,000</td>
</tr>
<tr>
<td>Party Name</td>
<td>50</td>
</tr>
<tr>
<td>Party Affiliation</td>
<td>50</td>
</tr>
<tr>
<td>Party Abbreviation</td>
<td>3</td>
</tr>
</tbody>
</table>
**System Character Limits, continued**

<table>
<thead>
<tr>
<th>Item</th>
<th>Character Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ballot Stub Free Form Fields (4)</td>
<td>50</td>
</tr>
<tr>
<td>Precinct Label</td>
<td>20</td>
</tr>
<tr>
<td>Write-in Label</td>
<td>20</td>
</tr>
<tr>
<td>Sample Ballot Label</td>
<td>20</td>
</tr>
</tbody>
</table>
creating a recovery vDrive for voting devices

In the event that a device vDrive is lost or damaged during an election event, a recovery vDrive can be created by accessing the Administrator menu on the device itself. To access the Administrator menu, you will need to know the Administrator password for devices set up in Build (see page 112). For instructions on creating a recovery vDrive for the Central application, see page 222.

**materials needed**
- Voting device containing the data that needs to be recovered
- vDrive not previously used in a device for the election
creating a recovery vDrive

1 On the device startup screen, select the Menu button.

2 Select Administrator Menu.
creating a recovery vDrive, continued

3 Enter the device Administrator passcode and select Accept.

4 Select Create recovery vDrive.
creating a recovery vDrive, continued

5 Insert a vDrive that has not been previously used for the election.

6 Select the election data you wish to recover (A), and then select OK (B).
creating a recovery vDrive, continued

7 Wait while the data is written to the vDrive.

8 Select OK.
creating a recovery vDrive, continued

9 Remove the vDrive. If needed, the vDrive can now be read into Count and tabulated.
In Build, you can configure the Scan device behavior when scanning ballots with voter intent issues (see page 113). These settings determine if and how second-chance voting opportunities are presented to the voter.

The change ballot rules function allows an administrator to change the second-change voting behavior of an individual Scan device. For instance, during a recount process, or if using a Scan to process absentee ballots, it may be desirable to override the scan behavior defined in Verity Build and use different settings for that specific device.
From the Administrator Menu, select **Change ballot Rules**.

Select the desired ballot processing rules for that particular Scan device.

- Choose **Use election settings** will follow the rules defined in the Verity Build application (see page 113).
- Choose **Accept all ballots** to override Build settings and force the Scan device to accept all ballots.

Select **OK**. Changes to ballot rules will remain in effect until the device is restarted.
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 Writer. The access code is printed by the poll worker from the Touch Writer that the voter will use. 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 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 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 Layout 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 Layout 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 cryptography.

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

Verity Layout
The Verity Election Office application used to manage data such as ballot content, ballot formats, and ballot style previews.
Verity Scan
Verity polling place scanning device. These devices scan physical printed and marked ballots for collecting and tabulating votes.

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.
index

A

Absentee. See voting type

Accepted (election status) 45, 75, 106, 117–118, 153, 251
accepting (ballot pages or contests). See ballots, accepting

Access controller. See Verity Access accessing the Windows operating system. See OS access in Verity

adding elections 42

adjudication. See resolving (ballots)

Administrator menu (Verity Scan) 392–393

Administrator (Verity Central user role) 52

Administrator (Verity Count user role) 52

aliases
creating for reports (Count) 318–319

All Contests report 99

annotations (voter intent color coding) 198, 200

archiving elections 42–46

best practices 43

associations (ballot style and precinct/polling place) 103–104, 122

audio alert volume (Scan) 115

audio (ballot), proofing 102–103

auditing dashboard 307, 355–357

Audit log (report)

Build 97

Central 229

Count 323

B

ballot data, validation 89

ballot images
exporting from Verity Central 213

saving on Verity Scan 115

ballot numbering 123

definition 128

ballot preview 90–93, 122

exporting to PDF 93

Balloon QC Overlay 121

ballots
accepting (Central) 198
accepting contests on (Central) 200

barcodes on 129

best practices for paper ballot processing 177

checking out/in (Central) 194, 209

creating print queues 124–128
creating print queues (pre-marked) 366–371
exporting page images to PDF 198, 213
exporting to PDF 121, 124
locking contests on (Central) 194, 200, 209
locking pages (Central) 198, 209
multi-sheet 167, 172, 183
printing 106, 120–128
vendor certification 121
printing ballot images 179, 198
proofing in Build 88–105
resolving for voter intent (Central) 186–209
reverting to scanned state (Central) 198
scanning in Central 171–173
searching (Central) 170, 178–180
settings for printed ballots (Build) 108
status indicators (Central) 194
viewing (Central) 179
writing to vDrive (Central) 194

Ballots Printed (report) 100
ballot stubs 93, 123
ballot style 90–91
  and printing 122–128
ballot type (paper or electronic) 91–92
barcodes. See ballots, barcodes on

Batch Detail Report 231
batches (ballot scanning - Central) 170–176. See also Scanned Batch report
  Batch ID 174
  changing voting type 176
deleting 176
  discarding batches 173
  editing notes 176
  managing 174
  saving 173
  status 174
  viewing ballots in a batch 192
blank ballots
  and Verity Scan 113
in Verity Central 197

Build (software application). See Verity Build

C
Canvass report 325
Cast Vote Records, exporting 355–357

Central (software application). See Verity Central
Certified Write-in Candidates (Count import) 363
certified write-ins. See write-ins, defining
checked in/out. See ballots, checking out/in (Central)
client workstations  59–62
clock, setting (Desktop application)  32, 33
Close Polls (end of day type)  109
Configuration report  230
Configure Settings (Build tab)  106–119
Contest Associations report  99
contest-level view (Central)  199–204
contests  90
  accepting (Central)  200
  locking (Central)  200
  printing and exporting images (Central)  200
  proofing  103–104
  reverting to scanned state (Central)  200
  sorting results in Count status (Central)  204
copying elections  42
Count (software application).  See Verity Count
Create (Build tab)  120–141
Cumulative report  324
custom reports (Count)  329–334
CVR.  See Cast Vote Record
Daylight Savings Time.  See clock, setting (Desktop application)
Deleted Ballot report  233
deleted (batch status in Central)  174
deleting elections  41–42
Desktop (application)  31, 32–39
Detailed Vote Totals (Count export)  364
Device Logs (report)  324
duplicate ballots.  See unique identifiers, allowing duplicates (Central)
E
Early Voting.  See voting type
Election Day.  See voting type
election data limits  383
Election Media Reader (Verity Count user role)  52, 282, 292–293
elections
  accepting  106, 117–118
  adding  42
  archiving & restoring  42–46
  copying  42
  deleting  41–42
  exporting signed  42, 139–140
  importing  41–42, 72–74
  importing signed  41–42, 150–151, 248–249
  monitoring progress using the Count dashboard  283
opening in Verity Build 85
opening in Verity Central 159
opening in Verity Count 267
renaming 41–42

Elections (Count tab) 266–280
election settings (Build) 107–116
election status 45, 75, 153, 251
exporting signed elections 42, 139–140
exports (Central) 226, 234–235

F
d file hashes. See hash testing
d filters
adding (Central) 189–191
and custom reports (Count) 333
clearing (Central) 188
in ballot resolution workflow
(Central) 209
managing (Central) 190
use in Verity Central 188–192
fold lines (ballot preview) 93
best practices 94

H
hard disk space 47
Hart Support 38
hash testing 32, 34–37
help tab 80–81, 155–156, 262–263
home (link) 30, 39
home screen 30–31, 39, 154

I
Import/Export (Count tab) 360–365
importing elections 41–42, 72–74
importing signed elections 41–42, 150–151, 248–250
incomplete ballots. See also ballots, multi-sheet
allowing (Central) 167
invalid votes
and Verity Scan 113
in Verity Central 197

J
Jurisdiction Configuration report 98

K
Key (cryptographic device). See Verity Key
Kiosk mode. See OS access in Verity

L
language (ballot) 90–91
Layout (software application). See Verity Layout
legend (voter intent issues) 196–197
locked (contest). See ballots, lock-
Locked for Export (election status) 45, 75, 153, 251
locked (page). See ballot, locking pages (Central)
logging in to Verity 28–29, 39
Logic and Accuracy Testing 372–380
log out (link) 39

M
Manage (application) 31, 40–46, 72–75, 139–140, 150–151, 248–250
manual vote adjustment. See manual vote recording
  best practices 351
Media Creator (Verity Build user role) 51
Media Reader (Verity Count user role). See Election Media Reader (Verity Count user role)

N
network configuration 59–62
  and refreshing ballot status in Central 195
Not resolved (batch status in Central) 174

O
official ballots 123
  defining labels 79, 108
Official (Central task type) 160, 162
Official (Count task type) 270
Official (vDrive type) 130, 132
OK as scanned (batch status in Central) 174
Open for Editing (election status) 45, 75, 153, 251
operating system access. See OS access in Verity
Operator (Verity Build user role) 51
Operator (Verity Central user role) 52
Operator (Verity Count user role) 52
options, reporting (Count) 307–319
orphan ballot. See ballots, multi-sheet
OS access in Verity 32, 38
overlay. See Ballot QC Overlay
overvotes
  and manual vote recording 353
  and Verity Scan 113
  in Verity Central 197, 203

P
page-level view (Central) 196
paper ballots. See ballots
party (entering voter registration numbers by) 254
passcodes. See passwords
passwords
  and reading vDrives 287
  and Verity Key 134–135
for devices 112
managing 57–58
user passwords 28–29, 55–58, 382
  best practices 56
  changing 29, 56
Polling Place List (report) 98
polling places reporting 306
  including on report headers
  (Count) 257, 310
  viewing and updating 285, 342–345
Polling Places Reporting report 327
Precinct Detail report 232
precinct groups, creating (Count) 316–317
Precinct report 325
precincts reporting 306, 326
  including on report headers
  (Count) 257, 310
  viewing and updating 285, 338–341
preferences (Central) 158, 165–167
preferences, default (Build) 77–79, 86
preferences, default (Count) 253–261, 275
pre-marked ballots, creating 128, 366–371
print queue. See ballots, creating
print queues
Proof Ballots (Build tab) 88–105
R
RAID 47–48
Read (Count tab) 282–294
recount procedures. See also Auditing dashboard
  on Verity Scan 392–393
recovery vDrive (Central) 218, 222–223
recovery vDrive (devices) 386–391
refreshing ballot status (Central) 195
Registered voter information
  (Count import) 363
Registered Voters (Count export) 364
rejected images (ballot scanning) 172
renaming elections 41–42
reporting run 335–337
reporting status (polling place). See polling places reporting

reporting status (precinct). See precincts reporting

report label
  defining for reports in Count 255, 309
  defining for tasks in Central 162

reports (Build) 97–101

reports (Central) 226–233

Reports (Central tab) 226–236

reports (Count) 306–349
  and unassigned or rejected write-ins 259–260, 313–314
  calculating based on voting type 311
  choosing reporting level 255, 308
  choosing report label 255
  custom 329–334
  grouping reports (reporting run) 335–337
  reporting by voting type 315
  sorting options 258, 312
  viewing, printing and exporting 320–322

reports (voting devices)
  reporting level 110
  sorting 110
  summary vs. detailed 111

Residual Votes report 328

Resolution Board (Verity Central user role) 51

Resolve (Count tab) 296–304

resolved (batch status in Central) 174

resolving (ballots) 186–209, 214–215

restoring archived elections 42–46

Results (Count tab) 306–358

Review (Central tab) 186–216

Rotation Report 100

S

sample ballots 123
  defining labels 79, 108

Scan (Central tab) 170–184

Scan (device). See Verity Scan

Scanned ballot information export 235

Scanned Batch report 172, 176, 230

scanners
  performing a test scan (Central) 181
  settings in Central 170, 181–183

scanning ballots (Central) 171–173
  rejected images, viewing 172

searching (Central)
  ballots 178–180
second-chance voting
  override settings 114
  settings on Verity Scan 113–115

security
  and Verity Key 138
  election security recommendations 14
  Verity security features 12–13

Select Election (Build tab) 76–86
Select Election (Central tab) 158–168

selection boxes
  and resolving ballots in Central 201–204

server workstations 40, 59–62
settings (Build). See election settings (Build)

shutdown button 30

signed election 75, 139–140, 150–151, 153, 248–250, 251. See also Accepted (election status)

status (batch) 174
status (election). See election status

stubs. See ballot stubs

Suspend Polls (end of day type) 109

system character limits 384–385

System log (report)
  Build 97
  Central 229
  Count 323

T

tabulation
  and resolving write-ins in Count 296
  starting and stopping (Count) 284, 287, 291

Tally (device report) 109

tasks (Central) 158, 160–164
  creating 161–162
  definition 160
  managing 164
  opening 163

tasks (Count) 268–274
  completing 273
  creating 269–270
  definition 268
  managing 272–274
  opening 271

Test ballots 123

Test (Central task type) 160, 162

Test (Count task type) 270

test deck. See Logic and Accuracy testing

Test (vDrive type) 130, 132
tiles (application icons) 31

Touch Writer. See Verity Touch Writer
trusted build. See hash testing

turnout. See voter registration

U

undervotes
  and manual vote recording 353
  and Verity Scan 113
  in Verity Central 197
  reporting unassigned/rejected
  write-ins as (Count) 314

unique identifiers 123
  allowing duplicates (Central) 166, 182
  and rejected ballot images in
  Central 172
  definition 128
  enabling 78, 108
  making human-readable 78
  on Verity Touch Writer ballots
  116

unique identifiers, allowing duplicates (Central) 182

user names 28, 382

user roles 50, 51–52

users
  adding 49–50
  changing passwords 56
  disabling 53
  removing 54
  setting rules for 55

Users (application) 31, 49–56

V

validation button 37

vDrive compartment (devices) 36–37

vDrive ID 130–131

vDrives 20
  closing (Central) 220
  closing (Count) 290
  planning quantities 130, 132
  reading (as Count Media Reader
  user) 292–293
  reading (Build) 133
  reading (Count) 282–293
  recovery (Central) 218, 222–223
  recovery (devices) 386–391
  rejected in Count 289
  setting the number expected for
  polling places 346–347
  setting type (Official or Test) 130
  status (Count) 288–289
  tabulating 287, 291
  writing 106, 120, 130–133
  writing (Central) 194, 218–221

vDrives Created report 101, 131

vDrive Status report 327

vDrive Tracking Log 130–133

vDrive Worksheet 130, 132

Verity Access 21

Verity Build 26, 31, 65–141
  Key passcodes 58
opening an election 85
passcodes, creating for devices 57
reports 95–101
setting default preferences 77–79, 86
workflow overview 71

**Verity Central 26, 31, 143–237**
and resolving write-ins 162, 205–208
choosing default voting type behavior for scanning batches 165
managing batches 174–176
opening an election 159
resolving ballots for voter intent in 196–209, 214–215
scanning batches 171–173
setting preferences 158, 165–167
settings 170
tasks in 158
workflow overview 149

**Verity Count 26, 31, 239–365**
and the election dashboard 283–285
exporting Cast Vote Records from 355–357
importing and exporting data 360–365
managing tasks in 269–274
managing write-ins 296–304
manual vote recording in 350–354
opening an election in 267
opening the Count application 252
reading vDrives 296–308
reports, configuring and generating 306–349
resolving write-ins 296–304
setting default preferences 253–261, 275
tabulation 296–308
workflow overview 247

**Verity Key 23, 150**
administrator password 134–135
and signing/accepting elections 75
managing passcodes 58
passwords (devices and applications) 135
reading 136
security best practices 138
use with Verity software and devices 24–25, 137–138
writing 106, 120, 134–135

**Verity Layout 26, 31**

**Verity Scan 22**
and hash testing 36–37
and second-chance voting 113
audio alert volume 115
changing ballot rules 392–393
saving ballot images 115
settings in Build 113–115

**Verity Touch Writer 21**
access code settings  116
and hash testing  36–37
unique identifier settings  116

Viewer (Verity Build user role)  51

Viewer (Verity Central user role)  51

voter intent  113, 187
write-in votes (Count)  300–303

voter registration
entering by party (Count)  254
importing totals (Count)  306, 348–349, 360, 363
including on report headers (Count)  256, 309

Voting Device report  326

voting types
allowing Tally for  109
and reporting (Count)  311, 315
and scanned batches in Central  174–176
choosing for scan batches  171
preferences when scanning batches (Central)  165
setting end date and time  109
setting end of day type (Suspend or Close)  109

W

Windows operating system access.
See OS access in Verity

workstation ID
and scanned batches in Central

Write Ballots (Central tab)  218–224
Write-in report  328

write-ins  197
deferring to Verity Count  162
defining candidates (Central)  186, 207–208, 210–212
defining candidates (Count)  297–299, 363
managing in Verity Central  162, 186
managing in Verity Count  296–304
reporting defaults for unassigned/rejected write-ins (Count)  259–260, 313–314
resolving in Verity Central  205–208
resolving in Verity Count  285, 300–301
viewing and printing assignments (Count)  302–303

write-in votes. See write-ins

Written (batch status in Central)  174

Z

Zero report  283, 286
printing (Count)  276–279
validation  254
notes
notes
Hart Support

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

Hart Customer Support Center (Help Desk)

1.866.275.4278

hartsupport@hartic.com