



U.S. Election Assistance Commission

Voting System Security Measures



The security of voting systems is essential to a trustworthy election. Every state and local jurisdiction utilizes common-sense procedures and tools to safeguard the voting process. Common best practices include using locks, tamper-evident seals, security cameras, system testing before and after elections, audits, and physical and cybersecurity access controls.

At the federal level, the U.S. Election Assistance Commission (EAC) sets voluntary standards for states to follow in several key areas of election administration, including voting systems. The purpose of the EAC's national voluntary voting system certification program is to independently verify that voting systems comply with the functional capabilities, accessibility, and security requirements necessary to ensure the integrity and reliability of the systems. Industry experts, election officials, and federal agencies collaborate to develop certification standards in a transparent process. For more information about the EAC's testing and certification process, see <https://www.eac.gov/voting-equipment/testing-and-certification-program>.

Every state enacts laws, regulations, and security policies to further protect the integrity of elections. Each state also has a Chief Election Official who ensures their laws and procedures are strictly followed. Some states may require election officials to use EAC-certified voting systems or systems tested and certified by the state. To find information about the rules in your state, visit: <https://www.eac.gov/voters/register-and-vote-in-your-state>.

Over 10,000 election officials directly oversee the voting process in their states and communities. Election officials use standard operating procedures to ensure the accuracy of the election.

Common procedures include:

- Purchasing tested and certified voting systems.
- Programming all devices according to local laws and regulations.
- Testing the accuracy of voting equipment before elections and allowing the public to attend.
- Conducting elections with bipartisan poll workers and observers.
- Verifying the total number of voted ballots matches the total number of voters.
- Auditing the ballots to ensure that the voting equipment counted votes accurately.
- Maintaining a strict chain of custody, verified by at least two witnesses (often from bipartisan teams).
- Maintaining physical security access controls.

This guide outlines some of the many best practices election officials employ to secure voting systems through an election cycle. Every state and local jurisdiction has its own controls for ensuring the integrity of elections. Security measures may vary based on state law and the voting system in use in the jurisdiction.

1 Ballot Design & Security

Election officials design ballots on a dedicated computer used to program other pieces of voting equipment (touchscreen voting devices and ballot scanners). The same computer may also compile election results after the polls close on election night.

Best practices election officials use to secure the computer include:



- Keeping it in a location with restricted access (locks with documented entry, key card systems) and video surveillance



- Never connecting it to the internet or other external network



- Providing users unique logins, strong passwords, and access to the minimum functions needed to perform their duties



- Routinely reviewing audit logs of all users who log onto the computer and actions they perform



- Validating the computer's software has not been modified

2 Voting Equipment Programming

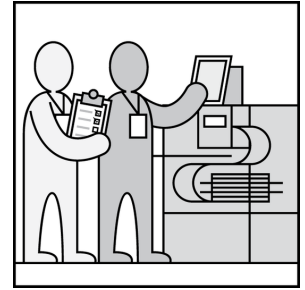
- Teams of two individuals (preferably bipartisan) program the voting equipment with USB or other storage devices only used for data transfer (equipment may include touchscreen voting devices, precinct scanners, and central scanners)
- After the voting equipment is programmed, election officials affix tamper-evident seals to the equipment
- Access to equipment is restricted and it is stored in an area with locked or key card only access or in locked and sealed containers with video surveillance
- Election officials document the movement and control of equipment, who accessed the equipment, and seal and location information throughout its lifecycle
 - Every piece of voting equipment is tracked separately



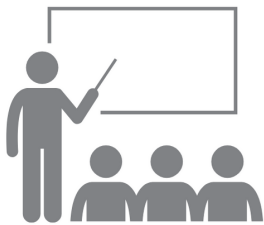
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3 Voting Equipment Testing

- Teams of two individuals (preferably bipartisan) verify chain of custody information and tamper-evident seals on each piece of voting equipment being tested
- Testing includes:
 - Verifying the correct election version is loaded
 - Voting a pattern that ensures all ballots are properly read
 - Verifying tabulated results match the expected outcome of the test
 - Uploading results to the central tabulation computer and verifying compiled results from all tested equipment
 - Clearing test results and preparing equipment for voting
 - Replacing tamper-evident seals (as necessary) and returning equipment to secured storage for deployment
 - Documenting testing outcomes and chain of custody, including who performed the testing, whether the piece passed, seal information, and storage location

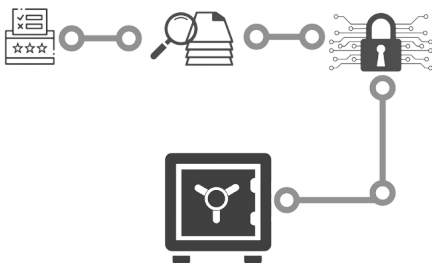


4 Poll Worker Training



- Poll workers are trained to:
 - Conduct activities in teams of two individuals (preferably bipartisan)
 - Verify and maintain the chain of custody for voting equipment, including checking seal information and verifying equipment contains zero votes at the opening of polls
 - Remind voters to verify their ballot choices before casting their vote (for example, instructing voters to review their paper ballot before casting it)
 - Monitor equipment continuously throughout voting hours
 - Document any issues that arise

5 Deploy Equipment



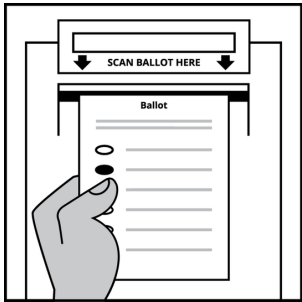
- Teams of two individuals (minimum, preferably bipartisan):
 - Verify seal information and document possession of equipment
 - Transport equipment along predetermined routes
 - Maintain chain of custody documenting who moved the equipment, where, and when
- Once the equipment is delivered, it remains locked and sealed until poll workers arrive to open the voting location

6 Early and Election Day Voting



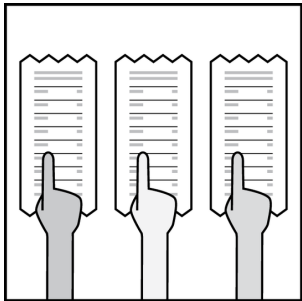
Before polls open – poll workers:

- Verify seals and locks on every piece of voting equipment and look for evidence of tampering
- Turn on the equipment and verify no ballots have been cast before voters can use the equipment
- Document who completed the verification and handled the equipment startup



Throughout the day:

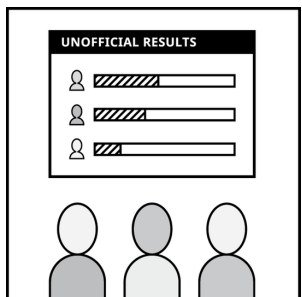
- Most votes are cast with a paper record (ballots), which are kept in locked containers with tamper-evident seals to maintain integrity for post-election audits or recounts
- Poll workers track who has voted in poll books to prevent voting by unauthorized persons or double voting
- Voting equipment shows how many ballots have been processed on each machine, which poll workers periodically compare to the number of voters checked in



Close of polls:

- Poll workers account for all ballots and compare the number of ballots processed to the voters who checked in to vote
- Paper ballots and storage devices containing vote counts are placed in secured containers with tamper-evident seals and returned to the elections office
- Voting equipment is shut down, locked, and secured with tamper-evident seals

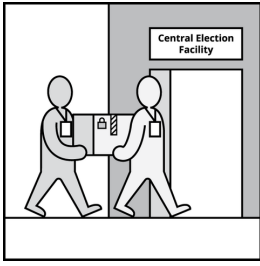
7 Election Night Reporting



- Unofficial election results are shared on election night from a secure location that limits public access, while allowing people to observe the counting process
- Back-ups of election results are run on a regular schedule, so that data can be recovered quickly and restored if needed
- Computer networks are monitored looking for signs of irregularities to prevent tampering with election results reporting websites
- For more information on securing election results reporting, see the EAC's **Checklist for Securing Election Night Results Reporting**

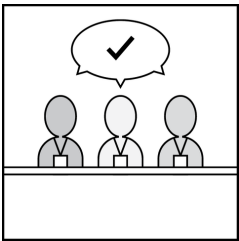
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8 Return Equipment



- At least two people (poll workers or separate delivery crew) return voting equipment and materials to the elections office and document the chain of custody
- Election officials verify that the equipment was safeguarded during transport, return the equipment to secured storage, and complete the chain of custody

9 Official Canvass & Certification



- Canvass Boards or teams of election officials review documented issues and chain of custody for equipment and ballots
- Election officials verify that results include all eligible ballots and that the voters checked in matches the number of ballots cast



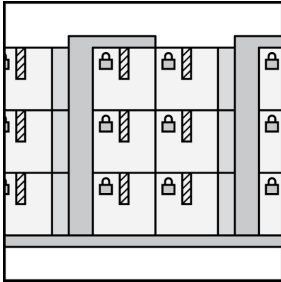
Unofficial election night results may change during the canvass process. The EAC's [Election Results, Canvass, and Certification website](#) includes several resources with information on how unofficial election results are canvassed and certified.

10 Audit*



- Election officials use a variety of methods to audit elections and procedures to ensure that the results are accurate
- Audits are typically open to the public to observe the process
- Two or more people remain with ballots in every step of the process
- Auditors document every step to ensure audit procedures were strictly followed
- The results of the audit are available for the public to view
- After the audit, all ballots are resealed and returned to the secured storage location

*Audits may take place before or after the official canvass and certification depending on the state.



- **Storage facilities are secured with:**

- Locks with keys issued to a limited number of election officials
- Minimum of two persons (preferably bipartisan) to enter facilities
- Entry and exit tracking - may be logged automatically with key card access or manually with strictly enforced sign in/sign out policies
- Strictly enforced logging policies for any equipment accessed
- Cameras to deter unauthorized access and provide a record of who accessed the location

- **For offices without separate, secured storage facilities, election officials use secured storage containers or racks and secure them with:**

- Locks and tamper-evident seals
- Minimum of two persons (preferably bipartisan) to access a container
- Cameras monitoring the area housing the containers or racks
- Strictly enforced logging policies requiring teams who access a container or rack to record when seals are broken and replaced on storage containers with the date, time, and detailed reason why it was accessed

- **Federal election materials are kept for a minimum of 22 months per federal law and many states retain materials for longer per state law**

What can you do to help ensure the integrity of elections?



Be a poll worker – Elections rely on hundreds of thousands of poll workers, who volunteer in their communities to oversee the voting process on Election Day. Volunteer to strengthen our democracy and ensure free and fair elections. To learn more visit: <https://www.eac.gov/help-america-vote>.



Ask election officials – Elections are administered by state and local officials who are trusted sources of election information. Voting laws and procedures are different from state to state and what you see online is not always true. Election officials are ready to answer any questions you have. Election websites may also provide answers to frequently asked questions. The last line of defense in election security is you - the American voter. Be a smart consumer and sharer of information.



Observe elections – Voting equipment testing, election night tabulation, official canvass, audits, and recounts are frequently open for public observation. Observe and see for yourself how election officials safeguard the voting process and verify the integrity of election results.