



Product Advisory

System Affected:	Verity Voting v. 1.0
Components Affected:	Verity Central v. 1.0.3, Verity Count v. 1.0.3
Notification Date:	September 30, 2015
Summary:	Procedural workflow to prevent invalid vDrive from Verity Central when resolving write-ins in an election containing a Straight Party selector
Affected Users:	This issue affects only users of Verity Central and Verity Count who <ol style="list-style-type: none">1) Have elections with straight party voting; AND2) Resolve write-ins in Verity Central

Note: The information contained in this document is for reference only. It is recommended that each jurisdiction consult with its state and local election authorities with respect to applicable laws, regulations, procedures and other guidelines that may impact how this information is used.

Overview:

Verity Central is high-speed paper ballot scanning software used with commercial-off-the-shelf scanners as part of the Verity Voting system, v. 1.0. When Verity Central is used to process paper ballots from an election that includes straight party voting, particular user actions in association with resolution of write-in votes can result in the production of an invalid vDrive. This advisory describes the issue and presents a procedural workflow that allows users to efficiently complete tasks associated with ballot processing and reporting, while avoiding the risk of creating an invalid vDrive.

Issue Description:

In Verity Central, it is possible to create an invalid vDrive that will not be accepted in Verity Count tabulation and reporting software. If this condition is encountered, Count will generate the message, “vDrive format is invalid.” The user can recover from this error by rescanning all ballots contained on the affected vDrive. However, this advisory recommends an efficient and usable alternative workflow to avoid the condition altogether.

This issue can be encountered in some Central ballot adjudication workflows if the following conditions exist:

- The election contains a Straight Party Selector
- A contest that is included in the “Straight Party” has a marked write-in which is adjudicated in Verity Central
- Various combinations of additional adjudication actions are performed; an example of a sequence that results in an invalid vDrive is:
 - **Resolve** the write-in contest
 - **Accept** a voter intent issue in any contest (in Verity Central, “Accept” means to “confirm” the system processing of the mark)
 - **Make any change** to any contest on the ballot (i.e. manually check or uncheck a choice, using the software, to classify it as marked or not marked)

Different combinations of the actions above, as well as other adjudication action, can generate an invalid vDrive. Because these actions can occur in different sequences, and because they can also be preceded or followed by additional actions, it is not possible to specify a single workflow that will result in the invalid condition; other sequences of steps can also result in the invalid condition. After these steps have been performed and the ballot containing the resolved write-in has its Cast Vote Records (CVRs) written to a vDrive, the vDrive that contains this ballot will not be accepted in Verity Count. When the vDrive is read into Count, Count will generate the message, “vDrive format is invalid.”

Root Cause:

In the affected workflows, resolved write-in entries are moved into an intermediate database column prior to being written to vDrive election media. This intermediate column is incorrectly configured at a fixed length of 100 characters, which causes the database engine to add blank spaces to the write-in until the total length of the string is 100 characters. Verity Count supports up to 50 characters for a resolved write-in. Accordingly, when a vDrive affected by the actions specified above is read into Verity Count, Verity Count will not accept the vDrive.

Recommended Procedures:

If the election contains both write-ins and a Straight Party selector, the recommended procedure is to resolve all write-ins in Verity Count. No alternative workflow is required if the election does not contain both write-ins and a Straight Party selector.

Although some adjudication workflows do not produce invalid vDrives in these conditions, because of potential human error it is preferable to use Verity Count to avoid the issue entirely – especially because it is very similar to the procedure for resolving write-ins in Verity Central, and indeed, it has additional benefits compared to the Verity Central method.

Verity Count has all of the same write-in resolution capabilities as Verity Central:

- Both applications allow users to enter “certified” candidate write-in names, to facilitate assignment of captured write-ins
- Both applications present a graphic cross-section of voter-written write-in entries
- Both applications also offer users the capability to assign a write-in as “rejected,” if it cannot be assigned to a named write-in candidate.

Verity Count also offers the following **additional** capabilities associated with write-in resolution, which are not available in Verity Central:

- In Count, users are not required to resolve write-ins at all, if they do not wish to do so; users can choose to resolve them, or they may leave them in an unresolved category. This allows maximum flexibility and efficiency.
- In Count, users can choose whether rejected write-ins are reported in a separate category designated by the user, or whether they are counted as undervotes.

*In sum, resolving all write-ins in Verity Count has the following **benefits** for the user:*

- All the advantages of resolving write-ins in Verity Central: digital adjudication, without having to outstack or review physical ballots.
- Maximum efficiency for ballot processing in Verity Central; Verity Central users do not need to interrupt their procedures or wait to resolve all write-ins before writing CVRs to vDrives for tabulation.
- Verity Count offers additional reporting features that provide added flexibility to the user, since they offer options for whether write-ins get resolved, and the manner in which they are reported.

Conclusion:

The workflow described above will prevent users of Verity Central from inadvertently creating an invalid vDrive from Verity Central when resolving write-ins in an election containing a Straight Party selector.

The root cause of this issue is being corrected in a future version of Verity Voting, currently scheduled for release in 2016.