

# Elections ACT

## Upgrade of eVACS® for the 2024 ACT Legislative Assembly Election

### Installation Manual

**Document Status: Final  
Version 1.4  
March 2023**



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## eVACS®

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Where used in this Installation Manual, eVACS has the same meaning as eVACS®.

## eVACS® 2024 upgraded documentation tree

—	Contract with 2024 Upgrade requirements
—	Operational Concept Description
—	System Specification - Part 1 including 2024 upgrade requirements
—	Interface Specification - Setup election
—	<b>Installation Manual</b>
—	User Manual - Election server
—	User Manual - Ballot Viewer
—	User Manual - Polling Place server
—	User Manual - Telephone Voting server
—	Multi Factor Authentication

## Document Control Information

The controlled version of this document is in electronic form.

All hardcopy versions are uncontrolled.

### Modifications

Date of this Revision	Version	Comment	Author	Reviewer	Release
2020-04-09	0.1	Initial Draft	CJB	AS, JZ	
2020-07-19	0.2	Modifications to reflect boot processes for specific election hardware. Inclusion of instruction for creating backup election server, replacement voting server and spare/replacement voting clients	CJB		
2020-08-03	0.3	Included missing screen in setup of voting client	CJB		
2021-12-30	1.0	Delete references to data entry and include documentation tree	CJB		2021-02-15
2022-11-15	1.1	Schedule 1.13(1)	CVB	CJB	
2022-11-18	1.2	Minor edits included	CJB		2022-11-18
2023-03-04	1.3	Edits to reflect 2024 upgrade changes	CJB	CVB	
2023-03-16	1.4	Inclusion of reviewer comments	CJB		2023-03-16

### Distribution

Name and Appointment	Document Name	Date of Issue	Version
Jiv Sekon, eVACS Project Manager, EACT	Installation Manual	2020-07-28	0.2
Jiv Sekon, eVACS Project Manager, EACT	Installation Manual	2020-08-03	0.3
Jiv Sekon, eVACS Project Manager, EACT	Installation Manual	2021-02-15	1.0
Jiv Sekon, eVACS Project Manager, EACT	Installation Manual	2022-11-18	1.2
Ro Spence, Deputy Electoral Commissioner, EACT			
Jiv Sekon, eVACS Project Manager, EACT	Installation Manual	2023-03-23	1.4

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# 1. Introduction

## 1.1 Scope

Guidance is provided for the installation of the different software modules comprising the eVACS® components:

- Setting up an Election Server,
- Setting up a Ballot Viewer,
- Setting up voting servers (polling place and telephone) and
- Setting up telephone voting server.

Each of these components is addressed in separate sections of this document, together with the equipment and other resources required to establish an operating eVACS® system for a particular election.

Specific details of equipment, such as the particular features a server or All-In-One voting client needs to meet, are provided in the User Manuals [1], [2], and [3] and Requirements Specification [4].

## 1.2 Referenced documents

1. Software Improvements Pty Ltd, eVACS® Election Server - User Manual, 2023
2. Software Improvements Pty Ltd, eVACS® Polling Place Voting - User Manual – 2023
3. Software Improvements Pty Ltd, eVACS® Telephone Voting - User Manual – 2023
4. Software Improvements Pty Ltd, eVACS® System Specification – Part 1 Requirements, 2023
5. Software Improvements Pty Ltd, eVACS® Interface Design Description Election Data Setup, 2023
6. Software Improvements Pty Ltd, eVACS® Ballot Viewer - User Manual - 2023

## 1.3 Required information

For all server hardware, if a BIOS password has been set by Elections ACT prior to installation of eVACS®, then this password must be known in order to progress the installation. The following installation instructions refer to setting a BIOS password after the installation of eVACS®.

The election data and audio clips uploaded to eVACS® as part of the setup for an election are detailed in [5] and [6].

Schedule 1.13(1)

## 1.4 Accessing the BIOS

As part of the process for installing eVACS® software on any of the hardware to be used as Election Server, voting servers, voting clients and the ballot viewer, the BIOS settings on each computer must first be set appropriately, and for voting servers and clients immediately before installation be set to a 'One time boot from network'. As these procedures are different for the two types of HP used as servers for the 2020 election and expected to be used for the 2024 election, detailed descriptions are provided in the following sections.

Appendix B contains detailed instructions for setting the BIOS on the Dell AIOs used as voting clients in 2020. In order to reflect the ballot view as seen by a voter, the Ballot Viewer has been developed as a standalone computer of the same type as used for the voting clients, currently a Dell AIO OptiPlex 7470. If another AIO is chosen for 2024 then the general BIOS settings required for the Ballot Viewer are:

1. ensure that the device boot order has the USB option first, so that when switched on the AIO will boot from a Ballot Viewer Boot-USB, and
2. the UEFI Secure setting must be set to OFF (unticked).

To access the BIOS, a standard keyboard must be connected to the computer. For the servers, election and voting, and the Ballot Viewer, a keyboard is connected for installation and (as appropriate) throughout the election. For the voting clients (Dell AIOs) a keyboard must be connected for eVACS® installation but immediately after removed or in the case of the B&VI system replaced with a telephone-style keypad.

A further level of security on the hardware is obtained by setting a password for accessing the BIOS. Care must be taken to ensure the password is never lost, as a lost password may result in a return of the hardware to the factory.

## 1.5 CAUTION

Key considerations in the design and development of the eVACS® software have been the security and integrity of data. As a result the installation process wipes all data and software (including operating system) on the equipment and installs a clean and safe environment (operating system, supporting drivers and utilities, and application) for the eVACS® software to run.

Direct access to the database or command-line interface is prohibited. Print utilities are provided to support printing of Master Admin QR cards for the Election Server, scrutiny sheets, and reports. Data backup utilities are provided to aid in disaster recovery.

## 1.6 Passwords

Passwords are used throughout eVACS® for many functions. For 2024 when characters are entered for a password each is indicated by an asterisk (\*), except where the password is being used to access a USB encrypted via VeraCrypt. Unfortunately the VeraCrypt software used does not allow for display of an indicator as each character is entered.

## 1.7 Acronyms

ACT	Australian Capital Territory
AIO	All-in-One computer
B&VI	Blind and Vision Impaired
EACT	Elections ACT / ACT Electoral Commission
eVACS® / eVACS	electronic Voting and Counting System
IVR	Interactive voice response or IVR - an automated phone system feature that interacts with callers and gathers information by giving them choices via a menu. It then performs actions based on the answers of the caller through the telephone keypad.
LAN	Local Area Network
NLA	No Longer Available (refers to Data Entry)
SIP	Session Initiation Protocol (SIP) - a communication protocol that manages multimedia communication such as video and voice calls.
USB-FD / USB	USB Flash Drive



## 2 Setting up Election Server

### 2.1 Equipment

The Election Server comprises a HP EliteDesk computer, monitor, keyboard, scanner capable of reading QR codes and A4/A3 printer.

For operations involving the installation of voting software a LAN and switch connected to the Election Server are required. This network need only be connected to the Election Server when necessary for undertaking voting server installations.

For all other operations the Election Server is standalone.

### 2.2 Security

Although the Election Server software has access controls in place and unused ports are decommissioned via the operating system software when loaded, any ports not to be used are also best physically protected.

For additional security, the Election Server is located in an environment where access to that environment is controlled.

Election Server access is also password and QR code controlled.

### 2.3 Setting the BIOS on the HP EliteDesk computer

For the setting of the BIOS only the monitor and keyboard need be connected to the computer.

Immediately on startup select F10. If a screen to confirm settings is displayed navigate, using up and down arrows, to CANCEL and then press Enter. A screen titled 'MAIN | Security | Advanced | UEFI Drivers | Computer Setup' is displayed.

Navigate to 'Change Date and Time' and press Enter. 'Change Date and Time' screen is displayed. Change if necessary to current date and time, and then use back arrow to return to Main screen.

Navigate to 'Change to default factory settings and Exit' and press Enter. Computer will shut down.

Restart and use F10 to display Main screen again. Navigate using right arrow to the 'Advanced' screen.

On 'Advanced' screen navigate down to 'Secure Boot Configuration' and press Enter. Under 'Configure Legacy Support and Secure Boot' make sure selection is for 'Legacy Support Enable and Secure Boot Disable'. If not preselected, press Enter to display drop down list. Select 'Legacy Support Enable and Secure Boot Disable' and then press Enter to close drop down list. Press ESC to return to Advanced Menu.

Navigate to Secure Boot Options and press Enter. Turn off / deselect CD-ROM Boot and UEFI Boot Order by navigating to each item and pressing Enter.

Then navigate to items listed under Legacy Boot Order (should be only one item down) and press Enter. An arrow appears next to USB, navigate down so the arrow is against HDD and press enter. Two navigation arrows appear; use the up arrow to move HDD to the top of the list. Press Enter to accept the change. Press ESC twice to exit 'Legacy Boot Order' and return to the 'Advanced' screen.

Navigate to 'Built-in Device Options' and press Enter. Navigate to 'M.2 USB / Bluetooth' and disable by pressing Enter. Ensure 'Audio Device' is selected.

Press F10, 'Save changes' is listed. Navigate to Yes and press Enter to confirm changes. System will shut down and automatically reboot. Manually turnoff computer.


## 2.4 eVACS® Election Server software installation

After manual shut down at the end of section 2.3, insert the eVACS® Election Setup Installation USB-FD into the top USB slot on the front of the computer (see Figure 1).


Restart the computer and immediately press F9 until the 'Boot Menu' screen with an options list is displayed. In the options list navigate to the USB-FD identified by brand name and model that corresponds to the USB-FD inserted with the eVACS® Election Setup Installation. Press Enter. The system will shut down and restart from the inserted USB-FD and proceed to install the eVACS® Election Server software.


After the eVACS® software has been installed (in less than 10 minutes, the system will automatically shut down. Remove the installation USB-FD from the computer.

Before restarting as a functioning Election Server:

- Schedule 1.13(1) 
- Ensure scanner and printer are connected to the election server and operational.
  - The scanner is operational when the trigger on the scanner is pressed and a red beam is seen.
  - The printer is operational when the printer display is lit up or indicates Energy Saver Mode
  - An appropriate A4 sheet of card is in the printer for printing of the Master Admin card for the Election Server.
- Have the password to use later for accessing the Election Server, ensuring password is recorded and stored safely, and meets ACT Government requirements.
- Accessories are connected to the ports that have not been decommissioned.
  - See Figures 1 and 2

Initial setup steps:

Schedule 1.13(1) 

Schedule 1.13(1) 

Schedule 1.13(1)

Step 4 – A prompt is then displayed to enter Election Server access password. Confirm password by re-entering, and then press ENTER. The system will then generate and print a Master Admin card for the Election Server. After Master Admin card is printed, press ENTER to reboot the Election Server.

Step 5 – After reboot a prompt is displayed to enter Election Server password. Enter password as provided at Step 4 and press ENTER. A prompt is displayed to scan Master Admin card for Election Server.

Step 6 – Scan Master Admin card for Election Server. Election Server Main Menu is displayed with the message: Please enter one of the options and then press ENTER.

Step 7 – Enter S and then press ENTER to shut down the server. A prompt is displayed to scan Master Admin card.

Step 8 - Scan Master Admin card. Server shuts down.

Schedule 1.13(1)

**NOTE:** If a backup Election Server is to be available, then there is no need to pre-load the computer hardware with the eVACS® Election Setup Installation.

## 2.4.1 Creating a replacement/backup Election Server

A backup Election Server can be created at any time, as per the following:

Schedule 1.13(1)

Step 2: Ensure hardware has correct BIOS settings (section 2.2).

Schedule 1.13(1)

Schedule 1.13(1)

Step 4: On the Backup Election Server select menu option 5 - Restore Database, and insert USB-FD with backup database when prompted.

Schedule 1.13(1)

Whenever changes are made to the Main Election Server, say Phase 2 is run, then a backup of the Main Election Server database should be prepared and immediately used to update the database on the Backup Election Server.

## 2.5 Software installation on voting servers

Once the Election Server has been created, the voting server software (for polling places and telephone voting) can be installed using menu option 11 (section 3).

## 3 Preparing the HP Z1 tower computers as voting servers

### 3.1 Setup the BIOS on the HP Z1 tower computers

The HP Z1 tower computers are being used for voting servers, both polling place and telephone voting. Before any eVACS® software can be installed on this hardware to create a voting server, the BIOS on the hardware must be correctly setup.

Recommendation: The BIOS changes be made on all the voting servers before attempting to install the eVACS® voting server software.

The only hardware required for setting the BIOS is the computer, monitor and keyboard. There is no connection to a LAN required.

### 3.2 Setting the BIOS ready for installing the eVACS® voting server software

The BIOS setup on the HP Z1 computers is similar but not the same as the HP Elite Desk computer being used for the Election Server.

Immediately on starting up the computer select F10. If a screen to confirm settings is displayed, navigate, using the up and down arrows, to CANCEL and then press Enter. The Main screen is displayed with options as follows:

MAIN | Security | Advanced | UEFI Drivers | Computer Setup.

Stay on the Main screen and navigate down to 'Change Date and Time' and press Enter. The 'Change Date and Time' screen is displayed. Change if necessary, and then press the back arrow key to return to Main screen.

On the Main screen, navigate to 'Apply Factory Defaults and Exit' and press Enter. Computer will shut down.

Depending on what was set beforehand, you may get a screen to enter a code. Follow the instructions and after the auto shutdown, immediately restart and use F10 to get to the Main screen again.

Otherwise just immediately restart and use F10 to get to the Main screen again.

Navigate using right arrow to move to the Advanced screen.

On the Advanced screen, navigate down to HP Sure Recover and press Enter. If on the HP Sure Recover screen there is a 'tick' against the item 'HP Sure Recover' (which should be highlighted), press Enter to remove the 'tick'. Use the back arrow to return to the Advanced screen.

Still on the Advanced screen, navigate to 'Secure Boot Configuration' and press Enter. On the 'Secure Boot Configuration' screen now displayed, 'Configure Legacy Support and Secure Boot'

should be highlighted. From the drop down list ensure “Legacy Support Enabled and Secure Boot Disabled” is selected.

If Legacy Support Enabled and Secure Boot Disabled is already selected simply navigate to the Advanced screen using the back arrow back.

Press F10 to bring up the Save changes screen. ‘Cancel’ is selected. Navigate up to Yes and press Enter to save changes. System will automatically shut down and then restart. At restart immediately press F10 to bring up the Main screen. Navigate to the Advanced screen.

If the ‘Configure Legacy Support and Secure Boot’ selection is changed, a confirmation screen will be displayed. Confirm the change by highlighting Yes and pressing Enter. You may also get a screen to enter a 4 digit code. Follow the instructions and after the auto shutdown, immediately restart and use F10 to get to the Main screen again and then navigate to the Advanced screen.

On the Advanced screen navigate down to Boot Options. Press Enter to display the Boot Options screen.

Navigate to Fast Boot and press Enter to deselect.

Navigate down to UEFI Boot Order and press Enter to deselect.

Navigate down to ‘Legacy Boot Order’ and press Enter to Select. An arrow will appear against the top item which should be ‘USB’. Press Enter and up/down markers appear next to USB. Navigate using the down arrow on the keyboard to move USB down below M1 and M2. Press Enter to accept. Press ESC to exit. Use back arrow to go back to Advanced screen.

On Advanced screen navigate to Built-in Device Options and press Enter. Navigate to M.2 USB / Bluetooth and if ‘ticked’ disable by pressing Enter. Ensure Audio Device is selected. Use back arrow to return to Advanced screen.

Press F10 to confirm the changes. Navigate to Yes and press Enter. System will auto shut down on confirmation and automatically reboot. Before reboot progresses, manually turn off computer.

## 3.3 Installing the eVACS® voting server software

### 3.3.1 Setup

Step 1 – Ensure that the BIOS has been correctly set on each of the HP Z1 computers (Section 3.2)

Step 2 – Connect each computer, with monitor and keyboard attached, via an isolated LAN and switch, to the Election Server, which has been setup as per section 2.

Step 3 - Ensure that the Election Server is operational and the computers connected via the switch are all connected to power, with monitors switched on but computers off.

Step 4 – Identify which computer is to become the Telephone Voting Server.

A summary of the procedures for installing the eVACS® voting server software from the Election Server is described in the Election Server User Manual but is included here in detail.

**NOTE:** All data for a specific election must have been uploaded to, or generated by, the Election Server, before installation of voting servers can proceed.

### 3.3.2 Installation of voting server software

**NOTE:** For any action requiring selection of an option from the Election Server menu, enter option number followed by Enter and then when prompted scan Master Admin card for the Election server.

Step 1 - Start the Election Server, enter password and scan Master Admin code for the Election Server and the Main Menu is displayed. First check that all the information necessary to create a voting server is available from the Election Server. Enter 6 ( See Election Data Setup Status) and review to ensure status is complete for all items. Press Enter to return to Main Menu.

Status of all items must be complete before continuing.

With status complete for all items, enter 11, Start Installation Services on the Main Menu. When installation services have been started successfully follow the prompt to press Enter to return to Main Menu.

Step 2 - Leave the Election Server and proceed in turn to each HP Z1 computer connected to the Election Server.

Step 3 – Start with the computer that is to be used as the Telephone Voting Server. Ensure the monitor is on, power on the computer and immediately select F12 on the keyboard. The computer will immediately boot and start the download of the voting software.

Step 4 – At the start of the software download a screen will display with two choices: Polling Place Server and Telephone Voting Server. Navigate with the up/down arrows to Telephone Voting Server and press Enter.

Step 5 – After selection of Telephone Voting Server the software will be downloaded and installed. This will take less than 10 minutes. When completed the newly created Telephone Voting Server will automatically shut down and the boot sequence automatically changed to 'boot from hard drive'. The Telephone Voting Server should be immediately physically identified as such and disconnected from the LAN.

Step 6 – Proceed in turn to each HP Z1 computer connected to the Election Server and ensure monitor is on. Power on computer and immediately select F12 on the keyboard. Step 4 is not required as The default selection is Polling Place Server so there is no need to select Polling Place server on the choice screen (Step 4).

Step 7 – After automatic shutdown, the new Polling Place Server can be disconnected from the monitor and LAN and another computer installed in its place, commencing again at step 6.

Step 8 – Once all the computers have been created as voting servers and shut down, return to the Election Server and if not done at the end of Step 1 press Enter to return to Main Menu which has two options: 12) Stop Installation Services and S) Shut Down Election Server. Select option 12) to Stop Installation Services. When services have been stopped successfully press Enter to return to Main Menu.

**NOTE:** The Telephone Voting Server MUST be separately identified as its Menu is different to the Polling Place Server Menu.

## 3.4 Replacement voting servers

Replacement, or additional, polling place or telephone voting servers can be created at any time after all the necessary data has been uploaded to, or generated by, the Election Server. That is, Phase 1 and Phase 2 have been run, barcodes and voting tokens generated and passwords entered.

Either 'spare' voting servers are created as described Step 7 in section 3.3.2 or new hardware is setup as per section 3.2 and 3.3.

If the replacement is for a voting server that has been in use, at least one hard drive from the failed voting server should be recovered and inserted into the replacement server, according to the agreed procedures (see Polling Place or Telephone - User Manual). The two drives will then proceed to synchronise, which may take up to 30 minutes, and all data including votes from the old voting server will have been synchronised to both drives in the replacement server.

### 3.5 Identifying a voting server and generation of authentication key

Schedule 1.13(1)

During the eVACS® software installation the telephone voting server is separately identified, but all polling place servers are identical.

For operation at a polling place, a server must first be named by selecting from a list of polling place names, and the corresponding Master Admin card for that polling place name linked.

Step 1 - Reboot the server. A list of polling places for electronic voting is displayed with the instruction "Please choose one polling place by number:". Enter the number of the chosen polling place, then press Enter.

Step 2 – A prompt is displayed to scan the Master Admin card for that polling place. Scan the Master admin card.

Schedule 1.13(1)

Step 4 – Remove USB-FD and press Enter to reboot. Server will shutdown and restart.

Schedule 1.13(1)

Step 6 – Remove USB-FD followed by pressing Enter and the Main Menu for the Polling Place is displayed with the name of the polling place chosen for the server, and the date.

Step 7 – Select option 11) Turn off server, to shutdown server ready for use at the chosen polling place.

Schedule 1.13(1)

Schedule 1.13(1)

**NOTE:** Each time a voting server menu is displayed, the name of the server and that day's date are displayed.



## 4 Setup for Voting at Polling Places

### 4.1 Equipment

Equipment for electronic voting at polling places includes:

- A Voting Server, comprising a HP Z1 tower computer, monitor, keyboard, scanner and A4 printer (Ricoh P800)
  - The computer has already been installed from the Election Server with the eVACS® voting software, as in section 3.2 and [1] and the location of the polling place server identified as in section 3.5
  - Schedule 1.13(1)
- A number of Dell All-In-One (AIO) computers, each with touch screen, keyboard and scanner able to read QR codes, as Voting Clients
  - All have had their BIOS setup correctly (see Appendix A)
  - A keyboard must be connected prior to download of software from the Polling Place Server
- One Voting Client with keyboard and keypad, the latter being one of two types
  - large black keypad which is attached to the voting server via a PS2/USB adapter
  - small keypad with direct USB connection
- Lockable cabinet for the Polling Place Server
- Power cables and power boards to connect to power sockets, and a UPS for the Voting Server if power supply is questionable
- LAN comprising ethernet cables and switch to connect voting clients to the Polling Place Server

### 4.2 Security

As part of the installation of the eVACS® voting software all unused ports on the Polling Place Server are decommissioned via the operating system. Any ports not to be used are also to be physically protected. Similarly with the Voting Clients, any unused ports are decommissioned and are to be physically protected.

Physical security of the Polling Place Server is also provided by its installation in the lockable cabinet.

**Note:** If the AIO's to be used are different to those used in 2020, the eVACS software will most likely require amendment so the ports to be decommissioned are correctly identified.

### 4.3 Access control

All existing operating system and software, including user profiles and logins, on the machine will have been removed when the Polling Place Server software was installed from the Election Server. Similarly, when the Voting Client software is installed all previous software will be removed.

While the Polling Place Server is operating, access to functionality is 2D barcode controlled via the Master Admin card with QR code, and for the Voting Clients barcode controlled either via an e-voting card with a unique QR code, or the Master Admin card (Administration screen only).

Schedule 1.13(1)

## 4.4 Setting up for voting

Schedule 1.13(1)

Step 1 – Connect keyboard, monitor, scanner and printer to the computer for the Polling Place Server (Figure 3).

Step 2 - Ensure the LAN and switch are in place connecting all the voting clients to the Polling Place Server, and that power is available to the server, printer, switch and all voting clients.

Step 3 – Connect a scanner and keyboard to each All-in-One computer as a voting client (Figure 4). It is not strictly necessary to have a keyboard connected to each All-in-One computer. A single keyboard could be used, as each voting client in turn will require a change to support 'One time boot from network' to enable download of the voting client software from the Polling Place Server.

**NOTE:** While it is not essential to have each voting client powered on before step 7 (below), checking the power supply is OK on each before progressing ensures the following steps progress smoothly.

- a) Turn on the monitor screen to check it is operating.
- b) Test the scanner is on by pressing the trigger on the scanner - a red scanner beam is visible if scanner is operating.

If one or more components do not operate as required, check component/s is/are correctly attached to the voting client and that power is on but **Leave All-In-One off**.

Step 4 – Power on the Polling Place Server, and conduct the following tests:

- a) Schedule 1.13(1)
- b) Test the scanner by pressing the trigger on the scanner - a red scanner beam is visible if the scanner is operating
- c) Turn on the printer

If one or more components do not operate as required check component/s is/are correctly attached to the Polling Place Server and that power is on to the server and the printer.

Schedule 1.13(1)

Step 7 – On Polling Place Server select Option 7 – Start installation services (enter 7, then press Enter, scan Master Admin card at the prompt, and then press Enter to return to Main Menu).

Step 8 – If the BIOS setup on the voting clients was not undertaken previously, complete the instructions at Appendix A.

Otherwise, for each voting client in turn, power on the voting client and immediately select F12, the voting client will display 'One time boot from network' in top right corner of display and then display a screen with UEFI Boot selected. Use the down arrow to move to Onboard NIC (IPV4) and press Enter

to select. The download of software from the Polling Place Server then commences. Installation process on each voting client should be completed in 5 minutes or so. At the end of the download the voting client will automatically shut down. Remove the keyboard(s) and for the B&VI voting client only replace the keyboard with a keypad (Figure 4) and connect a set of headphones (Figure 5).

Step 9 – After all voting clients (AIOs) have automatically shut down, return to the Polling Place Server and select Option 7 – Stop installation services (enter 7, then press Enter and scan Master Admin card, and press Enter to return to Main Menu).

Step 10 - On Polling Place Server select Option 5 – Start Voting.

Step 11 – Return to each voting client in turn. Each voting client should have automatically reset to boot from hard drive. If not done at Step 8, remove keyboard if attached and for the B&VI voting client attach a keypad in the USB port used for the keyboard. Turn on the display, and after a couple of minutes the 'Welcome screen' is displayed.

**NOTE:** When a voting server is first started up at a Polling Place, the two drives will automatically commence synching with each other. This process takes about 30 minutes, and will be undertaken in the background while the voting clients are being set up and software installed.

Recommendation: The synching process be completed before voting is allowed to commence.

Progress with synching can be monitored via the option Check Drive status (option 3 on a polling place server menu). The display indicates the number of minutes to complete synching.

**NOTE:** If at some later time another voting client needs to be created, this can be undertaken when the Polling Place Server is not accepting votes. See section 4.5 for details.

Schedule 1.13(1)

A large, solid grey rectangular area that appears to be a redacted image or a placeholder for a diagram. It occupies the lower half of the page.

Schedule 1.13(1)



## 4.5 Replacing a voting client

Should a voting client fail and have to be replaced, the replacement process simply involves disconnecting the failed client from the network and replacing it with another Dell AIO that has been setup as an eVACS ® voting client. Voting clients are not specific to any particular polling place.

There are two options for setting up a replacement Dell AIO as an eVACS ® voting client.

Option 1 - create spare voting client/s when initially setting up at a polling place. When a voting client automatically shuts down at step 8 in section 4.4, it can be disconnected from the network and a Dell AIO, with the BIOS correctly set, connected to the network and step 8 in section 4.4 repeated.

If required during an election, the pre-installed voting client can simply be swapped in for a failed voting client.

Step 1 - Disconnect the failed client from the network, turn off power to the client and accessories, and then disconnect the scanner (and keypad and headphones if a B&VI client) from the client before removing the client from the voting booth.

Step 2 – Install the replacement client in the voting booth, connect the accessories, connect the power and then connect to the network. Turn on the client to ensure it is operating correctly, Welcome screen should be displayed.

Option 2 – involves creating a voting client during the election.

In this case, voting must be stopped, all voting clients shut down and then disconnected from the network, before connecting the replacement client that is not pre-installed with voting client software.

After connecting the replacement client to the network and ensuring power is on and accessories are operating, connect a keyboard to the replacement client and then proceed with steps 7, 8 and 9 in section 4.4. Before proceeding with steps 9 to 11 in section 4.4, reconnect all the other voting clients to the network. After step 11, all voting clients should display the Welcome screen.

## 5 Telephone Voting

### 5.1 Equipment

The telephone voting system requires the following equipment:

- A SIP telephone connection and outlet to support multiple incoming and outgoing lines
- A virtual IVR server platform (comprising two virtual IVR servers and a virtual softPBX server), on a computer with monitor, mouse and keyboard
- A telephone voting server, comprising computer, monitor, keyboard, scanner able to read QR codes, and A4 printer
- Network cabling and network switch to connect the servers and to connect the telephony.

Schedule 1.13(1)

### 5.2 Security

In view of the sensitivity of the vote data to be stored on the Telephone Voting Server, the telephone voting system is to be located in a secure environment with full access control.

All unused ports on both servers are decommissioned via the Operating System and also need to be physically protected.

### 5.3 Access

As with all other eVACS® servers when the eVACS® voting software is installed to create the Telephone Voting Server all previous software is removed.

Schedule 1.13(1)

Once setup and commissioned for an election, there is no means of access to the IVR servers, with the monitor, mouse and keyboard removed, and all unused ports decommissioned.

### 5.4 Installation

Both the Telephone Voting Server and the IVR server platform have the necessary operational software installed prior to setting up the telephone voting system for the election.

## Schedule 1.13(1)

The IVR server platform is delivered pre-programmed to accept telephone calls and interact with the Telephone Voting Server to enable a (registered) caller to vote by telephone. The audio clips to communicate with a caller in relation to registration and voting for a particular election are made available from the Telephone Voting Server once the IVR server platform is in situ and connected for an election.

## 5.4.1 Installing the Telephone Voting System

Step 1 – Connect the keyboard, monitor, scanner and printer to the Telephone Voting Server computer. Details are the same as for the Polling Place Server in Figure 3.

Step 2 – Connect the keyboard, monitor and mouse to the computer with the IVR servers (simply referred to as the IVR server platform)

Step 3 – Connect the network cables to the network switch, IVR server platform, and Telephone Voting Server

Step 4 – Connect the telephone connection to the network switch, to enable SIP telephony

Step 5 – Power on the IVR server platform. All services are started automatically, and the computer is now ready to receive telephone calls.

Step 6 - Power on the Telephone Voting Server, and conduct the following tests:

- c) Turn on the monitor screen, the Main menu is displayed and the status line indicates that this is the Telephone Voting Server
- d) On the keyboard, enter '1' and then press Enter - the number of ballots in the electronic ballot box is displayed; since voting has not commenced, the number is zero
- e) Test the scanner is on by pressing the trigger on the scanner - a red scanner beam is visible if the scanner is operating
- d) Check the printer has power supplied and is turned on.

If one or more components do not operate as required check component/s is/are correctly attached to the Telephone Voting Server, and that power is on to the server.

Step 7 – During a pre-determined period, audio files on the Telephone Voting Server can be accessed by the IVR server platform (section 5.4.2)

Step 8 - Call the telephone number for telephone voting. The audio heard is: "The ACT's Telephone Voting System will be available from 9:00 am on Monday <day and month> (will be 30 September in 2024)30 September. Please call back then."

**NOTE:** When the Telephone Voting Server is started, the two drives will automatically commence synching with each other. This process takes about 30 minutes, and will be undertaken in the background.

Progress with synching can be monitored via the option Check Drive status (option 4 on the Telephone Voting Server menu); the display indicates the number of minutes to complete synching. However, as the Telephone Voting Server will be operational for some hours before voting actually commences, there is no real need to monitor the progress with synching during setup.

## 5.4.2 Obtaining audio for telephone voting

The following steps are required for the telephone voting audio to be obtained by the IVR server platform.

Step 1 – During a pre-determined period, on the Telephone Voting Server select menu item 10 – Start Audio Services which opens an FTP site for the IVR servers to access.

Step 2 – the IVRs are pre-programmed to automatically look for the FTP site on the Telephone Voting Server during the specified period of accessibility. Once found the audio files will be automatically downloaded by the two IVR servers, which will then disconnect from the FTP site.

Step 3 – After an agreed time, Menu item 11 – Stop Audio Servers on the Telephone Voting Server must be selected. The FTP site will be unavailable after the pre-programmed period expires.

The length of the period when the FTP site is available has been pre-programmed into the eVACS® software.

The start time of the period when the IVRs automatically look for the FTP site needs to be agreed with Elections ACT as part of the setup process of the IVRs for an election.



## 6 Ballot Viewer

### 6.1 Equipment

The Ballot Viewer requires the following equipment:

- A single, standalone All-in-One with touchscreen, currently Dell All-in-One (OptiPlex 7470)
- A standard keyboard.
- The boot-USB for the Ballot Viewer.

### 6.2 Security

The Ballot Viewer needs to be afforded the same physical security as the Election Server and be physically close to the Election Server so that data can easily and quickly be transferred from Ballot Viewer to Election Server.

### 6.3 Access

Currently, the Ballot Viewer has no electronic access controls, as it is used to produce (if required) a single, specially formatted, data file containing ballot layout information. The data file is input to the Election Server (only) during phase 2 of the setup procedures. Once input, the ballot layouts can be viewed on the Election Server, thus enabling discovery of incorrect or (perhaps) corrupted data.

### 6.4 Installation

The Ballot Viewer is not part of the standard, networked election setup. It is a standalone computer requiring its own boot-USB containing the Linux operating system and (only) the necessary functions to enable the manipulation of layout settings for the ballots of each electorate. There are several ballot component settings such as column headings, various fonts, preference box sizes etc., that can be adjusted to obtain optimum readability of each ballot.

#### 6.4.1 Installing the Ballot Viewer

Before installing the Ballot Viewer software, the BIOS on the AIO must be set.

Step 1 - Setup an AIO Touchscreen computer with a standard keyboard.

Step 2 - Follow the instructions at Appendix B in order to set the BIOS settings correctly and boot from the Ballot Viewer boot USB.

Step 3 – At the end of the boot installation the AIO will shut down, automatically restart and display the Ballot Viewer Menu. Ballot Viewer operations are detailed in User Manual[6].

## Appendix A – BIOS setup for Dell All-in-One Voting Clients

There are two parts to the setup process; set BIOS settings and then setup for one time boot from network.

- 1) To enter BIOS settings – F2

### General

Boot Sequence – make sure UEFI is selected

Advanced Boot Options – leave blank

UEFI Boot Path Security – enable Always, Except Internal HDD

Date/Time – check is correct

### System Configuration

Integrated NIC – Enable UEFI Network Stack

SATA Operation – leave as is

Drives – leave as is

SMART Reporting – leave as is

USB Configuration – disable USB Side Ports, enable USB support and USB rear ports

Rear USB – must be enabled

Side USB – if disabled at USB Configuration, will automatically be disabled

USB Powershare - leave disabled

Audio – leave as factory setting, all enabled, including microphone to ensure side jack will operate with all types of headphones

Touchscreen – enable

Miscellaneous – all disabled

Secure Boot – leave as default settings

Wireless – all disabled

Save and shutdown

- 2) Restart: To be undertaken immediately before software download when AIO is connected to Polling Place Server via the local area network

Use F12 for One time Network boot setting - select Onboard NIC (IPV4)

## Appendix B – BIOS setup for Dell All-in-One Ballot Viewer

Before turning on the computer it is best to insert the Ballot Viewer boot-USB into one of the USB slots - the side slot is OK and probably more convenient than either of the back slots.

There are two parts to the boot process.

- 1) Turn on the computer and immediately start frequently pressing the F12 key on the keyboard.

A screen containing blue coloured instructions followed by a yellow coloured statement on the **Boot mode** setting and whether **Secure Boot** is OFF/ON.

Below this latter statement there are three sections: LEGACY EXTERNAL DEVICE BOOT:, UEFI BOOT:, and OTHER OPTIONS:.

Under **UEFI BOOT:** there may be reference to CentOS and/or Windows as well as **UEFI: SanDisk** (or some equivalent USB device name). Ultimately, it is this USB device that needs to be selected before pressing ENTER/RETURN.

However, before making this ultimate selection, it is important to ensure that the **Boot Mode** is set to **UEFI** and the **Secure Boot** is **OFF**. If, initially, these latter settings are not correct then it will be necessary to select **BIOS Setup** (under **OTHER OPTIONS:**) and check the following settings.

### General

Boot Sequence – make sure UEFI is selected

Advanced Boot Options – leave blank

UEFI Boot Path Security – enable Always, Except Internal HDD

Date/Time – check is correct

### System Configuration

Integrated NIC – disable UEFI Network Stack

SATA Operation – leave as is

Drives – leave as is

SMART Reporting – leave as is

USB Configuration – all USB ports can be enabled (for convenience).

USB Powershare - leave disabled

Audio – leave as factory setting, all enabled, including microphone to ensure side jack will operate with all types of headphones

Touchscreen – enable

Miscellaneous – all disabled

Secure Boot – disable

Wireless – all disabled

Select **Apply** - this will automatically shut down the computer and restart it.

2) Immediately the computer begins restarting at the end of 1) above, frequently press the F12 key to display the screen described at 1) above.

Select the **UEFI: SanDisk** (or equivalent) option under **UEFI BOOT:** and press ENTER/RETURN. A line of Linux penguins will appear at the top of the screen with the successful boot from the Ballot Viewer boot-USB.

- E N D O F D O C U M E N T -