

Elections ACT

Enhancement of eVACS® for the 2024 ACT Legislative Assembly Election

Election Server - User Manual

**Document Status: Final
Version 1.5
May 2023**



Copyright Notice

Copyright Software Improvements Pty Ltd

This document has been produced by Software Improvements Pty Ltd on behalf of the ACT Electoral Commission (Elections ACT).

This document is the property of Elections ACT who shall retain its copyright jointly with Software Improvements Pty Ltd. It may not be reproduced or recorded in whole or part in any form or media without the explicit written approval of Elections ACT.

Disclaimer

In compiling this Election Server User Manual document, Software Improvements Pty Ltd has relied upon the accuracy and completeness of information provided by Elections ACT.

eVACS®

eVACS® is a registered Trade Mark of Software Improvements Pty Ltd.

Where used in this Election Server - User 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
—	Installation Manual
—	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
2022-09-22	1.1	Initial Draft based on 2020 Election document	CJB		
2023-03-07	1.2	Inclusion of additional menu items	CJB	CVB	
2023-03-21	1.3	Addresses reviewer comments	CJB		2021-03-21
2023-05-26	1.4	Inclusion of detail for Export Other Reports	CJB		2023-05-26
2023-06-26	1.5	Includes modification to Counting abort process	CJB	CVB	2023-06-26

Distribution

Name and Appointment	Document Name	Date of Issue	Version
Jiv Sekon, Elections Operations Manager, EACT	Election Server User Manual	2023-03-23	1.3
Jiv Sekon, Elections Operations Manager, EACT	Election Server User Manual	2023-05-26	1.4
Jiv Sekon, Elections Operations Manager, EACT	Election Server User Manual	2023-06-26	1.5

Contents

COPYRIGHT NOTICE	2
Disclaimer.....	2
eVACS®	2
eVACS® 2024 upgraded documentation tree	2
DOCUMENT CONTROL INFORMATION	3
Modifications	3
Distribution	3
CONTENTS	4
1. INTRODUCTION	7
1.1 Scope.....	7
1.2 Conventions	7
1.3 Referenced documents	7
1.4 Acronyms	7
2 SOFTWARE SUMMARY	9
2.1 Software Installation	9
2.2 Software functionality.....	9
2.3 Security, integrity and privacy.....	11
2.4 Assistance and problem reporting	11
3 ACCESS TO THE SOFTWARE	12
3.1 Equipment required	12
3.2 Set the date/time	12
3.3 Access control	12
3.4 Election Server Menu	12
3.5 Stopping and suspending operations.....	13
4 PROCESSING REFERENCE GUIDE	14
4.1 Capabilities.....	14

4.2	Conventions	14
4.3	Processing procedures	14
4.3.1	Run Election Data Setup Phase-1 (option 1)	14
4.3.2	Generate Barcodes (option 2)	15
4.3.3	Generate Voting Tokens (option 3)	16
4.3.4	Backup Database (option 4)	16
4.3.5	Restore Database (option 5)	17
4.3.6	See Election Data Setup Status (option 6)	18
4.3.7	Run Election Data Setup Phase-2 (option 7)	18
4.3.8	View Ballot Papers (option 8)	19
4.3.9	Set End-of-Day Password (option 9)	19
4.3.10	Set Server Admin Password (option 10)	20
4.3.11	Start Installation Services (option 11)	21
4.3.11.1	Set up	21
4.3.11.2	Installing from Election Server	21
4.3.12	Stop Installation Services (option 12)	22
4.3.13	Create Barcode Images for Printing (option 13)	22
4.3.14	Export Voting Tokens (option 14)	22
4.3.15	Export encryption key for OSEV votes (option 15)	23
4.3.16	Load Votes from a Polling Place or Telephone Voting (option 16)	23
4.3.17	Load Votes from Scanning (option 17)	25
4.3.18	Load OSEV votes (option 18)	28
4.3.19	Count Votes for an Electorate (option 19)	28
4.3.19.1	Count Votes setup when a candidate has died	30
4.3.20	Reprint scrutiny sheets (option 20)	31
4.3.20	Database Vote Summary (option 21)	31
4.3.21	Export ballots (option 22)	32
4.3.22	Export Scrutiny Sheets (option 23)	33

4.3.23	Export Other Reports (option 24)	33
4.3.24	Run Casual Vacancy (option 25).....	34
4.3.25	Reprint Casual Vacancy (option 26)	37
4.3.26	Clear Printer Queue (option P).....	37
4.3.27	Shutdown Election Server (option S)	38
4.4	Data backup	38
4.5	Recovery from errors, malfunctions, and emergencies	38
4.6	Error Messages.....	39
APPENDIX A – USE OF USB-FDS		40

1. Introduction

1.1 Scope

The eVACS® Election Server Installation software supports creation of an eVACS® Election Server with functions to load election data, install Polling Place servers, undertake counting, and export data and reports.

The Election Server allows the upload of Election Setup Data without manual intervention by the eVACS® development team in either the preparation or upload of the data. Documented herein are the processes for setting up an election and recommended data backup procedures.

The procedures for uploading vote data, counting votes, printing scrutiny sheets and exporting vote data are then detailed.

The formats of data uploaded to the Election Server are provided in [1] (setup data), [4] (scanned votes) and [5] (votes from overseas e-voting).

1.2 Conventions

Many functions of the Election Server require the use of secure USB flash drives. For convenience, in the remainder of this document they will be referred to as USB-FDs or secure USB-FD when they are setup with a password protected secure container (encrypted via VeraCrypt) [6].

1.3 Referenced documents

1. Software Improvements Pty Ltd, eVACS® Interface Design Description – Election Data Setup, 2023
2. Software Improvements Pty Ltd, eVACS® Installation Manual, 2023
3. Software Improvements Pty Ltd, eVACS® Ballot Viewer User Manual, 2023
4. Software Improvements Pty Ltd, eVACS® Notes on scanning export format , 2nd revision, 2020
5. Software Improvements Pty Ltd, eVACS® Interface Specification – TIGER - Telephone Voting & OSEV, 2020
6. Software Improvements Pty Ltd, VeraCrypt for Windows and CentOS7, 2020

1.4 Acronyms

ACT	Australian Capital Territory
CV	Casual Vacancy
EACT	Elections ACT / ACT Electoral Commission
ES	Election Server

eVACS® / eVACS	electronic Voting and Counting System
LAN	Local Area Network
NAL	Data Entry related details No Longer Applicable
OSEV	Overseas Electronic Voting
PIN	Personal Identification Number provided by elector registering to vote by telephone
USB-FD / USB	USB Flash Drive

2 Software Summary

2.1 Software Installation

The Election Server is created by installing the audited eVACS® election software, together with a cut down Linux operating system and utilities, provided on a bootable USB-FD. Installation instructions are provided in section 2 of the Installation Manual [2].

Schedule 2.2(a)(xi)

The Election Server password must be entered and the Master Admin card scanned as part of restarting the Election Server after any shut down. The Master Admin card is also required to be scanned before gaining access to any of the functions available from the Election Server menus.

2.2 Software functionality

Schedule 2.2(a)(xi)

Schedule 2.2(a)(xi)



2.3 Security, integrity and privacy

Key considerations in the design and development of eVACS® software have been the security and integrity of data. As a result the installation process wipes all data and software on the computer's hard disk 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, and an audit trail of the Election Data Setup is maintained. Print utilities are provided to support printing of scrutiny sheets and the Master Admin QR code for the Election Server. Data backup utilities are provided to aid in disaster recovery. Regular backups of the data are recommended to mitigate against disaster and assist in disaster recovery. USB-FDs are used as the medium to which data is backed up.

It is important that processes are put in place to prevent unauthorised access to the Election Server and to the network connected to it when installing voting servers.

2.3.1 Unused ports

All unused ports on the Election Server are to be inaccessible via physical means as well as through disconnection by using features within the operating system. [Schedule 1.13\(1\)](#)

2.4 Assistance and problem reporting

Should any problems be encountered in the use of the eVACS® software, please check this document for clarification or detailed description of the relevant functionality. If the problem still cannot be resolved, report the problem to Software Improvements for assistance.

3 Access to the Software

3.1 Equipment required

The equipment needed for installing the eVACS® Election Server is:

- Computer
- Standard keyboard with USB connection
- Monitor – preferably the same resolution as for the voting clients
- Scanner - with USB connection and capable of scanning 2D barcodes (QR codes)
- A4/A3 printer with PCL and Linux support connected via USB

Warning: All data and software on the machine chosen to be the Election Server will be lost on installation of the eVACS® software. Any data that needs to be retained must be backed up before commencing installation of the Election Server software.

3.2 Set the date/time

Prior to installing the eVACS® installation software, the BIOS on the Election Server should have been checked, to ensure that the Date/Time of the Election Server is set to Australian Eastern Time (AET), as per section 2 of the Installation Manual [2].

3.3 Access control

Schedule 2.2(a)(xi)

A large grey rectangular area that has been redacted, covering the content of this section.

3.4 Election Server Menu

Schedule 2.2(a)(xi)

A large grey rectangular area that has been redacted, covering the content of this section.

Schedule 2.2(a)(xi)

3.5 Stopping and suspending operations

To shut down the Election Server, choose menu option S.

The power button should **NOT** be used to shut down the Server.

Note: After the Election Server has been shut down, on restart, both the Election Server password and Master Admin card for the Election Server will be required in order to access the Election Server Menu.

4 Processing reference guide

4.1 Capabilities

Options 6 (See Election Data Setup Status), P (Clear Printer Queue) and S (Shutdown Election Server) can be invoked at any time.

Apart from these three options, there is a basic operating workflow from options 1 through 5, and option 7 onwards.

Restrictions regarding the order in which certain menu options may be used are detailed in Section 2.2.

4.2 Conventions

Messages displayed on the screen are indicated using a blue typeface in this document. Descriptions and explanations are in black.

The following sections contain potential error messages and suggested resolutions. However, the Election Server performs additional error checking beyond what is described here, and other error messages are possible. Should an error message be displayed that is not listed in the relevant section, contact Software Improvements for a resolution.

4.3 Processing procedures

There are references to USB-FDs throughout section 4.3. Appendix A provides a guide to whether the USB-FD used for a particular function is a secure USB-FD and, if secure, whether it has a single encrypted partition or two partitions of which only partition 2 is encrypted (see [6]).

If an option is inadvertently selected and after the Master Admin card is scanned there is no instruction to press Enter to return to Main menu, continue to press Enter until the selection is cancelled and the Main menu displayed.

4.3.1 Run Election Data Setup Phase-1 (option 1)

Schedule 2.2(a)(xi)

A large rectangular area of the page is completely redacted with a solid grey color, obscuring all text and graphics that would otherwise be present in this section.

