



Clear Ballot

ClearVote 2.1

ClearAccess Build Procedures

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Clear Ballot Part Number: 100051-10017

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Preface

This section defines the purpose of this document. It contains the following subsections:

- About this document
- Scope of this document
- Intended audience

About this document

This document provides a procedure for building the ClearAccess accessible voting system.



A ClearVote® system can comprise the ClearAccess®, ClearAudit®, ClearCast®, ClearCount® and ClearDesign® products. Jurisdictions are not required to purchase all products. You can ignore references to any ClearVote products that are not part of your voting system. Also ignore implementation options that are not relevant to your policies and procedures.

Scope of this document

This document contains the following sections:

- [Setting up the build environment](#)
- [Installing third-party software](#)
- [Installing the source code](#)
- [Building ClearAccess](#)

Intended audience

This document is intended for state and federal election officials and their voting system test laboratories as part of the technical data package (TDP) required to certify the ClearVote voting system for use. This document is also used by Clear Ballot personnel who support election officials and election staff.

Chapter 1. Setting up the build environment

The ClearAccess system is built using the Microsoft Windows 10 operating system.

For the build environment a fresh install of the operating system should be performed.

Chapter 2. Installing the third-party software

2.1 Overview

The ClearAccess System requires a number of third-party libraries and support packages to be installed in the build machine. These will be used to build ClearAccess during the build process.

To aid in the acquiring and installing of the 3rd party software the ClearAccess source includes a setup directory that has a build-setup and static-setup subdirectory that contains the files used for acquiring and installing the 3rd party tools and libraries.

The easiest way to acquire the 3rd party tools and libraries is to have a Windows machine connected to the internet and run the scripts below.

The 3rd party tools and libraries are all downloaded from the internet.

2.2 Acquiring the third-party tools and Python libraries

1. Make a directory to use as a working directory.
2. Copy the ClearAccess source setup/build-setup directory to the working directory.
3. Open the 'build-setup' directory.
4. Right-click on the file 'get_packages.ps1' and select 'Run with PowerShell'. This will download all of the files listed in the 'python.list' files into python-lib directories.
5. Copy the 'build-setup' directory to a USB drive for later use.

Note: Clear Ballot recommends the use of encrypted USB drives. See the *ClearVote Approved Parts List* for information about approved devices.

2.3 Acquiring the JavaScript libraries

1. Make a directory to use as a working directory (see "Acquiring the third-party tools and Python libraries" above).
2. Copy the ClearAccess source setup/static-setup directory to the working directory.
3. Open the 'static-setup' directory.
4. Right-click on the file 'get_packages.ps1' and select 'Run with PowerShell'. This will download all of the files listed in the 'static.list' and then copy the files listed in the 'copy.list' file to the '3rdParty' directory.
5. Copy the '3rdParty' directory to a USB drive for later use.

Note: Clear Ballot recommends the use of encrypted USB drives. See the *ClearVote Approved Parts List* for information about approved devices.

Note: this 3rdParty directory will be replace the 3rdParty directory in the ClearAccess source 'static' directory during build setup.

2.4 Installing the third-party tools and Python libraries

The process includes the copying of the 3rd party tools and Python libraries acquired in "Acquiring the third-party tools and Python libraries" on the previous page to the build machine and then installing them.

1. Log in to the build machine.
2. Insert the USB drive containing the 'build-setup' files created in "Acquiring the third-party tools and Python libraries" on the previous page.
3. Copy the 'build-setup' directory from the USB drive to the build machine.
4. Install the 3rd party tools and Python libraries by running the 'install_packages' script.

Chapter 3. Installing the source code

3.1 Overview

The source code for ClearAccess is all contained within a single directory structure.

The name of the directory is typically src-bmd. This directory contains the following sub-directories:

- controllers – contains the python controller modules used by ClearAccess
- models – contains the python model modules used by ClearAccess
- utils – contains the python utility modules used by ClearAccess
- templates – contains the html template modules used by ClearAccess
- static – contains the static JavaScript, css, and image files used by ClearAccess and the third-party JavaScript libraries.

3.2 Installation process

This installation process assumes the source is in a zip file that is on a USB drive.

Note: Clear Ballot recommends the use of encrypted USB drives. See the *ClearVote Approved Parts List* for information about approved devices.

To install the source code:

1. Log in to the build machine.
2. Create a sub-directory named "ClearAccess" in the user's Document directory.
3. Copy the source code from the USB drive to the ClearAccess directory.
4. Unzip the source code. That will create a new sub-directory named "src-bmd".

3.3 Installing the JavaScript libraries

To install the JavaScript libraries:

1. Insert the USB drive containing the '3rdParty' files created in "Acquiring the JavaScript libraries" on page 7.
2. Copy the '3rdParty' directory from the USB drive to the source code 3rdParty directory (ClearAccess/src-bmd/static/3rdParty). This will replace the 3rdParty directory in the source.



Chapter 4. Building ClearAccess

4.1 Overview

The build process for ClearAccess must be done on a properly configured build machine. The process builds a distribution ClearAccess.exe file, which includes the ClearAccess code and all of the third-party libraries that are used by ClearAccess.

4.2 Build process

This section describes how to build the ClearAccess distributable on a ClearAccess build machine.

1. Log in to the build machine.
2. Change to the src-bmd sub-directory.
3. Double-click on the 'build' file. That will build the ClearAccess system and place the output in the 'dist' sub-directory.
4. Change to the 'dist' sub-directory.
5. Copy the "ClearAccess-x.x.x Installer.exe" file to the USB drive. This is the distribution file.

Note: Clear Ballot recommends the use of encrypted USB drives. See the *ClearVote Approved Parts List* for information about approved devices.