

Halalan, an *Open-source* Voting System
Version 1.3.0
User's Guide

University of the Philippines Linux Users' Group

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Version 1.3.0
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UP Linux Users' Group

Edited by: Halalan Development Team

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An online version of this guide can be found at <http://halalan.uplug.org>.

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1 Installation

1.1 System Requirements

- PHP 4.4.x or higher
- GD 2.x.x or higher
- MySQL 4.1.x or higher or
- PostgreSQL 8.x.x or higher
- web server with rewrite module turned on
- Javascript-enabled web browser

1.2 How to Install

- Unpack the distribution to a location that is accessible by the web server
- Create a database named 'halalan'
- Input the database settings at system/application/config/database.php
- Go to the Halalan URL + install (Ex. <http://localhost/halalan/install>)
- Input the required settings (see next section for more information)
- Copy the generated configuration to system/application/config/halalan.php
- Create the following directories (should be writable by the web server): public/captcha, public/uploads/logos, public/uploads/pictures, public/uploads/csvs

1.3 Election Settings / Configuration

- **name of setting** <variable name in halalan.php>
<description>
- **URL** <base_url>
This defines the base url of the installation.
- **Name** <name>
This defines the name of the election.
- **PIN** <pin>
Possible values are TRUE or FALSE. If set to TRUE, a PIN will be required during the confirmation.
- **Password and PIN Generation** <password_pin_generation>
This defines the method of delivery for the PIN and the password. It accepts "web" or "email" as its value. When this is set to "web", the PIN and the password will be displayed on the admin web interface. If set to "email", the PIN and the password will be emailed directly to the voter. Configuration of the mail server is then required. It can be found at system/application/config/Email.php.

- **Password and PIN Characters** <password_pin_characters>
This defines the allowed characters for the PIN and the password.
- **Password Length** <password_length>
This defines the length of the password.
- **PIN Length** <pin_length>
This defines the length of the PIN.
- **CAPTCHA** <captcha>
Possible values are TRUE or FALSE. If set to TRUE, CAPTCHA confirmation will be enabled.
- **CAPTCHA Length** <captcha_length>
This defines the length of the CAPTCHA.
- **Language** <language>
This defines the language to be used. It currently accepts “english” and “filipino”.
- **Candidate Details** <show_candidate_details>
Possible values are TRUE or FALSE. If set to TRUE, this will show the candidate details in the ballot only.
- **Candidate Order** <random_order>
Possible values are TRUE or FALSE. If set to TRUE, the ordering of the candidates’ names will be randomized for each voter.
- **Virtual Paper Trail** <generate_image_trail>
Possible values are TRUE or FALSE. If set to TRUE, a virtual paper trail (PNG image) containing the votes, the voter’s identity, and a hash is generated for each submitted ballot.
- **Virtual Paper Trail Path** <image_trail_path>
This defines the location where the images for the virtual paper trail will be stored.

2 Usage

2.1 Administrator

- Log in can be found at the Halalan URL + `index.php/gate/admin`
- Example: `http://localhost/halalan/index.php/gate/admin`

2.1.1 Administrator Options

- Election Status
 1. Running
 - The election is underway
 - Admin can no longer make changes to the election
 - Voters can now log-in
 - Results are hidden
 2. Not Running
 - The election is stopped
 - Admin can make changes to the election
 - Voters will not be able to log-in
 - Results can be shown
- Results
 - Results can only be published when the election is not running
 - Results will automatically be hidden when the election status is set to running
 - The results can be found at the halalan url + `index.php/gate/results`
 - A link to the results will be provided in the voter login page when they are released
- Password Regeneration
 - Passwords and pins can be regenerated through the Regeneration Box when the election is running

2.1.2 Election Management

- Positions
 1. Adding a Position
 - Position names are required
 - Description is optional
 - A maximum number of candidates for the position must be supplied (e.g. 12 Senators)
 - Ordinality must be supplied for the arrangement of the positions
 - Choose whether the position is abstainable or not

- Position Types
 - (a) General
 - * This position can be voted for by everybody
 - * E.g. Student Council President
 - (b) Specific
 - * This position has a specific audience
 - * E.g. Batch Representative, College of Science Representative
- 2. Editing a Position
- 3. Deleting a Position
 - A position that has candidates running for it can not be deleted.
- Parties
 1. Adding a Party
 - Party name is required
 - Alias is optional but recommended
 - Description and logo are optional
 2. Editing a Party
 3. Deleting a Party
 - A party that has members can not be deleted.
- Candidates
 1. Adding a Candidate
 - The complete name of the candidate is required
 - Alias, description, photo and party are optional
 - Position must be provided
 2. Editing a Candidate
 3. Deleting a Candidate
 - A candidate that has received votes can not be deleted
- Voters
 1. Adding a Voter
 - Complete name and username/email address are required
 - Choose the specific position that the voter will vote for
 - If you chose “email” during the installation, the password and pin will be delivered to the voter’s email address
 - If you chose “web” during the installation, the password and pin will be generated right after you press the ‘Add Voter’ button
 2. Editing a Voter
 - Password and/or pin can be regenerated
 3. Deleting a Voter
 - Voters who have voted can not be deleted

4. Importing Voters

- Choose the specific position that the imported voters will be voting for
- Files to be imported should be in the following CSV formats:
 - (a) Using the “Web” option
Username,Last Name,First Name
 - (b) Using the “Email” option
Email,Last Name,First Name

5. Exporting Voters

- Choose what information you would like to include in your export file:
password, pin, votes, voting status

2.2 Voter

- Log in can be found at the Halalan URL + index.php/gate/voter
- Example: <http://localhost/halalan/index.php/gate/voter>

2.2.1 Voting

- Password will be provided either through email or given by election officers
- Mark the appropriate check box of the candidate that you wish to vote
- Each position has a maximum number of candidates that you can vote for which can be found beside the position name
- If you do not wish to vote on a particular position, choose abstain

2.2.2 Confirmation

- Input the CAPTCHA (if required)
- Input the PIN (if required)
- Once you have completed this step, you will be automatically logged out

2.2.3 Paper Trail

- After voting, you may log-in again to print out your ballot

2.3 Recap

Just a quick sample election run.

- Administrator
 - Install and configure Halalan
 - Add all necessary parties, positions, candidates and voters
 - Set the election status to “Running ”
 - If necessary, passwords and pins can be regenerated
- Voter
 - Vote!
- Administrator
 - After the election period has expired, set the election status to “Not Running ” and publish the results
 - Log out and proclaim the winners

3 About

3.1 Halalan

Halalan is an open-source voting system designed for student elections. It aims to automate the manual processes of elections such as counting, archiving, and voting. It is designed to be easy-to-use and secure. It is currently being developed and maintained by the UP Linux Users Group (UnPLUG), a student organization from the University of the Philippines Diliman.

Objectives

- Develop an easy-to-use and secure voting system for student elections to lower their costs and make them run efficiently.
- Prove that the result of a computerized election is valid and trustworthy.
- Increase voters turnout by providing a convenient way to vote.

3.2 University of the Philippines Linux Users' Group

Persistence! The University of the Philippines Linux Users Group (UnPLUG) is a duly recognized student organization dedicated in promoting the use of Free and Open Source Software (FOSS) and in advocating FOSS philosophy through seminars, trainings, and software development.

Profile The idea of openly sharing software source codes, knowledge, and ideas to the people that need them is an antithesis, and a natural opponent, to the current trend of big software companies to hoard and hide the code, therefore monopolizing the software market, and making the public believe that software solutions could only come from one source, and could only come at a high price. This reflects that aside from the technical aspects of computers, computer-related technologies and software development, UnPLUG also concerns itself with the political, economic, and social issues, such as digital imperialism and monopoly, the FOSS movement, and the benefits that computers and automation would bring to the people.

Despite its geek nature, UnPLUG welcomes students who have the passion and dedication to provide service to the University and to the Filipino people.

3.3 Contact Us

For more information, general discussion, and announcements, visit us in our mailing list. Bug reports, support requests, patches, and feature requests are also accommodated. Visit us here:

<http://groups.google.com/group/halalan>

For the latest news on Halalan development, visit our development mailing list:

<http://groups.google.com/group/halalan-dev>

For information and discussion about FOSS, you can join UnPLUG's Community Mailing list here:

<http://groups.google.com/group/unplug-community>

If you have used Halalan in your elections please email the details to premraraATgmailDOTcom.