



# ADMINISTRATOR HANDLEIDING

VRF Battery webapplicatie

## Abstract

Dit is een handleiding voor beheerder(s) van de webapplicatie van de VRF Battery. Er is een testopstelling. Deze testopstelling schrijft gegeven naar de database. Een webapplicatie leest de database uit. Met de applicatie kunnen de gegevens worden geanalyseerd. Deze handleiding beschijft hoe de webapplicatie werkt én hoe u deze als beheerder kunt gebruiken.

Ahmet Oral, Prashant Chotkan, Niels van Amsterdam en Thijs  
Dregmans

Project 5/6: Technische Informatica

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## 2.0 Preface

We are studying computer engineering at the University of Applied Science in Rotterdam. Our group for project 5/6 consists of: Ahmet Oral, Prashant Chotkan, Niels van Amsterdam, and Thijs Dregmans. We had a list to choose our top 5 favorite projects. Eventually we got this project after everyone was sorted into their respective projects.

The kick-off started September 1st and after a week on September 7th was the first time we spoke with our client Christiaan Tempelman. Christiaan is a scientist and professor Chemical Engineer at the University of Applied Science in Rotterdam. He is researching and developing a membrane that separates positive and negative energy in batteries.

A previous group already made a system with a Raspberry Pi that measures the data with sensors. This data used to stay on the Raspberry Pi. Now our client Christiaan wants us to work on an essential part of his research: monitoring. He wants to monitor data of the battery, anytime and anywhere he wants. That's why he asked us to create a website that shows all the data of the battery 24/7. We are going to deliver our client 3 things:

1. A user-friendly web application that allows Christiaan to see the data of the batteries on the website.
2. An easy-to-read manual for Christiaan to get things rolling again in case something goes wrong.
3. The ability to connect multiple battery systems with the web application.

**This document is the manual for the admin! There is a separate manual for users on the website.**

### 3.0 Introduction

This manual is made for the purpose of reinstalling the API and/or the webapplication once it stops working completely or it stops working as it's supposed to work. That's why a short and easy-to-read manual is essential. So that the admin can solve the problem without the help of the developers of the web application.

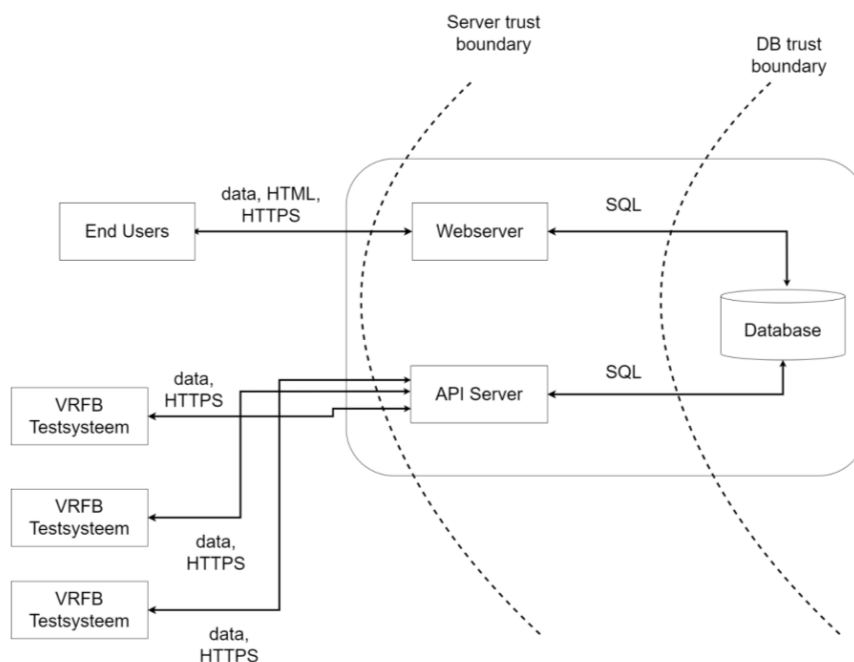
There is a web server with a web domain. The name of this web domain is 'vrfb-test.nl'. You can enter and see your date on the website once you have the correct username and password. The webserver exists out of several PHP files. The manual will explain how these work.

We are also going to describe how the webapplication actually works in correlation with the VRF batteries and how an admin can administrate it. In a different manual made for users of the website will be described how the webapplication can be used to its highest potential.

A VRF Battery test system exists of the battery that is monitored, a Raspberry Pi, and sensors that sends the data to the Raspberry Pi. The Raspberry Pi gives data of the temperature, voltage, and amperage of the VRF Battery test systems every 5 minutes to the web application, thru the API.

Let's start with a short and basic description of the big picture. We make a distinction within de VRF Battery web application between the website and the API. The API (Application Programming Interface) is there to put the data in the database after it collects the data from the test systems. The API is technically speaking part of the website, but we talk about this separately because it works in a specific way that deserves its own explanation. We explain both components and explain how it works within the application. We also will take a deep look into the structure of the folders.

De VRF Battery test system works the following way: a raspberry pi measures and sends data of the test system through the API (more about this in the section 'The VRF Battery API') to the database, where data like temperature and voltage will be saved. The data from the database will go to the web server (more about this in the section 'Web servers for dummies'). The data will be seen on your computer screen once it successfully went through the webserver.



## Administratorhandleiding VRF Battery webapplicatie

After that we will explore the admin environment of the web server, how to make back-ups, and how to put these back-ups back. The manual will also talk about how you can reinstall everything. There will be sources in this manual where you can find more relevant information.

## 4.0 Web servers for dummies

A web server is a computer that stores web server software, a websites component files and a database. The web server connects to the internet and supports data interchangeably between other devices connected to the internet. Whenever a browser needs a file that is hosted on a web server, the browser requests the file via HTTP. When the request reaches the correct server, it accepts the request, finds the document and sends it back to the browser.

### HTML, CSS and javascript

HTML and CSS are two languages that are used for building webpages. HTML provides the structure of a page and CSS the visual layout. Javascript is a programming language that can be used to modify website content and may behave in different ways in response to a user's actions. Common uses for javascript are: confirmation boxes, calls-to-action and adding new identities to existing information. Javascript is a programming language that let's web developers design interactive sites.

### PHP

PHP Is a general-purpose scripting language. It provides dynamic content through scripts and is typically a server-side language. HTML provide the foundation and structure for a webpage, while PHP allows you to create the inner workings of a web page.

### DNS

The Domain Name System (DNS) is the phonebook of the internet. Humans access information online through domain names, like google.com or youtube.com. Web browsers interact through Internet Protocol (IP) addresses. DNS translates domain names to IP addresses so browsers can load Internet resources.

### HTTP, HTTPS

Hypertext Transfer Protocol (HTTP) transfers data from a web server to your browser so that it can access and load websites. HTTPS is the acronym For Hypertext Transfer Protocol Secure. Like HTTP, its main purpose is to transfer data from a server to your browser, so you can load websites.

However, HTTPS uses an encrypted connection to communicate between the server and the browser. A SSL (secure sockets layer) certificate protects the transferred data from being stolen as it's exchanged.

### FTP

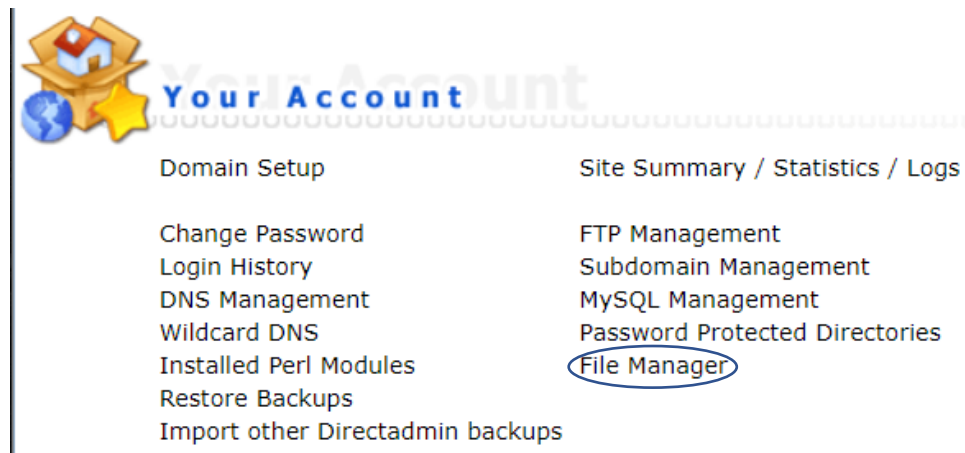
Stands for 'File Transfer Protocol'. FTP is used to communicate and transfer files between computers on the internet. FTP connections need two parties to communicate on the network. To do that, users need to have permission by providing credentials to the FTP server. To receive or transfer a file, an authorized user will use the protocol to request to make a change in the server. In return, the server will grant access. FileZilla is the FTP client we recommend. You can download it by going to

## Administratorhandleiding VRF Battery webapplicatie

this link <https://filezilla-project.org/>. After you have downloaded it, you can login by inputting the host, username and password. Port can be left empty. You can find the hostname(<https://web0150.xcs.nl>), username and password in the mail you received from the server provider.

## 5.0 The VRF Battery web application

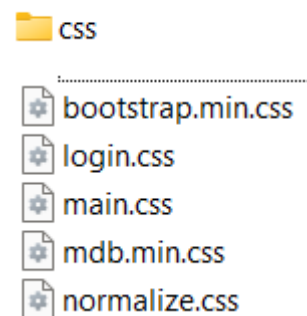
The web application consists of several documents that, when put together make the web app. You can access these documents by navigating to the directory domains/vrfb-test.nl/public\_html.



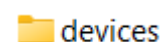
When you're logged in on DirectAdmin (<https://web0150.zxcs.nl:2222/>), you can choose the option 'File Manager' (highlighted in blue). Here, you can access all files and directories on the server. By navigating to domains/vrfb-test.nl/public\_html/ you can see all files. To see the content of a file, click 'Edit' in the 'Action' column.

If you need to edit multiple files, it is easier to use FTP (see 4.0 webserver for dummies). The FTP client that we recommend is 'FileZilla' (<https://filezilla-project.org/>).

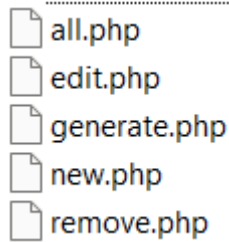
In the 'public\_html' directory you will find a lot of documents. Only the important documents will be covered in this paragraph.



The first map is the css map. In this map you will find the css (see webserver for dummies html, css and javascript) used to shape the website. The first css file (bootstrap.min.css) is a framework we use to give the web app its visual layout. The login.css file is used to give the login page its layout. Main.css is also a file used to give the bootstrap elements such as the side bar its shape. Mdb.min.css is the file used for the graphs that the webapp shows for the measurements. The normalize.css file ensures that all browsers and operating systems can see the same webpage.



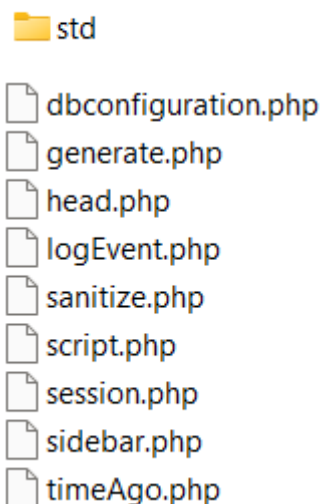




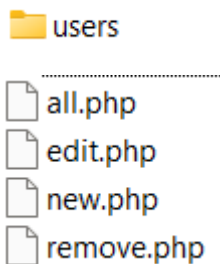
The next directory is the 'devices' directory. This directory is used for the devices page on the web app. The first file all.php is used to display all registered devices. It asks the server for all the registered devices and displays them on the page. Edit.php is used for the edit page. In this page you can edit the registered devices or add a new one. You can also edit the name of a device, generate an API-key, change the description or choose a new image. Generate.php is used to generate a new API-key with which your device can communicate with the web server. New.php is used to register a new device. It asks you for a name, it will automatically generate an API-key, a description, and an image. Remove.php is used to delete a device. If you delete a device all the data from that specific device will be deleted from the database.



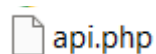
The js map contains all the javascript (see webserver for dummies html, css and javascript) files used for the web app. Main.js contains the code for the navigation bar left on the screen we use in the web app. This controls the smoothness of the navigation bar. Mdb.min.js is used for the graphs we show on different pages. This controls the parameters we enter into the graph, the animations and the ability to toggle on and off certain parameters. In the map vendor there is one file named modernizr-3.11.2.min.js. This file is also used for the bootstrap framework. This file ensures that the web app also works on for example a smartphone screen.



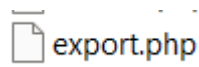
The std map contains certain files used by a lot of web pages. The first file dbconfiguration.php contains the information used to access the database. If the password for the database changes, it also needs to change in this file. Generate.php is used to generate a new API-key when making a new device in the devices page. Head.php is used for the bootstrap framework. LogEvent.php is used to add a log event to the logs table in the database. This keeps track of who logged in or who changed something on the pages. Sanitize.php is used for security. It sanitises the input we get so we are protected against certain attacks. Script.php is used for the bootstrap framework. Session.php is used to keep track of when a new session has started. sidebar.php is used to add all the icons in the sidebar. You can also link certain icons to certain pages. TimeAgo.php is used for easily convert time to a human readable format.



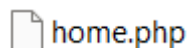
The user map contains all the files for the users page on the web app. All.php is used to display all registered users. With edit.php you can edit your own account or if you are an administrator, all accounts. In this page you are able to edit your username, name, and email address. New.php lets you add a new user. You need to input a username, name, and email address. Remove.php lets u remove a registered user.



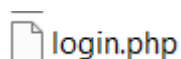
When you scroll down further you will find the api.php file. This file is accessed by a device to insert certain data into the database.



Export.php is used to download the measurements from different devices.



Home.php is the homepage of the webapp. This is the first page you see when you have successfully logged in. This page displays how many measurements a certain device has made in the last 24 hours and the last 7 days.



Login.php is the login page for the webapp. This page gives you the ability to login. If you forgot your password, you are able to ask for a new one.

#### `measurements.php`

Measurements.php is used to display all the data from a certain device. When displaying graphs you can choose between certain dates, and the page will only display the data from those dates. You are also able to download the data you have chosen to display. All the way on the bottom there is a button with which you can download the whole database.

#### `resetPassword.php`

ResetPassword.php is used when you click on forgot password on the login page. This file sends you an email which contains a link. When you click on this link you will be redirected to a page where you are able to choose a new password.

#### `settings.php`

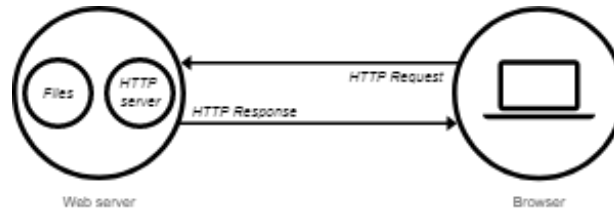
Settings.php is used for the settings page on the webapp. The manuals can be accessed on this page. There are links to the admin pages for the website. And the last 100 logs are displayed.

#### `signout.php`

The last important file is signout.php. This is the file which is used to signout the user.

## 5.1 The VRFB Battery website

A webserver is a place where information can be stored. This information can later be requested through a HTTP(S) request. When the request is received successfully, the requested data is sent back with a HTTP(S) response (see picture below). There is a key stored on this server which is used to check the identity of the host. If these keys match the server will send the requested data.



If the data is stored in the database and the server can successfully retrieve the data, the data can be displayed on the website. This data will be shown on for example the measurements page by using charts.

When you go to the website, you will be greeted by a login page. On this page you can login or, if you forget your password you can ask for a new one. When you have asked for a new password, you will receive an email. In this email you will receive a link. When you click on this link, you will be redirected to a page where you can make a new password.

When you have successfully logged in you will be redirected to the home page. On this page you will find two graphs. These graphs show you how many measurements a certain device has made in the last 24 hours and the last 7 days.

When you click on the tree stripes on the top left corner, a navigation bar will show up. On this navigation bar you will be able to see what page you are on because the page you are on will be highlighted.

Below the homepage icon you will find the measurements icon. When you click on this icon you will be redirected to the measurements page. On this page you can display specific data that has been sent by the raspberry pi. On the top of the page, you are able to choose two dates. When you have chosen those dates, you can click on the 'display specific interval' button. When you have clicked on this button graphs will appear showing you the data you requested. On the bottom of these graphs, you will find an export button. By clicking on this button, you will be able to download the requested data. Next to the 'display specific interval' button there are two more buttons. These buttons are named 'display last 24 hours' and 'display last 7 days'. These buttons will respectively display the data from the last 24 hours or the last 7 days. On the bottom of the screen, you will find the 'export all devices' button. This as its name implies, will export the data from all the devices for the time interval you have specified.

Below the measurements icon you will find the devices icon. When you click on this icon you will be redirected to the devices page. On this page an administrator can add or delete devices. The users that don't have administrative privileges will only be able to see the devices that are registered on their account.

Below the devices icon you can find the users icon. When you click on this icon you will be redirected to the users page. On this page you will be able to see the data of your own account. If you are an administrator, you will be able to see all registered accounts. You will also have the ability to edit or delete any account.

Below this page you will find the settings page. On this page you can download the whole database on your computer. It is recommended to make a backup using this tool on a regular basis. Below this button you will find the manuals that are written. It is strongly recommended to keep a copy on your own computer. Below that there are links to the direct admin and the phpMyAdmin pages. The direct admin button will redirect you to the admin page of the website (see admin environment of server provider). The phpMyAdmin button will redirect you to the database page (see admin environment of server provider). And lastly there is a logs section. These logs keep track of everyone who has logged into the web app, modifications made to the website, or if someone has requested a new password. Also stored with these logs are the ip addresses of the computer.

## 5.2 The VRF Battery API

When the raspberry pi wants to send data to the webserver it has to go through something called an API. An API (short for application programming interface) allows one website, a device or a piece of software to communicate with another.

The best way to describe how an API works is through an Example. Say you want add weather information on your website. You could do it manually every few hours. However, as you can imagine, this is not practical. This is where an API comes in. By using an API, you can ask for the specific data from a server that provides this data, which you can then display on your website automatically.

We are doing the same thing on our website. Devices send data to the API. If they provide a correct key, they are 'let in' i.e., their data is processed. By using this key, we can authenticate the sender. This way, only devices with a key can enter data. Data is stored in the database. The website displays this data if it is accessed with a web browser.

## 6.0 Admin environment of server provider

Go to the admin environment with this link: <https://web0150.zxcs.nl:2222>. You can find everything you need here once you enter the right username and password. Further steps to reinstall everything (reinstalling will be explained in the next section) will also be found here.

The admin environment is full of links. Some are more important than the other. We'll only mention the ones that are relevant for the manual. So subjects like e-mail management will not be mentioned.

On top of the Admin environment page is the section 'Your Account'. In this section the following links are relevant: Domain Setup, DNS management, Restore Backups, Import other Directadmin backups, and MySQL Management.

**Domain Setup** is for adding or changing domain names.

**DNS management** is for arranging requests to servers on the internet, when you use a domain name to look for a website.

**Restore Backups** (more information on this in the section 'making backups')

**Import other Directadmin backups** (more information on this in the section 'making backups')

**MySQL Management** is for adding or deleting databases (more about this in the section 'Installation'). You can also click the link to go to phpMyAdmin (more about this later) for further installation of the database.

We are going to skip the section 'E-mail management'. That means that we'll go over to the section 'Advanced features'. In this section the following links are relevant: SSL Certificates, Select PHP version and phpMyAdmin.

**SSL Certificates** is there for adding and deleting SSL Certificates. These certificates expire so you need to add new ones once every year at most. This is important for the safety of your website.

**Select PHP version** is there to make sure the right PHP version is used.

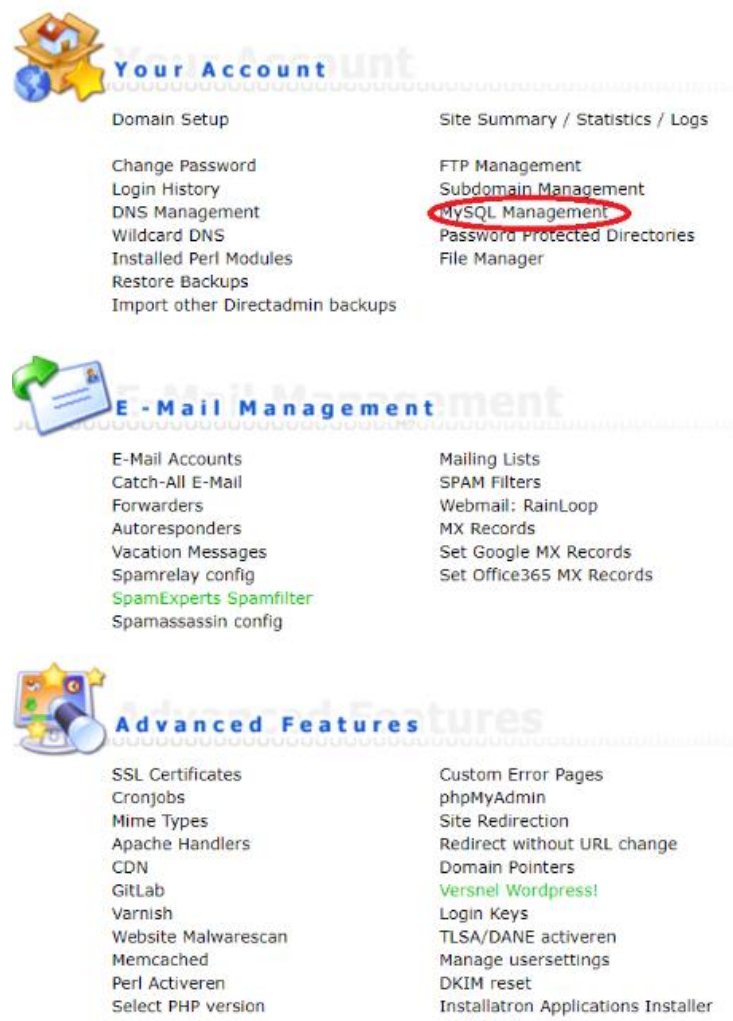
**phpMyAdmin** is probably one of the most important pages that will be discussed in this section. Because the actual installation of the database will happen here. You'll land on the frontpage of phpMyAdmin once you click on the link. You'll see the menu bar on top of the page. More about installing the database can be found in the section 'Installation'. But first we're going to explore the pages of the menu bar.

- In databases is an overview of all the databases that has been added in the admin environment. Click on the database of your choice. We'll continue the explanation from there.
- The structure of your database will be on the 'Structure' page. This means that all the rows and columns will be seen here. All the data will be here as well.
- The SQL page is there to make adjustments with sql query to the database. The adjustments will be changed automatically once you put in the correct query and click 'Start'.
- You'll be able to search for specific data on the search page. Search options like in which column you want to look can be changed as well.
- You can build your own query in the 'Build query' page. You're able to use this query later.

- On this page you can export data from the database in formats like pdf, sql, or csv. You'll also be able to choose how much data you want to export.
- The import page is very important. Because here you'll actually import the file for the database. Most of the time you'll use a sql file, but other formats are possible as well.
- You can rename your database or add tables on the 'actions' page.



## 7.0 Installation



**Your Account**

- Domain Setup
- Change Password
- Login History
- DNS Management
- Wildcard DNS
- Installed Perl Modules
- Restore Backups
- Import other Directadmin backups
- Site Summary / Statistics / Logs
- FTP Management
- Subdomain Management
- MySQL Management**
- Password Protected Directories
- File Manager

**E-Mail Management**

- E-Mail Accounts
- Catch-All E-Mail
- Forwarders
- Autoresponders
- Vacation Messages
- Spamrelay config
- SpamExperts Spamfilter
- Spamassassin config
- Mailing Lists
- SPAM Filters
- Webmail: RainLoop
- MX Records
- Set Google MX Records
- Set Office365 MX Records

**Advanced Features**

- SSL Certificates
- Cronjobs
- Mime Types
- Apache Handlers
- CDN
- GitLab
- Varnish
- Website Malwarescan
- Memcached
- Perl Activeren
- Select PHP version
- Custom Error Pages
- phpMyAdmin
- Site Redirection
- Redirect without URL change
- Domain Pointers
- Versnel Wordpress!
- Login Keys
- TLSA/DANE activeren
- Manage usersettings
- DKIM reset
- Installatron Applications Installer

vrfb-test.nl

	Used	Max
Disk Space (MB)	4.06	102400
Bandwidth (GB)	0.0442	unlimited
E-Mails	1	unlimited
Ftp Accounts	1	unlimited
Databases	1	unlimited
Inodes	331	500000

**Options**

Force SSL	No	(toggle)
-----------	----	----------

**Useful tests**

Sent emails	Show log
SSL DNS	Check Now
PHP error log	Show log
SSL Certificate	Check Now
Email tester	Test Now

**Current Domain**  
vrfb-test.nl

- Webhosting Duitsland**  
Hosting met een Duits IP, vanaf nu beschikbaar!
- Webhosting Engeland**  
Hosting met een Engels IP, vanaf nu beschikbaar!
- Performance hosting**  
Gegarandeerd de allersnelste

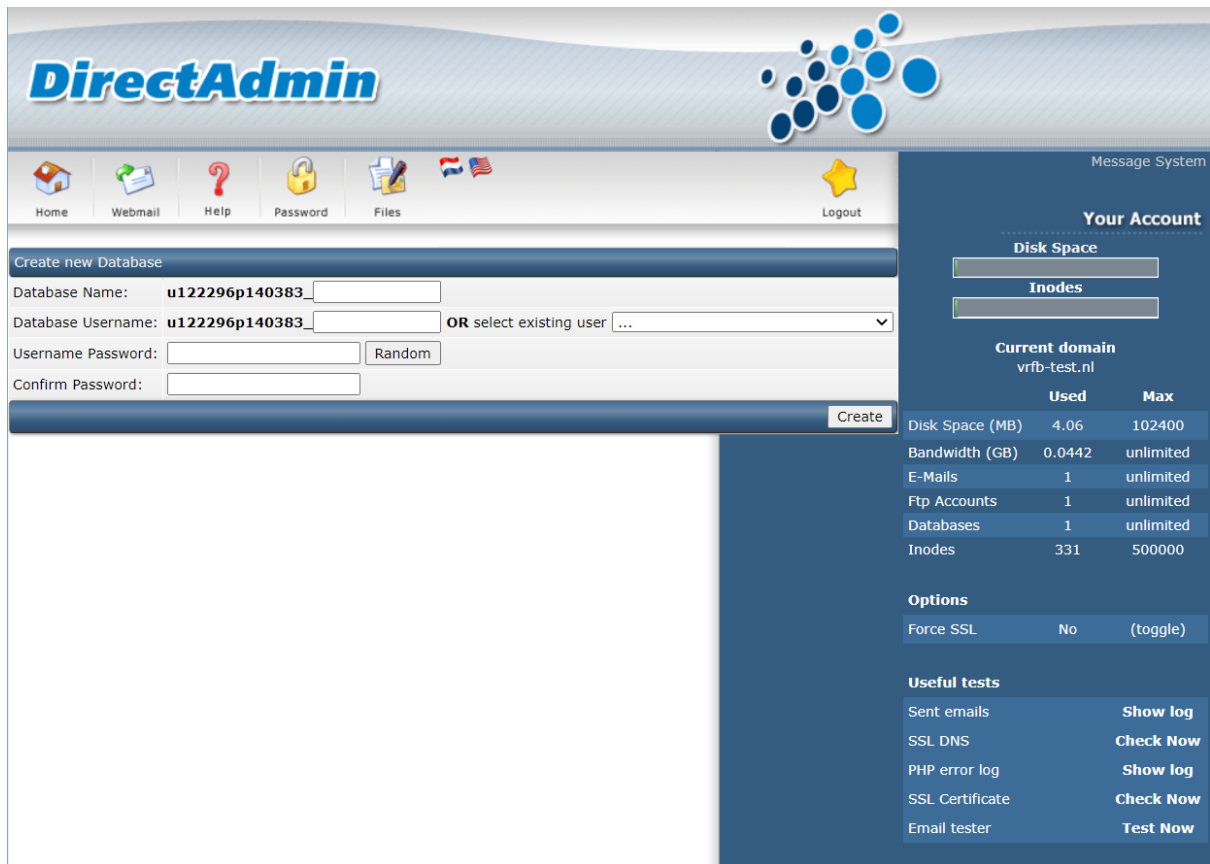
Firstly, you must make a name and password for the database. You do this by going to "MySQL Management". This is under the section "Your Account".

The screenshot shows the DirectAdmin web interface. At the top, the 'DirectAdmin' logo is on the left, and a cluster of blue circles is on the right. Below the logo is a navigation bar with icons for Home, Webmail, Help, Password, Files, and Logout. The main content area on the left has a link 'create new Database' circled in red, followed by 'phpMyAdmin'. Below this is a table of existing databases. The table has columns: Database, Number of Users, Download Backup, Size, and Select. One database is listed: 'u122296p140383\_battery' with 1 user, a download backup of '.gz .sql', and a size of 192 KB. Below the table are buttons for 'Upload a Database Backup (.gz)', 'Select Database' (with a dropdown menu showing 'u122296p140383\_battery'), 'Bestand kiezen', 'Geen bestand gekozen', and 'Select connection method:'. There are two radio buttons: 'Your current login information' (selected) and 'A specified user & pass'. An 'Upload' button is at the bottom right of this section. On the right side of the interface, there is a 'Message System' section, a 'Your Account' section with 'Disk Space' and 'Inodes' progress bars, and a 'Current domain' section showing 'vrfb-test.nl'. Below these are tables for 'Used' and 'Max' values for various resources: Disk Space (MB), Bandwidth (GB), E-Mails, Ftp Accounts, Databases, and Inodes. At the bottom right, there are 'Options' (Force SSL: No) and 'Useful tests' (Sent emails, SSL DNS, PHP error log, SSL Certificate, Email tester) with links to 'Show log', 'Check Now', and 'Test Now'.

Database	Number of Users	Download Backup	Size	Select
u122296p140383_battery	1	Download .gz .sql	192 KB	<input type="checkbox"/>

	Used	Max
Disk Space (MB)	4.06	102400
Bandwidth (GB)	0.0442	unlimited
E-Mails	1	unlimited
Ftp Accounts	1	unlimited
Databases	1	unlimited
Inodes	331	500000

Click on "Create new Database" (There already is a premade database on this image).




The screenshot shows the DirectAdmin web application interface. The main content area displays the 'Create new Database' form, which includes fields for Database Name, Database Username, Username Password, and Confirm Password. The Database Name and Database Username fields are pre-filled with 'u122296p140383\_'. The Username Password field has a 'Random' button. The Confirm Password field is empty. A 'Create' button is located at the bottom right of the form.

The sidebar on the right contains the 'Your Account' section, which displays account statistics and options. The statistics table shows the following data:

	Used	Max
Disk Space (MB)	4.06	102400
Bandwidth (GB)	0.0442	unlimited
E-Mails	1	unlimited
Ftp Accounts	1	unlimited
Databases	1	unlimited
Inodes	331	500000

The 'Options' section shows 'Force SSL' set to 'No' with a '(toggle)' link. The 'Useful tests' section includes links for 'Sent emails', 'SSL DNS', 'PHP error log', 'SSL Certificate', and 'Email tester', each with a corresponding 'Show log' or 'Test Now' button.


Fill in all the information and click "Create".



## Your Account

Domain Setup
Change Password
Login History
DNS Management
Wildcard DNS
Installed Perl Modules
Restore Backups
Import other Directadmin backups


Site Summary / Statistics / Logs
FTP Management
Subdomain Management
MySQL Management
Password Protected Directories
File Manager



## E-Mail Management

E-Mail Accounts
Catch-All E-Mail
Forwarders
Autoresponders
Vacation Messages
Spamrelay config
SpamExperts Spamfilter
Spamassassin config

Mailing Lists
SPAM Filters
Webmail: RainLoop
MX Records
Set Google MX Records
Set Office365 MX Records



## Advanced Features

SSL Certificates
Cronjobs
Mime Types
Apache Handlers
CDN
GitLab
Varnish
Website Malwarescan
Memcached
Perl Activeren
Select PHP version
Resource Usage

Custom Error Pages
[phpMyAdmin](#)
Site redirection
Redirect without URL change
Domain Pointers
Versnel Wordpress!
Login Keys
TLSA/DANE activeren
Manage usersettings
DKIM reset
Installatron Applications Installer
RedisCache

	Used	Max
Disk Space (MB)	4.06	102400
Bandwidth (GB)	0.0442	unlimited
E-Mails	1	unlimited
Ftp Accounts	1	unlimited
Databases	1	unlimited
Inodes	331	500000


**Options**


Force SSL	No	(toggle)
-----------	----	----------


**Useful tests**

Sent emails	Show log
SSL DNS	Check Now
PHP error log	Show log
SSL Certificate	Check Now
Email tester	Test Now

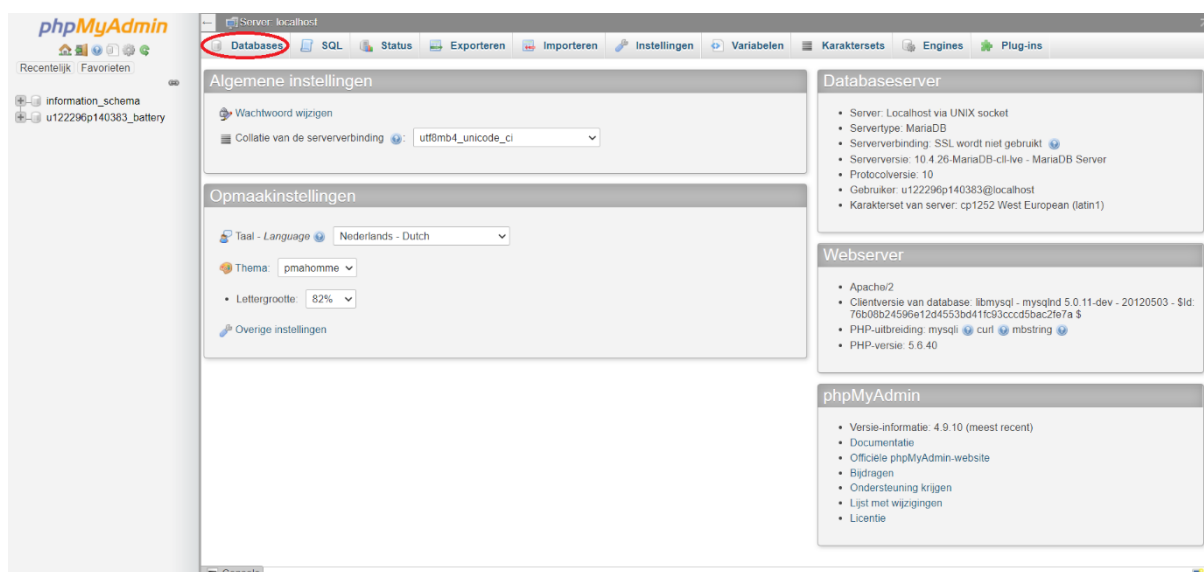
**Current Domain**  
vrfb-test.nl


**Webhosting Duitsland**  
Hosting met een Duits IP, vanaf nu beschikbaar!


**Webhosting Engeland**  
Hosting met een Engels IP, vanaf nu beschikbaar!

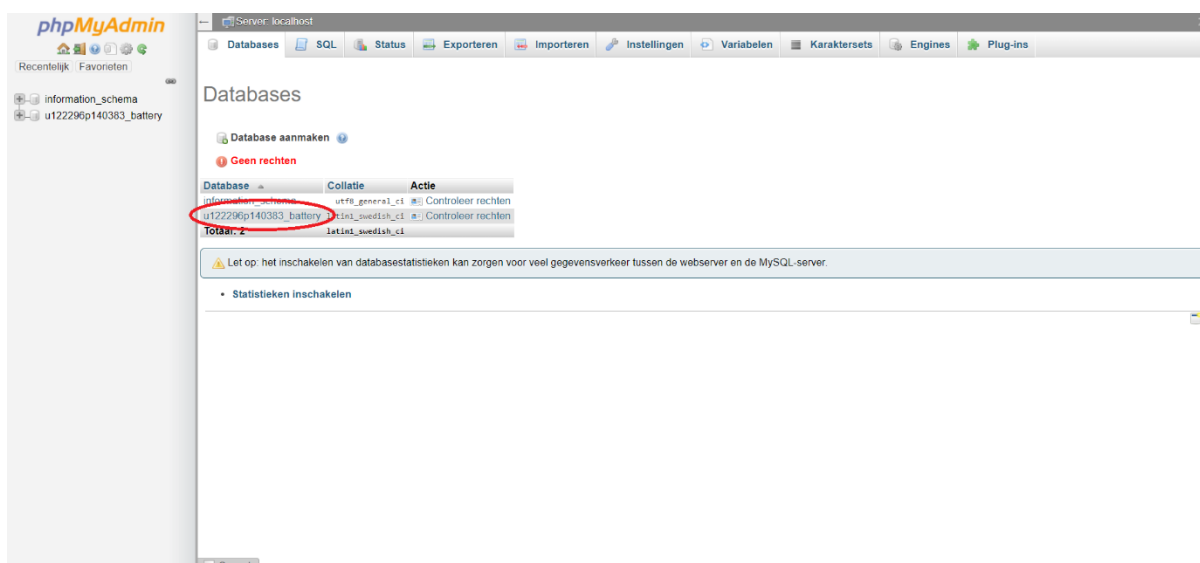

**Performance hosting**  
Gegarandeerd de allersnelste hosting voor je website.

Now the right database file needs to be imported. You'll do this in phpMyAdmin. The link to this is under the section "Advanced Features". You may need to log in

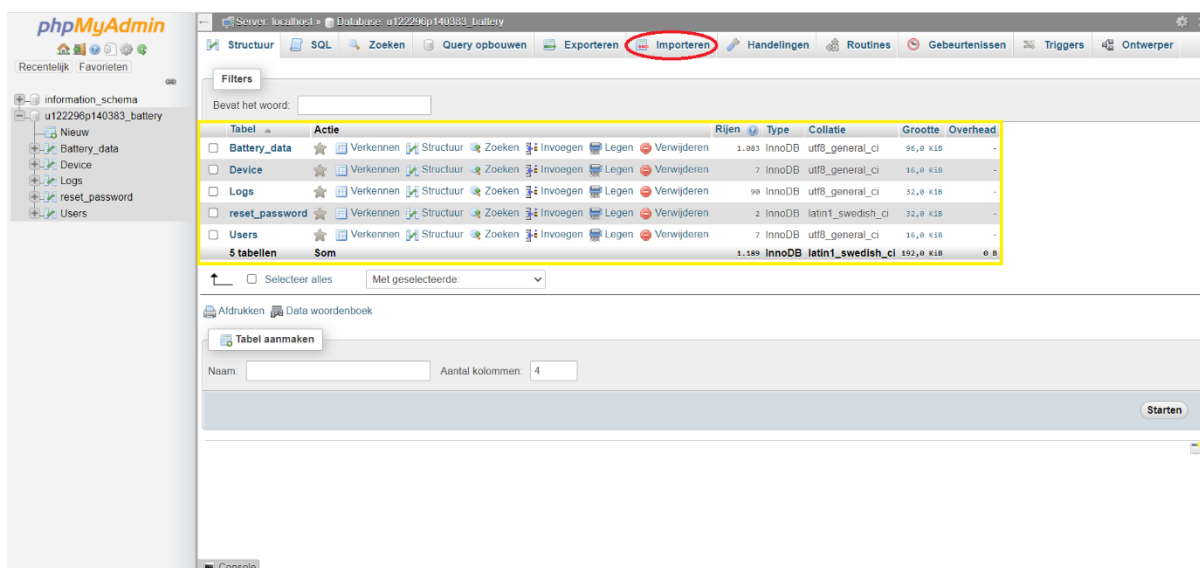


Click on "Databases" in the menu bar.

## Administratorhandleiding VRF Battery webapplicatie

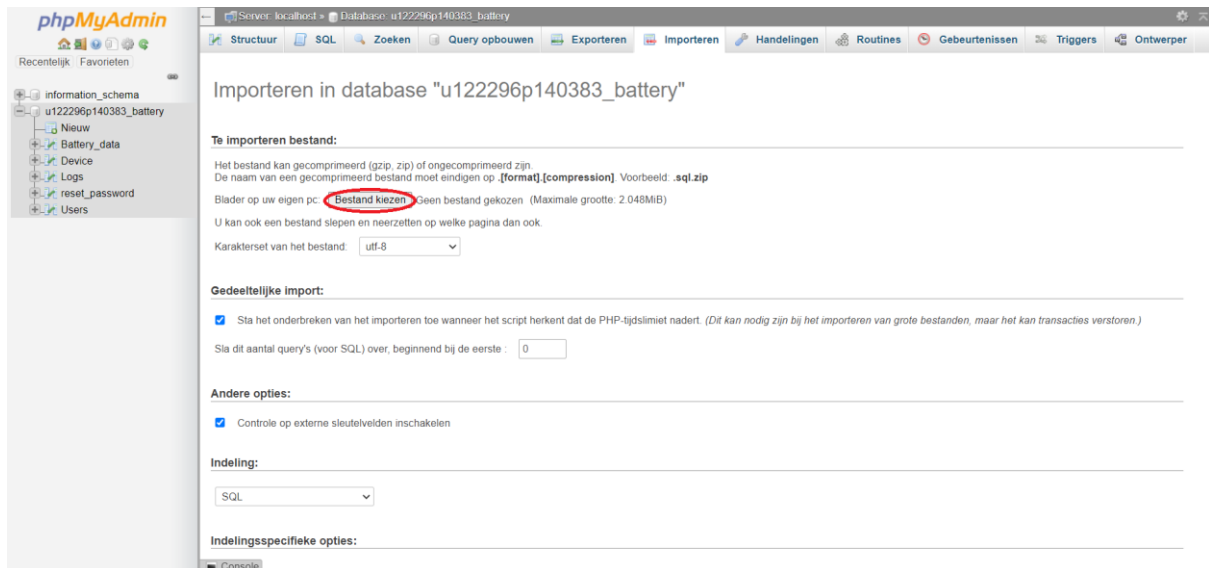


Here you see the name of the database you've created, click on it.

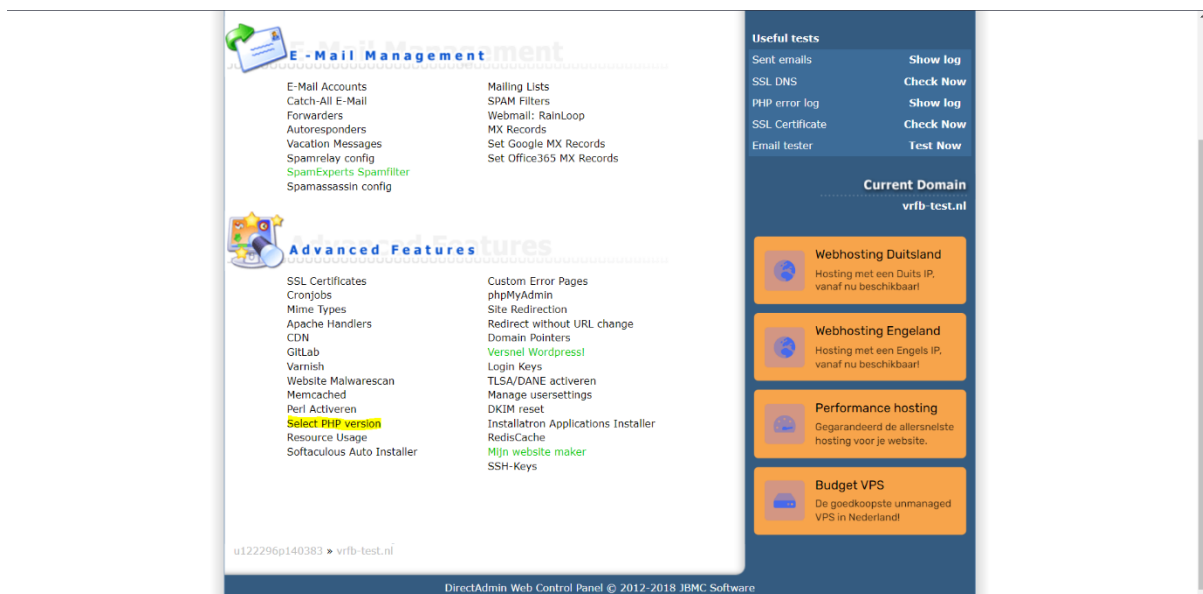


Go to "Importeren" in the menu bar (the part that is highlighted in yellow should be empty when you didn't import a database yet).

## Administratorhandleiding VRF Battery webapplicatie



Choose the file that you want to import and click “Starten” on the bottom of the page.  
Congratulations you have successfully imported your database.



In the admin panel go to Advanced Features and click "Select PHP version"

## Administratorhandleiding VRF Battery webapplicatie

<b>A</b>	<input type="checkbox"/> amqp	<b>I</b>	<input checked="" type="checkbox"/> intl	<b>P</b>	<input checked="" type="checkbox"/> pdo	<b>S</b>	<input type="checkbox"/> solr
	<input type="checkbox"/> apcu		<input type="checkbox"/> ioncube_loader		<input type="checkbox"/> pdo_dblib		<input type="checkbox"/> sourceguardian
<b>B</b>	<input checked="" type="checkbox"/> bcmath	<b>J</b>	<input type="checkbox"/> jsmn		<input type="checkbox"/> pdo_firebird		<input type="checkbox"/> sqsdrv
	<input type="checkbox"/> brotli		<input checked="" type="checkbox"/> json		<input checked="" type="checkbox"/> pdo_mysql		<input type="checkbox"/> ssh2
<b>D</b>	<input type="checkbox"/> dba	<b>L</b>	<input type="checkbox"/> ldap		<input type="checkbox"/> pdo_oci		<input type="checkbox"/> stats
	<input type="checkbox"/> dbase		<input type="checkbox"/> luasandbox		<input type="checkbox"/> pdo_odbc		<input type="checkbox"/> swoole
	<input checked="" type="checkbox"/> dom		<input type="checkbox"/> lz4		<input type="checkbox"/> pdo_pgsql		<input type="checkbox"/> sysvmsg
<b>E</b>	<input type="checkbox"/> eio	<b>M</b>	<input type="checkbox"/> mailparse		<input checked="" type="checkbox"/> pdo_sqlite		<input type="checkbox"/> sysvsem
	<input type="checkbox"/> enchant		<input checked="" type="checkbox"/> mbstring		<input type="checkbox"/> pdo_sqlsrv		<input type="checkbox"/> sysvshm
<b>F</b>	<input checked="" type="checkbox"/> fileinfo		<input type="checkbox"/> mcrypt		<input type="checkbox"/> pgsql	<b>T</b>	<input type="checkbox"/> tideways_xhprof
<b>G</b>	<input checked="" type="checkbox"/> gd		<input type="checkbox"/> memcache		<input type="checkbox"/> phalcon4		<input type="checkbox"/> tidy
	<input type="checkbox"/> gearman		<input type="checkbox"/> memcached		<input checked="" type="checkbox"/> phar		<input type="checkbox"/> timezonedb
	<input type="checkbox"/> gender		<input type="checkbox"/> mongodb		<input checked="" type="checkbox"/> posix		<input type="checkbox"/> trader
	<input type="checkbox"/> geolip		<input checked="" type="checkbox"/> mysqli		<input type="checkbox"/> proprio	<b>U</b>	<input type="checkbox"/> uploadprogress
	<input type="checkbox"/> geos		<input checked="" type="checkbox"/> mysqlind		<input type="checkbox"/> pspell		<input type="checkbox"/> uuid
	<input type="checkbox"/> gmagick	<b>N</b>	<input type="checkbox"/> nd_mysql	<b>R</b>	<input type="checkbox"/> raphf	<b>V</b>	<input type="checkbox"/> vips
	<input type="checkbox"/> gnupg		<input type="checkbox"/> nd_pdo_mysql		<input type="checkbox"/> redis	<b>X</b>	<input type="checkbox"/> xdebug
	<input type="checkbox"/> gpc		<input type="checkbox"/> newrelic		<input type="checkbox"/> rrd		<input checked="" type="checkbox"/> xmlreader
<b>H</b>	<input type="checkbox"/> http	<b>O</b>	<input type="checkbox"/> oauth	<b>S</b>	<input type="checkbox"/> snmp		<input type="checkbox"/> xmlrpc
<b>I</b>	<input type="checkbox"/> igbinary		<input type="checkbox"/> oci8		<input checked="" type="checkbox"/> soap		<input checked="" type="checkbox"/> xmlwriter
	<input type="checkbox"/> imagick		<input type="checkbox"/> odbc		<input checked="" type="checkbox"/> sockets	<b>Y</b>	<input checked="" type="checkbox"/> xsl
	<input type="checkbox"/> imap		<input type="checkbox"/> opcache		<input type="checkbox"/> sodium		<input type="checkbox"/> yaml
	<input type="checkbox"/> inotify	<b>P</b>	<input type="checkbox"/> pdf				<input type="checkbox"/> yaz
<b>Z</b>	<input checked="" type="checkbox"/> zip						
	<input type="checkbox"/> zmq						

Scroll down and make sure "mysqli" and "mysqlind" are both selected

## 8.0 Adding an extra parameter

With the VRFB webapplication, you can record the temperature, voltage and current of a battery. At some point, Christiaan may want to add a parameter, for example the pH of the liquid. There are several steps that need to be taken to correctly display a parameter on the website.

1. First of all, the python-script, that is called by the Raspberry Pi has to read the value of the sensor and put this in the post-request. Because the Raspberry Pi does not fall within the scope of our project, we will not go in depth on how to get this value. In the python-script 'SQL-3.py', in the 'request'-object, the new parameter must be inserted.
2. Secondly, the API must be able to pick up this parameter. Parameters that the API does not know, are ignored. To put the parameter into the database, the API must know the parameter exists.

```
//clean measurement data
$temperature = sanitize($_POST["temperature"]);
$voltage = sanitize($_POST["voltage"]);
$ampere = sanitize($_POST["ampere"]);
$dateTime = sanitize($_POST["dateTime"]);
$newParameterHere = sanitize($_POST["newParameterHere"]);
```

(image 2.1)

In 'api.php', you see a comment 'clean measurement data' (image 2.1). Below, you see all known parameters. Create a new variable with as definition the sanitize-function of the '\$\_POST' variable (image 2.1). This variable will automatically contain the values that the pythonscript puts into the 'request'-object.

```
//insert data to database
insertMeasurement($deviceId, $temperature, $voltage, $dateTime, $ampere,$newParameterHere, $mysql);
```

(image 2.2)

```
//inserts measurement to database
function insertMeasurement($deviceId, $temperature, $voltage, $dateTime, $ampere,$newParameterHere, $mysql){
```

(image 2.3)

Below the definitions of the variables, you see that a function with the name 'insertMeasurement'(image 2.2) is called. Add your newly created variable, to the list of parameters. Below the call of this function, the function is defined (image 2.3). Here you need to add the same variable. Note that the parameters in the call of the function and the definition of the function must be in the same order.

```
//prepare sql statement
$query = $mysql->prepare("INSERT INTO measurements(device_id, temperature, voltage, time_, ampere,newParameterHere) VALUES (?, ?, ?, ?, ?, ?)");
```

(image 2.4)

In the definition of the function, you see the SQL-query (image 2.4). In the query, you need to add the the parameter. The name you add here must be the column-name in the 'measurements' table in the database. We will explain in step 5, how this is done. In the end of the query, you see a number of '?' Seperated by commas. Add an extra question mark and comma.

```
//bind paramaters to query
$query->bind_param("idddsd?", $deviceId, $temperature, $voltage, $dateTime, $ampere, $newParameterHere);
```

(image 2.5)

On the second line in the function, the parameters of the query are bound to it (image 2.5). Here, php replaces the questions marks with the values you provide here. Here again, the order of variables matters. when you add the new parameter, you also need to specify what datatype it is. In the portion that is highlighted in yellow in image 2.5 you will find a question



mark. This is where you need to specify what datatype you are using for the new parameter. If it's an integer you use an 'i'. If it's a double a 'd'. If it's a string a 's'. For more information visit the following link:

[https://www.w3schools.com/php/php\\_mysql\\_prepared\\_statements.asp](https://www.w3schools.com/php/php_mysql_prepared_statements.asp).

3. Next navigate to 'measurements.php'. On line 160 you will find the \$query (image 3.1).

```
$query = $mysql->prepare("SELECT measurement_id, device_id, time_, voltage, temperature, ampere, newParameterHere FROM measurements WHERE device_id = ? AND time_ BE
```

(image 3.1)

in this query you need to add the new parameter as shown in image 3.1. After this step you need to find the bind result function below (image 3.2).

```
$query->bind_result($measurementId, $deviceId, $time_, $voltage, $temperature, $ampere, $newParameterHere);
```

(image 3.2)

below that line you will find the 'create empty arrays' line. In this line you will need to add a new variable like shown in image 3.3.

```
// create empty arrays
$timeArray = array();
$voltageArray = array();
$temperatureArray = array();
$ampereArray = array();
$newParameterArray = array();|
```

(image 3.3)

below this you will find a while loop (image 3.4). in this loop you need to add a new array\_push line like shown in image 3.4.

```
// fill arrays with data
while ($query -> fetch()){
    array_push($timeArray, $time_);
    array_push($voltageArray, $voltage);
    array_push($temperatureArray, $temperature);
    array_push($ampereArray, $ampere);
    array_push($newParameterArray, $newParameterHere)
}
```

(image 3.4)

finally, you must add the data to the graph by adding the new parameter to the graph. As shown in image 3.5 you need to add a new 'label', new 'data', 'backgroundColor', 'borderColor' and 'borderWidth'.

```

data: {
  labels: ".json_encode($timeArray).",
  datasets: [
    {
      label: 'temperature',
      data: ".json_encode($temperatureArray).",
      backgroundColor: ['rgba(105, 0, 132, .2)'],
      borderColor: ['rgba(200, 99, 132, .7)'],
      borderWidth: 2
    },
    {
      label: 'voltage',
      data: ".json_encode($voltageArray).",
      backgroundColor: ['rgba(0, 137, 132, .2)'],
      borderColor: ['rgba(0, 10, 130, .7)'],
      borderWidth: 2
    },
    {
      label: 'ampere',
      data: ".json_encode($ampereArray).",
      backgroundColor: ['rgba(10, 180, 132, .2)'],
      borderColor: ['rgba(90, 140, 180, .7)'],
      borderWidth: 2
    },
    {
      label: 'new parameter',
      data: ".json_encode($newParameterArray).",
      backgroundColor: ['rgba(10, 180, 132, .2)'],
      borderColor: ['rgba(90, 140, 180, .7)'],
      borderWidth: 2
    }
  ]
}

```

(image 3.5)

if you want the new parameter to have a new colour, you have to change the first three numbers in 'backgroundcolor' after rgba. You can also change the 'bordercolor' by doing the same. For example, you can do this: `rgba(120, 10, 162, .2)` instead of `rgba(10, 180, 132, .2)`.

4. Next go to 'export.php'. Scroll down until you find the first query (image 4.1).

```

if(empty($device_id)) {
    // specific device
    $query = $mysql->prepare("SELECT measurement_id, device_id, time_, voltage, temperature, ampere, newParameterHere FROM measurements WHERE device_id = ? AND time_
    $query->bind_param('iss', $device_id, $start, $end);

```

(image 4.1)

Here you will need to add the new parameter in the prepare statement like shown in image 4.1. After this scroll down a bit more until you find the next query (image 4.2).

```

else {
    // all devices
    $query = $mysql->prepare("SELECT measurement_id, device_id, time_, voltage, temperature, ampere, newParameterHere FROM measurements WHERE time_ BETWEEN ? AND ? OR
    $query->bind_param('iss', $start, $end);

```

(Image 4.2)

Here you also need to add the new parameter to the prepare statement like show in image 4.2.

After that go to the bind\_result statement (image 4.3).

```

// execute query
$query->execute();
//bind results
$query->bind_result($measurementId, $deviceId, $time_, $voltage, $temperature, $ampere, $newParameterHere);

```

(image 4.3)

At the end of the bind\_result statement you will need to add your new parameter as shown in image 4.3). note do not forget to add the \$ sign to the new parameter.

Next scroll down until you find the \$csv\_export variable (image 4.4).

```
// create line with field names
$csv_export .= "measurement_id; device_id; time; voltage; temperature; ampere; newParameterHere;";

$csv_export .= "\n";
```

(image 4.4)

Add the new parameter at the end of list as shown in image 4.4. do not forget to add the ; at the end of the parameter.

Lastly scroll down until you find the fetch statement (image 4.5).

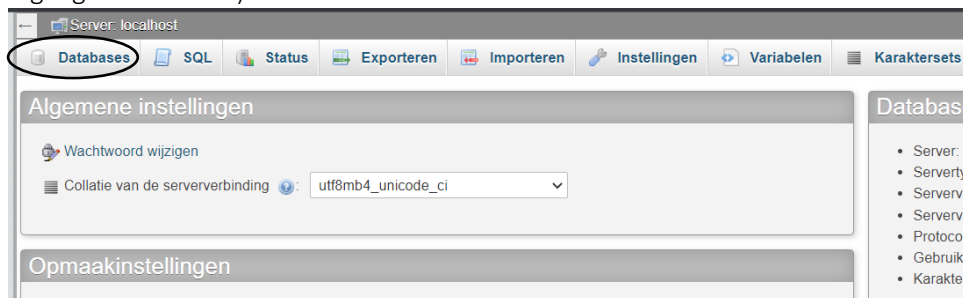
```
while ($query -> fetch()){
    $csv_export .= "$measurementId; $deviceId; $time; $voltage; $temperature; $ampere; $newParameterHere;";

    $csv_export .= "\n";
}
```

(image 4.5)

Add the new parameter at the end of the top \$csv\_export as shown in image 4.5.

- Before you can test if everything works you will need to add the new parameter to the database. Go to the following link: <https://web0150.zxcs.nl/phpmyadmin/> and login using the username and password. After you have successfully logged in you will be greeted by the home page of phpmyadmin. Here you must click on the button databases (image 5.1, highlighted in black)



(image 5.1)

next you need to click on the database to which you want to add the new parameter. In this case [u122296p140383\\_battery](#) (image 5.2)

Database	Collatie	Actie
information_schema	utf8_general_ci	Controleer rechten
u122296p140383_battery	latin1_swedish_ci	Controleer rechten
<b>Totaal: 2</b>	<b>latin1_swedish_ci</b>	

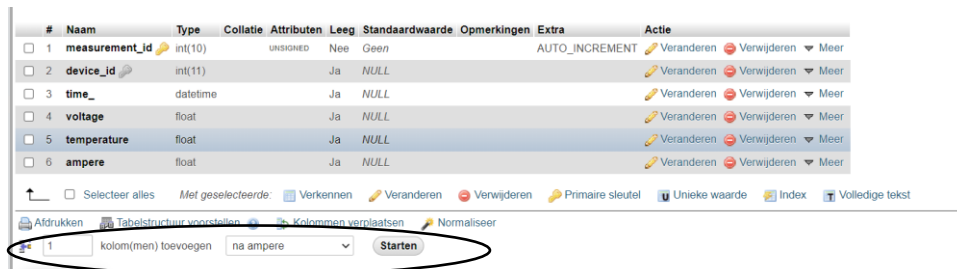
(image 5.2)

Tabel	Actie	Rijen	Type	Collatie	Grootte	Overhead
<input type="checkbox"/> devices	Verkennen Structuur Zoeken Invoegen Legen Verwijderen	7	InnoDB	utf8_general_ci	16,0 KiB	-
<input type="checkbox"/> logs	Verkennen Structuur Zoeken Invoegen Legen Verwijderen	365	InnoDB	utf8_general_ci	32,0 KiB	-
<input type="checkbox"/> measurements	Verkennen <b>Structuur</b> Zoeken Invoegen Legen Verwijderen	4.337	InnoDB	utf8_general_ci	144,0 KiB	-
<input type="checkbox"/> reset_password	Verkennen Structuur Zoeken Invoegen Legen Verwijderen	6	InnoDB	latin1_swedish_ci	32,0 KiB	-
<input type="checkbox"/> test	Verkennen Structuur Zoeken Invoegen Legen Verwijderen	2.700	InnoDB	latin1_swedish_ci	80,0 KiB	-
<input type="checkbox"/> users	Verkennen Structuur Zoeken Invoegen Legen Verwijderen	10	InnoDB	utf8_general_ci	16,0 KiB	-
<b>6 tabellen</b>	<b>Som</b>	<b>7.425</b>	<b>InnoDB</b>	<b>latin1_swedish_ci</b>	<b>320,0 KiB</b>	<b>0 B</b>

(image 5.3)

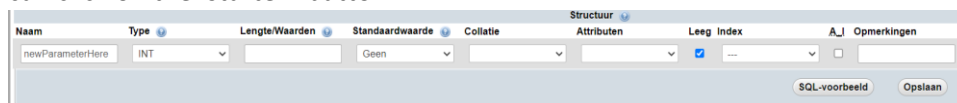
Here you need to click on the 'Structuur' button from measurements (image 5.3, highlighted in black)

## Administratorhandleiding VRF Battery webapplicatie



(image 5.4)

In the field (image 5.4, highlighted in black) you can choose how many new columns you want to add (in this case 1). Next to that you can choose after which row you want to add the new parameter. in this case we have chosen to add it after the 'ampere' row. Then you can click on the 'starten' button.



(image 5.5)

On this screen firstly you have to choose a name for your new parameter. this name has to be same one as you have chosen in step 2 image 2.4. This step is very important. if these two names are not the same the database will not save it in the correct column. secondly you have to choose what datatype the new parameter has. you need to choose the same datatype as you have specified before when editing the code. lastly you need to click on the 'leeg' button so this has a checkmark (as show in image 5.5). after you have done this you can click on the 'opslaan' button and start sending data.

once you are done with this step everything should be ready. if it does not work on the first try, we would advise you to go through this list one more time and check if you followed every step correctly.

## 9.0 Security measures

There are things that you have to do to make sure you'll have a safe experience while browsing your website.

### 9.1 Password 'hashing'

Hashing works as a one-way street. Hashing text is applying a complicated formula to it. The text turns into an unrecognizable string of characters. It is practically impossible to extract the original text out of this so called 'hash'.


In the webapplication, we use password hashing for security reasons. Both the API-key and user passwords are hashed. If, for some reason, all data is leaked, the passwords are not. Only if the combination of password and hash is publicly known, there is a danger. It is for this reason, you need a strong, unique password. If passwords are leaked, we highly recommend changing all passwords. The same is true for API-keys.

Users have to balance security and usability. It is best to change passwords as often as possible for security reasons, but it has to stay practical.

### 9.2 Making backups

Backups will be made automatically every 4 hours.


## Administratorhandleiding VRF Battery webapplicatie



### Your Account

Domain Setup  
Change Password  
Login History  
DNS Management  
Wildcard DNS  
Installed Perl Modules  
Restore Backups  
**Import other Directadmin backups**


Site Summary / Statistics / Logs  
FTP Management  
Subdomain Management  
MySQL Management  
Password Protected Directories  
File Manager



### E-Mail Management

E-Mail Accounts  
Catch-All E-Mail  
Forwarders  
Autoresponders  
Vacation Messages  
Spamrelay config  
SpamExperts Spamfilter  
Spamassassin config

Mailing Lists  
SPAM Filters  
Webmail: RainLoop  
MX Records  
Set Google MX Records  
Set Office365 MX Records



### Advanced Features

SSL Certificates  
Cronjobs  
Mime Types  
Apache Handlers  
CDN  
GitLab  
Varnish  
Website Malwarescan  
Memcached  
Perl Activeren  
Select PHP version  
Resource Usage

Custom Error Pages  
phpMyAdmin  
Site Redirection  
Redirect without URL change  
Domain Pointers  
Versnel Wordpress!  
Login Keys  
TLSA/DANE activeren  
Manage usersettings  
DKIM reset  
Installatron Applications Installer  
RedisCache

### Used

	Used	Max
Disk Space (MB)	4.06	102400
Bandwidth (GB)	0.0442	unlimited
E-Mails	1	unlimited
Ftp Accounts	1	unlimited
Databases	1	unlimited
Inodes	331	500000

### Options


Force SSL	No	(toggle)
-----------	----	----------

### Useful tests

Sent emails	Show log
SSL DNS	Check Now
PHP error log	Show log
SSL Certificate	Check Now
Email tester	Test Now


### Current Domain

vrfb-test.nl




#### Webhosting Duitsland

Hosting met een Duits IP, vanaf nu beschikbaar!



#### Webhosting Engeland

Hosting met een Engels IP, vanaf nu beschikbaar!



#### Performance hosting

Gegarandeerd de allersnelste hosting voor je website.

You can also make your own backup. You do this by clicking on “Import other Directadmin backups”.

Message System

**Your Account**

**Disk Space**

**Inodes**

**Current domain**  
vrfb-test.nl

	Used	Max
Disk Space (MB)	4.97	102400
Bandwidth (GB)	0.0442	unlimited
E-Mails	1	unlimited
Ftp Accounts	1	unlimited
Databases	1	unlimited
Inodes	318	500000

**Options**

Force SSL No (toggle)

**Useful tests**

Sent emails	Show log
SSL DNS	Check Now
PHP error log	Show log
SSL Certificate	Check Now
Email tester	Test Now

**Current Domain**  
vrfb-test.nl

Webhosting Duitsland

**Backup All Domains**

Select Items to include in Backup

**Website Data**

Domains Directory: Backs up all user files for all domains ☒

Subdomain Lists: Backs up the list of subdomains for each domain ☒

Deleted Trash Data ☒

**E-Mail**

E-Mail Accounts List for all domains (names and passwords) ☒

E-Mail Data: Includes the messages from the Inbox, IMAP Folders, and webmail data. ☒

E-Mail Settings: Includes the filters and the catchall address. ☒

Forwarders: Includes all forwarding addresses. ☒

Autoresponders: Includes all autoresponders and messages. ☒

Vacation Messages: Includes all vacation messages and times. ☒

Mailing Lists: Includes the list, digest-list and archives. ☒

**Ftp**

Ftp Accounts ☒

Ftp Settings ☒

**Databases**

Database Settings: Backs up all DB Users and DB Settings ☒


Database Data: If 'Databases' is selected, include the actual DB data ☒

Include Domains (selecting none includes all domains)

vrfb-test.nl ☒

Choose what you want to make a backup of and click on “Create Backup”.


## Administratorhandleiding VRF Battery webapplicatie



### Your Account

Domain Setup  
Change Password  
Login History  
DNS Management  
Wildcard DNS  
Installed Perl Modules  
**Restore Backups**  
Import other Directadmin backups


Site Summary / Statistics / Logs  
FTP Management  
Subdomain Management  
MySQL Management  
Password Protected Directories  
File Manager



### E-Mail Management

E-Mail Accounts  
Catch-All E-Mail  
Forwarders  
Autoresponders  
Vacation Messages  
Spamrelay config  
SpamExperts Spamfilter  
Spamassassin config


Mailing Lists  
SPAM Filters  
Webmail: RainLoop  
MX Records  
Set Google MX Records  
Set Office365 MX Records



### Advanced Features

SSL Certificates  
Cronjobs  
Mime Types  
Apache Handlers  
CDN  
GitLab  
Varnish  
Website Malwarescan  
Memcached  
Perl Activeren  
Select PHP version  
Resource Usage

Custom Error Pages  
phpMyAdmin  
Site Redirection  
Redirect without URL change  
Domain Pointers  
Versnel Wordpress!  
Login Keys  
TLSA/DANE activeren  
Manage usersettings  
DKIM reset  
Installatron Applications Installer  
RedisCache



### VRF Battery

	Used	Max
Disk Space (MB)	4.06	102400
Bandwidth (GB)	0.0442	unlimited
E-Mails	1	unlimited
Ftp Accounts	1	unlimited
Databases	1	unlimited
Inodes	331	500000

#### Options


Force SSL	No	(toggle)
-----------	----	----------


#### Useful tests


Sent emails	Show log
SSL DNS	Check Now
PHP error log	Show log
SSL Certificate	Check Now
Email tester	Test Now

#### Current Domain

vrfb-test.nl


**Webhosting Duitsland**  
Hosting met een Duits IP, vanaf nu beschikbaar!


**Webhosting Engeland**  
Hosting met een Engels IP, vanaf nu beschikbaar!


**Performance hosting**  
Gegarandeerd de allersnelste hosting voor je website.

You can easily restore a backup in “Restore Backups”.



**DirectAdmin**

Home Webmail Password Files Logout

Via het backup en restore systeem kan je snel en eenvoudig een backup terugplaatsen. Allereerst kies je een herstel moment, vanuit dit herstelmoment krijg je te zien van welke bestanden, databases en emailadressen een backup gemaakt is. Via het vinkje kan je aangeven wat je precies wenst terug te plaatsen of te downloaden.

Wanneer je direct een backup terug plaatst dan zullen de bestaande bestanden overschreven worden met de bestanden uit het backup moment, de bestanden die niet aanwezig zijn in de backup zullen blijven staan.  
Wil je er zeker van zijn dat enkel de backup bestanden teruggeplaatst worden, zorg er dan eerst voor dat je de bestanden/databases leeg haalt. Via de file manager kan je de bestanden uit de public\_html map verwijderen en via PhpMyAdmin kan je de database legen.

**Backup restore voor u122296p140383** Zoek door bestanden

Kies een herstel moment:  
Selecteer een datum ▼

Bestanden E-mail adressen MySQL databases

Selecteer een herstel moment.

☐ Ik weet zeker dat ik de huidige versie wil verwijderen en dit terug wil zetten Herstel Download

Wat	Status	Wanneer	Downloadlink
-----	--------	---------	--------------

u122296p140383 » Plugins

DirectAdmin Web Control Panel © 2012-2018 JBMC Software

Firstly choose a recover moment. Now you'll be able to see which files, databases, and e-mail adressess have a backup.



**DirectAdmin**

Home Webmail Password Files Logout

Via het backup en restore systeem kan je snel en eenvoudig een backup terugplaatsen. Allereerst kies je een herstel moment, vanuit dit herstelmoment krijg je te zien van welke bestanden, databases en emailadressen een backup gemaakt is. Via het vinkje kan je aangeven wat je precies wenst terug te plaatsen of te downloaden.

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Wil je er zeker van zijn dat enkel de backup bestanden teruggeplaatst worden, zorg er dan eerst voor dat je de bestanden/databases leeg haalt. Via de file manager kan je de bestanden uit de public\_html map verwijderen en via PhpMyAdmin kan je de database legen.

**Backup restore voor u122296p140383** Zoek door bestanden

Kies een herstel moment:  
2022-11-08 12:09:32 ▼

Bestanden	E-mail adressen	MySQL databases
<input type="checkbox"/> vrfb-test.nl		<input type="checkbox"/> u122296p140383_battery

☐ Ik weet zeker dat ik de huidige versie wil verwijderen en dit terug wil zetten **Herstel** **Download**

Wat	Status	Wanneer	Downloadlink
-----	--------	---------	--------------

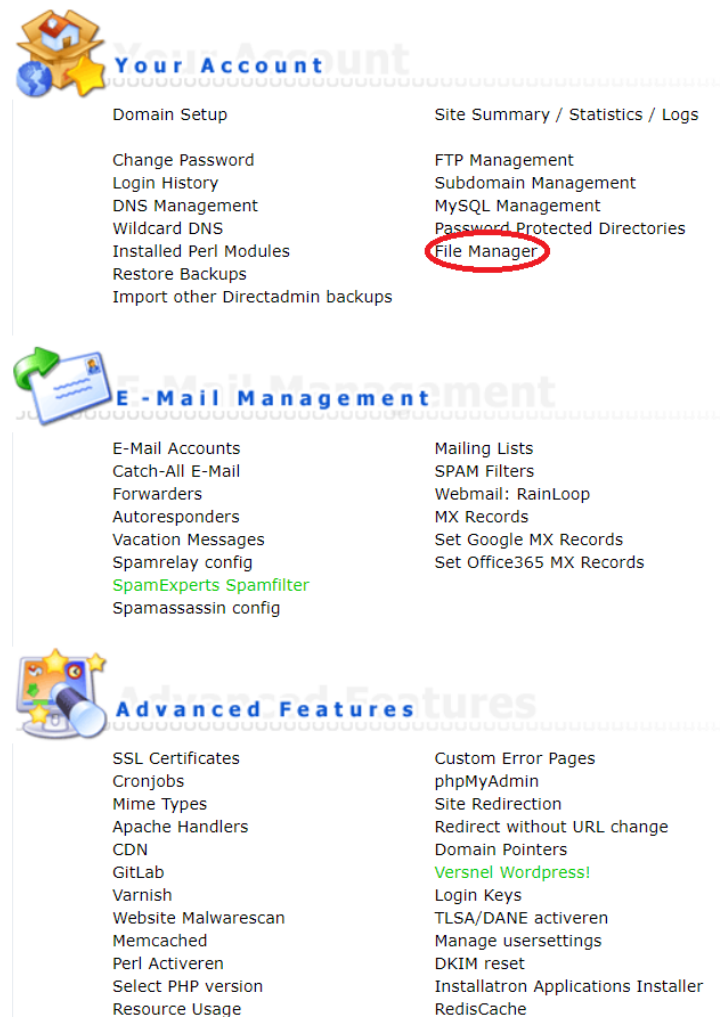
u122296p140383 » Plugins

DirectAdmin Web Control Panel © 2012-2018 JBMC Software

You can choose with the checkbox what you want to download or what you want to overwrite.

Existing files will be overwritten once you want to replace a file with a backup file. The files that aren't in the back will be left alone. Do you want to be sure that only the backup files will be used? Make sure to delete files and/or databases first before you want to use the backup files.

### 9.3 deleting the database



**Your Account**

Domain Setup      Site Summary / Statistics / Logs

Change Password      FTP Management

Login History      Subdomain Management

DNS Management      MySQL Management

Wildcard DNS      Password Protected Directories

Installed Perl Modules      **File Manager**

Restore Backups

Import other Directadmin backups

**E-Mail Management**

E-Mail Accounts      Mailing Lists

Catch-All E-Mail      SPAM Filters

Forwarders      Webmail: RainLoop

Autoresponders      MX Records

Vacation Messages      Set Google MX Records

Spamrelay config      Set Office365 MX Records

SpamExperts Spamfilter

Spamassassin config

**Advanced Features**

SSL Certificates      Custom Error Pages

Cronjobs      phpMyAdmin

Mime Types      Site Redirection

Apache Handlers      Redirect without URL change

CDN      Domain Pointers

GitLab      Versnel Wordpress!

Varnish      Login Keys

Website Malwarescan      TLSA/DANE activeren




Memcached      Manage usersettings

Perl Activeren      DKIM reset

Select PHP version      Installatron Applications Installer

Resource Usage      RedisCache

Click on "File Manager".

	Used	Max
Disk Space (MB)	4.04	102400
Bandwidth (GB)	0.0442	unlimited
E-Mails	1	unlimited
Ftp Accounts	1	unlimited
Databases	1	unlimited
Inodes	317	500000
<b>Options</b>		
Force SSL	No	(toggle)
<b>Useful tests</b>		
Sent emails	<a href="#">Show log</a>	
SSL DNS	<a href="#">Check Now</a>	
PHP error log	<a href="#">Show log</a>	
SSL Certificate	<a href="#">Check Now</a>	
Email tester	<a href="#">Test Now</a>	
<b>Current Domain</b>		
vrfb-test.nl		
<div><div></div><div><b>Webhosting Duitsland</b> Hosting met een Duits IP, vanaf nu beschikbaar!</div></div>		
<div><div></div><div><b>Webhosting Engeland</b> Hosting met een Engels IP, vanaf nu beschikbaar!</div></div>		
<div><div></div><div><b>Performance hosting</b> Gegarandeerd de allersnelste hosting voor je website.</div></div>		

## Administratorhandleiding VRF Battery webapplicatie

Advanced Search

Type	Name	Size	Perm.	Action	Date	UID	GID	Select
Folder	.cagefs	4.00k	771	Rename   Copy	Oct 7 15:09 2022	u122296p140383	u122296p140383	<input type="checkbox"/>
Folder	.d.selector	4.00k	755	Rename   Copy	Oct 14 12:51 2022	u122296p140383	u122296p140383	<input type="checkbox"/>
Folder	.php	4.00k	770	Rename   Copy Reset Ownership   Recursively	Nov 9 02:20 2022	u122296p140383	apache	<input type="checkbox"/>
Folder	.pki	4.00k	740	Rename   Copy	Oct 14 10:45 2022	u122296p140383	u122296p140383	<input type="checkbox"/>
Folder	Maildir	4.00k	770	Rename   Copy	Oct 31 20:14 2022	u122296p140383	mail	<input type="checkbox"/>
Folder	backups	4.00k	700	Rename   Copy	Nov 9 14:20 2022	u122296p140383	u122296p140383	<input type="checkbox"/>
Folder	domains	4.00k	711	Rename   Copy	Oct 7 14:22 2022	u122296p140383	u122296p140383	<input type="checkbox"/>
Folder	imap	4.00k	770	Rename   Copy	Oct 7 14:22 2022	u122296p140383	mail	<input type="checkbox"/>
Folder	public_html	0.03k	777	Rename   Copy	Oct 7 14:22 2022	u122296p140383	u122296p140383	<input type="checkbox"/>
Folder	tmp	4.00k	700	Rename   Copy	Oct 7 14:22 2022	u122296p140383	u122296p140383	<input type="checkbox"/>
File	.bash_logout	0.02k	644	Rename   Copy   Report malware	Nov 24 08:06 2021	u122296p140383	u122296p140383	<input type="checkbox"/>
File	.bash_profile	0.21k	644	Rename   Copy   Report malware	Oct 7 15:09 2022	u122296p140383	u122296p140383	<input type="checkbox"/>
File	.bashrc	0.23k	644	Rename   Copy   Report malware	Nov 24 08:06 2021	u122296p140383	u122296p140383	<input type="checkbox"/>
File	.shadow	0.10k	640	Rename   Copy   Report malware	Oct 7 14:22 2022	u122296p140383	mail	<input type="checkbox"/>


With Selected [set Permission](#) 755 ☐ Recursive [Reset Ownership](#) [Add to Clipboard](#) [Delete](#)

[View Clipboard](#) [Copy Clipboard Files here](#) [Move Clipboard Files here](#) [Empty Clipboard](#)

To copy/move files with the clipboard, add the source files to the clipboard with "Add to Clipboard", go to the directory where you wish to copy/move the files, then click "Copy Clipboard Files here" or "Move Clipboard Files here"

Filesystem Tools

Delete the files out of the "public\_html" files. This will delete the website.



### Your Account

Domain Setup

Change Password

Login History

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Wildcard DNS

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Import other Directadmin backups

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FTP Management

Subdomain Management

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Password Protected Directories

File Manager



### E-Mail Management

E-Mail Accounts

Catch-All E-Mail

Forwarders

Autoresponders

Vacation Messages

Spamrelay config

[SpamExperts Spamfilter](#)

[Spamassassin config](#)

Mailing Lists


SPAM Filters

Webmail: RainLoop

MX Records

Set Google MX Records

Set Office365 MX Records



### Advanced Features

SSL Certificates

Cronjobs

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Select PHP version

Resource Usage

Custom Error Pages

**phpMyAdmin**

Site Redirection

Redirect without URL change

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[Versnel Wordpress!](#)

Login Keys

TLSA/DANE activeren

Manage usersettings

DKIM reset

Installatron Applications Installer

RedisCache

### Webhosting Duitsland

Hosting met een Duits IP, vanaf nu beschikbaar!

### Webhosting Engeland

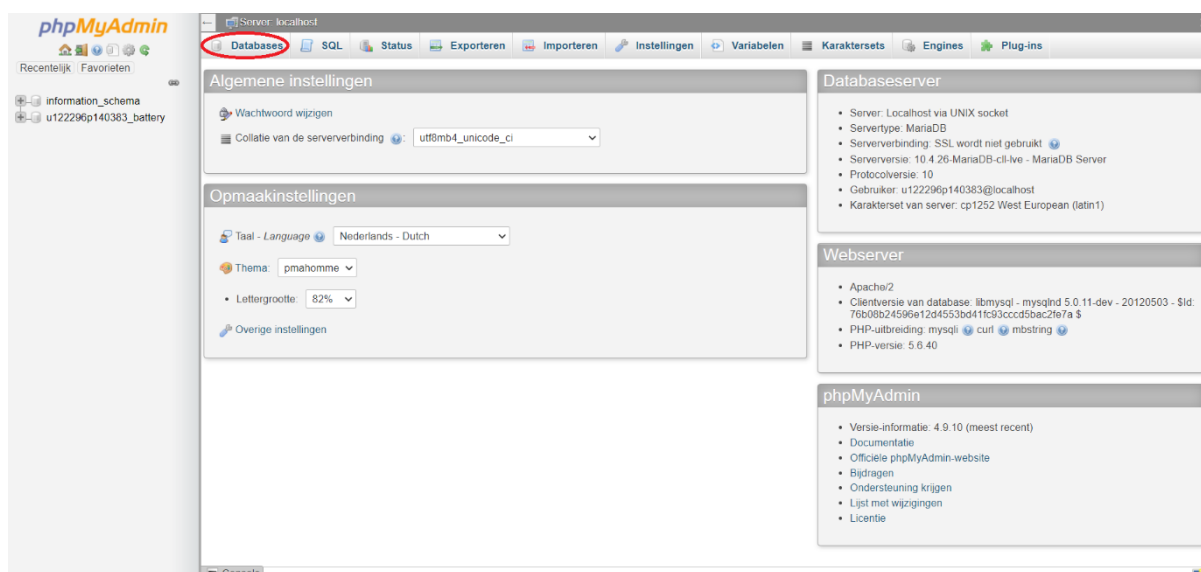
Hosting met een Engels IP, vanaf nu beschikbaar!

### Performance hosting

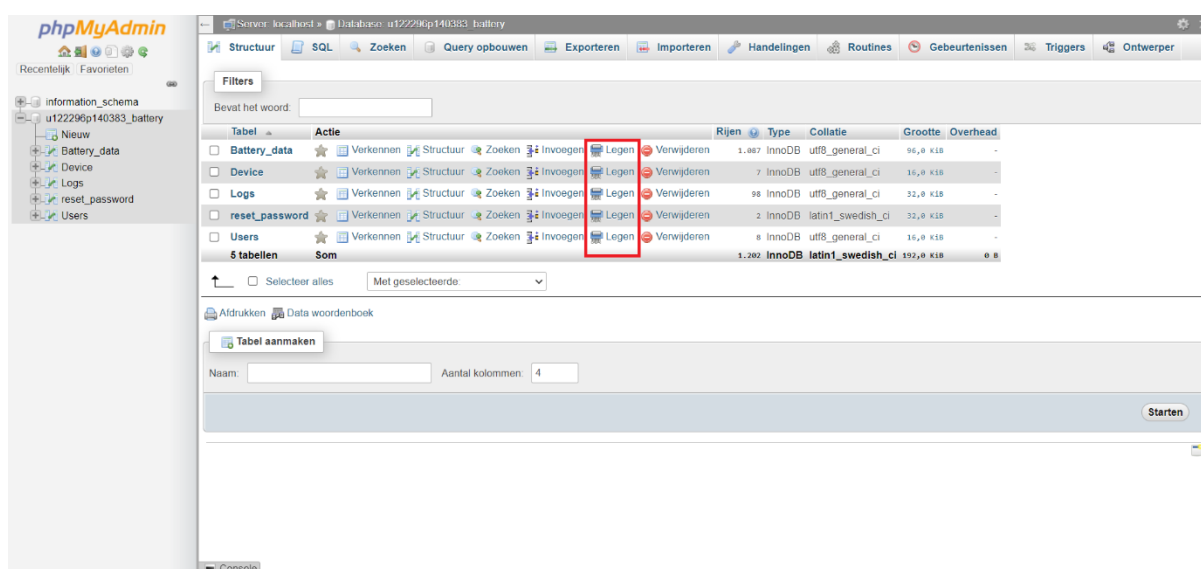
Gegarandeerd de allersnelste hosting voor je website.

Go to "phpMyAdmin" to empty the database.

## Administratorhandleiding VRF Battery webapplicatie



Click on “Databases”.



Click on “legen”.

## 10.0 Security recommendations

There are also things that you as an admin/user can do to have a safe experience on the web application.

1. Use a password of at least 16 characters.
2. Don't use the same password twice or a variation of the password where you only changed one character.
3. don't share your password with anyone.
4. Change your password every 6 months.
5. Delete the root-user when you have your own admin account.
6. Don't give admin privileges to someone you don't trust or someone who doesn't need it.
7. Don't share the API-keys from the devices. If you suspect that the key has leaked, regenerate it.
8. After we have finished this project, change every password: DirectAdmin Password, FTP Password, Database Password and User passwords (within the vrfb-test.nl webapplication).

The First 3 are the same. Note that, when you change the passwords, you also have to change the password within the file `'/std/dbconfigurations.php'`.

## 11.0 how to make someone an admin

There are 2 kinds of users:

- (normal) Users
- Admins

Admins have special privileges, like adding new Users, adding new Devices, ect. It is on purpose that you cannot make someone an Admin within the webapplication. To make someone admin, you need to go into the PHPMyAdmin system, with the following URL: <https://web0150.zxcs.nl/phpmyadmin/>

Navigate to the table 'users'. In the column 'admin', you can see if a user is admin. If 'admin' = 1, than the user is an admin. If 'admin' = 0, than the user is not an admin. When a new user is created, he/she is automatically not an admin. You can make someone an admin with a simple double-click on the 'admin' field for a specific user in the table. The same way, you can make an admin, a normal user.

It is important to keep in mind that admins can cause a lot of damage, like delete all devices or data. Only make people who you trust admins.