

SwimAdmin 0623 installation

Self-administered SwimAdmin systems must be installed from a disk image, which can be downloaded from <https://swimadmin.co.uk/data>. This document gives instructions for installing the image on a VPS ('Virtual Private Server').

It is assumed in this document that:

1. Your domain name is `myswimclub.uk`
2. Your IP address is `77.69.12.104`
3. Your 4-character ASA club code is `ABCD`

You will need to substitute these as required where they appear below.

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1 INTRODUCTION

A VPS is a mechanism to allow server resources to be made available to an end user over the internet via a cloud or hosting provider. Each VPS is installed on a physical machine which is operated by the provider. The physical machine will be located in a data centre, with access to a fast internet connection, and will host multiple VPSs. Each of these VPSs runs its own Operating System and applications, while sharing the underlying physical hardware. However, despite sharing the hardware, each VPS is private: there is no communication between the various VPSs on the server.

Your VPS can therefore be considered to be a complete stand-alone server, running the Ubuntu Operating System, together with the SwimAdmin application. The advantage of running an internet-connected application on a VPS is cost. A single VPS has enough computing resource to run SwimAdmin, but the annual running costs are a fraction of those of a complete physical system.

The installation of the SwimAdmin disk image on a VPS is straightforward, and can be completed in less than an hour, with little technical ability. To do this, you will need a domain name, a DNS provider, and a VPS provider.

1.1 DOMAIN NAME

Names can be purchased from a 'Domain Registrar'. The name might be any name which has not already been taken, but is assumed, for the purposes of this document, to be myswimclub.uk. A large number of registrars can be used for domain name purchases. [.uk](https://myswimclub.uk) domains are always cheap, but more unusual ones ([.org](https://myswimclub.org), and so on) will be more expensive, and pricing will vary between providers. The instructions in Section 4 below assume that you are using Ionos, but they are generally applicable to other providers.

Keep in mind that you are only renting a domain name. Prices may go up at renewal, and you will lose the name if you don't renew it.

1.2 DNS PROVIDER

The instructions below are specific to Cloudflare (<https://www.cloudflare.com/en-gb/>). Cloudflare is normally used for enterprise-level DNS, with an emphasis on mitigating against DDoS and other attacks, but it has a free plan which is suitable for SwimAdmin.

1.3 VPS PROVIDER

When choosing a provider, you should be looking for a basic hardware plan (with at least 2GB of RAM and 20 GB of SSD), with a fixed monthly cost of less than £10. Anything more, or a billing plan based on CPU usage, probably indicates that you have selected the wrong provider. The provider must allow the installation of 'qcow2' images.

Separate instructions are provided for installations at Ionos ([IonosVPS.pdf](#)) and Contabo ([ContaboVPS.pdf](#)). However, at the time of writing (June 2023) Ionos is in the process of changing its back-end systems, which do not yet support qcow2 installation. Do not attempt an Ionos installation without confirming that qcow2 images are supported.

2 DOMAIN NAME CREATION, STAGE 1

These instructions assume that you are using Ionos for domain name registration. You can, of course, buy domain names from many other registrars. Make sure that you don't buy a website, or an SSL certificate, or spam filters, or anything else; you just need a name. However, you should ensure that your domain has 'privacy protection' enabled (Ionos calls this 'Private registration'). Without this, your email address will be visible to anyone who carries out a [whois](#) search, and you will get a lot of spam email. Do *not* pay more for this; it should be free.

Enabling privacy can be difficult for Ionos; currently, you need to go to your control panel, select [Privacy & Contact Details](#) (see Figure 2 below), and then select [Private registration](#). This can be simpler at other registrars: domains purchased from Google (www.domains.google), for example, automatically have privacy enabled.

The going rate for [.uk](#) domains is currently about £10/year. However, you need to ensure that you are not locked into a contract which allows your provider to charge you more in subsequent years. You can, if necessary, transfer a domain to another provider once you have purchased it.

When the domain has been registered, you can proceed to the next step.

3 SET UP A DNS ACCOUNT

Create a Cloudflare account at <https://dash.cloudflare.com/sign-up>. The sign-up page will ask you to [Add site](#); click this, and enter your new domain name. If the domain exists, you will be taken to a 'Select a plan' page. Select the [Free](#) plan, and click [Continue](#).

If you are recycling an old domain, Cloudflare will now attempt to import existing records. You can't stop this; you will instead have to delete these old records (now, or in step 8 below).

If you now click on the [DNS](#) menu item on the left, you will see a section which lists your Cloudflare name servers:



The screenshot shows the 'Cloudflare Nameservers' section in the Cloudflare dashboard. It includes a heading, a descriptive paragraph, and a table with two rows of nameserver information.

Type	Value
NS	amber.ns.cloudflare.com
NS	dexter.ns.cloudflare.com

Figure 1: Cloudflare nameservers

Make a note of these two names. The names you see are likely to be different; where you see [amber.ns.cloudflare.com](#) or [dexter.ns.cloudflare.com](#) in the document below, you must replace them with the names you recorded.

Do-It-Yourself DNS is not difficult, and you may have a club member who offers to do this. This is not a good idea: DNS must be resilient, and the provider's servers must have 100% uptime, and protection from attack. A DIY solution is pointless when you can find free enterprise-class providers.

You can now proceed to the next step.

4 DOMAIN NAME CREATION, STAGE 2

A domain purchased at Ionos will automatically use the Ionos DNS servers. The point of this is to allow you to quickly set up (and pay for) a website which is hosted at Ionos. This will be true of most registrars, but you don't want this, and you instead have to ensure that name lookups go through Cloudflare, rather than Ionos.

To do this, return to the Ionos site, select your domain, and find the [Nameserver](#) tab. Now enter the name servers you found in Section 3 above. On completion, you should see this, although it may be a couple of minutes before this is visible:

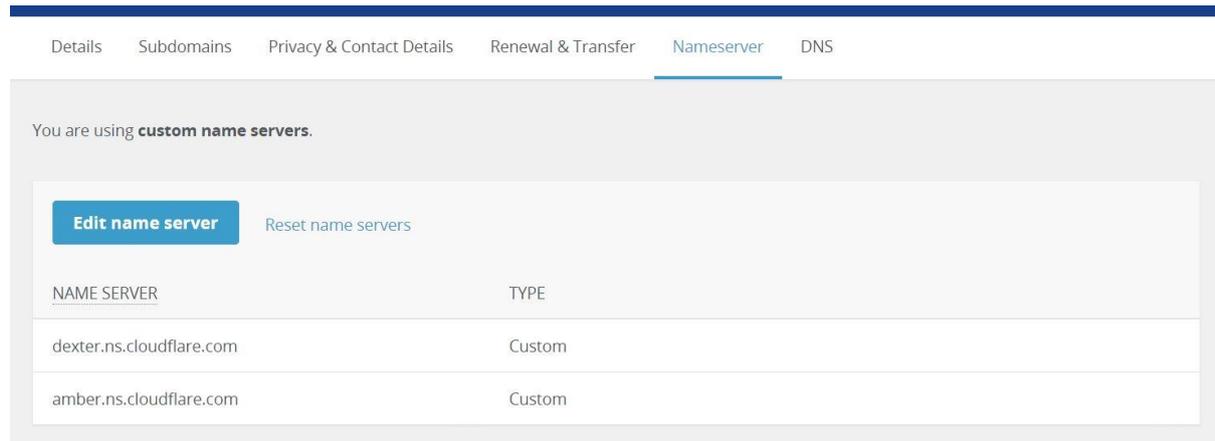


Figure 2: Ionos custom nameservers

5 SET UP THE VPS

You should now install the VPS. The procedure will depend on your VPS provider; see [IonosVPS.pdf](#) for an Ionos installation, or [ContaboVPS.pdf](#) for a Contabo installation.

6 CONFIGURATION SUMMARY

You now have a new SwimAdmin image which must be configured for your club. This configuration is carried out in 3 stages, which are covered in Sections 7 through 9. The procedure is summarised below. This assumes that your IP address is `77.69.12.104` and your domain name is `myswimclub.uk`; substitute as required.

1. Stage 1 Configuration (Section 7) is carried out at `http://77.69.12.104/configure`. Click **Submit** after entering the required information. You then have to download your 'zone file', which is required for the next stage. The server waits for two minutes, and then reboots. A little after the reboot completes you should receive an email (at the 'Site administrator' email address; see Figure 3 below). This mail simply tells you that your site has rebooted. The complete process should take no more than about 5 minutes.
2. You can carry out DNS configuration (Section 8) when you have the zone file. This will probably complete within 10 minutes or so, but could potentially take an hour or more. You will know that this stage has completed when you can browse to your site, using your domain name (`http://myswimclub.uk`), rather than your IP address.
3. When the DNS configuration has completed, you can carry out Stage 2 site configuration (Section 9) at `http://myswimclub.uk/configure`. When you click **Submit** the server communicates with an external website, which will take a few minutes. You should get 4 emails over a period of about 5 minutes, telling you that (1) a certificate renewal has been initiated; and (2) that the certificate has been renewed; and (3) that the certificate has been installed. A little later you should get another email telling you that the server has rebooted. Your server is now live.

The first and third steps require you to browse to an `http` (insecure) address, rather than `https`, because the security certificate is not yet available. Your browser will tell you that your connection is insecure if you attempt to use the `https` version.

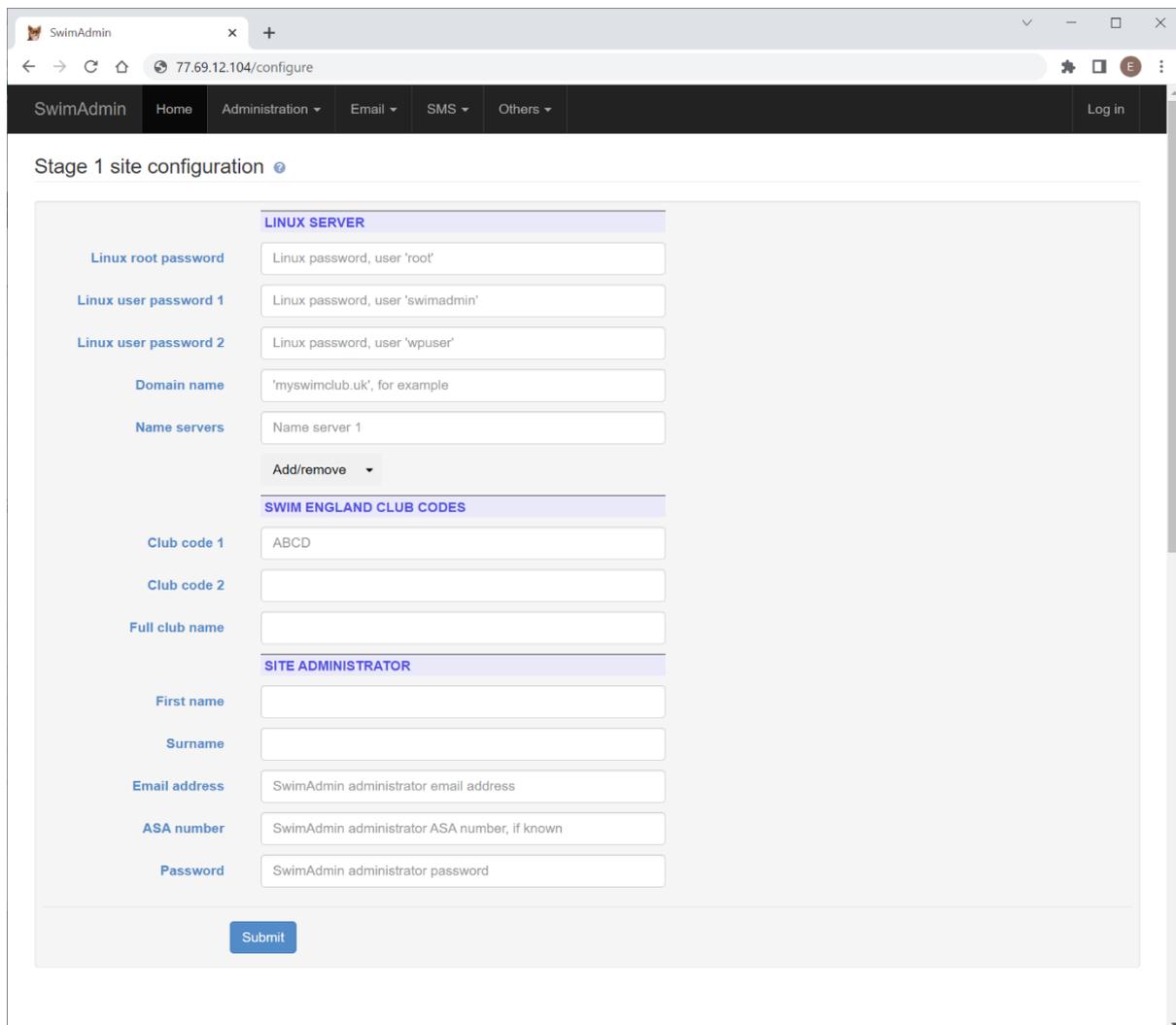
The configuration process is recorded in detail in two log files on the server (these are `/var/www1/logs/swimadmin.log`, and `/var/www1/data/acme.log`). If configuration fails, you should report this to `support@maia-eda.net`. We will be able to download these files if you have not removed the Maia public key from `/root/.ssh`. See the System Administration manual if you need more information.

7 STAGE 1 SITE CONFIGURATION

Your VPS is now running, and you can use a web browser to access it. There is an online configuration page to allow you to set up the server for your own club. However, you have not yet completed DNS setup, so you must access the server *using only the IP address*. Assume, for the sake of argument, that your IP address is actually `77.69.12.104`. You should now browse to `http://77.69.12.104/configure`. Make sure to enter `http`, and *not* `https`.

The server knows that you are carrying out Stage 1 configuration because you have used an IP address. When you carry out Stage 2 configuration, you will instead use your real domain name (`myswimclub.uk`), and the server then knows that it is carrying out a Stage 2 configuration.

To proceed, you will need to accept a licence agreement. The configuration page shown below is then displayed:



The screenshot shows a web browser window with the URL `77.69.12.104/configure`. The page title is "Stage 1 site configuration". The navigation menu includes "SwimAdmin", "Home", "Administration", "Email", "SMS", "Others", and "Log in".

The configuration form is divided into three main sections:

- LINUX SERVER**
 - Linux root password: Linux password, user 'root'
 - Linux user password 1: Linux password, user 'swimadmin'
 - Linux user password 2: Linux password, user 'wpuuser'
 - Domain name: 'myswimclub.uk', for example
 - Name servers: Name server 1
 - Buttons: Add/remove
- SWIM ENGLAND CLUB CODES**
 - Club code 1: ABCD
 - Club code 2: (empty)
 - Full club name: (empty)
- SITE ADMINISTRATOR**
 - First name: (empty)
 - Surname: (empty)
 - Email address: SwimAdmin administrator email address
 - ASA number: SwimAdmin administrator ASA number, if known
 - Password: SwimAdmin administrator password

A "Submit" button is located at the bottom of the form.

Figure 3: Stage 1 configuration

The online help (the `?` icon) may be used to find out what to fill into the form fields; the fields also display help information when hovered over. Your proposed passwords are tested for randomness; make sure that you read the pop-up information by the password fields.

The name server entry boxes should be set to whatever you recorded in Section 3 above (in this case, dexter.ns.cloudflare.com, and amber.ns.cloudflare.com).

You need to take some care with Stage 1 configuration. When you click Submit, the server is changed significantly, and these changes are not reversible. *You can only run Stage 1 configuration once.* If you need to repeat it, you will first have to re-install the image on the VPS.

You should, if possible, take a screen shot, and print it, before clicking 'Submit'.

The configuration will take a little while to run. On completion, you will be asked to download a 'zone file', which allows the DNS to be configured. However, the site is still 'insecure', so your browser may not allow you to download the zone file. This is unlikely but, if you do have a problem, you can access the zone file directly at <http://77.69.12.104/data/zonefile.txt> (with your own IP address, of course).

Note that the zone file includes your DKIM public key, and that this will change if you repeat Stage 1 configuration. *This means that, if you repeat Stage 1 configuration, you must also repeat DNS configuration.*

8 DNS CONFIGURATION

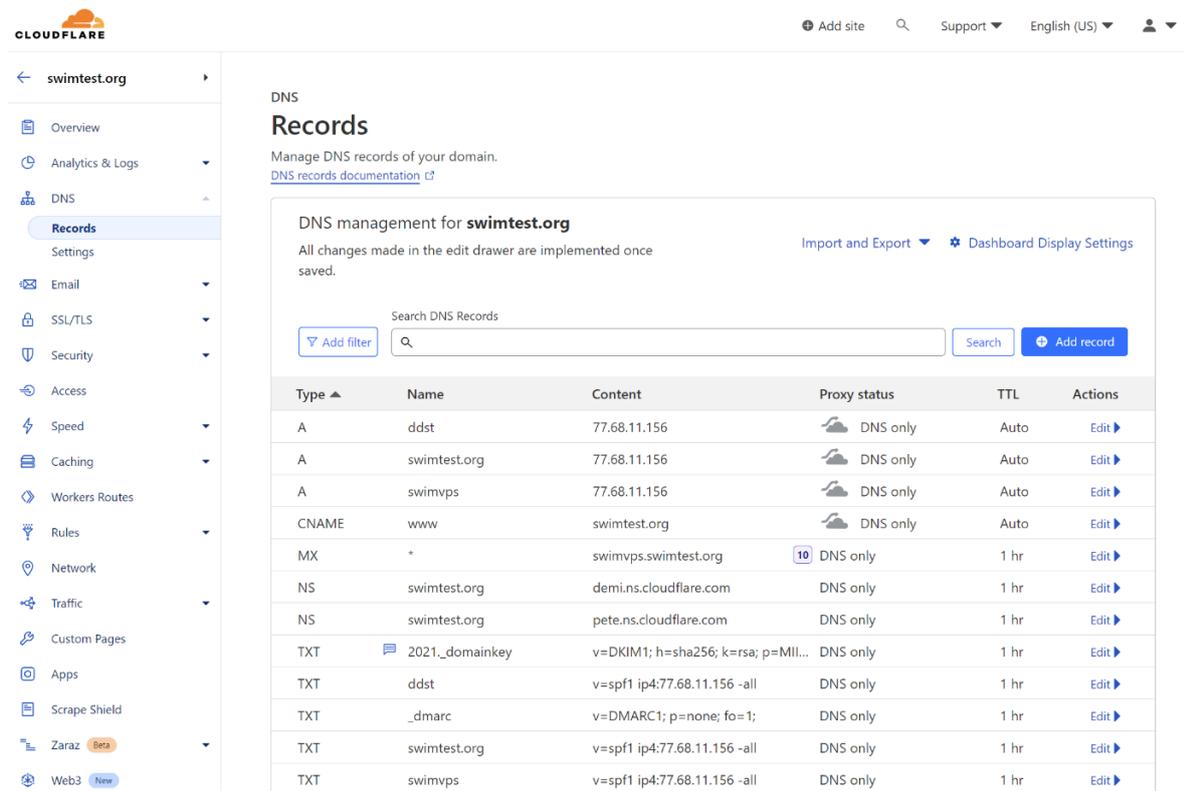
Now that you have the zone file, you can complete DNS setup at Cloudflare. Log in at Cloudflare, and click on [Websites](#) at the top of the menu on the left. This will show the name of your site in the main window. Click on this name.

The left menu now changes, and shows an entry for [DNS](#); click on this. You now have to set up plain DNS, with no proxying (Cloudflare will, by default, 'proxy' your IP address as a security measure; this cannot be used for sites which include a mail server).

If Cloudflare shows any existing DNS records, you must delete them *all* before proceeding. There is no quick way to do this; you must individually edit each record, and delete it, until no more records are shown.

You must now import your new zone file. To do this, click on [Import and Export](#). This shows an entry box where you can select or drag a file. Select or drag your saved zone file, and then click [Upload](#).

Cloudflare will now display 12 records. However, by default, Cloudflare proxies the A and CNAME records. These are the first 4 entries in Figure 4 below; they will be shown with a cloud symbol, and the text [Proxied](#). For these 4 entries, click [Edit](#), turn off [Proxied](#), and click [Save](#). On completion, all entries must show [DNS only](#) in the [Proxy status](#) column. Figure 4 shows the completed setup for a site named [swimtest.org](#), with IP address [77.68.11.156](#):



The screenshot shows the Cloudflare DNS Records page for the domain `swimtest.org`. The page title is "DNS Records" and it includes a search bar and an "Add record" button. The main content is a table of DNS records. The first four records are A records for `ddst`, `swimtest.org`, `swimvps`, and a CNAME record for `www`. These are all marked as "Proxied" with a cloud icon. The remaining eight records are an MX record, two NS records, and six TXT records, all marked as "DNS only".

Type	Name	Content	Proxy status	TTL	Actions
A	ddst	77.68.11.156	Proxied	Auto	Edit
A	swimtest.org	77.68.11.156	Proxied	Auto	Edit
A	swimvps	77.68.11.156	Proxied	Auto	Edit
CNAME	www	swimtest.org	Proxied	Auto	Edit
MX	*	swimvps.swimtest.org	DNS only	1 hr	Edit
NS	swimtest.org	demi.ns.cloudflare.com	DNS only	1 hr	Edit
NS	swimtest.org	pete.ns.cloudflare.com	DNS only	1 hr	Edit
TXT	2021_domainkey	v=DKIM1; h=sha256; k=rsa; p=MII...	DNS only	1 hr	Edit
TXT	ddst	v=spf1 ip4:77.68.11.156 -all	DNS only	1 hr	Edit
TXT	_dmarc	v=DMARC1; p=none; fo=1;	DNS only	1 hr	Edit
TXT	swimtest.org	v=spf1 ip4:77.68.11.156 -all	DNS only	1 hr	Edit
TXT	swimvps	v=spf1 ip4:77.68.11.156 -all	DNS only	1 hr	Edit

Figure 4: Cloudflare DNS

Note that, if you select another DNS provider, it may not be possible to upload the zone file directly. If this happens, you will have to create individual records like those shown above, and then copy-and-paste the relevant fields from the zone file. This is tedious and error-prone, and you should avoid it if possible.

9 STAGE 2 SITE CONFIGURATION

It may take some time for the DNS changes to propagate around the internet (anything from a few minutes to some hours). When this process has completed, you will be able to load the Stage 2 configuration page, at <http://myswimclub.uk/configure>.

Stage 2 automates the creation and installation of an SSL certificate. Click the [Submit](#) button to start the process. **However, you should wait at least 15 minutes before attempting this.** The reason is that the Site Administrator email address (as entered in Figure 3 above) will be sent a number of emails during configuration. If the mail server which handles that address cannot yet find the DNS entries for your club, it will reject the incoming mails, and your new server will then have to attempt to re-send the mails at a later time. If this happens, you may have to wait an hour or more before the emails are received, and they will arrive out-of-order. This is not a problem, but may cause some confusion.

While the installation process is running your site will be unavailable (attempts to access it will return a [503 Service Unavailable](#)). You should receive four emails during this process, which track the progress of the certificate installation:

1. Mail 1 reports that a certificate renewal has been initiated
2. Mail 2 reports that the certificate has been renewed. The server is rebooted at this point
3. Mail 3 is sent when the server has rebooted, and reports that the certificate has been installed
4. Mail 4 is the normal "your server has rebooted" email. However, this is sent one minute after the reboot has completed, and should arrive after Mail 3.

The whole process should complete within a few minutes. You may receive two additional emails before the certificate renewal emails (a reboot mail and a WordPress installation mail); these can be ignored.

If the server can't contact the Certificate Authority it will wait for a short time and try again; you will be emailed if an error occurs. If there is a problem, or you do not receive an email within a few minutes, you may be able to find more information in the log file, at <http://myswimclub.uk/data/acme.log>.

When the reboot has completed, you will be able to log in as an administrator. Your administrator page is at <https://myswimclub.uk/ABCD/admin> (you will be redirected to this page when you click [Ok](#)).

Log in as user [admin](#), with the 'Site Administrator' password you set up during Stage 1 configuration.

When you have logged in as an administrator, select [Administration > Edit configuration](#) to complete your club setup (by setting your squad names, record system, and so on). However, you should read section 11 below before doing this.

10 PASSWORDS

Four passwords were set during configuration (see Figure 3 above). These were the three Linux passwords, and the single Site Administrator password.

The Linux passwords can only be changed when logged into the server itself, using the normal Linux password utility (`passwd`). If you have lost the root password, and you cannot log into the server, then we will be able to log in and change the password for you. However, this will only be possible if you have not deleted Maia EDA's public key (from `/root/.ssh`).

The Site Administrator password is re-used a number of times, to reduce the complexity of the configuration form. These usages are listed below.

1. The SwimAdmin `admin` user. This person is effectively your site administrator. This password can be changed by the `admin` user from their login menu
2. The MySQL database is pre-configured with 4 users; all these users share the Site Administrator password. These can be individually changed from the [Others > MySQL passwords](#) form
3. WordPress is pre-configured with the Site Administrator's first name and password as the username and password. However, you should change both of these from [Others > WordPress](#) before first use
4. DokuWiki is pre-configured with the Site Administrator's first name and password as the username and password. These can only be changed from within DokuWiki itself
5. Dovecot is pre-configured with a single mailbox. The login username is `swimadmin`, while the password is the Site Administrator password. This can be changed from the [Email > Mailboxes](#) page, or from Roundcube. The external mail reference manual contains more information ([SwimAdminExternalMail.pdf](#)).

11 NEXT STEPS

11.1 MEMBER IMPORT

SwimAdmin is now configured and running. However, your club has no members, or any other club-specific data. You can explore the site by setting up a small club. To do this, log in as an administrator, and go to the [Administration](#) menu. Select [File download](#), and then [Sample spreadsheets](#). One of the spreadsheets ([MemberImport.xlsx](#)) can be used for the quick import of members, and is set up with 30 sample members. Change as required, and import it with [Administration > File upload > Spreadsheet import](#).

Note that the sample members are in the default squads (the squads which were created during installation). If you have already changed your squad names (from [Administration > Edit configuration](#)) then you will need to adjust the squad names in the spreadsheet.

11.2 SECURITY CERTIFICATE TEST

There are a number of online SSL testers, which will check whether or not your server is correctly configured for secure operation. <https://www.ssllabs.com/ssltest/>, for example, should report an A+ rating for your site.

11.3 REVERSE DNS TEST

There are a number of online reverse DNS testers. The MxToolBox tester, for example, is at <https://mxtoolbox.com/ReverseLookup.aspx>. Enter your IP address, and confirm that reverse DNS is implemented, and points to swimvps.myswimclub.uk, with myswimclub.uk replaced by your own domain name. If this test fails your email is likely to be marked as spam.

11.4 EMAIL TEST

You should confirm that your server's outgoing emails are correctly configured for SPF, DKIM, and DMARC. The simplest way to do this is to add Gmail and Microsoft webmail addresses to your own account, and to send a test email to yourself. You can then check the delivery reports.

Go to gmail.com, and create a mail address; repeat at outlook.com.

Log in at the SwimAdmin administrator page (myswimclub.uk/ABCD/admin) as user [admin](#). Select [Administration > Officials > Edit Official](#), and select your own name. Edit your email address; use the pull-down to create new entry fields, and add the two new addresses.

On the front page, under the user menu item, you will see a [Send test email](#) selection (the user menu is labelled with your username, which is [admin](#)). Use this to send yourself a test email.

Go back to gmail.com, and confirm that the email has arrived. You now need to view the message headers. Click on the circular icon with 3 vertical dots in it, and select [Show original](#). This should show, under 'Original message', a PASS message for all of SPF, DKIM, and DMARC.

Go back to outlook.live.com, and confirm that the email has arrived. You can view the message source by clicking on the 3 horizontal dots, and then selecting [View > View message source](#). There is no summary report here, so you will have to explicitly search through the pop-up box for SPF, DKIM, and DMARC, and confirm that all 3 show 'pass'.

If the incoming test email was placed in the spam folder, for either Gmail or Outlook, mark it as 'not spam' (without whitelisting it, if possible), and repeat until new mails go straight to your Inbox.

It can be difficult to persuade the webmail providers (particularly Microsoft and Yahoo) that emails from newly-created domains are not spam, which is why you may have to go through the whitelisting process.