

# WIRELESS INTERFACE

## Setup Instructions

V6.05.03.40



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# 1 GENERAL INFORMATION

## 1.1 DESCRIPTION

This manual will outline the necessary steps to configure the network server for the Wireless Interface. It will also outline how to create a Wireless Project for a new or existing CZone system. This project file is necessary to build the home page of the CZone App with the required control, monitoring and modes items needed for quick access. Once the project file is completed it will be written to the Wireless Interface and then can be read and displayed by any Ipad connected to it with the configured username and password.

## 1.2 USE OF THIS MANUAL

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## 1.3 USER PROFILES

The Wireless Interface can be configured to have one or more User Profiles containing a username and password. When configuring the device, **it is recommended to write the username and password on the supplied labels and attach one to the device and one to the Quick Start Guide. This documentation should go with the vessel before it is supplied to the customer.** The username and password must be entered on any iPad connecting to the Wireless Interface for control and monitoring or a PC connecting to the Wireless Interface to make further configuration changes.

WiFi	BEPData01
Server	10.192.0.126 >
Username	czone
Password	•••••
Connection	<input checked="" type="checkbox"/>

## 2 GETTING STARTED

### 2.1 WHAT YOU NEED

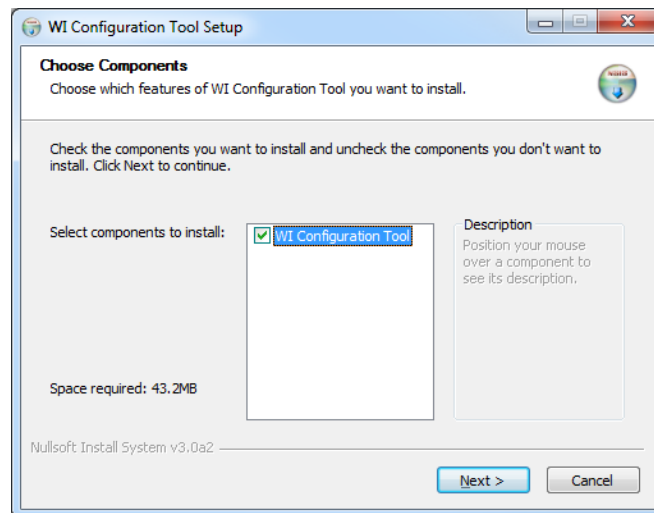
Before configuring the Wireless Interface, ensure you have the following items:

- Wireless Interface
- USB to CAN adaptor (part number 80-911-0044-01)
- WI Configuration Tool v6.05.03.40 or later
- CZone Configuration Tool v6.05.03.40 or later
- iPad Application v1.0.0 or later

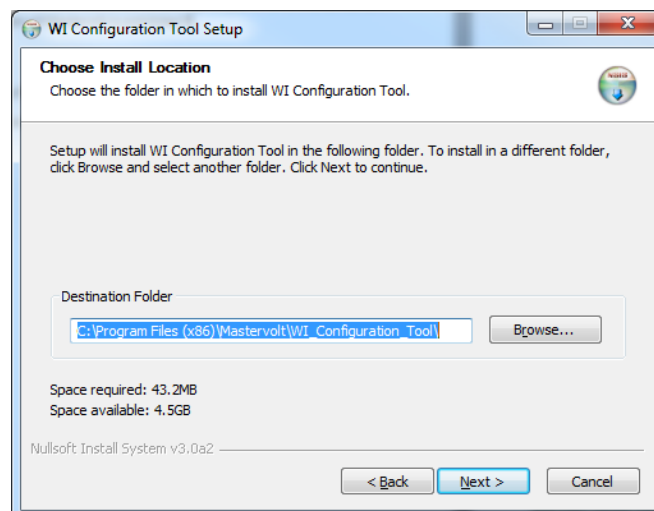
### 2.2 INSTALLING THE WIRELESS INTERFACE CONFIGURATION TOOL

Follow the below steps to install the Wireless Interface Configuration Tool.

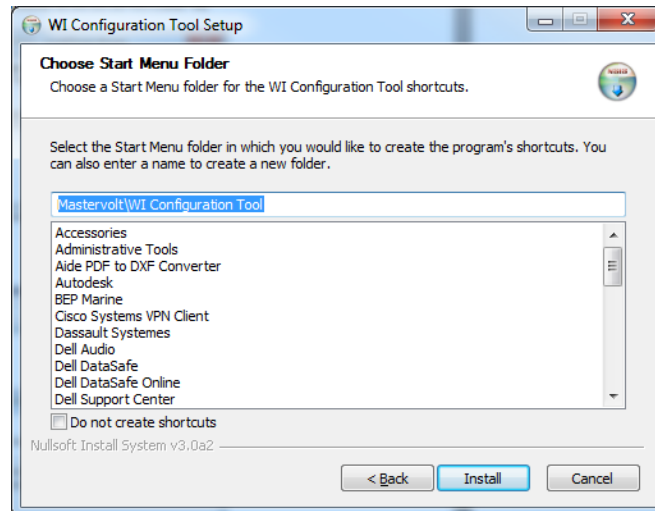
1. Double click on the 'Wi Configuration Tool Installer' file.



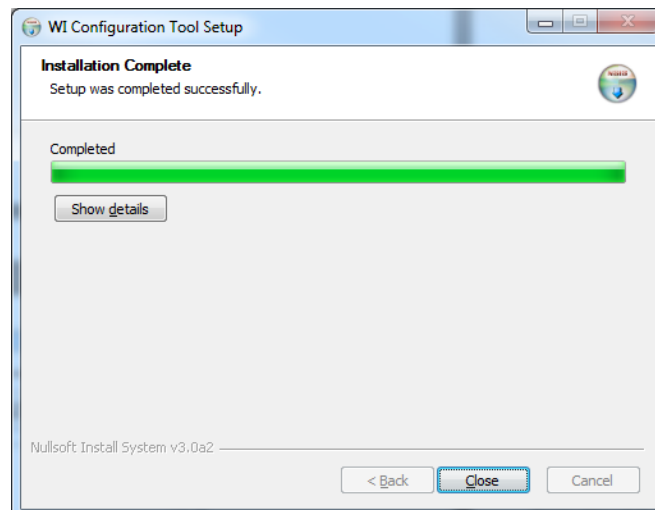
2. Click Next.



3. Select a location for the program to be installed or click Next for the default location



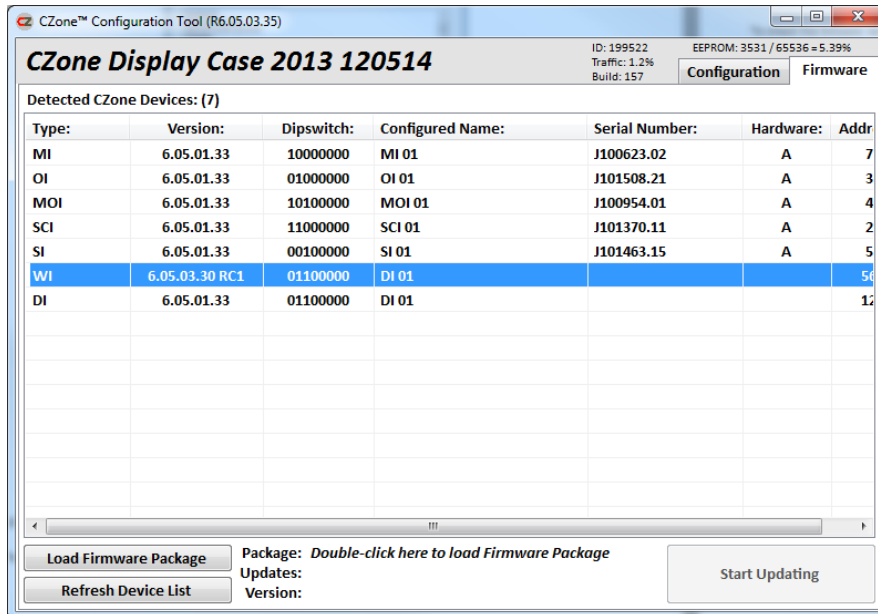
4. Select the Start Menu folder in which you would like to create shortcuts for the program or click Install for the default location.



5. When installation has completed click the Close button. You can now launch the tool from the Start Menu.

## 2.3 CHECKING THE WIRELESS INTERFACE FIRMWARE

The Wireless Interface will ship from Mastervolt with the latest firmware. In the event that there is a new firmware version released and you are unsure as to what your device contains, the firmware version can be checked via the CZone Configuration Tool.



Open the CZone Configuration Tool with the Wireless Interface connected to the CZone network and powered. Check the version number next to the device type WI. If there is a newer version available the device should be upgraded.

It is also important that when connecting the Wireless Interface to an existing CZone network that all other devices on the network have the same firmware version, if the devices have an older version they must be upgraded to match the WI.

See the *CZone Configuration Tool Instructions* for more information on upgrading CZone Modules.

## 2.4 UPDATING THE WI FIRMWARE

The firmware for the Wireless Interface must be upgraded through the USB port. You will need a USB Memory Stick to complete the upgrade.

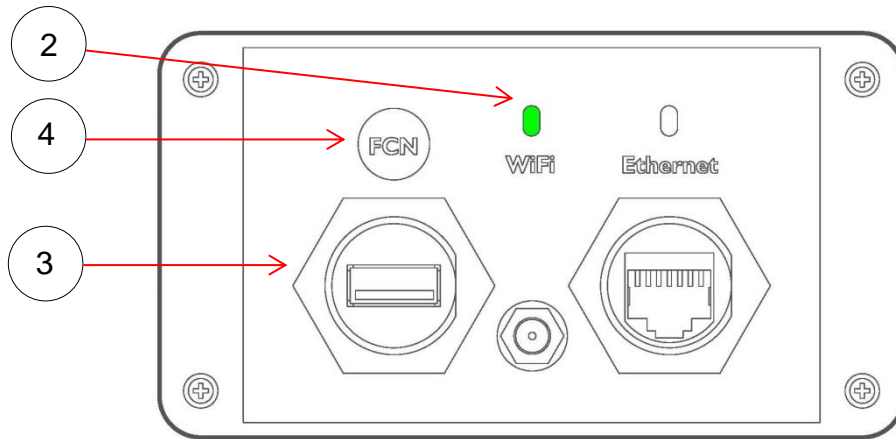


Figure 1: Firmware Update

- Copy the firmware file on to the root directory of a USB Memory Stick. There are 2 different files that can be updated. These files must be updated separately, so ensure only one file is present on the USB Memory Stick when performing the upgrade. The 2 types of firmware files and an example of each are listed below:
  - Server Firmware - 'CZone\_WI\_Firmware\_Update\_ROOTFS\_6\_05\_03\_40.tar.gz'
  - App Firmware - 'CZone\_WI\_Firmware\_Update\_APP\_6\_05\_03\_40.tar.gz'
- Power up the Wireless Interface and wait for it to complete booting (the WiFi Status LED will be solid On). See Figure 1.
- Insert the USB Memory Stick into the USB plug on the WI.
- Press and hold the 'FCN' key on the WI. The WiFi and Ethernet lights will flash for 10 seconds, then go off and begin flashing very slowly. At this point you can release the button.
- Leave the device in this state with the LEDs slowly flashing. The upgrade may take a few minutes.
- When the update has finished the device will reboot and the WiFi Status LED will be solid On.

## 2.5 PERFORMING A FACTORY RESET

It may be necessary at times to perform a factory reset on the Wireless Interface. Follow the below steps.

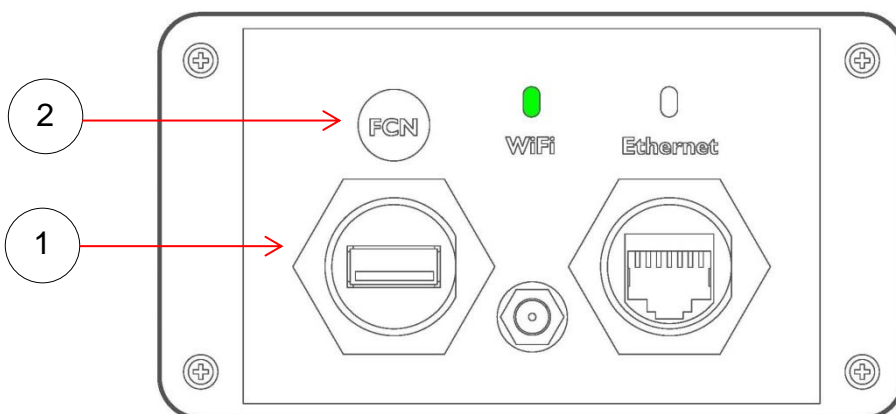


Figure 2: Factory Reset

1. Ensure there is no USB Memory Stick in the USB Port of the device.
  2. Press and hold the 'FCN' key for 20 seconds (the WiFi Status LED will remain solid On during this time). See Figure 2.
  3. After 20 seconds the WiFi and Ethernet lights will flash for 5 seconds then go off. At this point you can release the button.
  4. The device will reboot and the WiFi Status LED will be solid On, all settings will now reset to factory.
-



## 3 NETWORK CONFIGURATION

This chapter describes how to configure the wireless network and Czone Server of the Wireless Interface. It also describes how to set the dipswitch so the device can be identified on the CZone network. This process can be completed offline of the vessel with a PC connected to the WI through the wireless connection or ethernet.

### 3.1 NETWORK DEFINITIONS

Before setting up the Wireless Interface it is necessary to choose the type of network configuration the device will be installed in. The server on the WI can be accessed through its own internal wireless router or through another wireless router on the vessel. A definition of each of the server configurations is below:

#### 3.1.1 Access Point

See Figure 3. Use Access Point to enable the wireless router on the Wireless Interface. iPad and PC's will connect wirelessly to this Access Point.

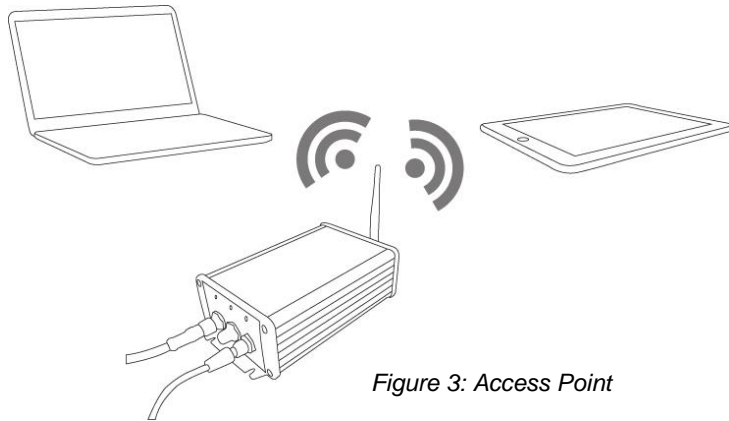


Figure 3: Access Point

#### 3.1.2 Client Mode Wireless

See Figure 4. Use Client Mode Wireless if another wireless router on the vessel is to be used as the Access Point. All devices including the Wireless Interface will connect wirelessly to this Access Point.

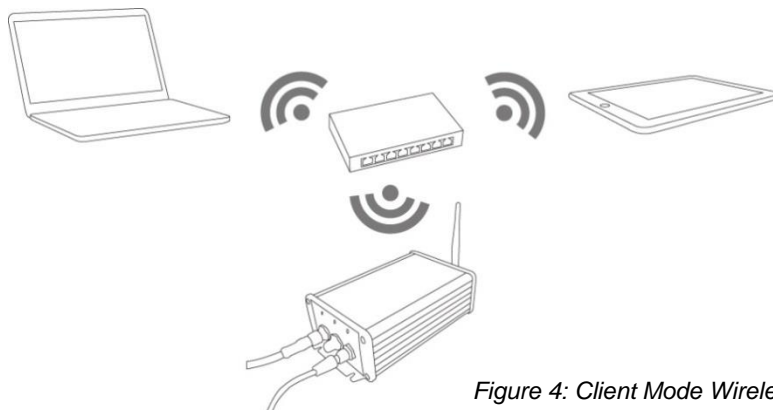


Figure 4: Client Mode Wireless

### 3.1.3 Client Mode Wired

See figure 5. Use Client Mode Wired if another wireless router on the vessel is to be used as the Access Point. Ipad and PC's will connect wirelessly to this Access Point. The Wireless Interface will connect via wired Ethernet.

*Note the wireless will be disabled on the WI in this mode.*

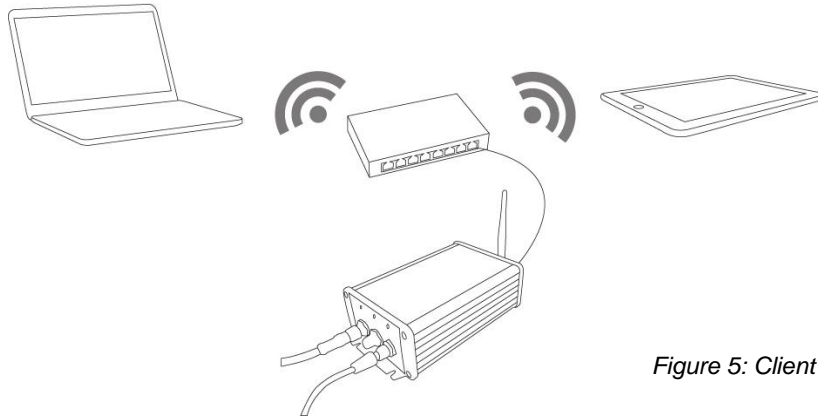


Figure 5: Client Mode Wired

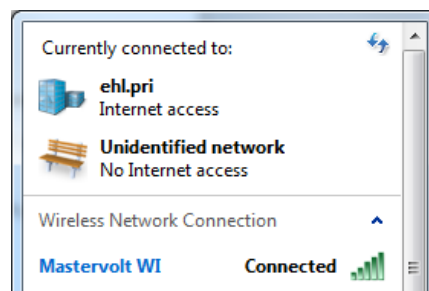
## 3.2 CONNECTING TO THE WIRELESS INTERFACE FOR THE FIRST TIME

Before setting up the network on the Wireless Interface we need to connect to the device. This can be done wirelessly (by default the WI is configured as an Access Point) or through Ethernet.

Ensure the WI is powered and that the WiFi Status LED is solid On.

### 3.2.1 Wireless Connection

To make a wireless connection to the WI from your PC, go to your computers available wireless connections and select the network named 'Mastervolt WI' and enter the password 'password'.



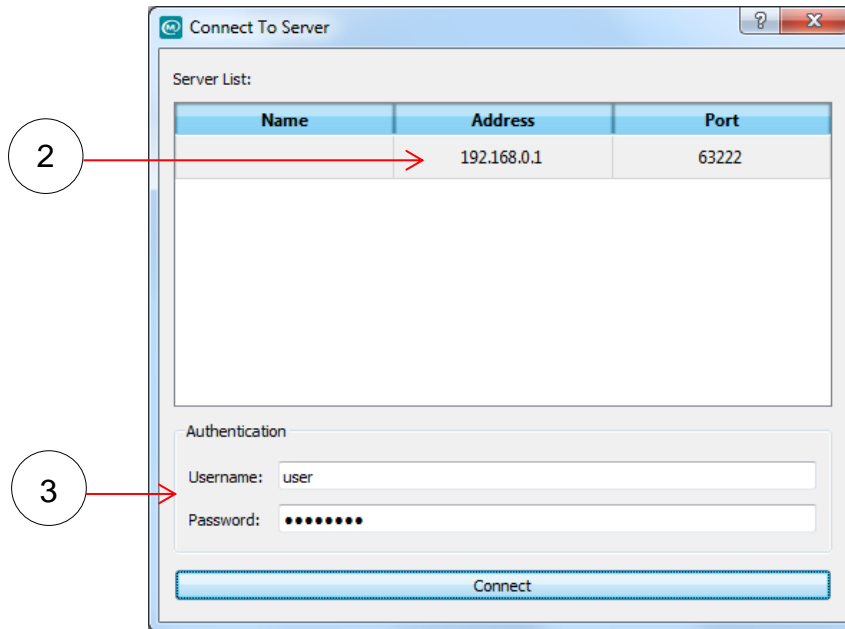
### 3.2.2 Ethernet Connection

To make a wired connection to the WI from your PC, connect an ethernet cable from the ethernet port on the WI to the router the PC is connected to. The Ethernet LED will be solid ON.

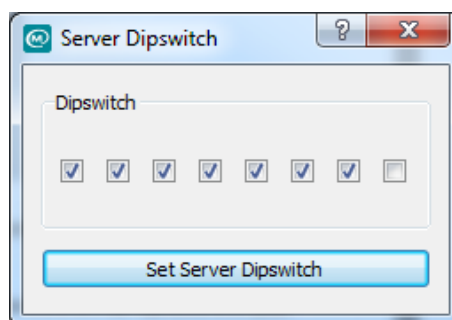
### 3.3 SETTING DIPSWITCH

Follow the below steps to set the dipswitch for the Wireless Interface. A unique dipswitch needs to be set for the WI so it can be identified on the CZone network. It is also important that this dipswitch setting doesn't conflict with any other CZone modules on the system it is intended to be installed.

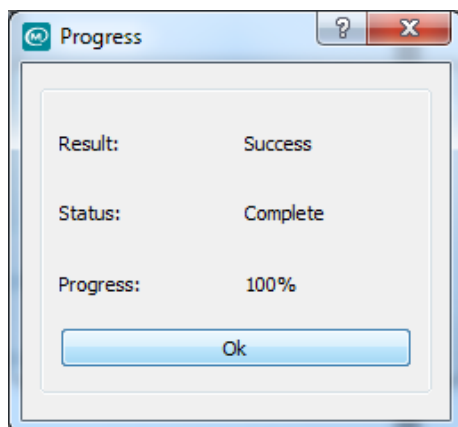
1. In the WI Configuration Tool go to Server > Set Server Dipswitch



2. In the Connect To Server window the Wireless Interface will be shown with its IP Address and Port number. If the server is not shown in this box check all connections to the WI are complete and the device is powered.
3. Enter the default username 'user' and password 'password' and then click Connect. The default user profile will be changed in a later chapter.



4. Use the tickboxes to set the dipswitch for the Wireless Interface. If the WI is an addition to an existing CZone network check the CZone configuration file to ensure the dipswitch doesn't conflict with any other CZone modules.

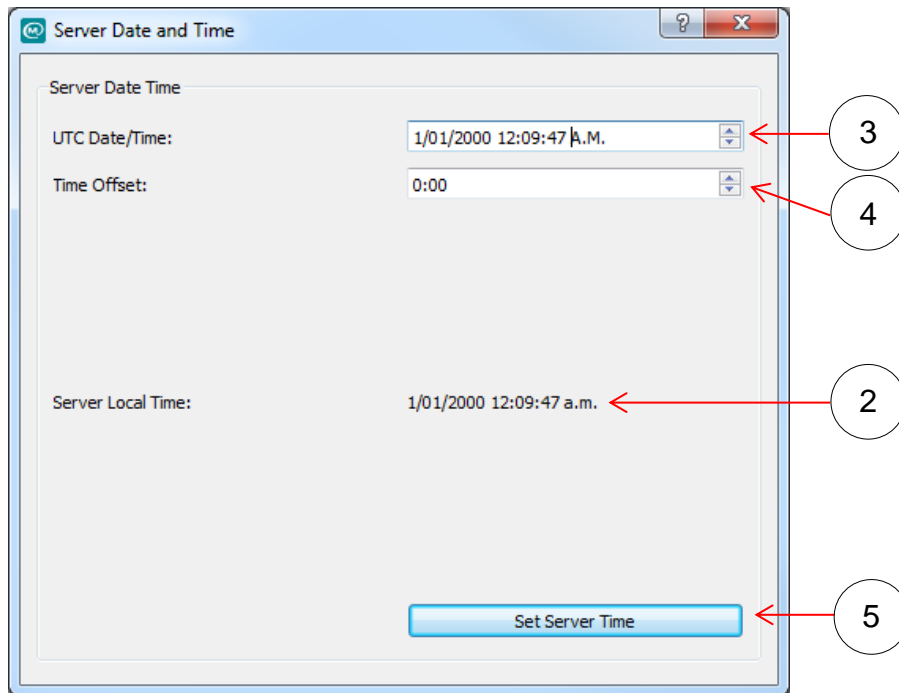


5. Once the progress reaches 100% the new dipswitch is set. Select OK to continue.

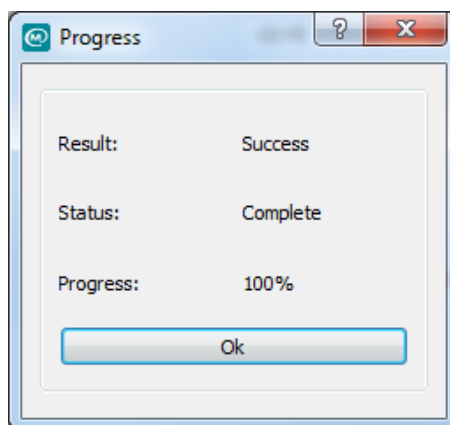
### 3.4 SETTING DATE & TIME

Follow the below steps to set the date and time for the Wireless Interface. The internal clock on the WI can be used for Time Of Day switching with the CZone system.

1. In the WI Configuration Tool go to Server > Set Date/Time.



2. The current server date/time will be shown at the bottom.
3. Adjust the Date by selecting the Day/Month/Year fields, use the arrows to adjust.
4. Adjust the Time by using the arrows to adjust the UTC offset for your region.
5. Select 'Set Server Time' to write the new settings to the device.

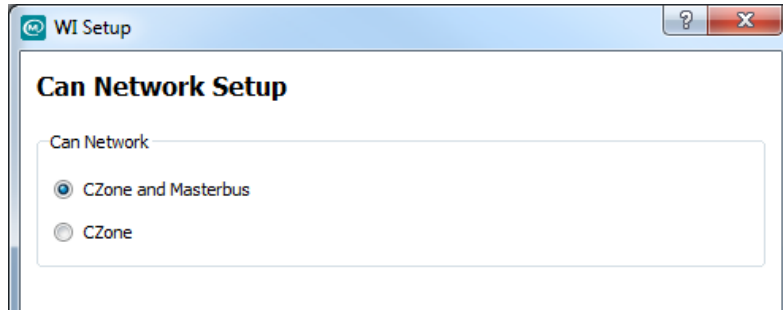


6. Once the progress reaches 100% the new time and date will be set. Select OK to continue

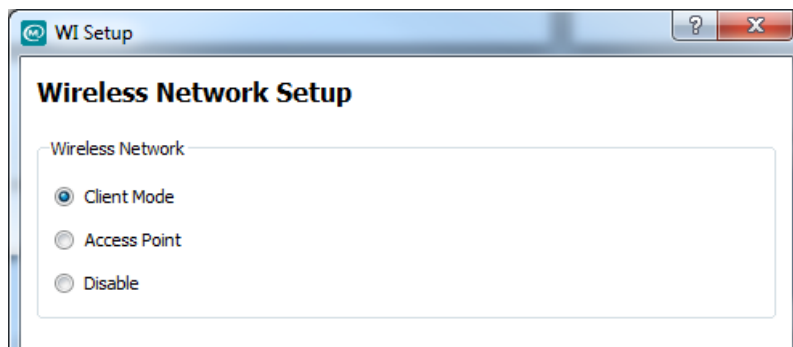
### 3.5 INITIAL NETWORK SETTINGS

Follow the below steps to begin network configuration for the Wireless Interface.

1. In the WI Configuration Tool go to Server > Setup.



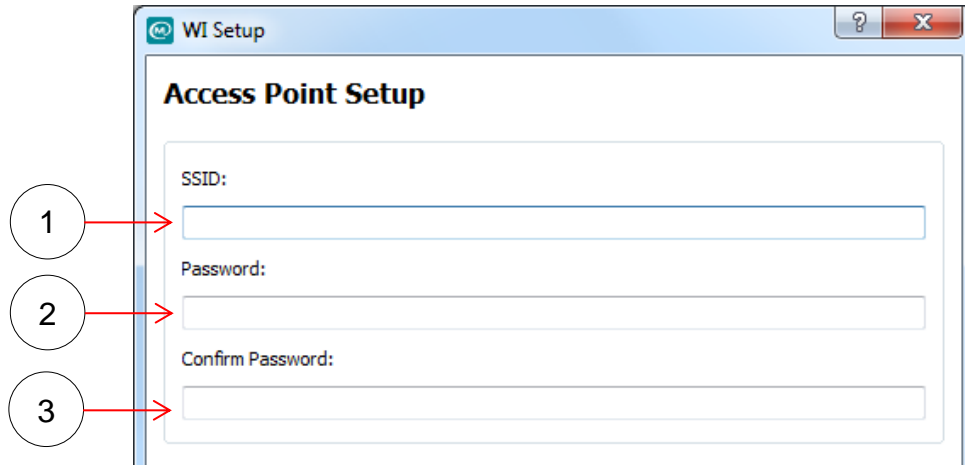
2. The Wireless Interface can also be configured to act as a network bridge between CZone and Masterbus networks. Select the 'CZone and Masterbus' option to enable the Masterbus Bridge functionality, otherwise select CZone.



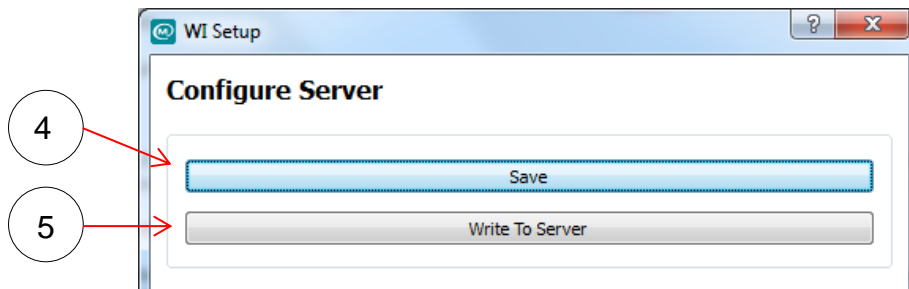
3. Select the type of Wireless Network required and press Next (Refer to Chapter 3.1 for definition of network types).

### 3.6 ACCESS POINT SETUP

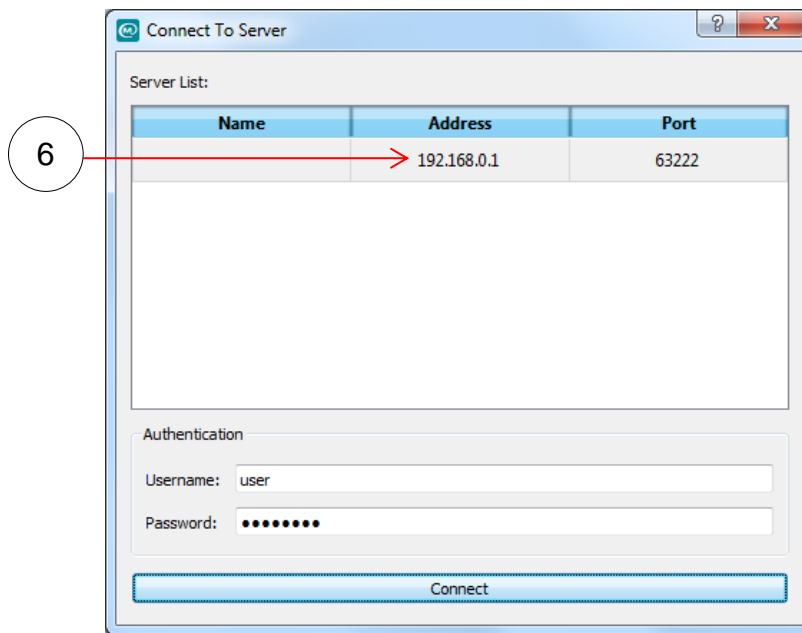
If Access Point has been selected, the following options will be presented:



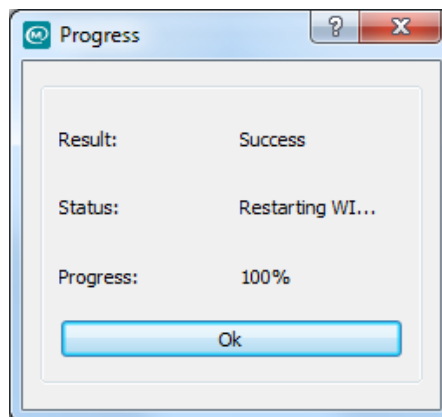
1. Enter a name for the standalone wireless network into the SSID field. This is the name that will be displayed when connecting to the WI from the iPad or PC. The default SSID is 'Mastervolt WI'.
2. Enter a password, with a minimum of 8 characters, into the Password field. The default password is 'password'.
3. Enter the password a second time into the Confirm Password field to complete the step, then click Next.



4. Select Save if you would like to save the network configuration to your hard drive. This can be uploaded to the system at a later time via a USB memory stick.
5. Select Write To Server to write the network settings to the device.



6. Select the Wireless Interface from the list of Servers and enter the default username 'user' and password 'password' and then click Connect. (Note if the server has been configured already the new configured username and password needs to be entered).

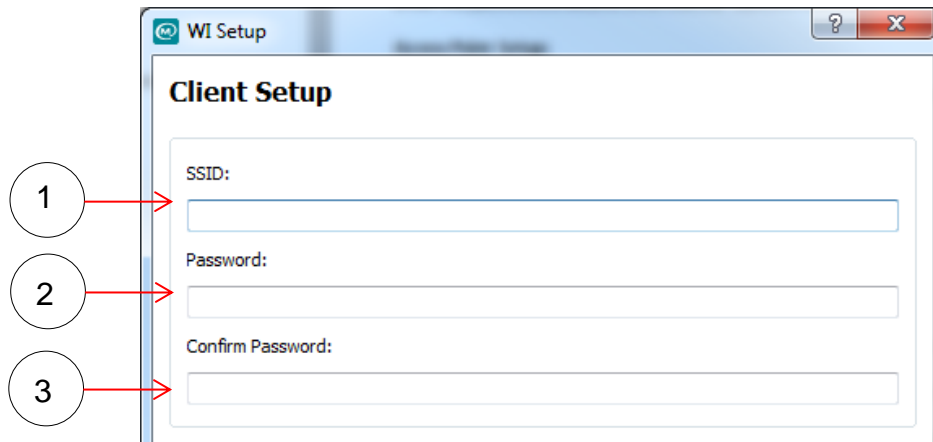


7. The above window will show the progress of the network configuration. Once the progress reaches 100% click the OK button. The device will now reboot for new network configuration settings to take effect.

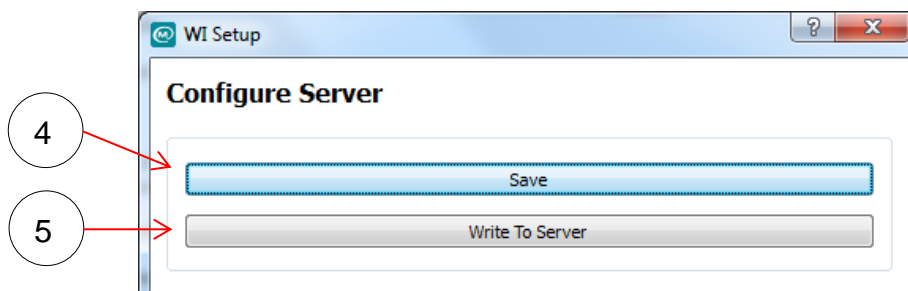


### 3.7 CLIENT MODE WIRELESS SETUP

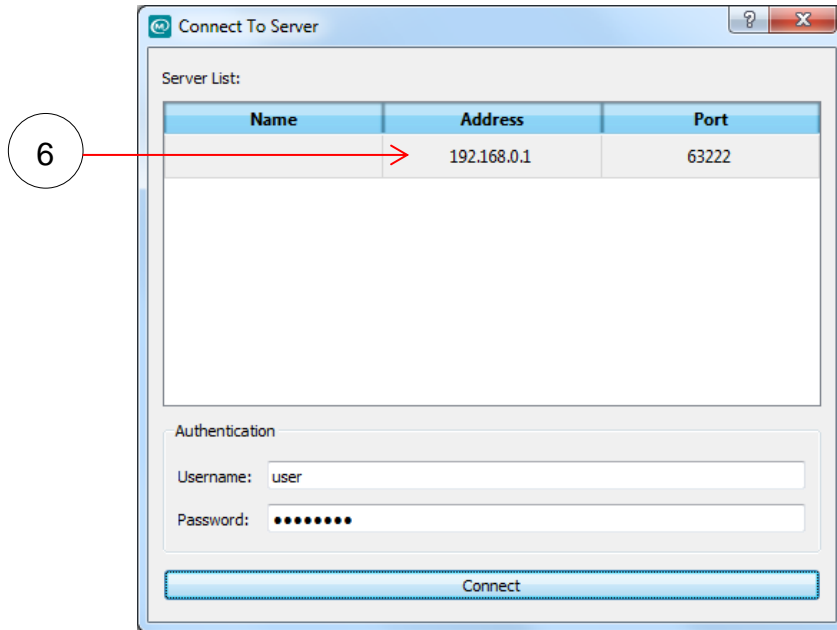
If Client Mode has been selected, the following options will be presented.



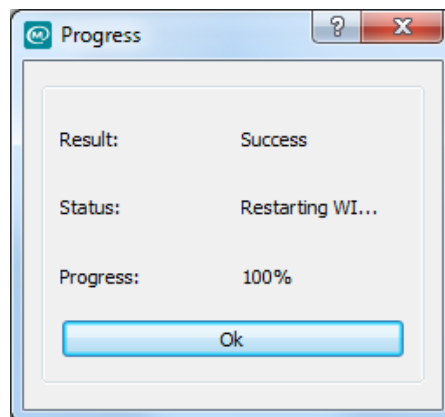
1. Enter the Name of the vessel's existing wireless network into the SSID field.
2. Enter the password of the vessel's existing wireless network into the Password field.
3. Enter the password a second time into the Confirm Password field to complete this step, and then click Next.



4. Select Save if you would like to save the network configuration to your hard drive. This can be uploaded to the system at a later time via a USB memory stick.
5. Select Write To Server to write the network settings to the device.



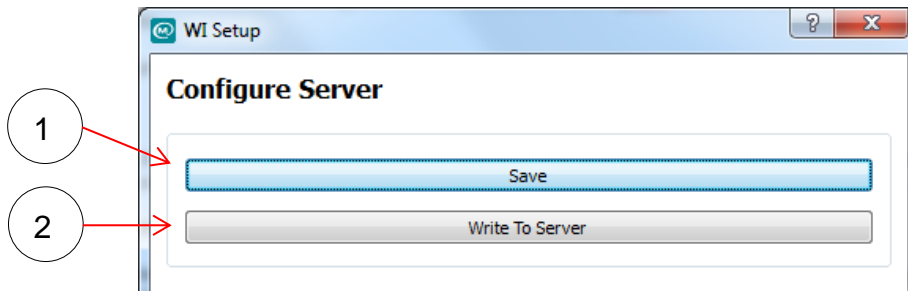
6. Select the Wireless Interface from the list of Servers and enter the default username 'user' and password 'password' and then click Connect.



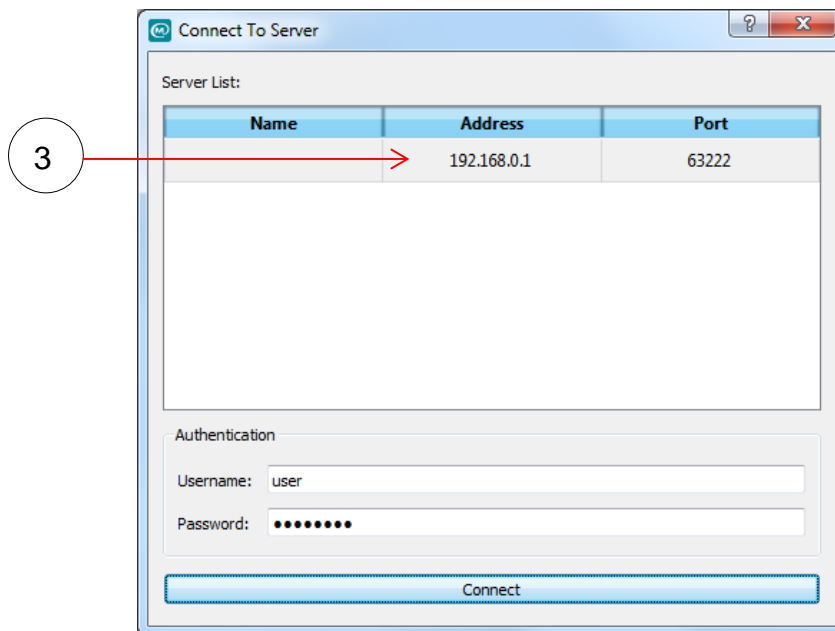
7. The above window will show the progress of the network configuration. Once the progress reaches 100% click the OK button. The device will now reboot for new network configuration settings to take effect.

### 3.8 CLIENT MODE WIRED SETUP

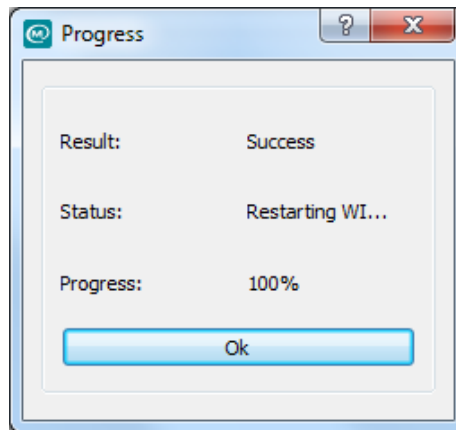
If Disable has been selected for the wireless network (Client Mode Wired), the following options will be presented.



1. Select Save if you would like to save the network configuration to your hard drive. This can be uploaded to the system at a later time via a USB memory stick.
2. Select Write To Server to write the network settings to the device.



3. Select the Wireless Interface from the list of Servers and enter the default username 'user' and password 'password' and then click Connect.



4. The above window will show the progress of the network configuration. Once the progress reaches 100% click the OK button. The device will now reboot for new network configuration settings to take effect.

## 4 CREATING A WIRELESS INTERFACE PROJECT

The purpose of the Wireless Interface Project is to build the home page of the CZone App. The home page is where the user has quick access to Modes, Monitoring and Control circuits including one or more vessel images for feedback of systems on and alarms. The Monitoring and Control sections are scrollable with a maximum of 12 items each. The Control section is dynamic and will change to suit the selected Boat View.

See Figure 6 for an example of the CZone App Home Page.

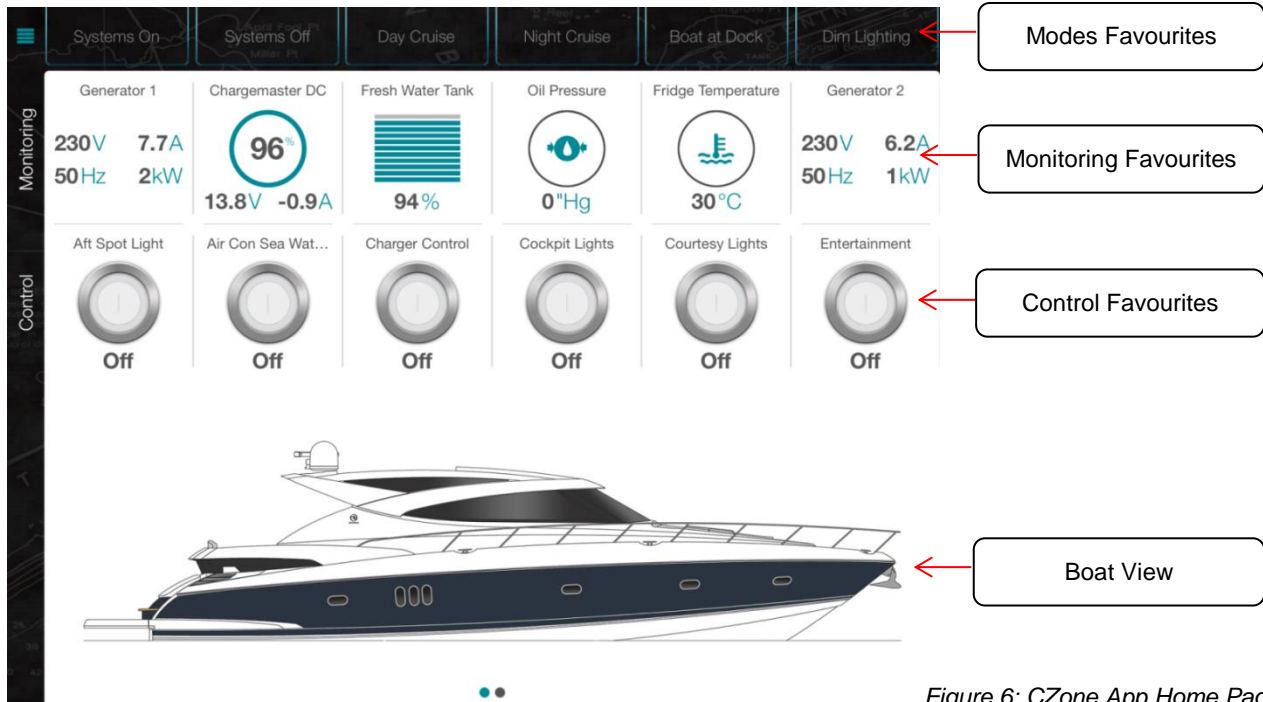
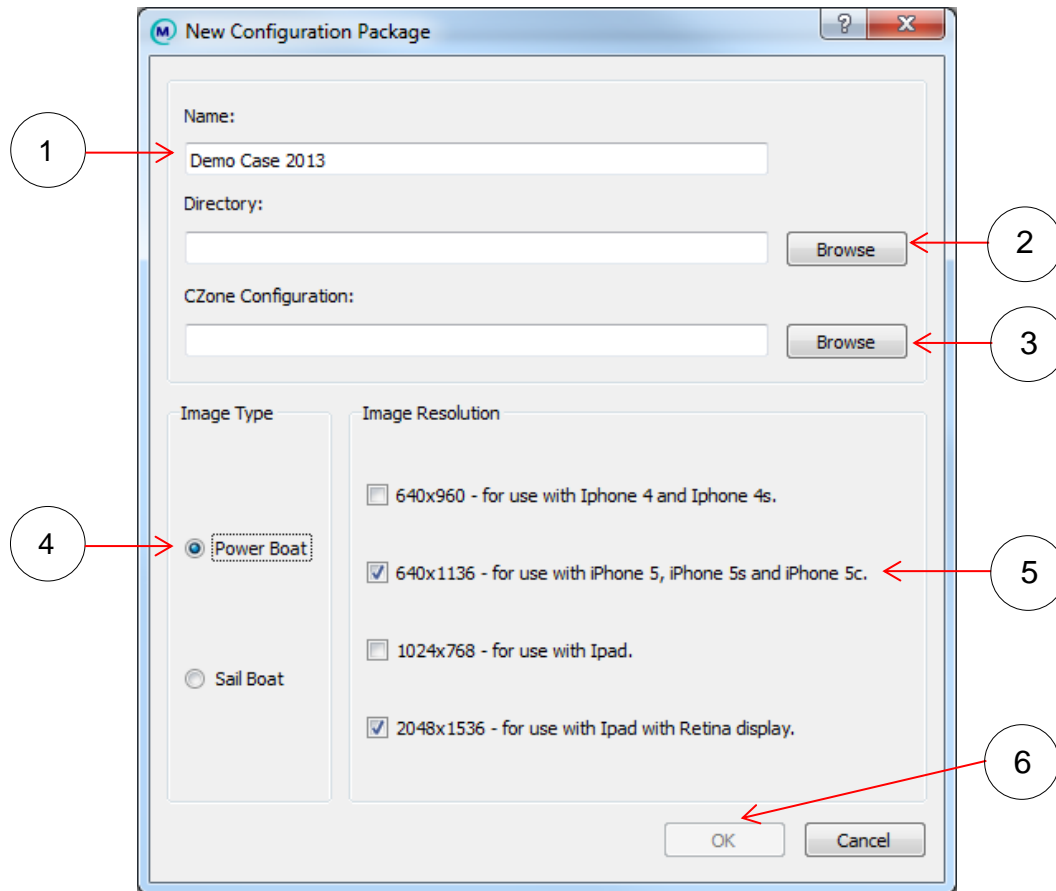


Figure 6: CZone App Home Page

To build a Wireless Interface Project a CZone Configuration File (.zcf) from the vessel is needed. This is used to reference the existing circuit and monitoring ID's to ensure the system functions seamlessly from multiple displays. You will also need a high quality image (or images) in .PNG format of the vessel for the Boat View.

## 4.1 INITIAL SETUP

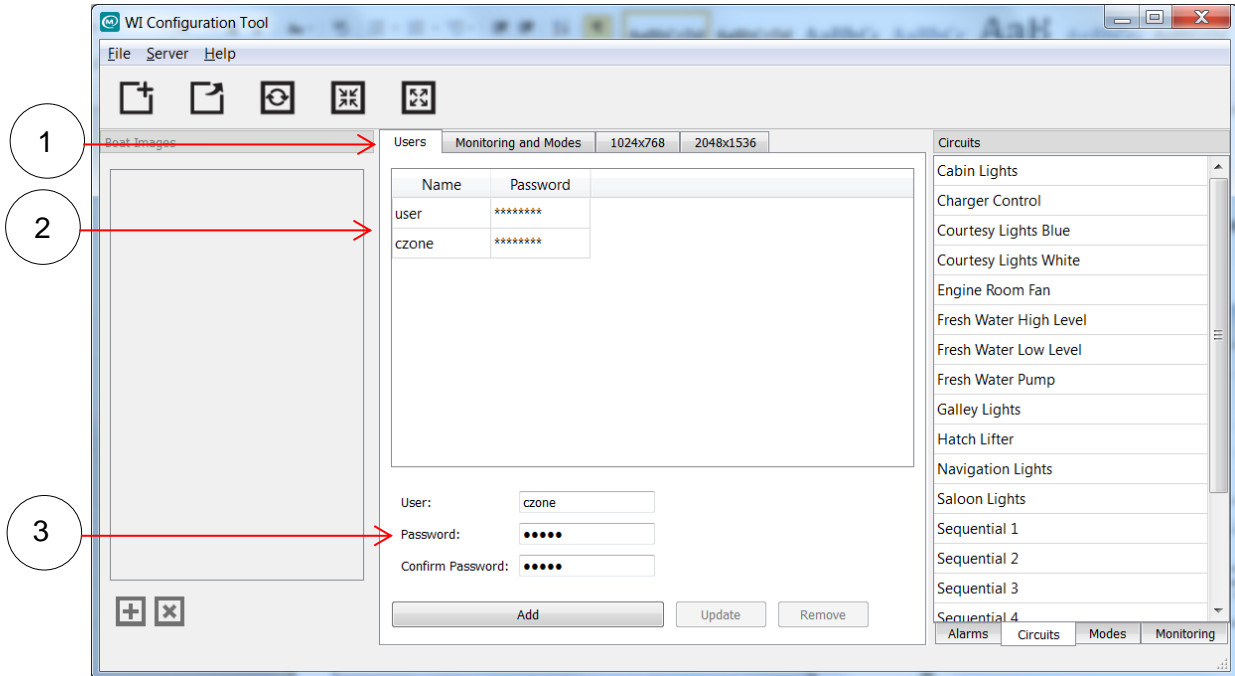
From the CZone WI Configuration Tool select File > New.



1. Enter a name for the project.
2. Press Browse and select a directory to save the project.
3. Press Browse and select the CZone Configuration File (.zcf) that will be used to create the project.
4. Select the Image Type that best suits the vessel to be configured. The Power Boat image will be displayed horizontally on the bottom of the home page. The Sail Boat image will be displayed vertically on the right hand side of the home page.
5. Select one or more image resolutions from the available list. If a device is connected to the Wireless Interface but does not have the correct resolution image configured the Boat View will show up blank. The options are:
  - a. 640 x 960 pixels = iPhone 4/4S
  - b. 640 x 1136 pixels = iPhone 5/5S
  - c. 1024 x 768 pixels = iPad Non Retina
  - d. 2048 x 1536 pixels = iPad Retina
6. Select OK.

## 4.2 USER PROFILES

To connect to the CZone Server on the WI a user name and password must be entered. The default username and password is 'user' and 'password'. For security reasons it is recommended to remove this default profile and enter a new one. Multiple user profiles can also be set, for example a builder may have one profile used on all vessels, and another profile unique to each vessel that could be given to the customer.

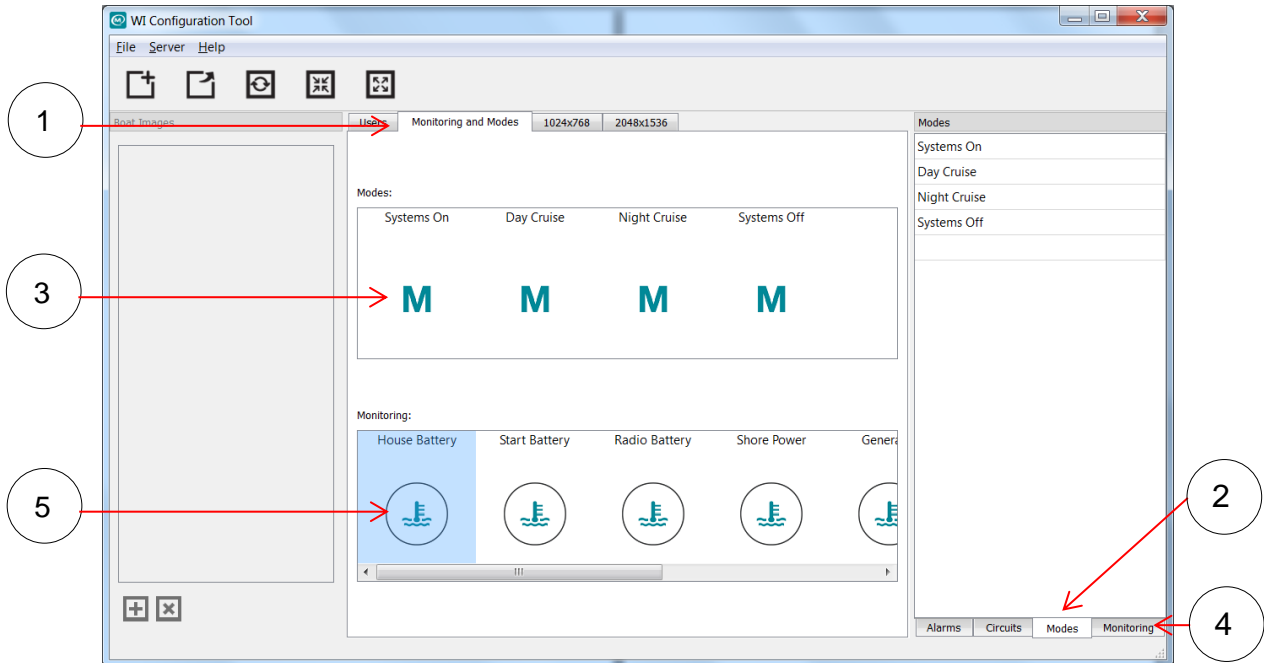


1. Select the Users Tab.
2. Select 'user' from the list and then click the remove button.
3. Enter a new user name and password, confirm password and press the Add button.
4. Repeat the process for additional user profiles.

Ensure to write down the username and password on the supplied labels and attach to the device.

### 4.3 MONITORING AND MODES CONFIGURATION

Follow the below steps to add any favourite Modes Of Operation and/or Monitoring items that the user would like displayed on the home page of the CZone App.



1. Select the Monitoring and Modes Tab.
2. Select the Modes tab from the lower right.
3. Drag and drop the required Modes from the imported CZone Configuration into the Modes box in the centre. A maximum of 12 Modes is allowed.
4. Select the Monitoring tab from the lower right.
5. Drag and drop the required Monitoring items from the imported CZone Configuration into the Monitoring box in the center. A maximum of 12 Monitoring items is allowed.

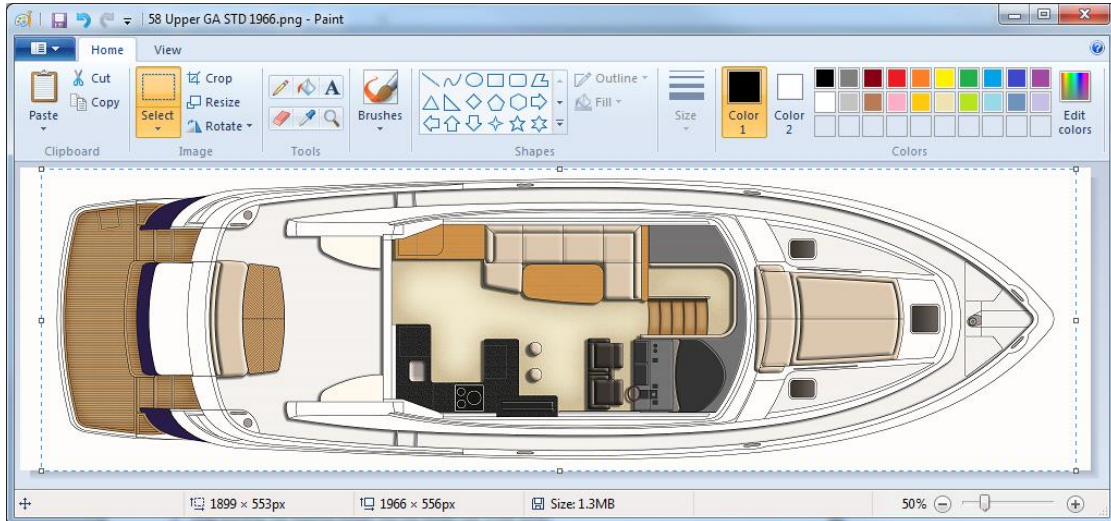
*Note Monitoring and Mode favourites can also be added or removed directly from the CZone App.*



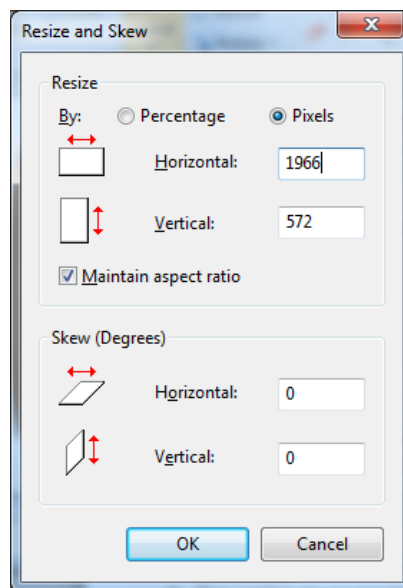
## 4.4 BOAT IMAGE CONFIGURATION

Before uploading a boat image into the Wireless Project it must be resized to fit the size of the target device resolution. It is recommended to use the free Windows software, Microsoft Paint.

1. Open the image in Paint. For best results it is recommended to start with an image with a higher resolution than the target resolution size. The image can then be scaled down and will result in a better quality image with less pixelation.



2. Crop the image to remove any unnecessary white borders.

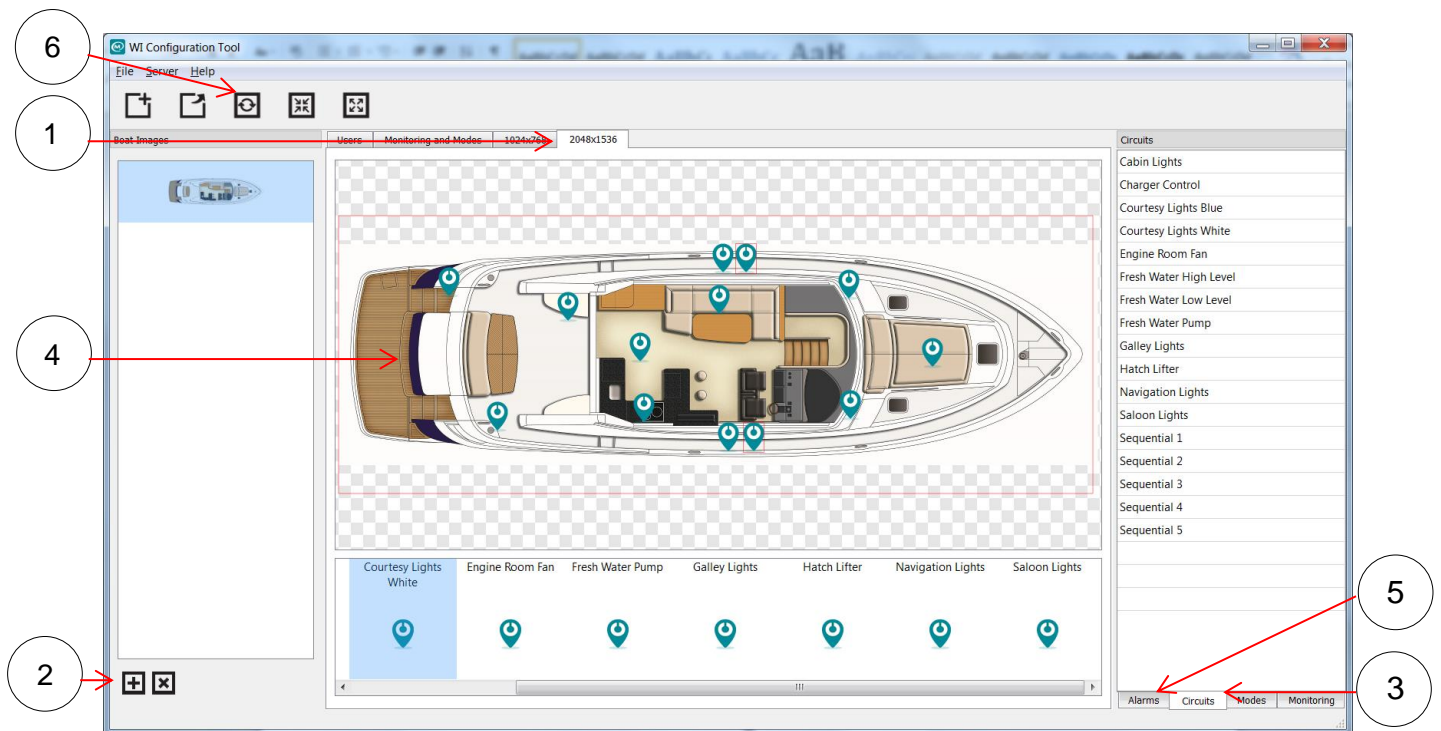


3. Select the Resize button and choose Pixels with the Maintain aspect ratio box ticked. Below are the target resolutions for the boat image:
  - a. 983 x 362 = iPad
  - b. 1966 x 724 = iPad With Retina Display

*Note if the image has a different aspect ratio to the target size, use one length (horizontal or vertical) as the reference. The image just needs to fit inside the box, any unused space will show as white on the application.*

4. Select OK and then save the image as a .PNG file.

Now that the image has been resized and saved in Paint, it must be imported in to the Wireless Project.



1. Select the tab of the device to be configured.
2. To import the image select the + icon. Navigate to the boat image .PNG saved previously and select OK.
3. Select the circuits tab from the lower right.
4. Drag and drop the required circuits from the imported CZone Configuration and place on the boat image where systems on feedback is required. This also populates the dynamic control menu you will see on the iPad for that particular boat view. A maximum of 12 circuits per boat layer is allowed.
5. Select the alarms tab and repeat if any alarms are required on the boat image. There is no limit to alarms allowed.
6. Press the Save button to save the project.

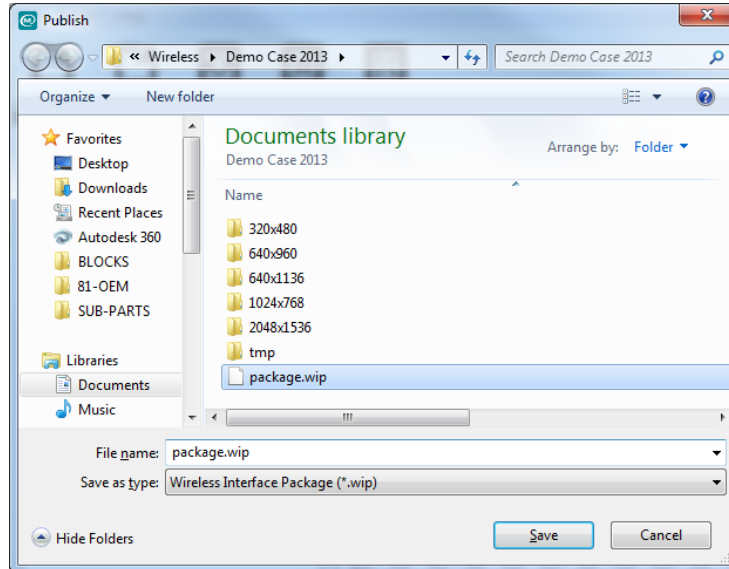
Repeat the process if any other boat views or devices are required.

**Important: Alarms in the CZone App will only activate when the App is open, not when the App is closed or running in the background. Do not rely on the CZone App as the sole device for alarm monitoring.**

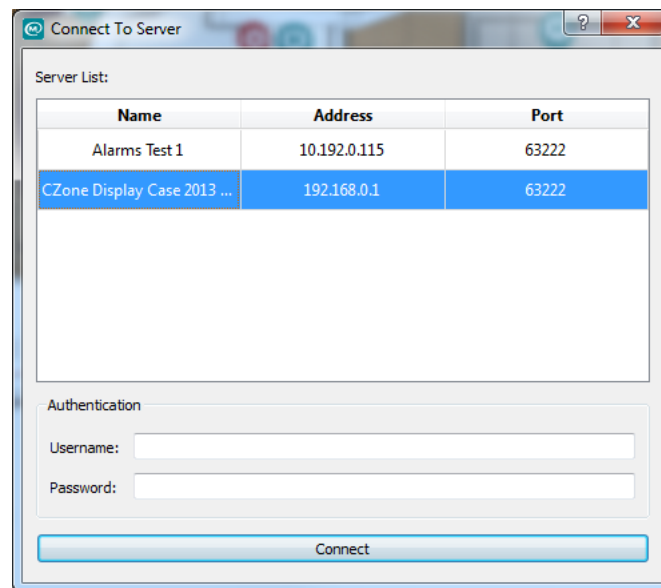
## 5 EXPORTING THE WIRELESS INTERFACE PACKAGE

Now that the Wireless Interface Project is complete it needs to be packaged into a new format and sent to the Wireless Interface. This file is a Wireless Interface Package (.wip) file.

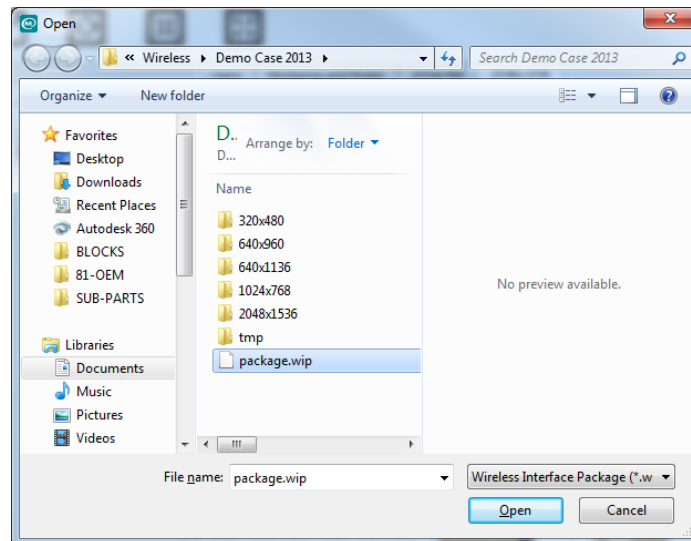
1. In the WI Configuration Tool Go to File > Publish.



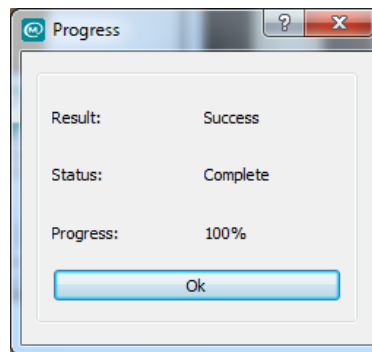
2. Type a filename relevant to the project and press Save.



3. Go to Server and select Write Package. Select the WI in the server list and enter the default username 'user' and password 'password' and press Connect. This will be replaced with the new user profiles once the package has been successfully written.



4. Select the file that was just created and press Open.



5. The above window will show the progress of the upload. Once the progress reaches 100% click the OK button. The Wireless Interface now has a copy of the Wireless Project that has been created. This project can be read immediately by any iPad connected to the device.

*To make changes to the WI Configuration repeat the above chapter, ensure you save the project, publish it into a package file, then write it back to the Wireless Interface. Any new packages will be automatically downloaded by the tablet when the app is next opened.*

*If the CZone Configuration is changed at any point (for example if a circuit has been added to the system) then go to File > Update CZone Configuration and browse to the new config and select OK. The Alarms/Circuits/Modes and Monitoring tabs will be updated with any new changes. Make any changes to the favourites page and then write the new package back to the WI. The new package will automatically be downloaded from any tablet when the app is next opened.*

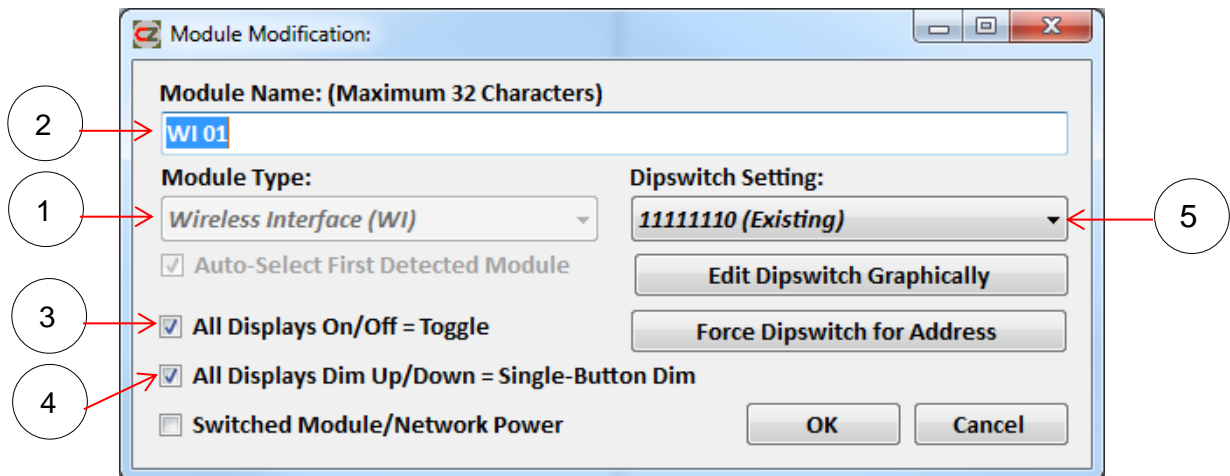
## 6 CZONE CONFIGURATION FILE

For the Wireless Interface to operate correctly within the CZone system it is necessary to add it as a new device in the CZone Configuration.

For existing systems connect your USB to CAN adapter to the network, open the CZone Configuration Tool and read configuration from network. Save this file (.zcf) to your hard drive.

For new systems open the CZone Configuration Tool and select 'New System Configuration'.

Go to the Modules tab and select Add.



1. Select the Module Type Wireless Interface (WI).
2. Add a name for the Wireless Interface or leave blank for the default name WI01 (created when OK is pressed).
3. Tick this box to change iPad controls for All Display On/Off switch type to Toggle. This cleans up the controls by having a single button instead of separate On and Off buttons.
4. Tick this box to change iPad controls for All Display Dim Up/Down to Single Button Dim. This cleans up the controls by having a single button instead of separate On and Off buttons.
5. Set the dipswitch for the Wireless Interface to match the dipswitch programmed in Chapter 3.3 and press OK.

Write the configuration to the network with the Wireless Interface connected and online.

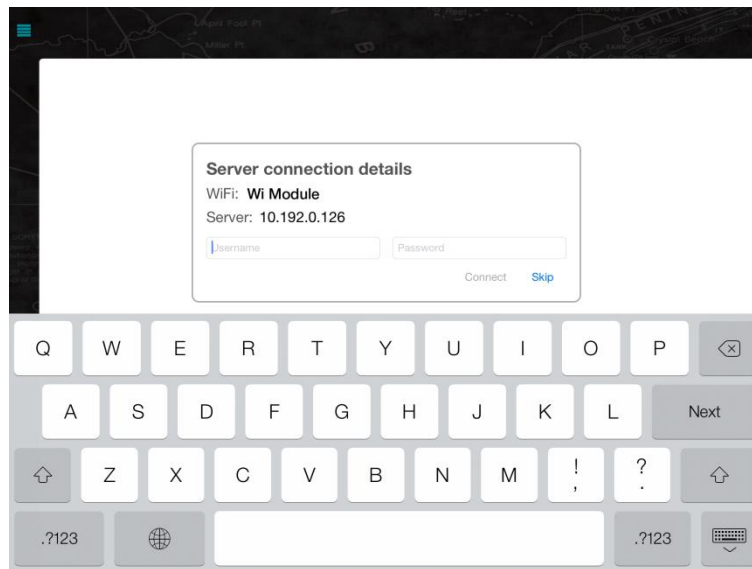
Refer to the CZone Configuration Tool Instructions for further steps on creating a full CZone Configuration from new.

## 7 SETUP OF THE IPAD APPLICATION

Go to Settings > Wifi on your iPad and connect to one of the following wireless networks:

- If device configured as an Access Point connect to the WiFi of the Wireless Interface.
- If device configured as a Client connect to the existing WiFi of the vessel.

The first time you open the CZone App you will see the following screen which shows the connected WiFi network and the WI server IP address. Enter the Username and Password for the server as configured in Chapter 4.2 and press Connect.



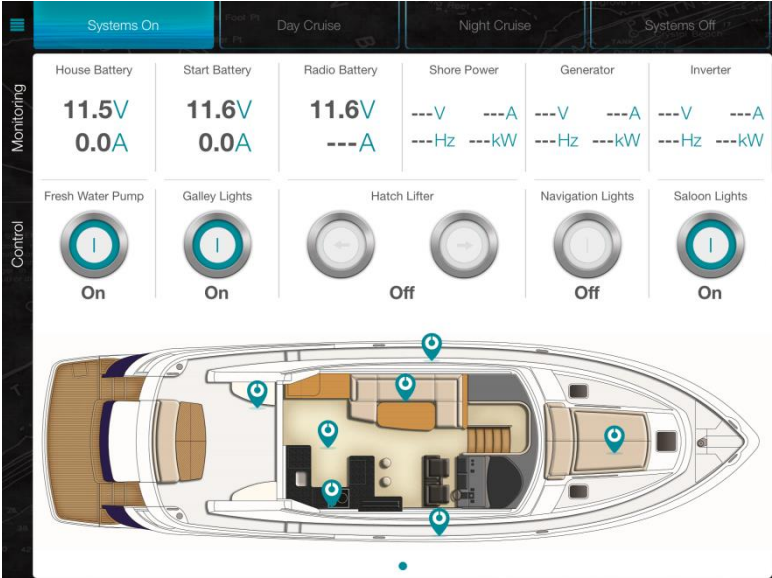
You will see the screen 'checking password'.



If password is successful the Wireless Package will begin downloading.

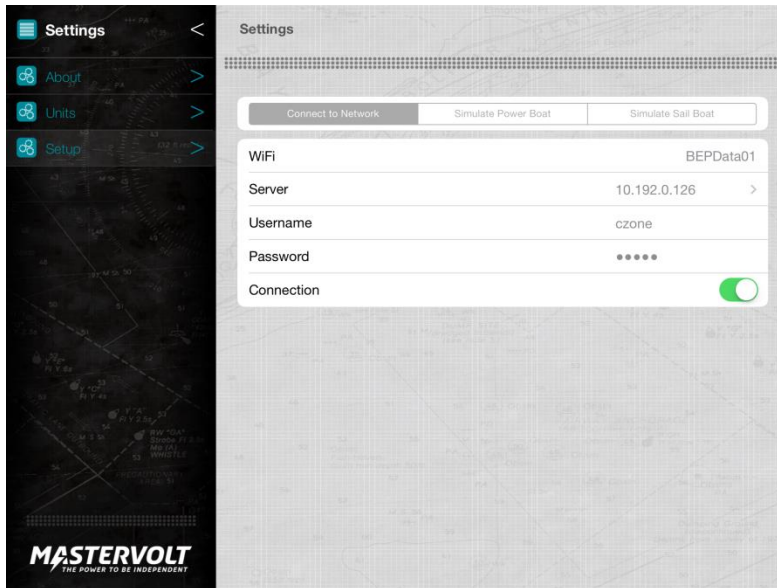


When downloading is complete your configured home page will be shown as per the example below.





Alternatively the server login details can be entered under the Settings page accessed by tapping Menu > Settings > Setup > from the App. If there are multiple servers on the network select the target server from the dropdown.



You can also remove the configuration from the app by performing a factory reset. Go to Menu > Settings > Units > Factory reset. The next time the application is opened you will see the server request popup again.

