POWERSMITHS

Cyberhawk

COMSERVER

NETWORK SETUP

USER MANUAL

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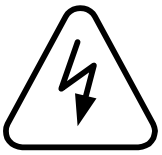
Safety Notice

Working on or around electrical devices presents a **Shock Hazard**, potentially leading to serious injury or death if safety precautions are not observed. Hence only qualified, competent personnel who have been trained in and are familiar with the **Risk of Electric Shock** and/or burns from **Plasma Arcs** should perform installation and maintenance of the unit. It is solely the **responsibility of the installer** to be fully aware of all necessary safety regulations and procedures and **be familiar with the installation instructions detailed in this manual**.

*IT IS IMPERATIVE THAT **POWER BE PROVEN DISCONNECTED** BEFORE ANY WORK ON OR PHYSICAL CONTACT TO ELECTRICAL CIRCUITS IS ATTEMPTED: **DO NOT ASSUME BUT CHECK** ACROSS THE LINES AND TO GROUND WITH A METER AND ENSURE THAT THE SOURCE **DISCONNECTION DEVICES ARE LOCKED OUT** FOR YOUR SAFETY.*

*IF WORKING IN CLOSE PROXIMITY TO LIVE INSTALLATIONS, THE **INSTALLER MUST BE SUITABLY TRAINED AND AUTHORIZED** TO WORK IN SUCH SITUATIONS AND BE FULLY ACQUAINTED WITH THE **RISKS OF ELECTRICAL SHOCK** AND/OR **BURNS FROM PLASMA ARCS** CAUSED BY INADVERTENT SHORTS, AND TAKE **ALL NECESSARY SAFETY PRECAUTIONS** WHICH WILL INCLUDE BUT NOT LIMITED TO THE USE OF ELECTRICALLY INSULATED GLOVES, SAFETY GOGGLES, AND REMOVE ANY METALLIC OBJECTS (JEWELRY, WATCHES ETC.) FROM THEIR PERSON.*

WARNING



ELECTRIC SHOCK RISK

- Hazardous voltages from several sources may present around the device. Ensure that all external power sources are de-energized prior to handling
- Refer all servicing to qualified personnel
- Wire and Hookup following all local Safety Codes (e.g. NEC)

CAUTION

- Failure to observe the voltage and current limitations of this device specified in this manual could result in permanent damage to the unit

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List of Figures

1 Scope

These setup instructions are specific to the Cyberhawk family of products equipped with a WEB enabled Ethernet Port or for a standalone COMSERVER equipped with ISG Firmware. For installation instructions and/or product details, please refer to the relevant manuals available from Powersmiths by request or by download from our company website (www.powersmiths.com).

1.1 Description

The Cyberhawk WEB interface is supported by an embedded micro-computing device loaded with Powersmiths propriety Firmware. It is installed in Cyberhawk branded family of products equipped with Ethernet ports and also in the standalone Powersmiths COMSERVER. It is available in two versions as follows.

- Integrated Ethernet Gateway (IEG)
- Integrated Web Server & Gateway (ISG)

The IEG provides only Modbus TCP/IP support over Ethernet and is usually used for Building Management System support while the ISG provides in addition a HTTP WEB server supporting direct dynamic WEB pages accessible by a common Browser. In addition the ISG Model has the capability to view and log selected parameters (typically from 1 minute to 15 minutes).

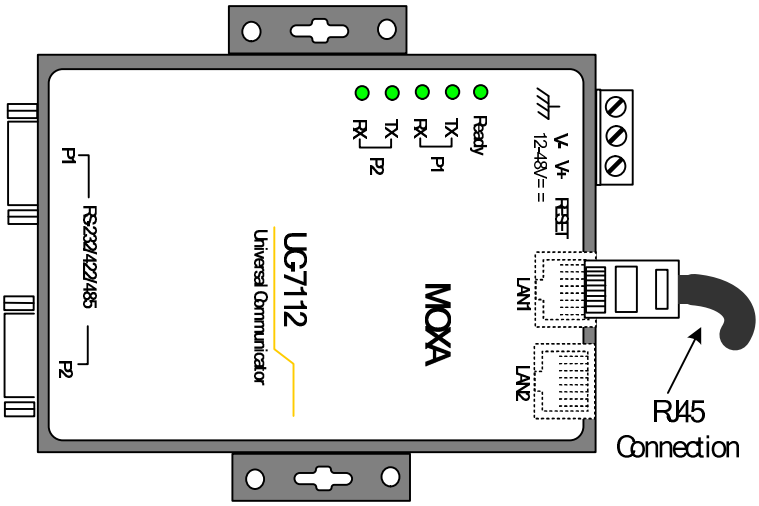


Figure 1-1: The Cyberhawk WEB Interface embedded micro-computer (reference only)

1.2 Communication

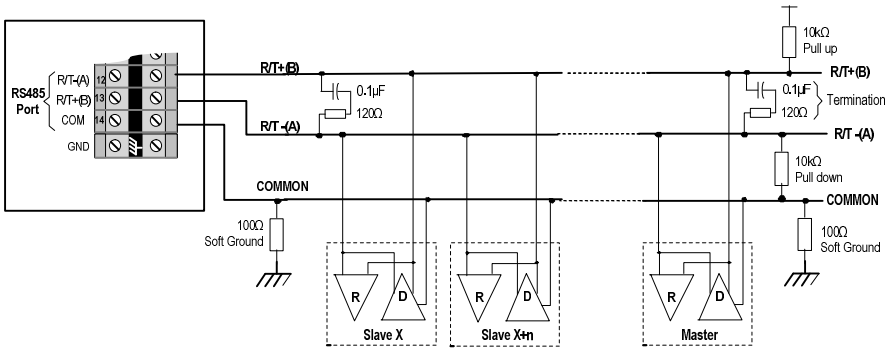
1.2.1 Ethernet Connection

The unit supports 10Base-T or 100Base-T with an RJ45 connector. The use of a Cat-5 cable is recommended.

1.2.2 Serial Connection

The unit is equipped with two ports supporting RS232, RS422, or RS485. Note that these ports are only available for external user application in the standalone COMSERVER; see table below for full characteristics.

Table 1.2-1: COMSERVER supported RS485 communication

Parameter	Description	Typical RS485 Connection
Connections	Com (Shield) R/T – (A) R/ T + (B)	
Connector	Compression; 12 to 24 ga. wire	
Baud Rate	1,200 to 38,400	
Max. Range	1,200 m	
Wiring (typical)	300V, 75°C #18 – 24 ga. Z = 120 ohms	
Termination	120 ohms (external)	
Protocol	Modbus RTU	

2 Network Utility

The *Cyberhawk Network Utility*, available from Powersmiths, is a PC software utility with the ability to search the local area network for any connected *Cyberhawk* Ethernet equipped device or COMSERVER and allows the user to find all connected devices in an Ethernet network or to configure the network properties such as the following:

- IP Address
- Subnet Mask
- Gateway Address
- Hostname
- DNS Addresses

System requirements for the utility are as follows

- Pentium 133 MHz or higher
- 100 Mb of free space on the hard drive
- Win 95/98/ME/NT/2000/XP/Vista
- Ethernet network connection
- JAVA 1.6.x run-time

Note: Firewalls may inhibit the Cyberhawk Network Utility from properly communicating with any connected Cyberhawk Network Device or COMSERVER, which may require that the firewall be temporarily disabled prior to the execution of the Cyberhawk Network Utility. Please contact the competent network administrator for information and/or assistance if needed.

2.1 Program Installation

The utility may be found on the Powersmiths web site at http://powersmiths.com/download/ under the Conserver heading. Download to a temporary folder. Double click the downloaded file and follow the on screen instructions.

2.2 Network Setup

Prior to executing the Cyberhawk Network Utility there must be a physical connection between the PC and the Cyberhawk COMSERVER for communication. There are two methods for connecting the PC and Cyberhawk COMSERVER for communication to occur between each other.

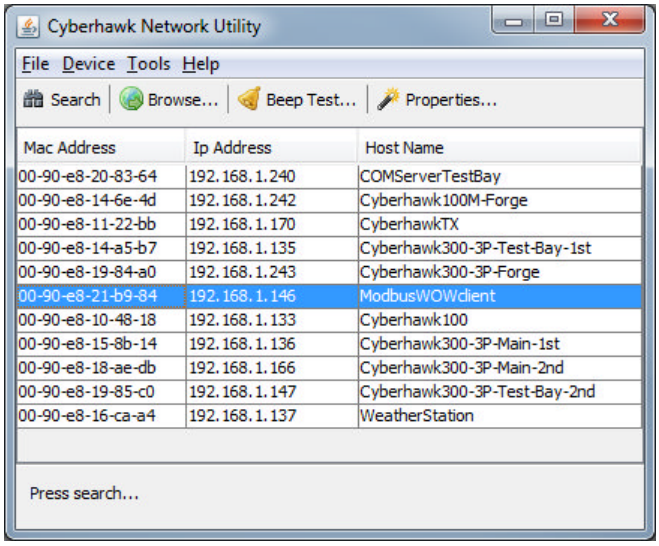
1. Connect both the PC Ethernet port and Cyberhawk COMSERVER Ethernet port 1 (LAN1) directly to the same network by means of Ethernet patch cables.

   Note: Additional networking hardware may be required, e.g. Router. Please contact the competent network administrator for information and/or assistance if needed.

2. Connecting the PC Ethernet port and Cyberhawk COMSERVER Ethernet port 1 (LAN1) directly to each other by means of an Ethernet crossover cable.

2.3 Virtual Search

To begin to search for Cyberhawk COMSERVER's over the network, execute the Cyberhawk Network Utility and press the Search button on the toolbar or Ctrl+S on the keyboard. Any Cyberhawk Network Device found will be listed as illustrated below. If no Cyberhawk COMSERVER's are visible in the table, double-check all physical connections and firewall settings.



- **MAC Address**: The Ethernet Port MAC address (LAN1)
- **IP Address**: The IP address (Dynamic or Static)
- **Host Name**: The host name (Product Type)

Figure 2-1: Cyberhawk Network Utility

2.4 Physical Search

To begin a physical search for a Cyberhawk Network Device, perform the steps from "Virtual Search". Select the Cyberhawk COMSERVER from the table and press the Beep button on the toolbar, enter the total amount of beeps on prompt and press the Ok button Figure 2-4. The maximum number of beeps is 255 and is repeated every half a second. Walk around the installation area; listening for a repetitive beeping sound echoing from the Cyberhawk COMSERVER.

Note: A successful search may require a search party of two or more individuals.

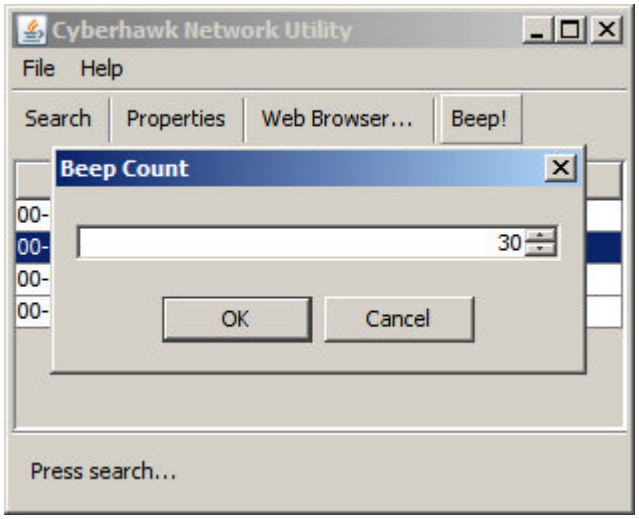


Figure 2-2: Beep Count

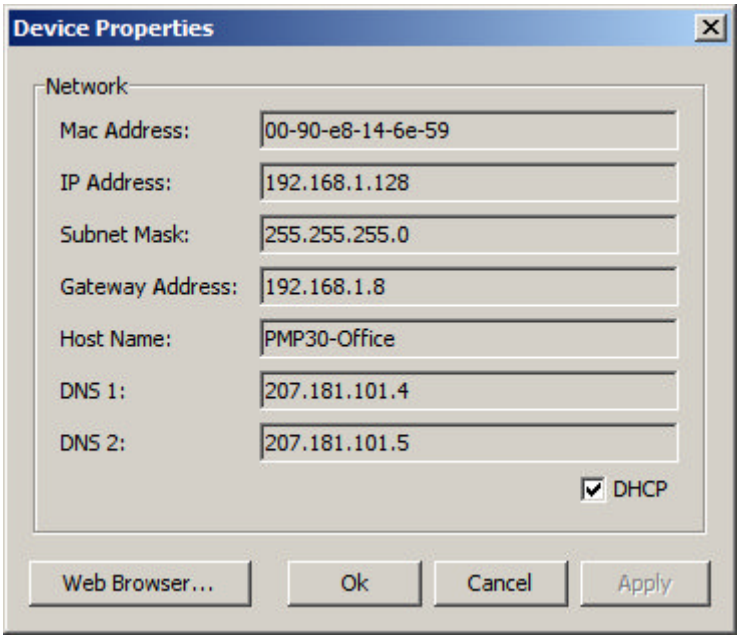
2.5 Configure Network Properties

To configure the network properties for any of the found Cyberhawk COMSERVER's; select a Cyberhawk COMSERVER to configure from the table and the press Properties button on the toolbar or Ctrl+P on your keyboard. A Device Properties dialog will appear as shown in in the figure below.

The default network configuration is set for DHCP. To switch to a static network configuration, uncheck the DHCP checkbox and enter the following criteria.

- IP Address, e.g. 192.168.1.100
- Subnet Mask, e.g. 255.255.255.0
- Gateway Address, e.g. 192.168.1.1
- Host Name, e.g. Cyberhawk-100
- DNS 1 & 2, e.g. 0.0.0.0

Note: To obtain the necessary static network properties, please contact the competent network administrator.



- **MAC Address**: The Ethernet Port MAC address (LAN1)
- **IP Address**: The IP address (Dynamic or Static)
- **Subnet Mask**: The subnet mask
- **Gateway Address**: The gateway address
- **Host Name**: The host name (Product Type)
- **DNS 1**: The Primary Domain Name Server
- **DNS 2**: The Secondary Domain Name Server

Figure 2-3: Network Device Properties

After entering the network properties, press the Apply or Ok button. For security reasons, the Cyberhawk COMSERVER's root password will be required to complete the action as shown in Figure 2-4. The default root user password is "root".

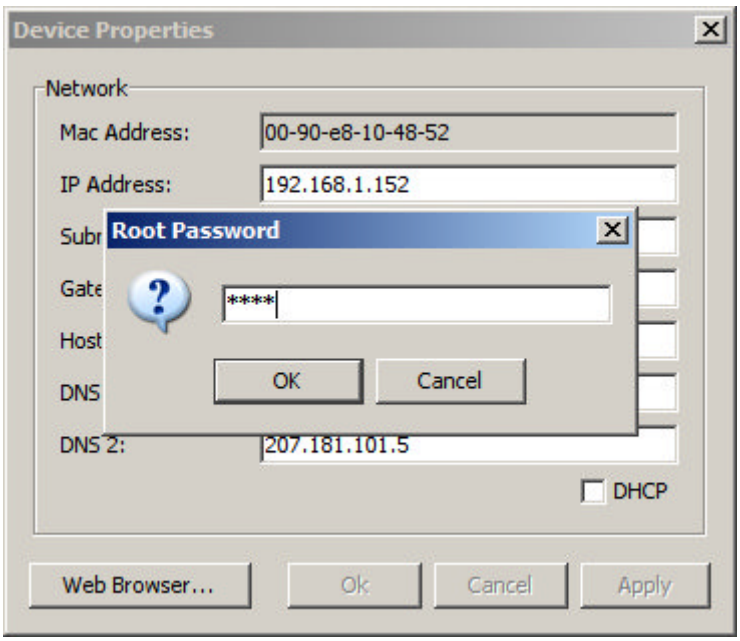


Figure 2-4: Root Password

2.6 Test Connectivity

To test the connectivity of a Cyberhawk COMSERVER's network properties, repeat the steps from "Virtual Search" Select a found Cyberhawk Network Device from the table and press the Web Browser button on the toolbar. The default PC/Mac web browser will execute and be directed to the IP address of the Cyberhawk Network Device.

Alternatively the device may be "Pinged". In the Windows environment, a typical 'Ping" using the Command prompt is shown below:

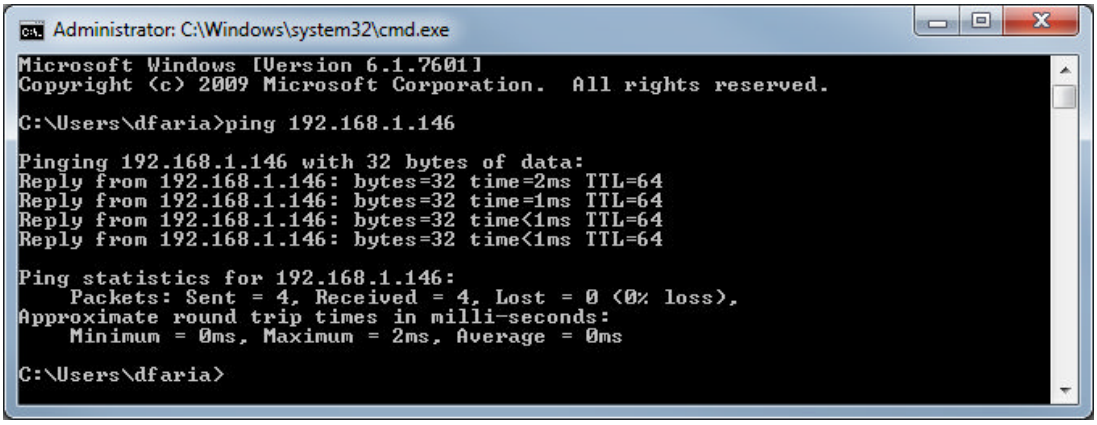


Figure 2-5: Windows ping test

3 Passwords

There are three password levels in the Comserver as follows:

- User: for viewing access only
  - Factory default: User *"guest"; Password "guest"*
- Administrator: for application setup
  - Factory default: User *"admin"; Password "admin"*
- Root: for system level setup (full access)
  - Factory default: User *"root"; Password "root"*

3.1 Changing Passwords

Passwords may be changed using a Telnet session (which is included in most operating systems but may need to be enabled in order to invoke).

To change any of the passwords in a Windows environment:

1. Open a Command Window (cmd)
2. Enter "telnet followed by IP address (see below) (or open a Telnet session directly with an "o" command followed by the IP address of the device)

   Note: The Network Setup Utility may be used to find the required IP

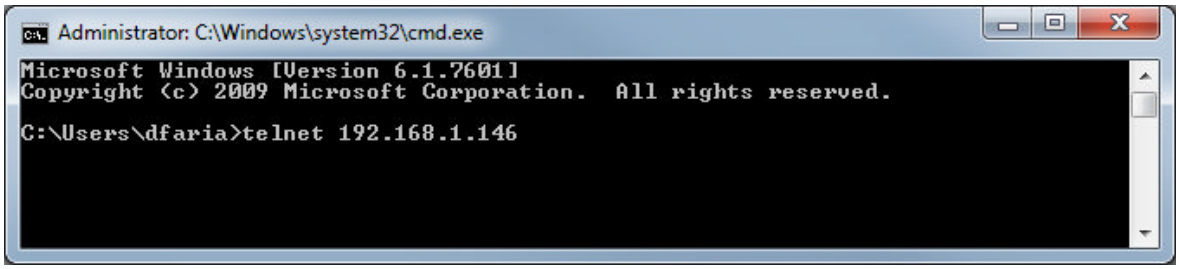


Figure 3-1: Opening a Telnet session from the Windows Command window

3. And after a "Return" screen shown below appears:

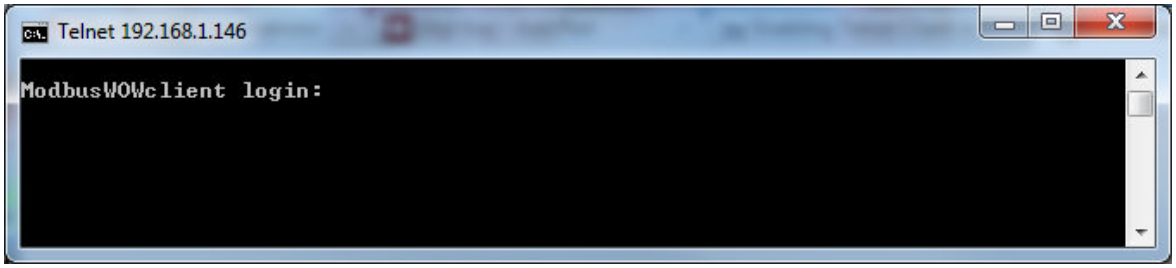


Figure 3-2: Telnet login

4. Enter Root level user name followed by password:

   Note that passwords can only be at the root level

Figure 3-3: Logging into the Root System administration

5. When the "#" prompt appears enter "passwd" followed by the user name and then follow the prompts as shown in the Dialog box below:

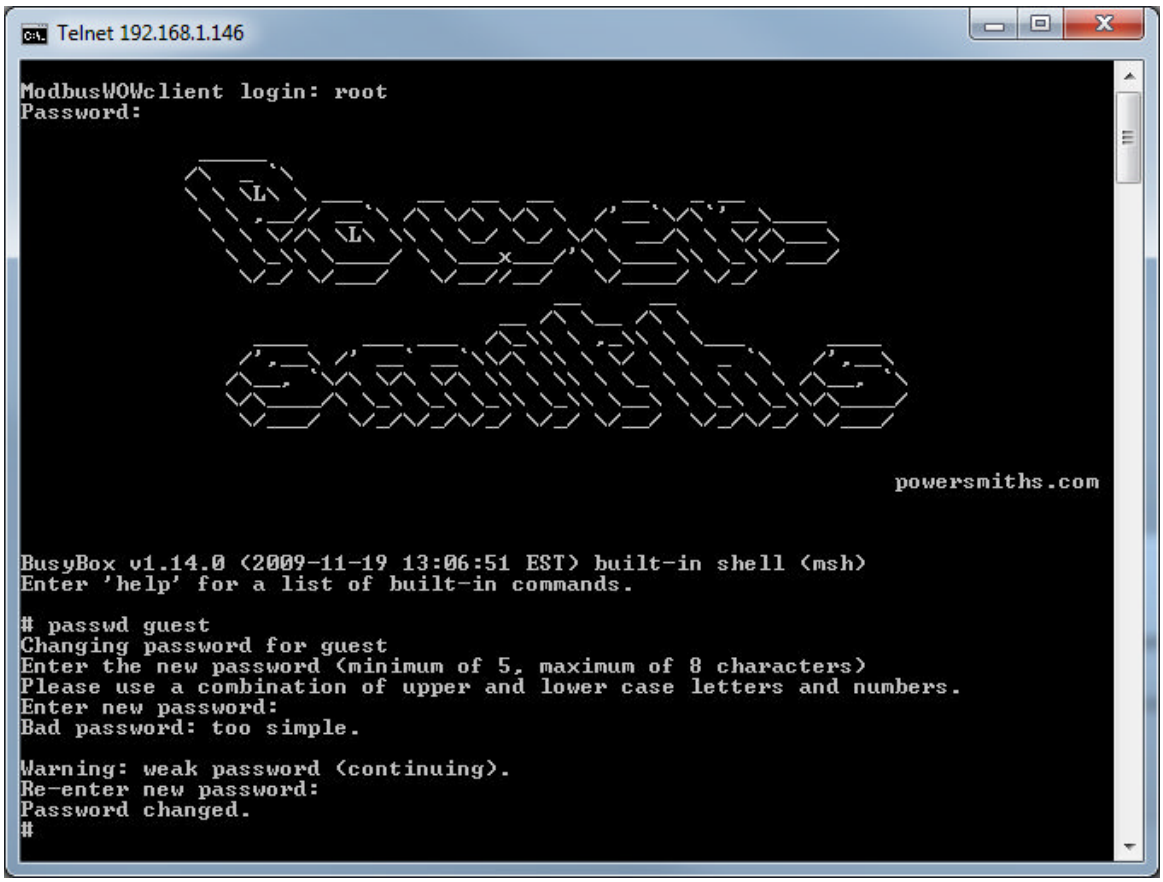


Figure 3-4: Changing passwords in Telnet session

6. To logout simply close the session by closing the dialog box

   Note: A list of Telnet commands can be displayed by typing "help" after the "#" prompt.

4 Web Interface

The following instructions are specific to navigating the WEB interface for the Cyberhawk family of products equipped with a Cyberhawk Network Device including COMSERVERs or Powersmiths Power Distribution Products.

4.1 Login

To provide a level of security, it is required that a user name and password are provided before gaining access to the Cyberhawk WEB interface. In addition there are two user groups both with different access privileges, guests and administrators.

4.1.1 Guest

Guests are limited to only view content or properties. The default guest user name is “guest” and password is “guest”.

4.1.2 Administrator

Administrators have no limitations in what content or properties they may view and or modify. The default administrator user name is “admin” and password is “admin”. As a precaution we recommend always logging in as a guest. There are very minimal circumstances that administrative privileges are required.

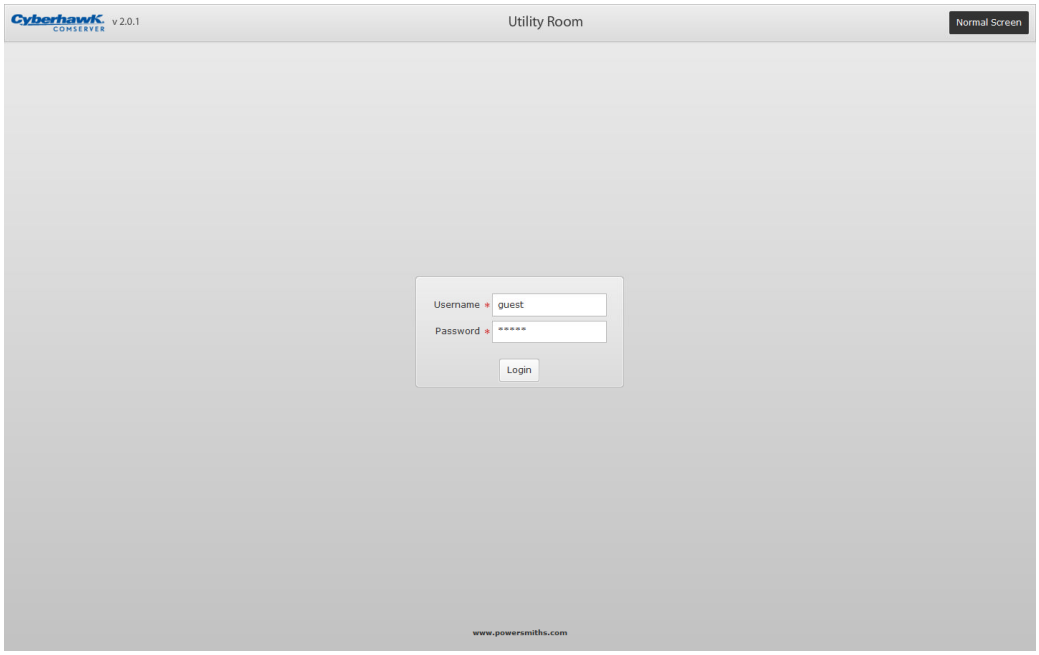


Figure 4-1: Login View

4.2 Logout

To logout click the logout button at the upper right hand corner of the web interface.

4.3 Device View

The device view provides an area to navigate between multiple devices and view each device’s individual context. Each device context is uniquely catered to the device’s specific function and feature set.

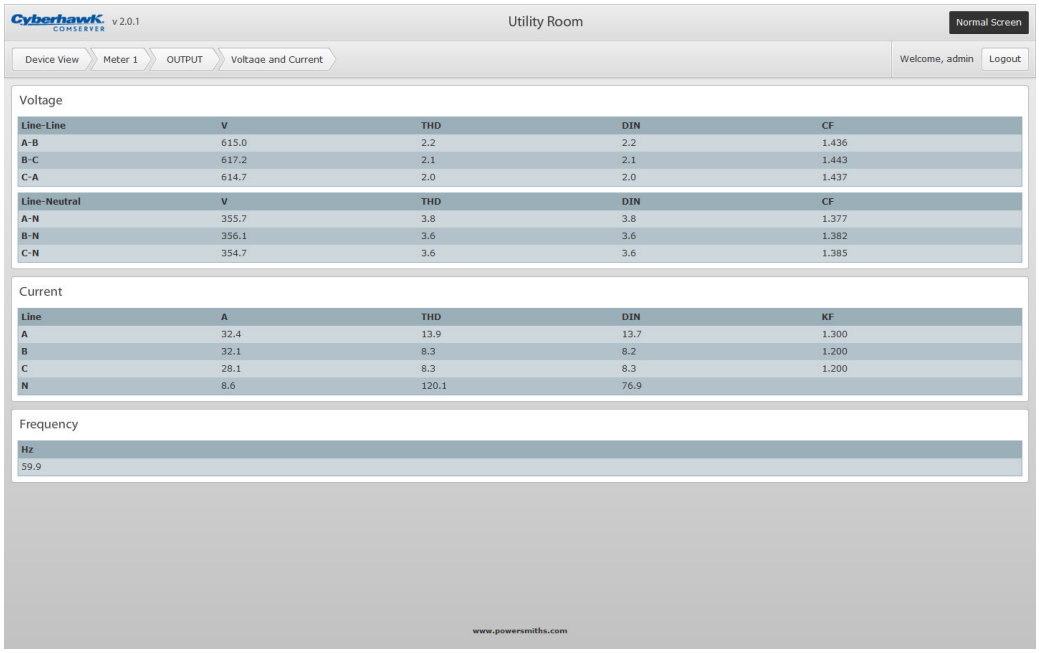


Figure 4-2: Device View

4.4 Data Log View

The data log view provides an area to chart and tabulate all or individual logged data points. The chart view features:

- Preview window
- Chart area with dual axes
- Data point selector.

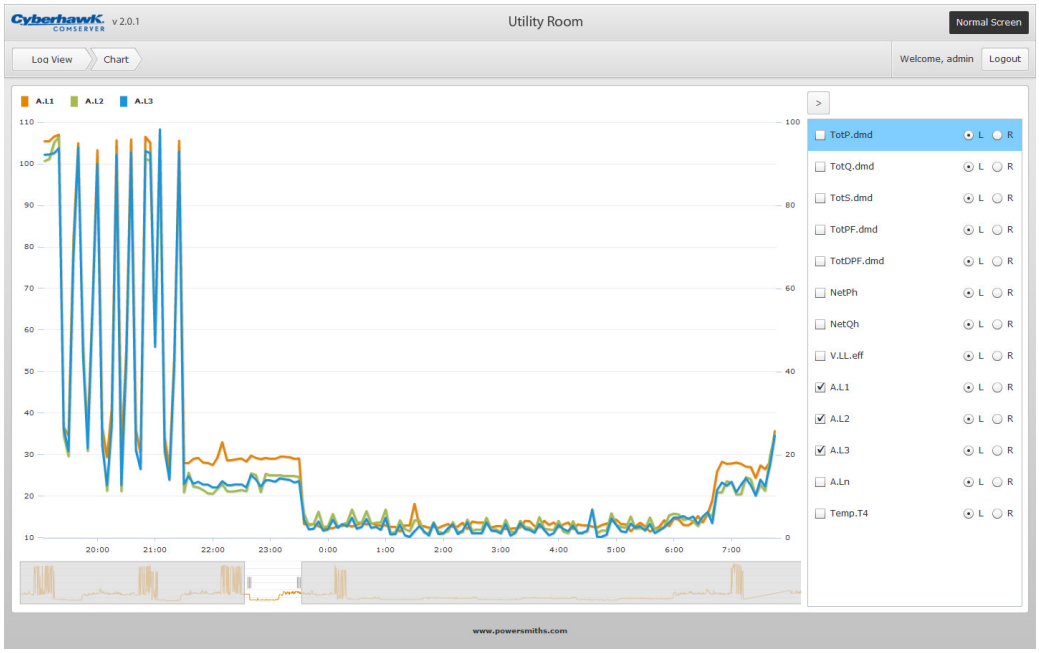


Figure 4-3: Data Log View

4.5 Setup View

The setup view is only visible to users with administrative group privileges. This prerequisite avoids unnecessary tampering of the Cyberhawk Network Device properties.

- Miscellaneous
- Device
- Data Log
- Serial Port
- Date and Time

4.5.1 Miscellaneous Setup

The miscellaneous setup view provides configuration for location awareness, and optional WOW service.

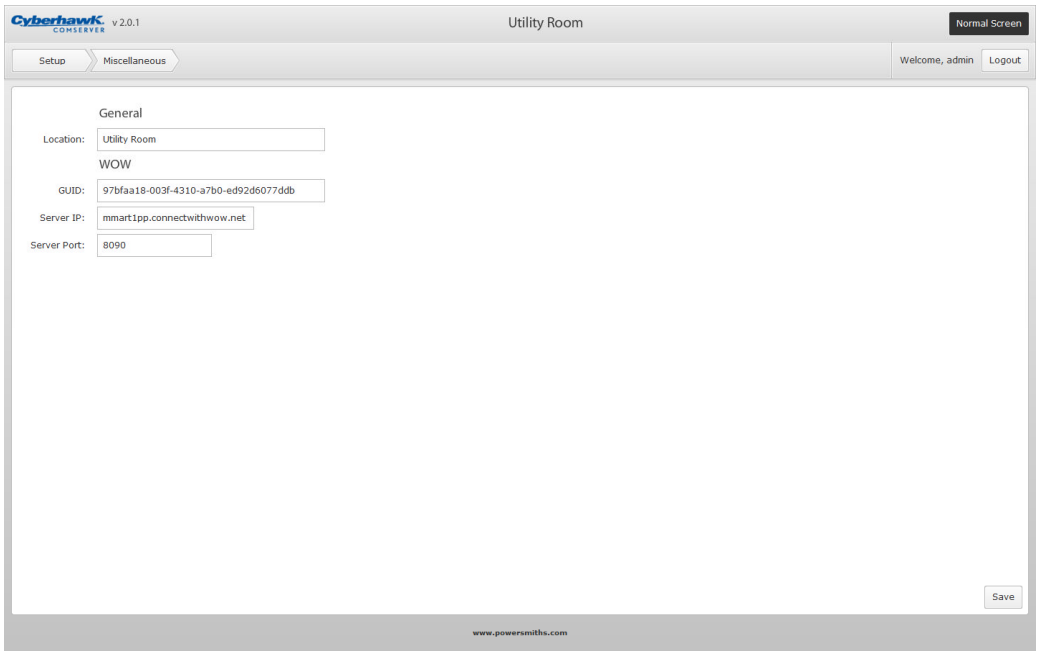


Figure 4-4: Miscellaneous Setup View

4.5.2 Device Setup

The device setup view supplements the adding, removing, and organizing of devices.

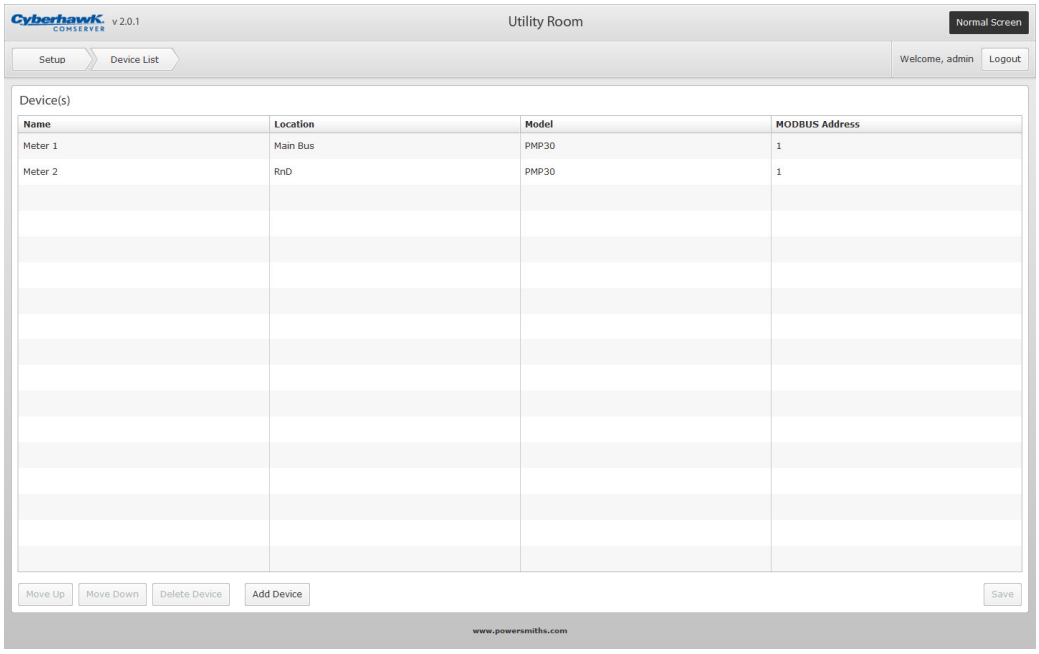


Figure 4-5: Device Setup View

4.5.2.1 Add Device

To add a device to the device table, click the Add Device button, change it's name, location, model, and Modbus address, and click the Save button.

4.5.2.2 Remove Device

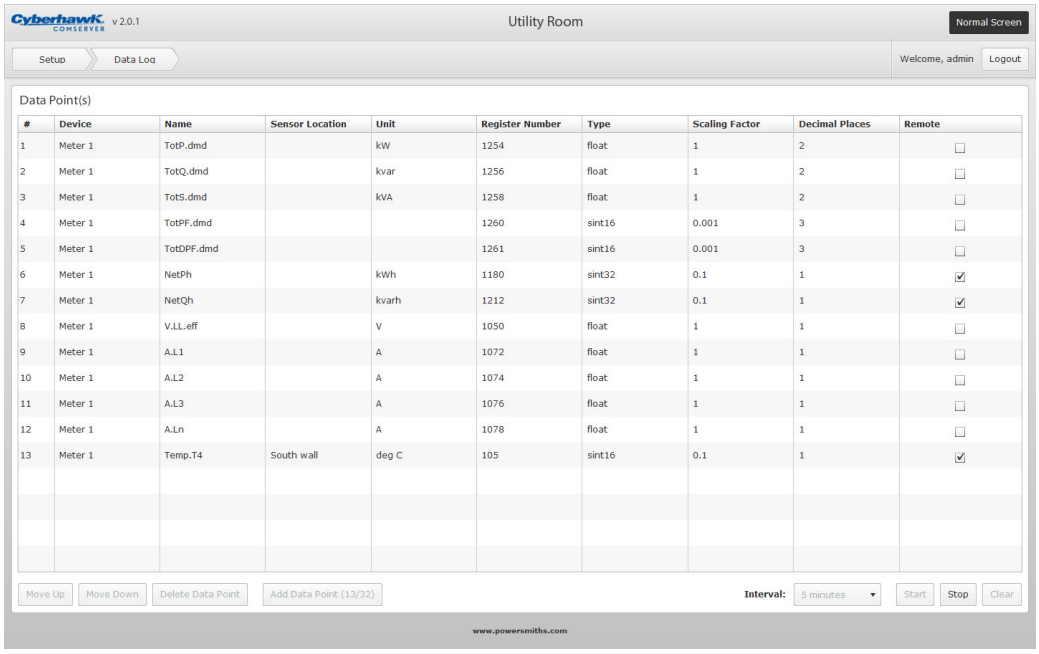
To remove a device from the device table, select a device from the table, click the Delete Device button, and click the Save button.

4.5.2.3 Organize Devices

To organize the devices in the device table, select a device from the table, click the Move Up or Move Down buttons, and click the Save button.

4.5.3 Data Log Setup

The data log setup context supplements the adding, removing, and organizing of data points; remote logging through the use of WOW, which is available as an optional service; starting and stopping logging; clearing the data log.



#	Device	Name	Sensor Location	Unit	Register Number	Type	Scaling Factor	Decimal Places	Remote
1	Meter 1	TotP.dmd		kW	1254	float	1	2	☐
2	Meter 1	TotQ.dmd		kvar	1256	float	1	2	☐
3	Meter 1	TotS.dmd		kVA	1258	float	1	2	☐
4	Meter 1	TotPF.dmd			1260	sint16	0.001	3	☐
5	Meter 1	TotDPF.dmd			1261	sint16	0.001	3	☐
6	Meter 1	NetPh		kWh	1180	sint32	0.1	1	☑
7	Meter 1	NetQh		kvarh	1212	sint32	0.1	1	☑
8	Meter 1	V.LL.eff		V	1050	float	1	1	☐
9	Meter 1	A.L1		A	1072	float	1	1	☐
10	Meter 1	A.L2		A	1074	float	1	1	☐
11	Meter 1	A.L3		A	1076	float	1	1	☐
12	Meter 1	A.Ln		A	1078	float	1	1	☐
13	Meter 1	Temp.T4	South wall	deg C	105	sint16	0.1	1	☑

Figure 4-6: Data Point Setup View

4.5.3.1 Add Data Point

To add a data point to the data points table, click the Add Data Point button, change its device, name, sensor location, unit, register number, type, scaling factor, decimal places, remote logging (WOW customers only), and click the Save button.

Note: To obtain the device register map, please contact customer service.

4.5.3.2 Remove Data Point Device

To remove a data point from the data points table, select a data point from the table, click the Delete Data Point button, and click the Save button.

4.5.3.3 Organize Data Points

To organize the data points in the data points table, select a data point from the table, click the Move Up or Move Down buttons, and click the Save button.

4.5.4 Serial Port Setup

The serial port setup view provides configuration for serial port properties:

- mode
- interface
- baud rate
- bits
- parity
- stop bit

The Cyberhawk Network Device is equipped with two serial ports. These ports are only available for external use when the Cyberhawk Network Device is provided in a COMSERVER. Refer to

Table 1.2-1: COMSERVER supported RS485 communication for proper configuration.

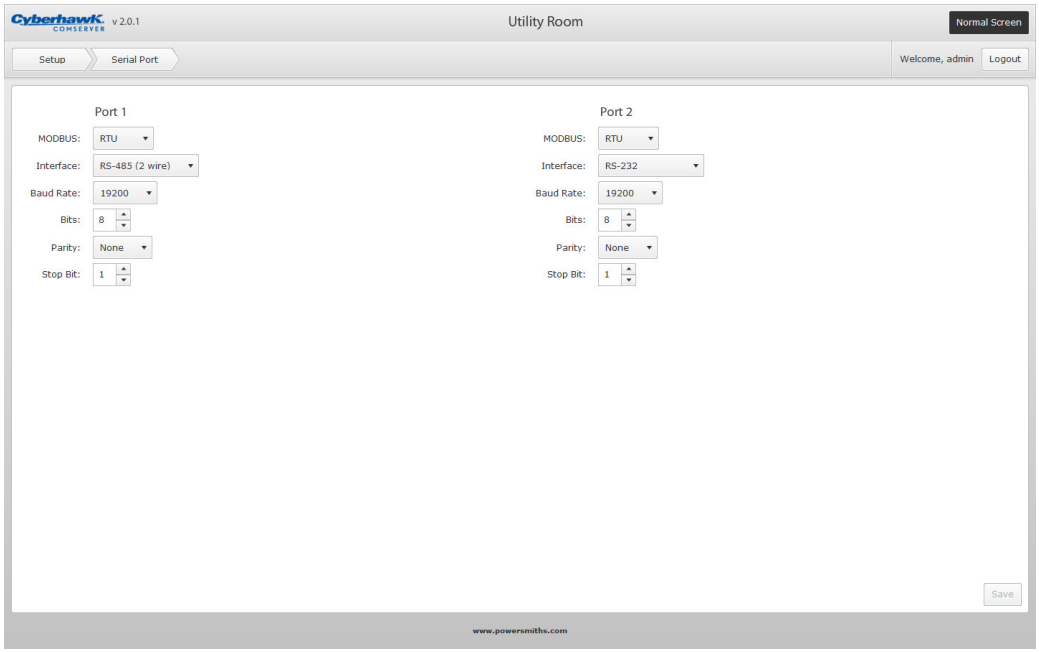


Figure 4-7: Serial Port Setup View