

Section 1 Overview and specifications	3
Introduction	3
Features	4
Specifications	4
System Requirements	4
Operating Systems	4
Browser Requirements	4
Supported Protocols	4
Operating Environment	4
Setup	5
Accessories	5
Connections	5
Jumper Settings	5
Button	5
LED Indicators	5
ICs	5
UCM ID Switch	6
Java Virtual Machine (JVM)	6
Section 2 Connecting the cwm	9
Connections	9
Broadband Internet via PC Gateway	10
Broadband Internet with Router	11
Section 3	12
Connecting CWM to the Network	12
Configuration	12
Section 4 Programming	26
CWM Applet Designer Software	26
Main Menu	26
Toolbar	27
Element Toolbox	27
Applet Tree	29
Property Box	30
View Tab	30
Status List	30
Designing Steps	31
Uploading Files to CWM	33

Comfort Webserver Module CWM02

<i>FTP via Browser</i>	34
<i>FTP via FTP Client</i>	34
TCP/IP Pass-through Port	36
HTML Programming	37
<i>Programming Elements</i>	37
<i>Sample Program</i>	49
<i>A More Complex Example</i>	52
<i>Display of X,Y Coordinates</i>	56
<i>Image Library</i>	56
Section 5 Programming comfort	59
<i>Comfort Programming</i>	59
Section 6 Troubleshooting	60
Common Problems	60
<i>Login windows does not appear</i>	60
<i>Login window is cleared after entering code</i>	60
<i>Web page does not appear</i>	60
<i>IP address lost</i>	61
<i>CWM files have been corrupted</i>	61
<i>Password lost</i>	61
<i>TCP pass-through port does not work</i>	61
<i>Firmware History</i>	62
<i>Document Revision History</i>	62
<i>Important Note</i>	63

SECTION 1 OVERVIEW AND SPECIFICATIONS

Introduction



Fig 1.1 - CWM02

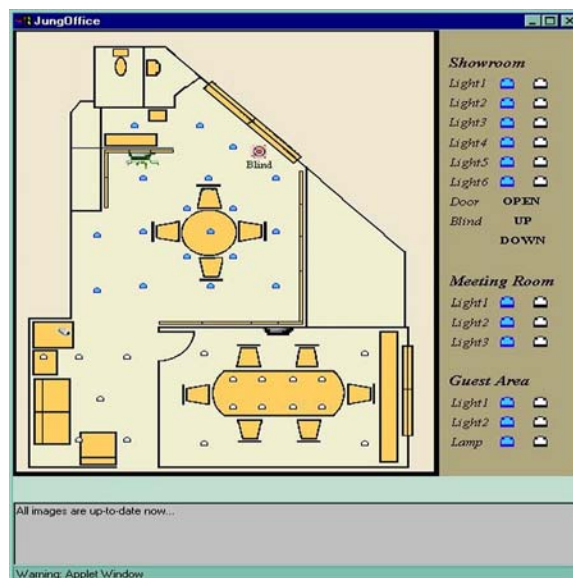


Figure 1.2 - Typical CWM User Design

The Comfort Web Server Module CWM02 is an add-on module which allows Comfort to be connected to a Local Area Network as well as to the Internet so that a browser can be used to view web pages in Comfort. The embedded web server software is built-in allowing web pages representing a home, office or factory layout with alarm points and appliances to be displayed on a browser. The activation of motion detectors as well as opening and closing of doors and windows is shown on the screen as they occur. The state of connected appliances and lights is also represented. Clicking on a light or appliance will change the state of the device (off to on and vice versa), and the change in state is updated as it occurs. The security system can also be armed to any mode (Away, Night, Day or Vacation) or disarmed by the click of a button. Any alarm activation will be shown in a message box or as a flashing icon. A network camera server on the local area network can be linked to the web server to view the premises on the Internet.

Comfort Webserver Module CWM02

The web page can be customized by anyone with knowledge of HTML, but a design tool, the CWM Designer with drag and drop functionality is also provided to facilitate the design of the webpages and elements. Several sample files and graphic images are provided as a reference to jump start the application.

Connection to the Internet can be via a PC or router on the local area network that has a permanent connection to the Internet (ISDN, ADSL, cable modem or leased line), this can be used as a gateway for Internet access.

Features

- Built-in Web Server with Linux Operating System
- Network Interface (RJ45 connector) 100 MB/sec
- Port mapping to allow camera servers to be accessed from same IP address (maximum of 10 ports)
- Compact Flash memory 1 GB for operating system, software and web pages. Approximately 600 MB is used by the operating system, 400 MB available for web page design and graphics
- Internal RAM 256 MB
- Sample graphic image files and designs provided in CWM.
- Access by computer through the internet or through a local network

Specifications

- Dimensions: 155 x 102 x 42 mm
- Weight: 700 g
- Power supply: 5V DC 1.6A from adapter (supplied), 100-240V AC input

System Requirements

- Comfort II firmware 5.145 and above

Operating Systems

- Windows 98, Windows 2000, Windows NT, Windows XP, Windows Vista
- Windows Millennium Edition requires Sun Java Virtual Machine

Browser Requirements

- Internet Explorer 5.0 or later
- Netscape 6 and above
- Opera Browser 7.0 and above with Java
- Mozilla Firefox 1.0 and above
- Chrome 5.0 and above

Supported Protocols

- TCP/IP, HTTP, FTP, PPP

Operating Environment

- 5 to 40 deg C
- 10% to 90% relative humidity non-condensing

Setup

Accessories

- Power Supply Adapter (100 to 240 VAC in, 5V DC, 1.6A out)
- “Crossover” Type Network Cable
- 4-way terminal block
- Four rubber foot pads

Connections

- KA, KB, 0V, 5V connector. KA,KB connected to KA/KB on Comfort. 0V connected to black wire, 5V connected to black-white wire of supplied power supply adapter.
- RJ45 connector. For 10BaseT Ethernet connection.

Jumper Settings

- SW7 – set according to the ID of the UCM, default ID=2 (see “UCM ID Switch” settings).

Button

- Reset button. This button reinitializes the connection from CWM to Comfort. It does not change any parameters in the CWM.

LED Indicators

- D1 (Green) RDY should be on at all times when powered up
- D9 (Red) RS485 Transmit to Comfort
- D10 (Green) RS485 Receive from Comfort
- D15 (Green) 100T from Network
- D16 (Orange) Activity should be flashing
- D17 (Green) Link from Network
- D5 (Green) RS232 Receive from Network
- D6 (Red) RS232 Transmit to Network
- D2, D3, D4 (Red) NOT used

ICs

- U1 – Microcontroller IC. Label indicates the firmware version number “CWM 5.128” or a higher version.
- U2 – RS485 Interface to Comfort

UCM ID Switch

Comfort is able to support up to 8 UCMs. SW7 is a set of 3 headers which is used to determine the ID, in accordance to the table below:

Table 1: ID Settings

ID	SW7-A	SW7-B	SW7-C
1	Short	Short	Short
2	Open	Short	Short
3	Short	Open	Short
4	Open	Open	Short
5	Short	Short	Open
6	Open	Short	Open
7	Short	Open	Open
8	Open	Open	Open

By convention, UCM ID = 1 is used for writing/reading configuration file. The CWM should be set to ID 2 or above so that any communication failure can be reported by Comfort.

Press RESET (SW1) after changing the ID settings.

The number of UCMs in Configurator should be set to the highest UCM number of the system including the CWM. This is the same as programming **Location 1672**, according to the number of UCMs and CWM connected. Press reset on Comfort after changing the number of UCMs.

Configuring CWM with Configurator 3

In the Modules tab right-click on UCM. For Comfort Firmware >= 5.164 and UCM05 firmware >= 5.178 select SCAN for UCMs. Enter your user code in the login box. The Scan results are shown below (typical). The CWM should be shown in the UCMs list.

If the Comfort or UCM firmware are lower than that required for the Scan function right click the Modules Tab and select Add UCM. Select UCM Type on the UCM Properties window as CWM.

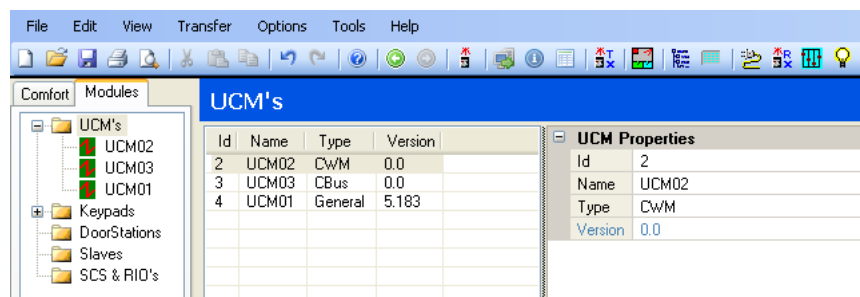


Figure 1.3 - Typical Configurator Screen with CWM

Java Virtual Machine (JVM)

As CWM uses the Java technology to communicate with the browser, user's computer must have the Java Virtual Machine (JVM) installed. The most common JVMs are the Microsoft Virtual Machine and the Sun JVM.

Microsoft does not supply its Java VM in their new products and does not allow it to be downloaded from their Website because of legal problems with Sun Microsystems. Hence it is preferable to use the Sun JVM.

To download the JVM, point the browser at <http://www.java.com> and click on the Download Java link. This will install the Java Runtime Environment as well as the Java plug-in. To see the JVM version in Mozilla Firefox, go to Tools menu

Comfort Webserver Module CWM02

and select Java Console.

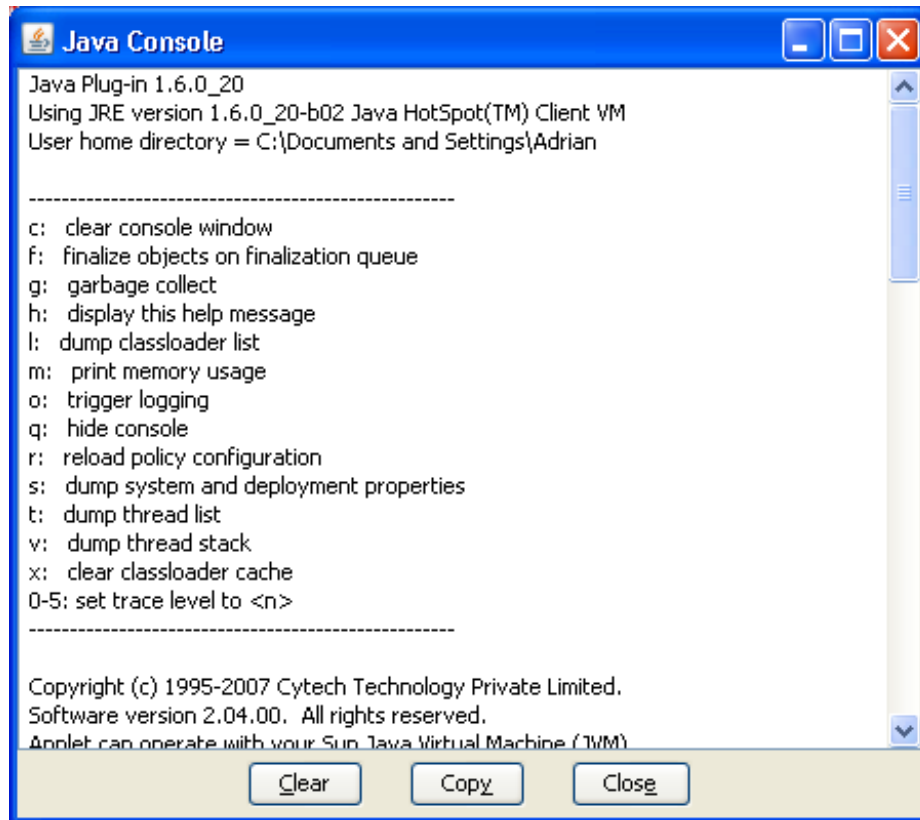


Figure 1.4 - Java Console Screen

For JVM, the version should be 1.6.0_20 or above. To see the JVM version in Internet Explorer, go to Tools -> Internet Options -> Advanced tab, scroll down the list to Microsoft VM, or Java VM and check the box titled "Java Console Enabled (requires Restart)". It will prompt user to reboot the machine in order for the setting to take effect. If an older JVM is used, the user may not be able to control the CWM elements by clicking on the icons.

An incompatible JVM version is one of the main causes of failure to connect or login for CWM. If the loading of the web page is extremely slow, try switching the JVM. We have found that the web page loads faster using the SUN JVM in some Windows XP machines. To change the Java VM in Internet Explorer browser, select the Tools Menu > Internet Options > click the Advanced Tab. To select the Sun JVM, check the "Java (Sun)" Box shown below. To use Microsoft JVM, clear the Java (Sun) box.

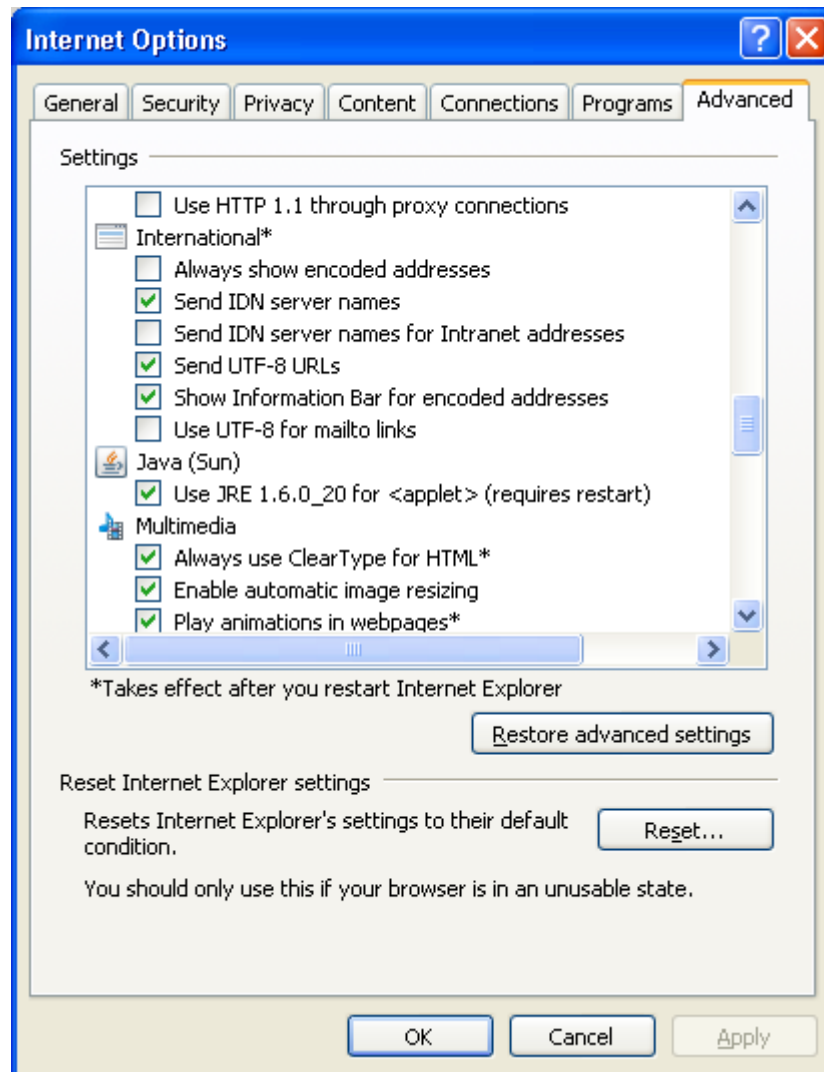


Figure 1.5 - Java VM Screen on IE

SECTION 2 CONNECTING THE CWM

Connections

- 1 By default the ID of the CWM is set to 2. The ID can be changed by opening the case and set the shunts on SW7 to the ID of the CWM according to the table in the previous section. By convention, ID 1 is reserved for UCM05 to write/read configuration file from Comfort as Communications Failure is not reported for ID=1. Up to 8 UCMs of different types (e.g. C-Bus, EIB) can be connected to the Comfort network.
- 2 The CWM is connected to Comfort via KA/KB from KA/KB green terminal block to Comfort's JP8 KA/KB.
- 3 Power is supplied to the CWM via supplied DC adapter to 0V/5V green terminal block. 0V is connected to the black wire and 5V is connected to the black-white wire of DC adapter.
- 4 The Green RDY led on the CWM should light up and remain on. The LEDs 485TX (red) and 485RX (green) should blink rapidly showing that RS485 communications has been established between Comfort and the CWM. 485RX (green) flashing shows that it is receiving communications from Comfort (poll). 485TX (red) comes on when the UCM responds to a poll from Comfort.
- 5 The following few pages illustrates how the CWM is to be connected depending on the way that the CWM is to be linked to the internet, i.e. whether it is via a PC as a gateway on a network or whether it is through a router.
- 6 **Important Note: Always connect the network cable to the CWM RJ45 socket before connecting power to the CWM. If the CWM is powered on before the Network is connected, its network driver will not be loaded and the network connection will not work.**

Broadband Internet via PC Gateway

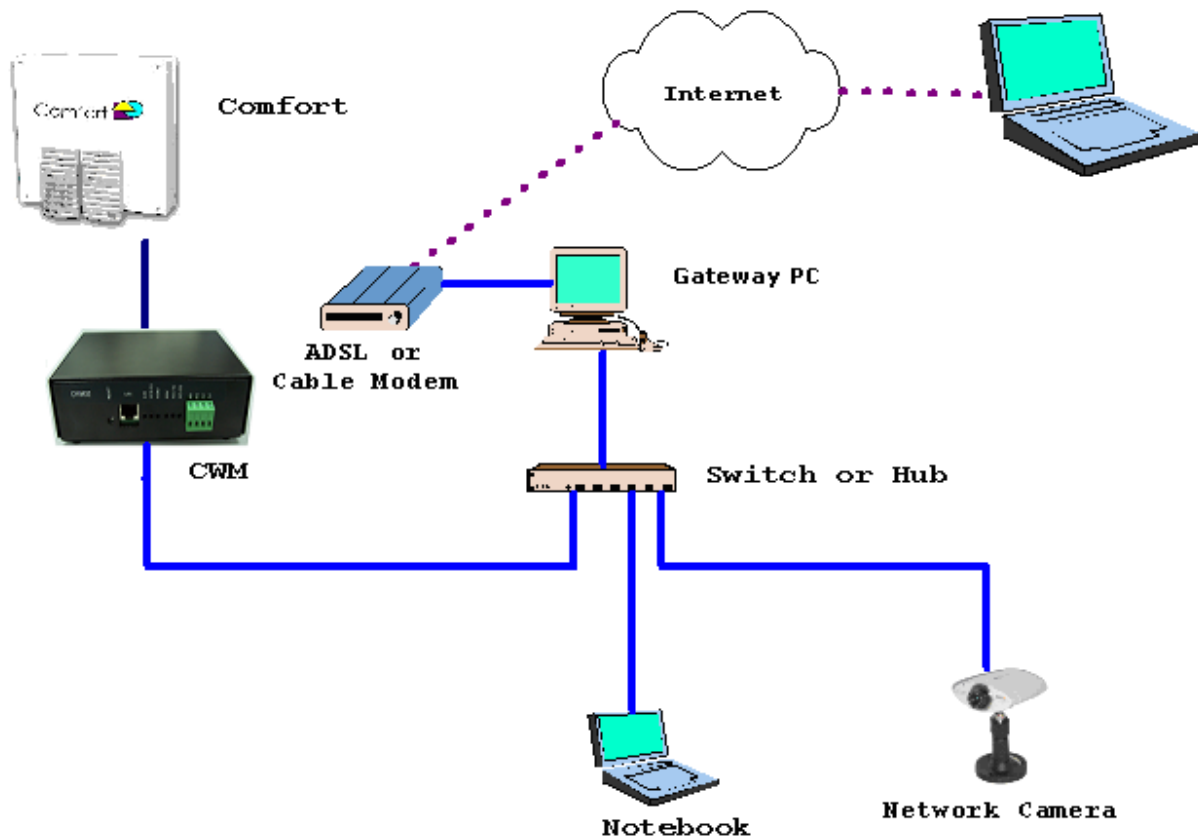


Figure 2.1 - Broadband Internet via PC Gateway

In this configuration, an ADSL or cable modem is connected directly to a PC. This gateway PC and CWM as well as other computers and devices are connected to a hub or switch. In order for the devices on the network to share the Internet connection, the gateway PC must run a software router like Winroute Pro. The software router must be set up to allow port forwarding to the CWM and network camera(s) which are to be accessed from the Internet. The gateway must also run a DNS update software to work with a dynamic DNS redirection service like no-ip.com. This can also be done using Cytech's Dynamic IP system (see "Dynamic IP Setup"). The gateway must always be on to allow Internet access. It is recommended that the gateway PC be a dedicated machine for this function.

Broadband Internet with Router

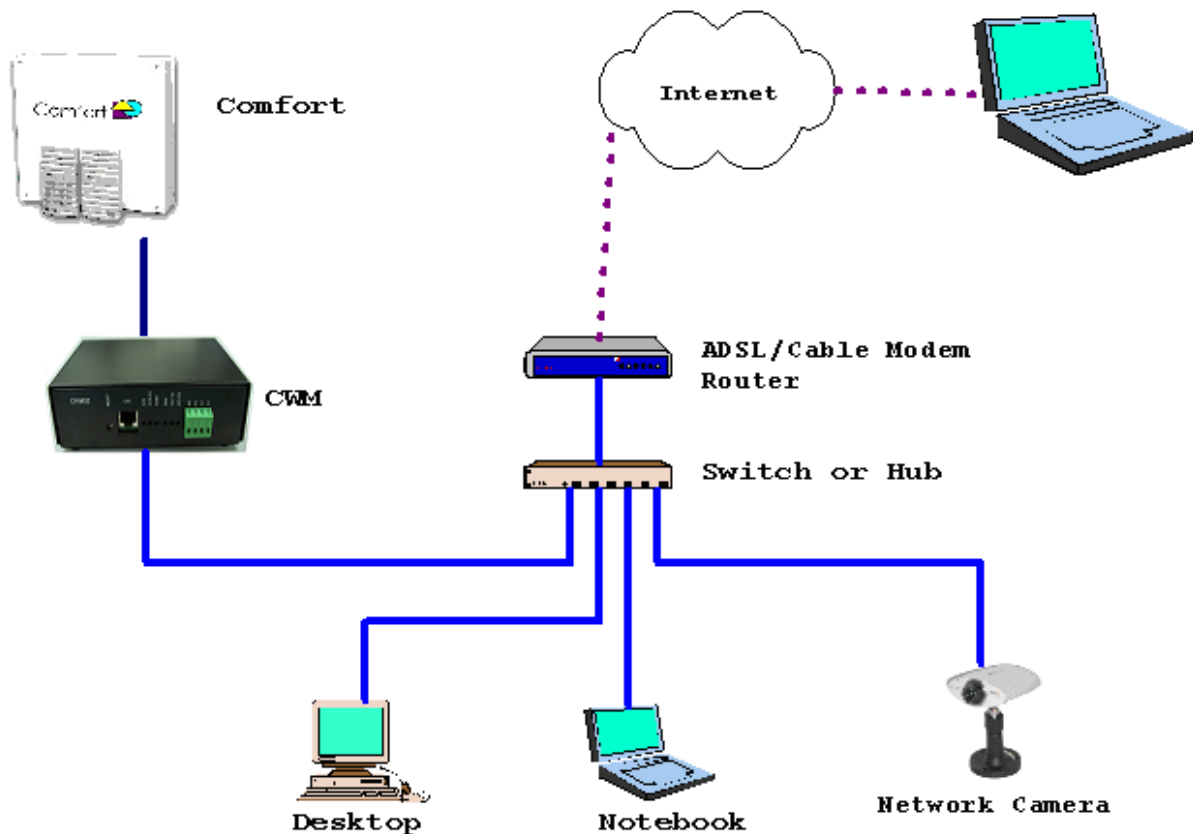


Figure 2.2 - Broadband Internet with Router

In this configuration, an ADSL or cable modem is used for Internet connectivity and a router is used to allow the other computers and CWM to share the Internet connection. The router must be set up for port mapping or forwarding for the CWM and network cameras which are to be accessed from the Internet. All the network devices are connected to a switch or hub. In order to provide the dynamic IP address to the remote browser, one of the PCs on the network must run DNS update software to work with a dynamic DNS redirection service like no-ip.com or run on Cytech's Dynamic IP system (See "Dynamic IP Setup").

This section shows how to configure the CWM to change the IP address and specify how to connect to the Internet.

Connecting CWM to the Network

In order to set up the CWM, it is necessary to connect a computer with a network card to the CWM on the Local Area Network (LAN) using the TCP/IP protocol. This can be done by connecting a crossover CAT5 cable directly between the computer and CWM or by connecting the CWM to the network via a hub or switch using a parallel CAT5 cable.

NOTE: Always connect the network cable to the CWM RJ45 socket before connecting power to the CWM. If the CWM is powered on before the Network is connected, its network drivers will not be loaded and the network connection will NOT work.

Configuration

The CWM is set by default to the IP address 10.0.0.16. Should the IP address be amended and forgotten, proceed on to the section "Running CwmSetup". To set up the CWM, open up the web browser with the following address:

<https://10.0.0.16/admin.htm>

Note that this address is only for the default IP address 10.0.0.16 with Port 443. For other IP addresses, please access the admin page via the format:

[https://\(IPAddress\):\(PortNumber\)/admin.htm](https://(IPAddress):(PortNumber)/admin.htm)

This should bring up the following screen:



Figure 3.1 - Admin Page of a CWM

Select "Module Setup" to continue, which will bring up the screen shown in "Module Setup".

Running CwmSetup

Comfort Webserver Module CWM02

CwmSetup.exe is a Windows program which discovers the IP address of the CWM and allows a new IP Address to be assigned. It can be downloaded from Cytech website at:

<http://www.cytech.biz/software.html>

It also launches the browser-based configuration program which sets up other parameters like the Webserver port, Internet connection method, DNS and gateway addresses, FTP addresses etc.

The CwmSetup program screen is shown below:

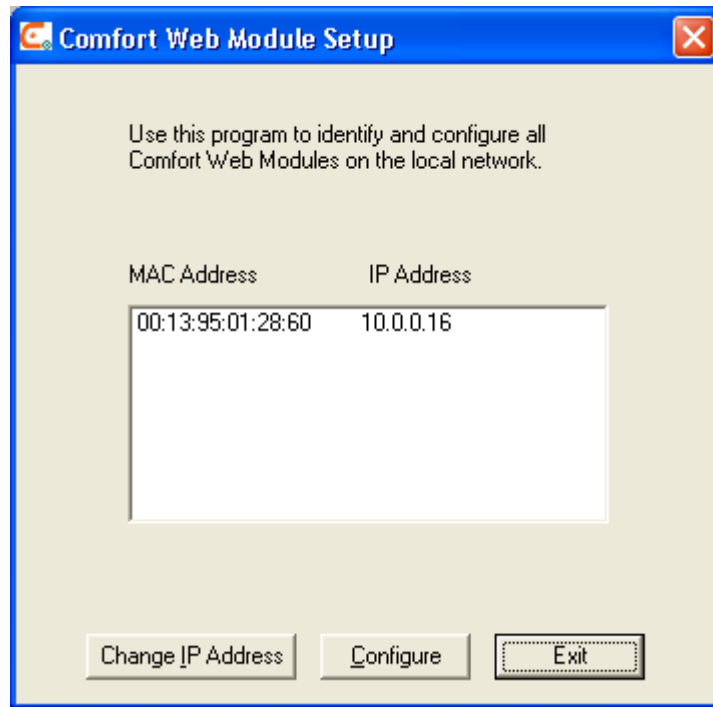


Figure 3.2 - CWM Setup Screen

The program identifies the MAC address and IP Address of the CWMs on the local network. The button "Change IP Address" allows the selected CWM IP address to be changed from the default 10.0.0.16. Change the IP address so that it is on the same subnet as the computer used to configure the CWM. For example, if the computer IP address is 192.168.0.1 and the subnet mask is 255.255.255.0, then the CWM can be set to any IP address from 192.168.0.2 (as not to clash with computer's IP) to 192.168.0.254 to be on the same subnet.

Click on "Configure" to continue to configure the CWM. This opens a series of browser-based screens. The Comfort Web Module Administration page will first open.

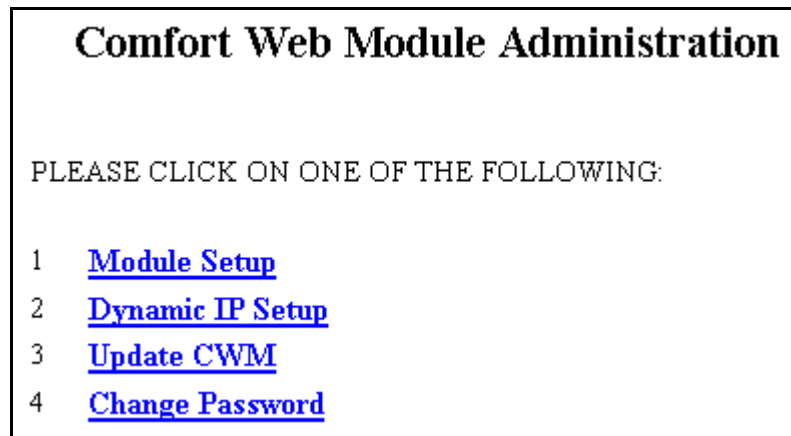


Figure 3.3 - CWM Admin Page

Click on "Module Setup" and the following screen will appear:

"Welcome to CWM Configuration Wizard"

Click Next to continue"

Module Setup

Before clicking on Next, please ensure that Engineer Sign In option is enabled (by pressing F0 on the keypad). The next screen shown below will ask for the user name and password to access the screen.

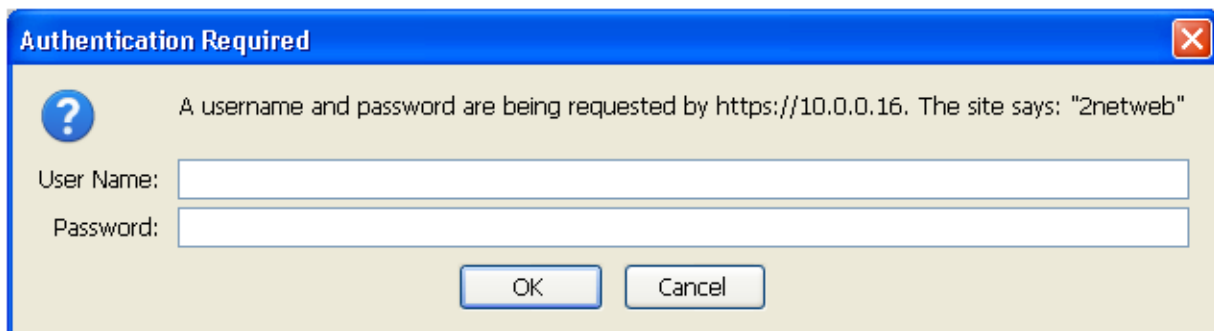


Figure 3.4 - Authentication Screen in CWM

Both the default User Name and Password are "admin". The password can be changed later.

If the Engineer Sign In option has not been enabled, the following screen will be loaded after signing in.

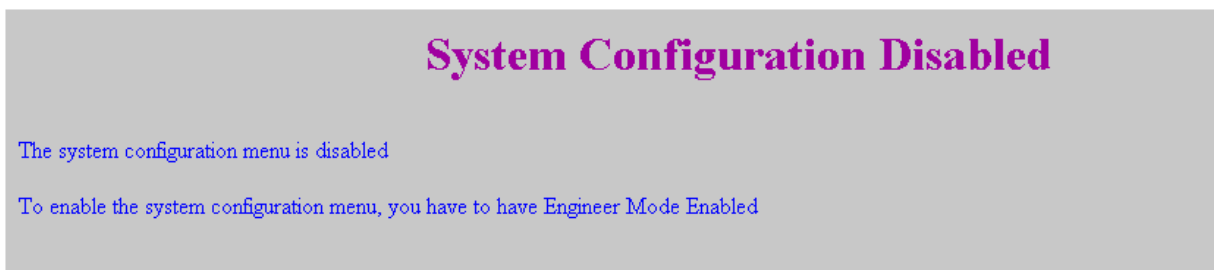


Figure 3.5 - System Configuration Disabled Screen

Comfort Webserver Module CWM02

When the correct User Name and Password has been entered, the following screen will appear:

IP Address

The CWM needs an IP address to identify itself on the local network, if there is one. The IP address is made of four sets of numbers separated by dots, for example 10.0.0.16. The IP address of each device on the local network must be unique.

The netmask is related to the number of devices on the network. In most cases it can be left as the default, 255.255.255.0.

The Secure web server port number determines how you access the web module. In almost all cases it should be left as the default, 443.

Use DHCP if you want the IP address to be automatically allocated by a DHCP server. If use DHCP is selected, your gateway and DNS addresses (LAN Configuration page) will be set automatically, and any IP address you set in this page will be ignored.

Pass-through port sets the port to allow Configurator or other programs to communicate with the Comfort system, through the network

Your proxy server name and port number will need to be entered if your ISP requires that you go through a proxy server to access the internet. This information is normally supplied by your ISP

Use DHCP ☐

Local IP address

Netmask

Secure web server port

Pass-through port

Proxy

Proxy port

Figure 3.6 - IP Address Page

With the correct login, the Local IP address and Net mask are displayed, and can be changed if required depending on the network in which the CWM is connected.

The Secure web server port is the port on the CWM for the web server. This is 443.

The Pass-through Port (default 10001) is another port on which the UCM (Universal Communications Module) can be accessed via TCP/IP over the network rather than by RS232, as with a regular UCM. This can be used for remote upload and download configuration file with the Configurator software tool. Comfort I firmware Outside 4.200 and above and CWM 5.052 and above are required to support this feature.

NOTE: Port 80 must NOT be used for pass-through port, as it may cause the webserver to be inaccessible!

Proxy can also be set from this page if needed.

The CWM is to be connected to the LAN via the Ethernet port and will access the Internet through a gateway (router or PC) on the network (as shown in the previous section). Press Next to continue to the next screen.

If the CWM is to be accessed from the Local network only and not to be connected to the Internet, skip the LAN configuration and Renew screens and go to the FTP Server page.

Press Next button to go to the next screen when completed.

For LAN connection the screen will be as shown in the following figure;

LAN Configuration

This page configures CWM to access the Internet via a gateway on the local network.

The Gateway IP is the address of the computer which connects to the Internet. This may be a PC running a program such as WinRoute or a broadband router.

Name servers are needed so that the CWM can find other servers on the Internet. You can get the name server addresses from your ISP (Internet Service Provider). Enter below the IP address of at least one name server.

Gateway IP	10.0.0.100
Name server 1 IP	165.21.100.88
Name server 2 IP	165.21.83.88
Back Next Cancel	

Figure 3.7 - LAN Configuration Page

The above screen specifies the gateway IP address of a router or PC on the network which provides Internet access. The Name Servers fields are the servers on the Internet which provide the Domain Name Service for the Internet connection. Refer to Internet Service Provider or FTP host for the IP addresses of these servers. Click on "Next" to continue.

Save Configuration

Click on **Finish** to save configuration. This may take a few seconds to complete.

Back	Finish	Cancel
-------------------------------------	---------------------------------------	---------------------------------------

Figure 3.8 Save Configuration Page

After setting the gateway IP, click on Finish to save the configuration. Should any other amendments be required, use the Back button to go back to any of the previous pages to make the necessary changes. To quit without saving, click on Cancel.

☎ Do NOT press the BACK or CANCEL keys or perform any other operation while saving the configuration as this may corrupt the files causing the CWM to be inaccessible. If this happens refer to the Troubleshooting section



Figure 3.9 Configuration Status Page

After saving the changes, click on reset on the screen to reset the CWM. It will probably take a few minutes before the CWM is initialized. A good way of verifying that the CWM is initialized is by running CwmSetup and seeing whether it can be detected.

Dynamic IP Setup

Most Internet connections will have a dynamic IP address, i.e. an IP address assigned by the Internet Service Provider (ISP) will change from time to time. For ADSL, some plans include a fixed IP address, usually for companies running their own web server. For plans which involve dynamic IP address, the IP address may not change for some time, sometimes every few days. Cable modem connections usually involve dynamic IP addresses. To access CWM from a remote browser on the Internet, the IP address of the system must be known. For fixed IP addresses, just type in the IP address or URL (and optionally port number if not 443). For dynamic IP addresses, there are 3 methods of getting the dynamic IP address of the CWM i.e. using Cytech Technology's Dynamic IP redirection system, using FTP to send the current IP address to the user own web page or using a dynamic DNS redirection service like: www.no-ip.com. Use of other Dynamic IP Redirection services is not within the scope of this manual.

Ensure that the Engineer Sign In Option is enabled (by pressing F0 on the keypad). If the CWM has been reset, the Engineer Sign In Option has to be enabled again to broadcast to the CWM.

To configure Dynamic IP setup, go to the CWM setup page, i.e.

[https://\(IPAddress\):\(PortNumber\)/admin.htm](https://(IPAddress):(PortNumber)/admin.htm)

And select Dynamic IP Setup.

Comfort Webserver Module CWM02

Renew Period

If you have a broadband connection with a dynamic IP address, and you want to be able access your CWM from the internet, you need to have a link on a web page with the updated IP address allocated by your ISP, which may be changed periodically.

There are 2 ways to do this. You can use Cytech's Dynamic IP system, where Cytech Technology's Web server will provide you with link to your CWM, or you can use your own web space to provide the link and have your CWM update the link by FTP.

If you want to have the link updated periodically, check the renew box and enter renew period value in minutes. Please do not enter values less than 10.

Do you wish to renew?

☐

Do you wish to use CYTECH's dynamic IP system?

☐

Renew period (minutes)

Next

Cancel

Figure 3.10 - Renew Period Page

The Renew Period gives the time interval for CWM to refresh the dynamic IP address for the connection to the remote web page.

In order to use Cytech's IP redirection system, check the box in the above screen.

Cytech's dynamic IP redirection service is hosted on the company's web server. The user registers with a username and password on the setup screen. CWM will send its IP address periodically to the allocated space on the website. To access the CWM from any browser on the internet point the browser to the URL:

<https://www.cytech-technology.com/dynip/username.php>

where "username" is the user name which is entered in the Dynamic IP setup page. The browser will be redirected to the actual IP address of the CWM. Note that the Cytech web site does not host the users CWM pages or gather any information about the CWM other than its IP address. However it must be noted that anyone who enters the same URL will be redirected to the CWM at the IP address. Anyone who has inadvertently or deliberately reached the CWM IP address must know the User code of the Comfort system in order to sign in. If there are 6 unsuccessful attempts to sign in on the CWM web page (also applies to keypad or telephone), the Sign In Tamper Alarm will be activated which will lock out further attempts.

FTP Server

If you have not chosen to use Cytech's Dynamic IP system

the CWM uploads a page to a web server with a link back to itself. You will click on this link in your web browser to access the CWM. To do this, CWM needs information about the server to upload to. The actual transfer is done using File Transfer Protocol, FTP. You will be able to find this information from the provider of your web space.

Enter below the address of your FTP server, the user name and password required to log in. Enter the directory on the server where you want the page to be loaded.

Use Passive mode FTP, if you are using the CWM behind a firewall and you have problems getting your web page updated

If you have chosen to use Cytech's Dynamic IP system

The CWM will update Cytech's Web Server with a link back to itself. You will click on this link in your web browser to access the CWM. To do this, CWM needs some information to allow only you to access your link.

Enter below the the user name and password, and your email address if you have any. The link you will use to access your CWM will be

<http://www.cytech.biz/dynip/username.php>

where username will be the user name you have entered below.

User name

Password

Email

Figure 3.11 - FTP Server Page

For those using Cytech's dynamic IP system, all that needed is for the user to register with a user name and password. The email address field is for the server to send information to user should something goes wrong. The link to the CWM will be set as:

<https://www.cytech-technology.com/dynip/username.php>

For those not using Cytech's dynamic IP redirection system, do not check the box in the previous screen. In this case, the user will have to specify an FTP address to which the CWM can upload the IP address. This also allows a URL address e.g. www.userpage.com/home.html set up by user, to host the IP address redirection, without relying on Cytech's web server.

The FTP Server screen will ask for the address of the FTP server, as well as the user name and password for logging in. All these information are normally obtainable from the provider of the web space.

The FTP server directory is the path within the FTP server to send the dynamic IP address. This is often "public_html" or "/". This information should be available from user's ISP or FTP host.

Press Next to continue.

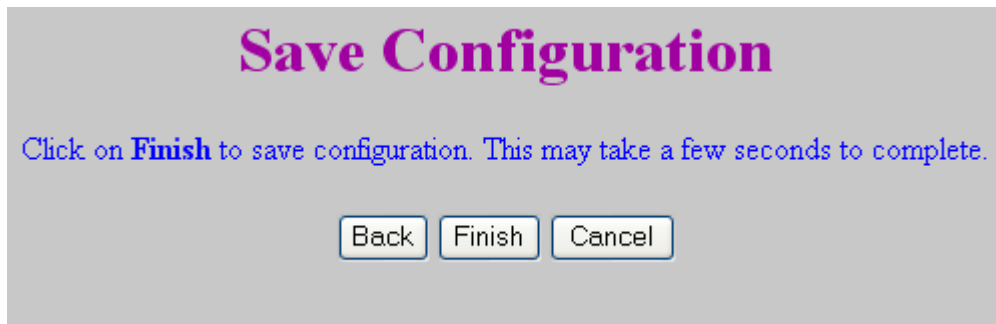


Figure 3.12 - Save Configuration Page

Click Finish to save the configuration.



Figure 3.13 - Configuration Status Page

This shows that the configuration has been saved. Press the Reset link on the screen to reboot CWM. It is not necessary to switch the power off and on as in previous versions.

Upgrading the CWM Software

To help facilitate the updating of the CWM, an online updating mechanism has been set up. To upgrade the CWM, please ensure that it is online. Then, simply click on the link in [https://\(IPAddress\):\(PortNumber\)/admin.htm](https://(IPAddress):(PortNumber)/admin.htm) and the CWM should be updated accordingly.

Changing Password

Here, the Engineer Sign In Option has to be enabled again (by pressing F, 0 on keypad). It is also needed to be enabled again if the CWM has been reset. Selecting this option allows the Password to be changed. This will replace the existing password. However, note that the user name will still be maintained as "admin".

The image shows a web page titled "Change Password" in a large, bold, purple font. Below the title, there is a paragraph of text in blue: "This page allows you to change the password to something more suitable. It is important that you change the password to prevent any one else from accessing your system using the default password". Below this text, there are two input fields. The first is labeled "New Password :" and the second is labeled "Confirm Password :". Both labels are in black text. Below the input fields, there is a button labeled "SET PASSWORD" in black text on a light gray background.

Change Password

This page allows you to change the password to something more suitable. It is important that you change the password to prevent any one else from accessing your system using the default password

New Password :

Confirm Password :

Figure 3.14 - Change Password Page

Testing CWM on the Local Network

Once the setup has been done as described above, it is possible to test CWM immediately without needing to do any programming of CWM. Make sure Comfort is powered on and connected to the CWM via KA/KB connection. Comfort can be programmed to the default template. Remember that minimum Comfort I "Outside" firmware on U1 is required.

CWM can be connected to the PC with the supplied crossover Ethernet cable, or it may be connected to the Local Area Network (on the same subnet) via a hub.

Open internet browser (Internet Explorer 8, or Netscape 7, Opera 7 or other Java-enabled browser) on the computer which is used to set up the CWM, or any computer on the network to which the CWM is connected (with the same subnet).

Type in the local IP address of CWM, e.g. `https://10.0.0.16` or the IP address that was assigned during the setup procedure. The prefix "`https://`" is used because SSL (Secure Sockets Layer) encryption is used to encrypt communications between the browser and CWM to protect unauthorized access. It will prompt a certificate error message as shown below;

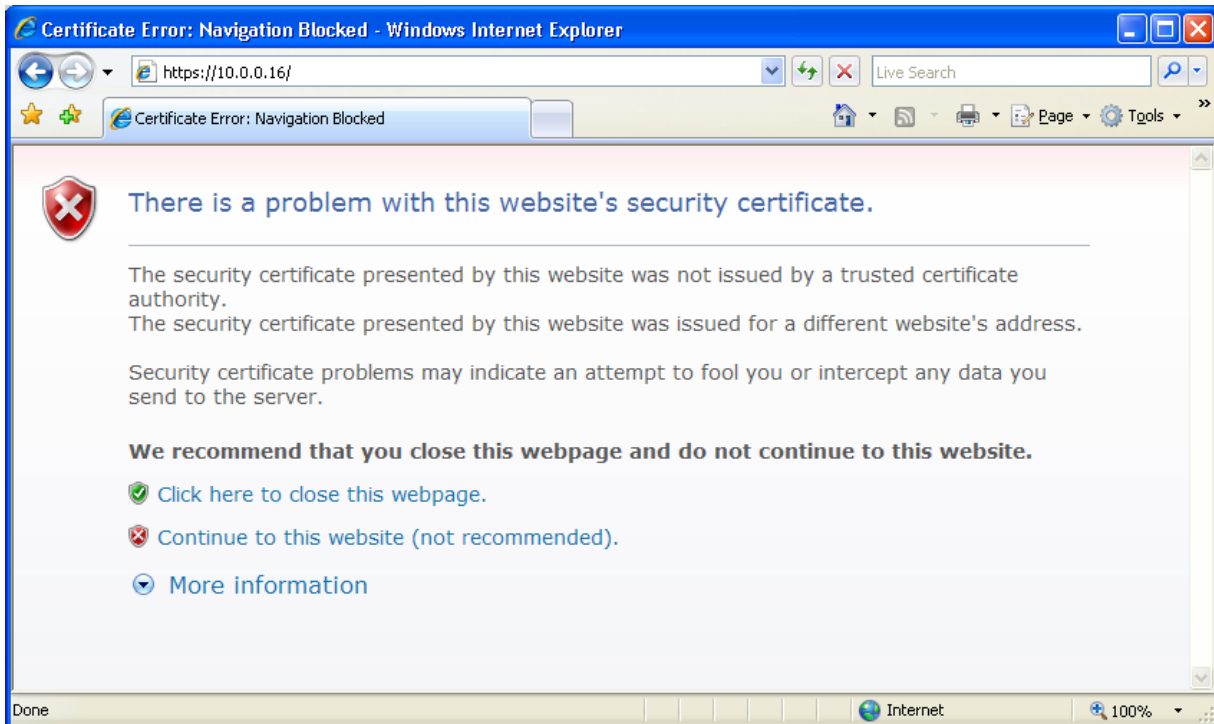
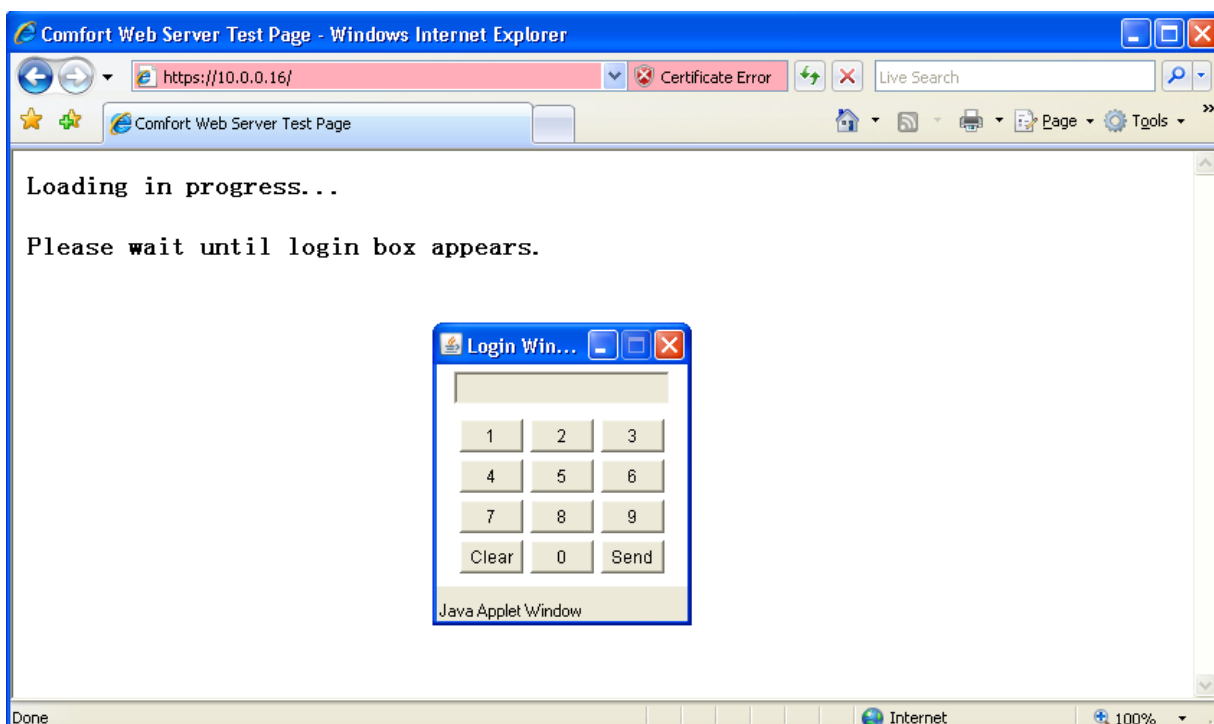


Figure 3.15 - Certificate Error Message on IE

The message says the security certificate presented by the website was not issued by a trusted certificate authority; it is a self-signed certificate. It is possible to pay to get a signed certificate from a certificate authority like Verisign. However this is not necessary as the purpose of a certificate is to authenticate the identity of a server which may be used for payment transactions. In this case you are accessing a server which belongs to you or the user (you entered your own IP address on the browser) so you trust the owner of the website. Select 'Continue to this website (not recommended)' or make an exception for this website (when using Firefox). However do not make this a permanent exception if the IP address is a dynamic one, ie not fixed.



Comfort Webserver Module CWM02

Figure 3.16 - Loading Page to the CWM

The browser will display “Loading in progress.” During this time, the Java Virtual Machine is loading on the computer. After 10 to 30 seconds, depending on the speed of the machine, the Login window will appear, which prompts “Please Sign In”

Enter Comfort sign in code which can be from 4 to 6 digits. Any valid Comfort user code will allow access. These codes are kept within Comfort, not the CWM or on any web site so there is better security. It is recommended that sign-in codes be 6 digits for maximum security.

Once the user code has been validated, the default web page will be displayed, as in the example below with the sample index.htm file.

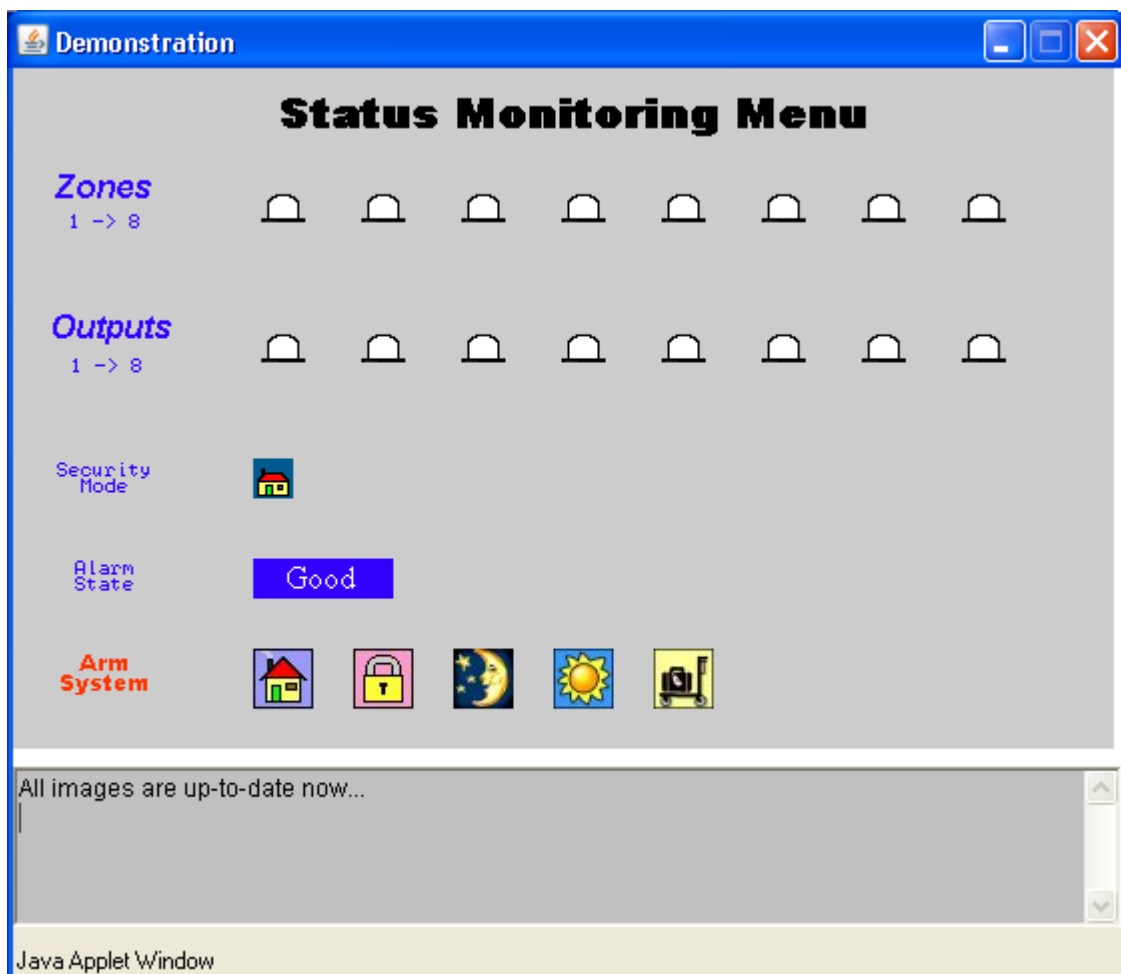


Figure 3.17 - Default CWM page

When the page loads, the state of the outputs 1 to 8 and inputs 1 to 8 will be updated, displaying the images for the object depending on whether the object is on or off. Please ensure that the message window indicates “All images are up-to-date”.

When any programmed zone is activated the corresponding image will change from white to blue (if nothing happens, it probably means that the one has not been programmed).

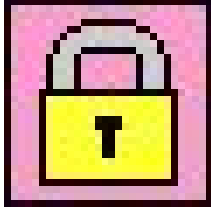
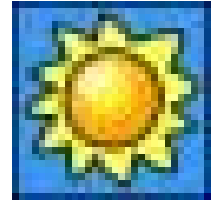
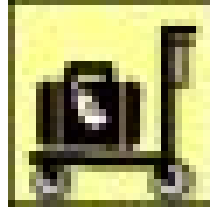
Clicking on any output will cause the state to change, from off to on, or on to off. When the cursor is over the icons, the cursor will change to a finger, and the border of image will be highlighted. Clicking on the image will cause the familiar hourglass to appear until the cursor is moved away from the image. An

Comfort Webserver Module CWM02

“acknowledge” announcement is heard when the user clicks on the image (provided a sound card is installed).

To get best results, keep the left mouse button pressed for a second or so when clicking on an image. Short clicks tend to get missed out.

The bottom row of icons is for arming and disarming.

Security Off	Away Mode	Night Mode	Day Mode	Vacation Mode
				

Arm Comfort by clicking on the Away, Day, Night, or Vacation icons. As this is a security operation, the Sign-in box will appear on screen. Enter user code to enable the operation. If the code is authorized, the system will be armed after the programmed exit delays. The Security Mode icon in the 3rd row will change to the corresponding icon, which is an animated gif. To disarm, click on the Home icon. Comfort will be disarmed to Security off when the user code is entered, and the Security Mode icon will change to Home.

The Alarm State icon shows Good, Trouble, Alert or Alarm.

The Text window displays Status messages from Comfort.

If the CWM remote FTP settings have been correctly programmed, then it would also be possible to access the system from the Internet.

Accessing the CWM via Cytech’s Dynamic IP System

For those who are not accessing via the local network, and are using Cytech’s dynamic IP system, the CWM can be accessed via:

[https://www.cytech-technology.com/dynip/\(UserName\).php](https://www.cytech-technology.com/dynip/(UserName).php)

There, the following login screen will be loaded.

Please enter your password :	LOGIN
---	--------------------------------------

Figure 3.18 - Login Screen of Cytech's Dynamic IP System

The password is the password set by the user in the dynamic IP setup as explained earlier in this section. Simply login with the correct password. This will then load the next screen:

Your CWM is at **116.14.249.227** port **443** as of 06 October 2008 11:55:44 PM (GMT-5) 1 Hrs 44 Mins ago

If your web page is not redirected there, you can click [here](#)

Comfort Webserver Module CWM02

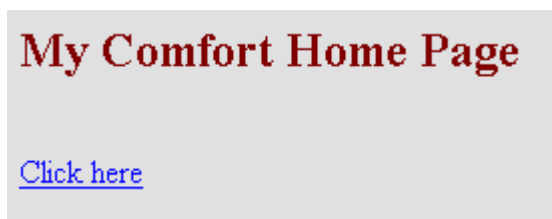
Figure 3.19 - CWM Status Page

This screen serves to show the current address of the CWM, as well as the last address update. The page should be re-directed to the current CWM address. If it does not seem to be redirecting, the user may also click on the link on the page.

After that, the steps will be similar to that of connecting to the CWM on the local network, i.e. signing in with Comfort's sign-in code, etc.

Accessing the CWM via other DNS Services

For those who are accessing the CWM by other means besides using Cytech's dynamic IP system, it will normally have a webpage which will redirect the user to the relevant webpage, e.g. a web page with a link as shown below.



In such a case, the user will also be redirected to the current updated CWM address. There, the steps to login are similar to the other 2 methods.

SECTION 4 PROGRAMMING

CWM Applet Designer Software

The software can be downloaded from <http://www.cytech.biz/software.html>

Opening the CWM-HTML Applet Designer will yield an empty work space as shown in the figure below:

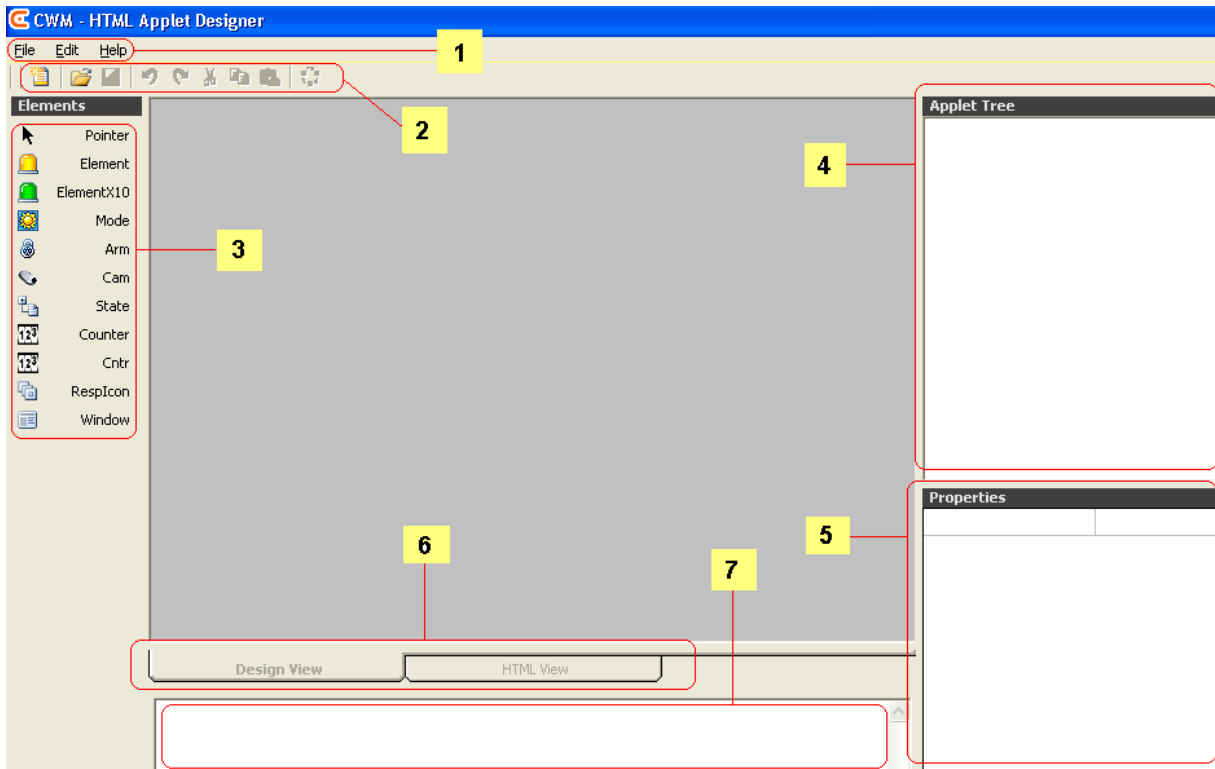


Figure 4.1 - CWM Applet Designer Page

Description:

- 1 Main Menu
- 2 Tool Bar
- 3 Element Toolbox
- 4 Applet Tree
- 5 Property Box
- 6 View Tab
- 7 Status List

Main Menu

File > New	To create new applet project
File > Open...	To open saved applet project (*.chd file)
File > Save	To save applet project (*.chd file)
File > Save As...	To save applet project as other name
File > Import HTML Applet...	To import existing HTML applet. #

Comfort Webserver Module CWM02

File > Settings...	To modify the default settings of CWM-HTML Applet Designer
File > Create HTML Output	To generate the HTML file output in the project folder. ##
File > Exit	Exit the designer software
Edit > Copy	Copy any element in a window.
Edit > Paste	Paste element.

Make sure that all image files for the applet are in the right folder under the same path of the HTML file. This will overwrite all settings previously done in the workspace.

Doing this will erase all file in the project path. New index.htm file will be created and a folder containing all the images for the project is copied in the new image folder in the project path.

Toolbar

Icons for easy access to the menus.

Element Toolbox

The Element toolbox is where to select elements to be added to the project window.

Element (zone and output)

To represent devices like lights and appliances which are controlled by Comfort, as well as devices which are connected to Comfort zones/inputs. The state of the device either off or on is represented by alternate images. The device state can be provided by a Zone (Input) or Output number.

Element X10

To represent the status of X10 modules. X10 commands to the addresses from wall switches or other X10 controllers will be reflected in the image displayed.

Arm

This parameter allows the system to be disarmed (security Off) or armed to Away, Night, Day or Vacation modes. This parameter does not show the security mode; display of the current security is by parameter "mode".

Mode

This parameter displays the current security mode be it security off, away, night or vacation mode by specifying the image files in the parameter list.

State

This parameter displays the current alarm state of the system. There are 4 states i.e. Idle (no alarm), Trouble (e.g. zone trouble, power failure, telephone cut, etc), Alert (zone alert, entry alert), and Alarm (intruder, fire, panic). The image associated with each of these states will be displayed when the system is in the corresponding state, and the image will blink. The "base" image is displayed during the blink.

Cam

Comfort Webserver Module CWM02

This parameter is used to place a camera icon on the web page and allow the user to view the images on the camera. Only a network camera with its own web server may be used, i.e. one that has an Ethernet port with a built-in web server, like Axis and Samsung webthru. These products have models which act as camera servers which allow several normal CCTV cameras to be connected. The camera server is connected to the same local area network as the CWM and must belong to the same subnet according to the subnet mask.

Counter

The Counter element is used for C-bus, EIB Instabus, or Honeywell Smartfit interfacing where monitoring is by means of counters. In C-bus and EIB systems, the counters store the current state of Group Addresses.

Cntr

This is very similar to Counter parameter except that clicking on the image can activate on and off responses. When the image is clicked, the value of the counter will be checked. The on-response is activated if the counter has 0 value and the off-response is activated if the counter has a non-zero value.

Resplcon

This element is used to directly execute Actions via CWM as distinct from Comfort Responses which reside in the Comfort Panel U4 IC. This may be used when Comfort's responses is not enough for the application. Be careful when using this parameter so as not to conflict with the Timers, Flags and Counters which are already used by Comfort Responses.

Window

To create a new window (max. 8).

Applet Tree

This is where all objects in the HTML Applet are displayed.

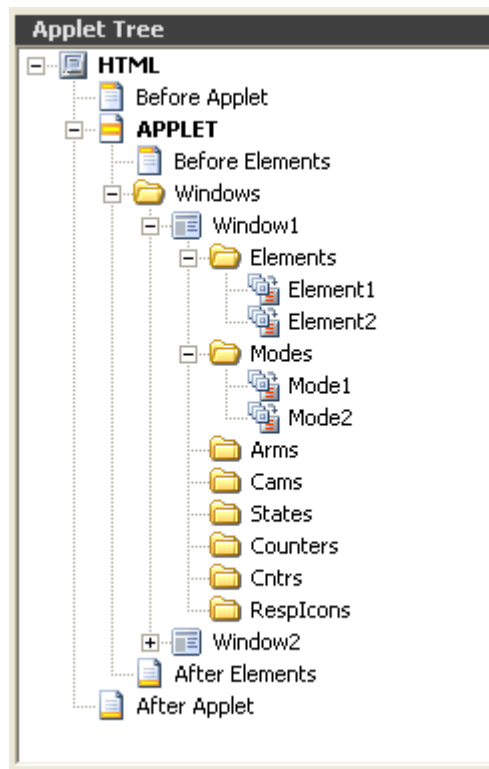


Figure 4.2 - Applet Tree Window

HTML

The root object

Before Applet

Heading tag e.g. `<H3> Please wait... </H3>`

APPLET

The applet root

Before Elements

Font tag e.g. `<FONT COLOR=#FFFFFF> </FONT>`

Windows

Folder contains Windows element

Up to 8 windows... Window1 to Window8

Elements

Elements folder – for Output, Zone and X10

Element1, Element2

The element1 and element2 objects for Window1

Modes

Modes folder – for Mode

Mode1, Mode2

The mode1 and mode2 objects for Window1

Arms

Arms folder - for Arm

Cams

Cams folder - for Camera

States

States folder - for State

Counters

Counters folder - for Counter

Cntrs

Cntrs folder - for Cntr

Resplcons

Resplcons folder - for Resplcon

Window2

Other Window tree

After Elements

Font tag e.g. Sorry, your browser doesn't support Java.

After Applet

Other tags may be added this After Applet section

Property Box

It is an object's properties which comprise all information pertaining to that object like element number, window number, coordinates, etc that can be modified when necessary. Clicking on any element in the window or clicking on any object in the applet tree will display its properties.

View Tab

Each time it is clicked, the designer software will pre-generate the HTML for the applet. Any warning or error will be displayed. Note that this is for checking purpose only, no HTML file will be created.

Status List

Any error or warning will be displayed here.

Designing Steps

It is not necessary to connect Comfort to the CWM to program the CWM web page.

- Go to File > New or click New icon on the toolbar.

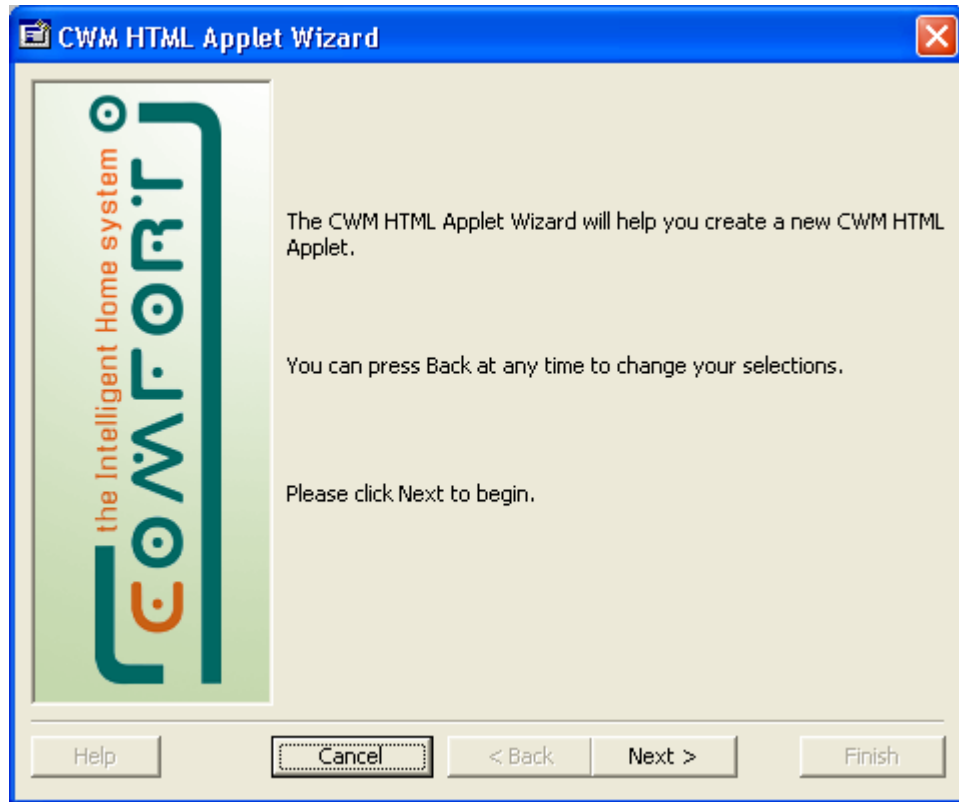


Figure 4.3 - Step 1 of Creating a New Applet

- Click Next to begin and the following screen will appear.

Comfort Webserver Module CWM02



Figure 4.4 - Step 2 of Creating a New Applet

Project Folder is where the newly created index.htm file and images folder are stored. Check 'Use Configurator File' and browse for the relevant ccl / cclx file.

- Click Next to Continue.

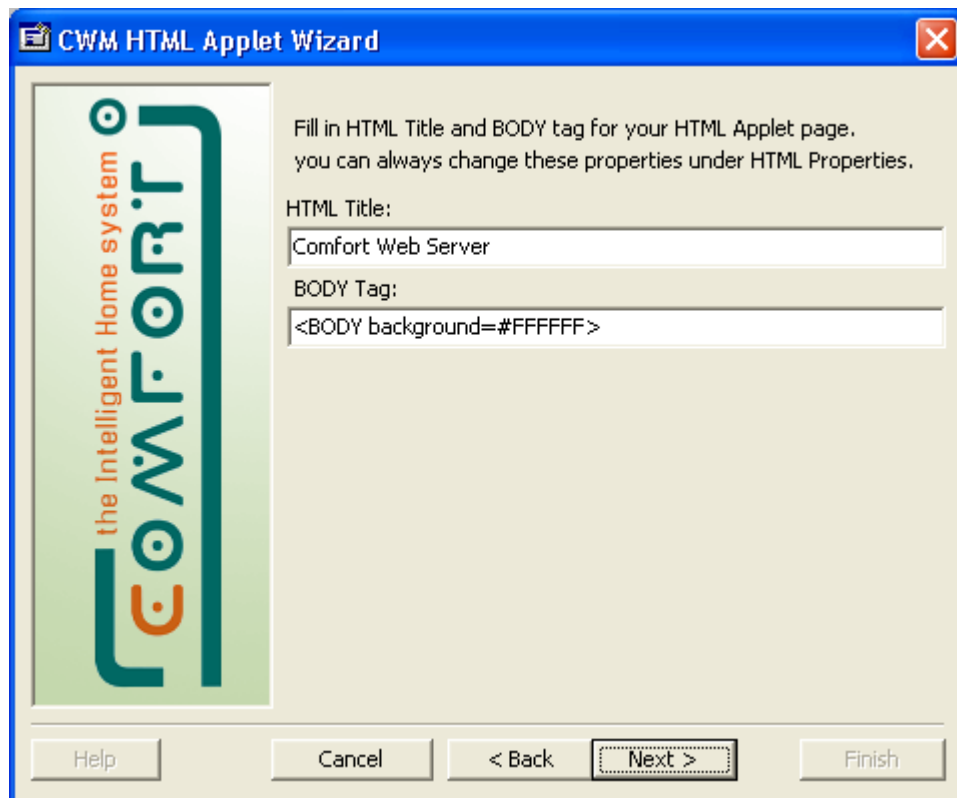


Figure 4.5 - Step 3 of Creating a New Applet

Comfort Webserver Module CWM02

This is an HTML property that is normally left to its default.

- Click Next to Continue



Figure 4.6 - Step 4 of Creating a New Applet

Click on 'Load Image' to load the background image. The background image file can be created by using any Paint program including Windows paint or Paint Shop Pro or a Floor Plan design program. The file format for the image should be of .jpg or .gif only. Keep the image size as small as possible in order to reduce the time required to load the page.

Title is the name of the window to be displayed by web browser. Change the title that corresponds to the project e.g. 123 Orchard Road.

- Click Finish when done with all the settings. Put all necessary elements onto the image and set up their parameters under their respective property box. See "Element Toolbox" or "Programming Elements" for detailed explanation on the Elements. It is highly recommended to do the design in an iterative manner; uploading and testing after a few elements have been added by clicking 'HTML View' tab and make sure there is no error displayed.
- When completed, go to File > Create HTML Output. The destination folder (that contains index.htm file and images folder) will open automatically. Upload these files to the CWM. The procedure is described in the following section: Uploading Files to CWM.

Uploading Files to CWM

Previously, to upload files to the CWM, File Manager had to be used. However, this is tedious in nature as it only allows for the uploading and downloading of 1 file at a time. To speed up these processes, with this current version (5.128),

Comfort Webserver Module CWM02

File Manager has been removed. File uploads and downloads can easily be done with the help of FTP.

FTP via Browser

CWM now currently supports FTP. For Windows 2000 and Windows XP, it can be accessed using the following address by keying in the following address in Windows Explorer (or any compatible browsers):

[ftp://admin@\(IPaddress\)](ftp://admin@(IPaddress))

For example, for the default CWM configuration, one can upload files to the CWM from <ftp://admin@10.0.0.16/>

To login, engineer menu must be enabled. Then, access the address format as shown above. If an error message encountered, click on “OK” to clear the message. After that, right click on the screen and select “login as”. Then, login as username “admin” with the correct password. The default password is “admin” unless amended (See “Changing Password”). Following that, the following screen should appear:

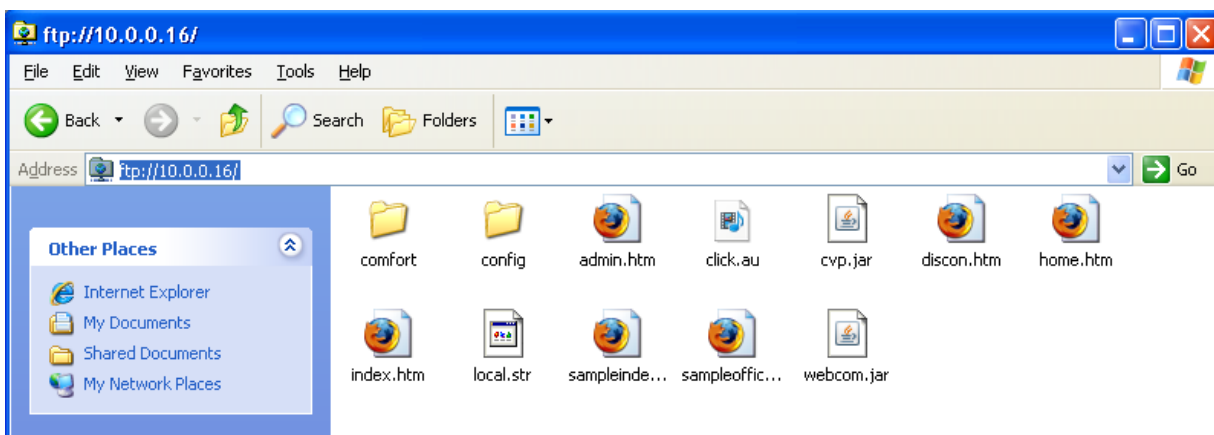


Figure 4.7 - FTP on Windows Browser

From this screen, uploading of files to the CWM is simpler. Simply copy and paste the files to be uploaded to the CWM to this page and to whichever directory one wants. Directories can also be created. Similarly, it also allows for the downloading of files from the CWM. This greatly enhances the ease of troubleshooting when the need arises.

FTP via FTP Client

For those who are still using older Windows like Windows 98 have to use a FTP Client like WS FTP and will have to configure it to connect to the CWM.

Comfort Webserver Module CWM02

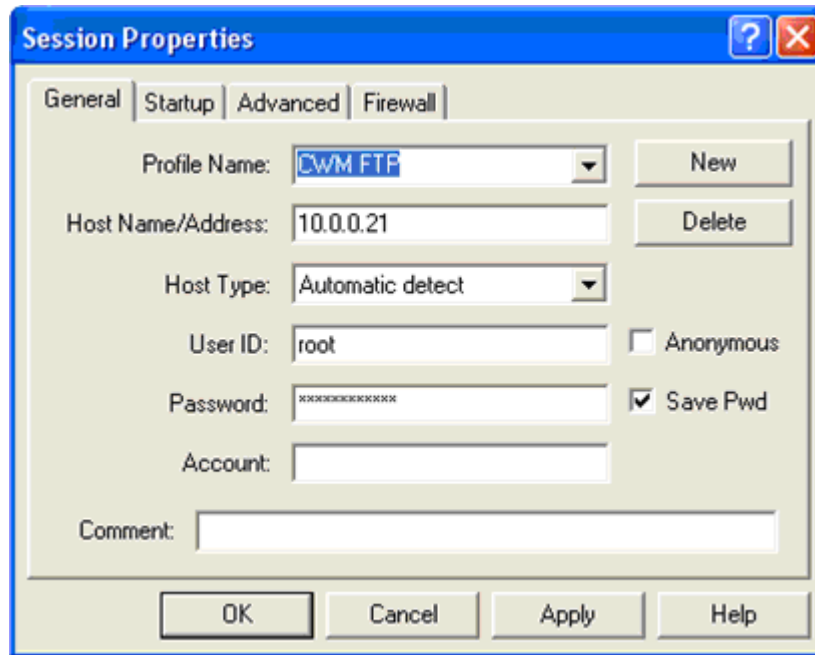


Figure 4.8 - WS FTP Session Properties

The above screen shot is an example of using WS FTP. Note that it has been configured to work with a CWM of address 10.0.0.21. The User ID and passwords need to be set as well. Correctly entering the username and password, user should then be able to connect to the CWM FTP server as shown below.

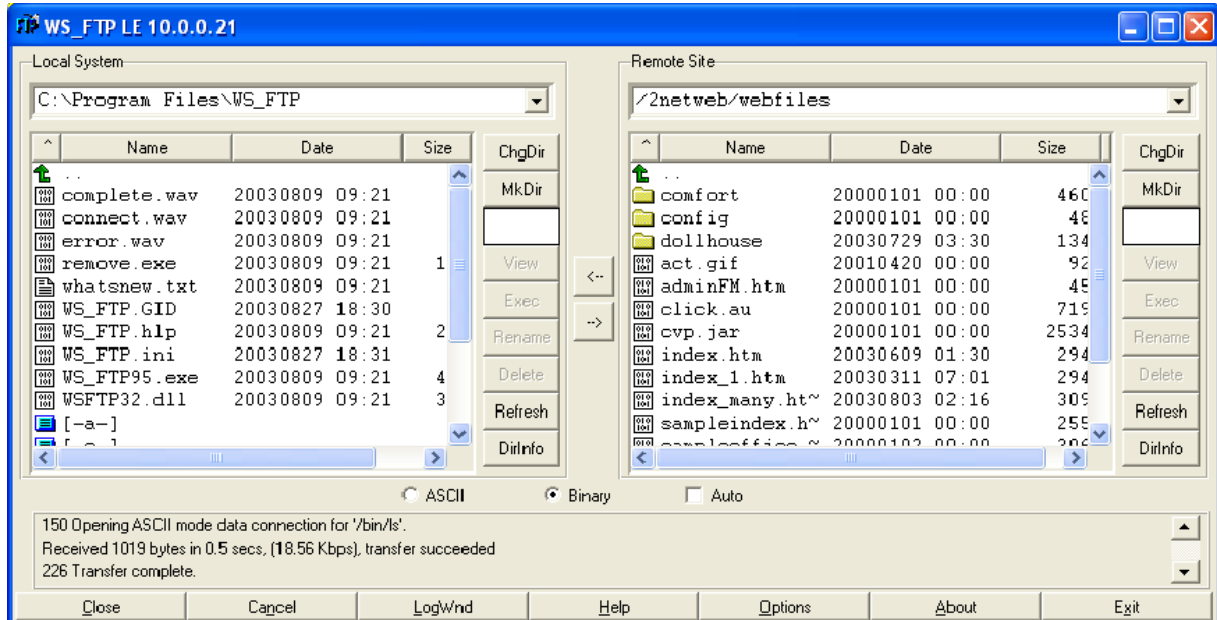


Figure 4.9 - WS FTP Screen

TCP/IP Pass-through Port

TCP Pass-through is a function whereby the Ethernet data is directly passed to the RS232 port of the UCM within the CWM and vice versa. This allows serial commands to be sent and status received using the LAN or Internet. It allows Comfigurator or WizComfort to work through the CWM by specifying a Network IP address and Port.

In order to enable the Pass-through port operation, Engineer Code must be enabled, by pressing F0 on the Keypad as usual. If Engineer Code is disabled at midnight on the same day or in Program Menu 3,4,0, the Pass-through Port will also be disabled. Only 1 Pass-through port can be established at one time.

While pass-through port operation is in progress, applet communications will cease, i.e. the normal operation of the CWM will stop. User will not be able to control or monitor Comfort via CWM until the pass-through connection is closed by disabling Engineer Code using Program Menu 3,4,0.

The default pass-through port number is 10001. This is specified in the browser setup using cwmsetup.exe or under the Module Setup page in [https://\(IPaddress\):\(PortNumber\)/admin.htm](https://(IPaddress):(PortNumber)/admin.htm). Port numbers can range from 0 to 65535.

NOTE: Port 80 must **NOT** be used for pass-through port.

The official list can be found at <http://www.iana.org/assignments/port-numbers>

Port numbers already used by CWM are 20 (file transfer data), 21 (file transfer control), 23 (telnet), 443 (https), 8080 (http alternate) and 10001 (default pass-through).

The Pass-through port feature is enabled on CWM firmware 5.063 and above.

If installed in a system with a firewall, check that the firewall does not block the assigned port for TCP / IP pass-through.

HTML Programming

This section applied to programming the web pages using HTML instead of the CWM Applet Designer.

The Comfort Web Server Module (CWM) enables Comfort to be controlled and monitored from a standard web browser such as Microsoft Internet Explorer and Netscape Navigator. The CWM makes use of Java Applets to provide icons and switches which change with the state of the device being monitored. These Java Applets interact with control variables which exchange information between the client browser and the server. The Java Applets are provided in webcom.jar, which contains Applets for controlling or monitoring input and output devices, X10, security mode, camera and alarm state. The applet code can be embedded in the HTML file using the <APPLET> tag.

The Java Applets are designed to send commands to Comfort by means of programmed Responses. The Responses must be preprogrammed in Comfort to perform the desired operations. Any Response can be activated by means of the Applets. For example, if Response 1 turns on Output 1, clicking on an icon can be programmed via the applet to send Response 1 to Comfort via the CWM.

The Java Applets monitor the state of variable like Zone, Output, X10, the Security Mode, and Alarm state, and can display the changed state using a specified image.

For each alarm input or appliance monitored or controlled by Comfort, two images are associated; one when it is On, and one when it is Off. For example,

the radio when it is off is shown as . When it is turned on, it can be



represented as . The program line which controls this element is illustrated as an example.

```
<PARAM NAME="Element1" VALUE="zone, 2, 5, /comfort/radio1.gif, 6,  
/comfort/radio0.gif, 350, 20, 1">.
```

This means the ON/Off status of the radio is monitored by Zone 2. If Zone is Off, radio0.gif is displayed, and zone 2 is On, radio1.gif is displayed.

Clicking on the radio icon will change its state, i.e. if it is On, it will turn off and vice versa. The programming line shown above specifies that Response 5 is used to turn on and Response 6 is used to turn off the radio. The set of coordinates tells where the icon should be located on the page.

Note that because of the visual feedback of the appliance state offered by web-based access, it is very desirable to monitor the state of the appliance. This can be done using a CSM03 current sensor connected to a zone input for many appliances.

Programming Elements

A sample index.htm page would look like this:

```
<HTML>  
<HEAD>  
<TITLE> ..... </TITLE>
```

Comfort Webserver Module CWM02

</HEAD>

<BODY>

<APPLET CODE=WebComfort.class ARCHIVE=webcom.jar, cvp.jar WIDTH=700
HEIGHT=500>

The above line specifies the Java archive to be downloaded to the browser.

The definition of the elements on the Java Applets follows. These consist of a series of statements of the form;

<PARAM NAME= "name" VALUE="value">

...

...

</APPLET>

</BODY>

</HTML>

The types of elements used are; **Element, Window, Mode, Arm, Cam, State, Counter, Cntr, Resplcon, IconHighlight**. Each parameter is assigned a sequential numeric value starting with 1 for each of the types, for example,

<PARAM NAME="Element1" VALUE="zone,4,0, /comfort/md1.gif,0 ,
/comfort/md0.gif, 19,376,1">

<PARAM NAME="Element2" VALUE="zone,5,0, /comfort/detect1.gif,0 ,
comfort/detect0.gif , 120,278,1">

A break in the sequence numbering for each element will invalidate the rest of the sequence. The element of each type need not be contiguous, i.e. they may be followed by other elements, but the sequence number of the element must be maintained, e.g., the following sequence is acceptable:

<PARAM NAME="Element1" VALUE=".....">

<PARAM NAME="Arm1" VALUE=".....">

<PARAM NAME="Element2" VALUE=".....">

<PARAM NAME="Element3" VALUE=".....">

<PARAM NAME="Arm2" VALUE=".....">

The following sequence is NOT acceptable because of a break in the sequence:

<PARAM NAME="Element1" VALUE=".....">

<PARAM NAME="Arm1" VALUE=".....">

<PARAM NAME="Element3" VALUE="....."> **(Element2 is missing)**

For each type, a token string is required in the "VALUE=" field. The number of tokens and the format of the tokens must be strictly adhered to.

The image files are normally stored in a subdirectory. In the examples shown, they are in the "/comfort" subdirectory

The types of parameters are defined below:

Window

Format:

Comfort Webserver Module CWM02

<PARAM NAME="Window#" VALUE="Title, window-image">

Explanation:

The parameter "Window" creates a new window on the screen. The first token is the title which will appear on the title bar. The second token is the name of the image file which will be displayed in the background. This image file may be in .gif or .jpg format which are the ones accepted by Java. The size of the window is determined by the image file. Keep the image size within the limits of the monitor's display. A minimum display resolution setting of 800 x 600 for pixels is recommended for the monitor.

The image file should consist of the static or fixed layout of the premises to be monitored on CWM. Any painting program like Windows Paint, or Paint Shop, or a Floor Plan design software can be used to create the background image.

Up to 8 windows may be used to represent different levels in a home or building.

Example:

<PARAM NAME="Window1" VALUE="Office, /comfort/office.gif">

This opens a window titled "Office" with a background image using office.gif.

Element (Zone and Output)

Format:

<PARAM NAME="Element#" VALUE="zone, number, response_on,
on-image, response_off, off-image, x,y, window ">

<PARAM NAME="Element#" VALUE="output, number, response_on,
on-image, response_off, off-image, x,y, window ">

Explanation:

The element name "Element" is used to represent devices like lights and appliances which are controlled by Comfort, as well as devices which are connected to Comfort Zone Inputs. The state of the device, either off or on is represented by alternate images. The device state can be provided by a Zone (Input) or Output number.

"zone" is the token which indicates that a zone (input) is providing the status feedback for the device.

"output" is the token which indicates that an output is providing the status feedback for the device.

"number" is the zone (Input) or Output Number (0 to 64) on Comfort which provides the status feedback for the device to Comfort. If "zone" is specified, the zone number must be programmed to the appropriate zone type. An un-programmed zone will not respond. If "zone" or "output" is 0, this means that there is no feedback status, and only the Off Image will be displayed. Clicking on the image will alternately activate the response on and response off.

"response on" is the Comfort Response (program) number (1 to 254 for Outside; 1 to 1023 for Action) which turns on the device. The Response number specified must be programmed to perform the required actions. (This is not to be confused with the Zone On Response which is activated when the zone goes on)

Comfort Webserver Module CWM02

“On-image” is the image file which represents the device when it is in the ON state. Note that the definition of Off and On depends on whether the Zone Type used is Normally Open or Normally Closed.

“response off” is the Comfort Response (program) number (1 to 254 for Outside; 1 to 1023 for Action) which turns off the device. The Response number specified must be programmed to perform the required actions. (This is not to be confused with the Zone Off Response which is activated when the zone goes on).

“Off-image” is the image file which represents the device when it is in the OFF state. Note that the definition of Off and On depends on whether the Zone Type used is Normally Open or Normally Closed.

“x” and “y” are the x and y coordinates of the image displayed. Coordinates are referenced from the top left corner of the window and the size extends from the top left corner of the image to the right and downwards.

“Window” is the window number which the element belongs to.

Example:

```
<PARAM NAME="Element1"          VALUE="zone, 2, 17,  
/comfort/lightcir_1.gif, 18, /comfort/lightcir_0.gif, 350, 20, 1">
```

This element represents a light controlled by Comfort and whose status is fed back to Zone (Input) 2 via a Current sensor (CSM03). lightcir_1.gif is the image shown when the light is on (Input 2 on) and lightcir_0.gif is the image shown when the light is off (Input 2 off). Clicking on the light switches will turn off or on the light depending on its current state. Response 17 turns on the light and Response 18 turns off the light. The image is at coordinates (350,20) in Window number 1.

The “zone” element allows control of any device using Responses which can be programmed for infrared control, x10 transmission, pulse outputs or on/off control and where the device state is available on an input zone through a current sensor.

```
<PARAM NAME="Element2"          VALUE="output, 5, 9,  
/comfort/lightcir_1.gif, 10, /comfort/lightcir_0.gif, 420, 50, 2">
```

This element represents a light controlled by Comfort and whose status is in output 5. Lightcir_1.gif is the image shown when the light is on (output 5 on) and lightcir_0.gif is the image shown when the light is off (Output 5 off). Clicking on the light will switch off or on the light depending on its current state. Response 9 turns on the light and Response 10 turns off the light. The image is at coordinates (420,50) in Window number 2.

The “output” element can be used for devices which are controlled directly through the outputs without any input feedback. For example a pulse to open a gate or door will show the on image momentarily during the duration of the pulse. A device which is controlled directly from the outputs is also represented in this way.

```
<PARAM NAME="Element3"          VALUE="zone, 15, 0,  
/comfort/detector1.gif, 0, /comfort/detector0.gif, 550, 10, 1 ">
```

This element represents a motion detector connected to Zone (Input) 15. detector1.gif is the image shown when the detector detects movement (Input 15 on) and detector0.gif is the image shown when the detector is off (Input 15 off). In this case the response_on and response_off is 0, i.e. not used because this element provides status only and not control.

Comfort Webserver Module CWM02

A zone or output number of 0 is valid and means that there is no feedback for this element. This is used to issue a command without feedback status. The off-image file will be displayed at all times, as an on status will not be received. A valid file name must be specified for the on-image even though it is not used. e.g. `<PARAM NAME="Element3" VALUE="zone, 0, 16, /comfort/imageoff.gif, 16, /comfort/imageoff.gif, 550, 10, 1 ">`

This displays imageoff.gif at all times. When clicked, Response 16 is always activated. If the on and off responses specified are different, then they will be alternately activated

This method is used to implement the Disconnect function to cause the dial-up modem to hang up. This is described in more detail in the "Programming Comfort" section.

Element (X10)

Format:

`<PARAM NAME="Element#" VALUE="x10, housecode, unitcode, response_on, on-image, response_off, off-image, yes/no, x,y, window ">`

Explanation:

The token "x10" for parameter "Element" is used to represent the status of X10 modules. X10 commands to the addresses from wall switches or other x10 controllers will be reflected in the image displayed.

"X10" is the token name for x10 control

"Housecode" is the housecode (A to P) of the x10 module to be controlled and monitored.

"Unitcode" is the unit code (1 to 16) of the x10 module to be controlled and monitored.

"response_on" is the Comfort Response (program) number (1 to 1023 for ULTRA) which turns on the x10 module. The Response number specified must be programmed to perform the required actions.

"On-image" is the image file which represents the device when it is in the ON state.

"response_off" is the Comfort Response (program) number (1 to 1023) which turns off the device. The Response number specified must be programmed to perform the required actions.

"Off-image" is the image file which represents the device when it is in the OFF state.

"Yes" or "no" indicates if the x10 module is a lamp module which can respond to the All Lights On and All Lights Off x10 commands. Please check with the X10 module instruction sheet to find out whether the module does respond to these commands.

"x" and "y" are the x and y coordinates of the image displayed. Coordinates are referenced from the top left corner of the window and the size extends from the top left corner of the image to the right and downwards.

"Window" is the window number which the element belongs to.

Example:

`<PARAM NAME="Element4" VALUE="x10, A, 1, 33, /comfort/moduleon.gif, 34, /comfort/moduleoff.gif, no, 350, 20, 1">`

Comfort Webserver Module CWM02

This element represents an X10 module with x10 address A1 (housecode=A, unitcode=1). moduleon.gif is shown when the module is on and moduleoff.gif is shown when the module is off. Clicking on the device icon switches off or on the module depending on its current state. Response 33 turns on the light and Response 34 turns off the module. The image is at coordinates (350,20) in Window number 1. "No" indicates the module is not a lamp module which can be controlled by the "All Lights On" X-10 command.

Note:

When the window is first opened, the X-10 elements are shown in the off state, as X-10 modules cannot be polled for their current state. The state is updated when the module is controlled for the first time.

Arm

Format:

<PARAM NAME="Arm#" VALUE="off-x, off-y, off-image, away-x, away-y, away-image, night-x, night-y, night-image, day-x, day-y, day-image, vac-x, vac-y, vac-image, window ">

Explanation:

This parameter allows the system to be disarmed (security Off) or armed to Away, Night, Day and Vacation modes. This parameter does not show the security mode - display of the current security is by parameter "mode".

"Off-x, off-y" are the coordinates of the security off image. Coordinates are referenced from the top left corner of the window and the size extends from the top left corner of the image to the right and downwards.

"off-image" is the image file for security off

"Away-x, away-y" are the coordinates of the away mode image. Coordinates are referenced from the top left corner of the window and the size extends from the top left corner of the image to the right and downwards.

"away-image" is the image file for away mode

"Night-x, night-y" are the coordinates of the night mode image. Coordinates are referenced from the top left corner of the window and the size extends from the top left corner of the image to the right and downwards.

"night-image" is the image file for night mode

"Day-x, day-y" are the coordinates of the day mode image. Coordinates are referenced from the top left corner of the window and the size extends from the top left corner of the image to the right and downwards.

"day-image" is the image file for day mode

"Vac-x, vac-y" are the coordinates of the vacation mode image. Coordinates are referenced from the top left corner of the window and the size extends from the top left corner of the image to the right and downwards.

"vac-image" is the image file for vacation mode

"Window" is the window number which this parameter belongs to.

Example:

Comfort Webserver Module CWM02

```
<PARAM NAME="Arm1"          VALUE="0, 200, /comfort/disarm.gif, 50,
200, /comfort/away.gif, 100, 200, /comfort/ night.gif, 150, 200,
/comfort/day.gif, 200, 200, /comfort/vacation.gif, 1">
```

This places the disarm.gif image at (0,200), away.gif image at (50,200), night.gif at (100,200), day.gif at (150,200) and vacation.gif at (200,200). These elements are in window 1.

Mode

Format:

```
<PARAM NAME="Mode#"          VALUE="x, y, off-image, away-image,
night-image, day-image, vac-image, window">
```

Explanation:

This parameter displays the current security mode (off, away, night, day, Vacation) by specifying the image files in the parameter list.

"x, y" is the location of the image to be displayed. Coordinates are referenced from the top left corner of the window and the size extends from the top left corner of the image to the right and downwards.

"off-image" is the image file for security off

"away-image" is the image file for away mode

"night-image" is the image file for night mode

"day-image" is the image file for day mode

"vac-image" is the image file for vacation mode

"Window" is the window number which this parameter belongs to.

Only one of the images is displayed in the same location, depending on the current mode, so the images must be of the same size.

Note that this "Mode" parameter only displays the current mode, while the "Arm" parameter controls the security mode.

Example:

```
<PARAM NAME="Mode1"          VALUE="150, 430, /comfort/disarm.gif,
/comfort/away.gif, /comfort/ night.gif, /comfort/day.gif, /comfort/vacation.gif,
1">
```

This places the image at (150,430) and the selected image file will be displayed depending on the security mode.

State

Format:

```
<PARAM NAME="State#"          VALUE="x, y, base-image, idle-image,
trouble-image, alert-image, alarm-image, window">
```

Explanation:

This parameter displays the current Alarm State of the system. There are 4 states: Idle (No alarm), Trouble (e.g. zone trouble, power failure, telephone cut etc.), Alert (Zone Alert, Entry Alert), and Alarm (Intruder, Fire Panic). The image associated with each of these states will be displayed when the system is in the corresponding alarm state, and the image will blink. The "base" image is displayed during the blink.

Comfort Webserver Module CWM02

"x y" is the location of the image to be displayed. Coordinates are referenced from the top left corner of the window and the size extends from the top left corner of the image to the right and downwards.

"base-image" is the image file for base image which is displayed during the blink

"idle-image" is the image file for idle state

"trouble-image" is the image file for trouble state

"alert-image" is the image file for alert state

"alarm-image" is the image file for alarm state

"Window" is the window number which this parameter belongs to.

Only one of the images is displayed in the same location, depending on the current alarm state, so the images must be of the same size.

Example:

```
<PARAM NAME="State1"          VALUE="300, 430, /comfort/base.gif,  
/comfort/idle.gif, /comfort/trouble.gif, /comfort/alert.gif, /comfort/ alarm.gif,  
1">
```

This places the image at (300,430) and the selected image file will be displayed depending on the alarm state.

Cam

Format:

```
<PARAM NAME="Cam#"          VALUE="x, y, webcam-image, ip-address,  
destination-port, subnet-mask, source-port,window">
```

Explanation:

This parameter is used to place a camera icon on the web page and allow the user to view the images on the camera. Only a network camera with its own web server may be used, i.e. one that has an Ethernet port with a built-in web server, like Axis and Samsung Webthru. These products have models which act as camera servers which allow several normal CCTV cameras to be connected. The camera server is connected to the same local area network as the CWM and must belong to the same subnet according to the subnet mask.

"x y" is the location of the image to be displayed. Coordinates are referenced from the top left corner of the window and the size extends from the top left corner of the image to the right and downwards.

"webcam-image" is the image file for the camera.

"ip-address" is the local IP address of the camera.

"destination-port" is the port number of the camera web server, usually 80.

"subnet-mask" is the subnet mask for the local network e.g. 255.255.255.0.

"Source-port" is the port number of the camera web server when accessed from the Internet. CWM is able to do "port forwarding" from the Internet. As there will only be one public IP address assigned when it is connected to the Internet, access to the camera will use the same public IP address with a port name. Port forwarding translates the IP address:port address to a local IP address and allows several local IP addresses to be accessed using a single public IP address. **The port numbers should be what was specified in the setup procedure.**

Comfort Webserver Module CWM02

“Window#” is the window number which this parameter belongs to.

The camera server must be configured according to the instructions of the product used, i.e. to set the IP address and subnet mask and the viewing parameters.

For Video Servers where more than 1 CCTV camera can be connected, there will be a single IP address to access the server. This has to be set up like a single camera. The access will be to the server's home page where user can select the camera image to view.

Counter

Format:

<PARAM NAME="Counter#" VALUE="x, y, number, divisor, Q/R, start-image, value1, value1-image, value2, value2-image,..., valueN, valueN-image, window #">

Explanation:

The Counter element is used for C-Bus, EIB Instabus, or Honeywell Smartfit interfacing where monitoring is by means of counters. In C-Bus and EIB systems, the counters store the current state of Group Addresses.

“x y” is the location of the image to be displayed. Coordinates are referenced from the top left corner of the window and the size extends from the top left corner of the image to the right and downwards.

“number” is the counter number which is being monitored. The allowable values range from 0 to 255 for ULTRA.

“Divisor” is the value that is divided into the counter value to obtain the value for comparison. The value for this parameter is expressed in decimal. If the range of values desired is 0 to 100, then the required divisor value is 2.55 (255/100).

“Q” or “R” indicates if the values of interest to be displayed is the Quotient or Remainder of the result. “Remainder” is used for displaying exact values like temperature. “Quotient” is used to display decimal digits (hundreds, tens or single-digit values)

“start-image” is the image file which is displayed during upon starting of Java or the lowest value image.

“value1” is the threshold value above which “value1-image” will be displayed. In other words if the computed value is greater than or equal to “value1”, the “value1-image” is displayed.

“valueN” is the threshold value above which “valueN-image” will be displayed. In other words if the computed value is greater than or equal to “valueN”, the “valueN-image” is displayed.

“Window#” is the window number which this parameter belongs to.

Note: The threshold value must be in ascending order for the system to work correctly.

Example 1:

Display counter 50 value (from 0 to 255) at Location (10,20) in 3 digits with each digit having a size of 30 x 30 pixels

<PARAM NAME="Counter1" VALUE="10, 20, 50, 100, Q, /comfort/0.gif, 1, /comfort/1.gif, 2, /comfort/2.gif, 1">

Comfort Webserver Module CWM02

This displays the hundreds digit (0,1,2)

```
<PARAM NAME="Counter2"          VALUE="40, 20, 50, 100, R, /comfort/0.gif,
10, /comfort/1.gif, 20, /comfort/2.gif, 30, /comfort/3.gif, 40, /comfort/4.gif,
50, /comfort/5.gif, 60, /comfort/6.gif, 70, /comfort/7.gif, 80, /comfort/8.gif,
90, /comfort/9.gif, 1">
```

This displays the tens digit (0 to 9)

```
<PARAM NAME="Counter3"          VALUE="70, 20, 50, 10, R, /comfort/0.gif,
1, /comfort/1.gif, 2, /comfort/2.gif, 3, /comfort/3.gif, 4, /comfort/4.gif, 5,
/comfort/5.gif, 6, /comfort/6.gif, 7, /comfort/7.gif, 8, /comfort/8.gif, 9,
/comfort/9.gif, 1">
```

This displays the ones digit (0 to 9)

Example 2:

Display counter 255 value (0 to 255) in the range 0 to 100 as 3 digits as in example 1

```
<PARAM NAME="Counter1"          VALUE="10, 20, 50, 255, Q,
/comfort/0.gif, 1, /comfort/1.gif, 1">
```

This displays the hundreds digit (0,1)

```
<PARAM NAME="Counter2"          VALUE="40, 20, 255, 25.5, Q,
/comfort/0.gif, 1, /comfort/1.gif, 2, /comfort/2.gif, 3, /comfort/3.gif, 4,
/comfort/4.gif, 5, /comfort/5.gif, 6, /comfort/6.gif, 7, /comfort/7.gif, 8,
/comfort/8.gif, 9, /comfort/9.gif, 10, /comfort/0.gif, 1">
```

This displays the tens digit (0 to 9)

If the additional threshold value of 10 is omitted it will display 190 instead of 100 when the maximum value of 255 is received.

```
<PARAM NAME="Counter3"          VALUE="70, 20, 50, 25.5, R,
/comfort/0.gif, 2.55, /comfort/1.gif, 5.1, /comfort/2.gif, 7.65, /comfort/3.gif,
10.2, /comfort/4.gif, 12.75, /comfort/5.gif, 15.3, /comfort/6.gif, 17.85,
/comfort/7.gif, 20.4, /comfort/8.gif, 22.95, /comfort/9.gif, 1">
```

This displays the ones digit (0 to 9)

Example 3:

This example displays the counter value by means of a pointer to a scale or water level in a tank. In this example there are 10 threshold values.

```
<PARAM NAME="Counter1"          VALUE="100, 200, 255, 1, Q,
/comfort/0per.gif, 25.5, /comfort/10per.gif, 51, /comfort/20per.gif, 76.5,
/comfort/30per.gif, 102, /comfort/40per.gif, 127.5, /comfort/50per.gif, 153,
/comfort/60per.gif, 178.5, /comfort/70per.gif, 204, /comfort/80per.gif, 229.5,
/comfort/90per.gif, 255, /comfort/100per.gif, 1">
```

Cntr

Format:

```
<PARAM NAME="Cntr#"          VALUE="x, y, number, on-response,
off-response, divisor, Q/R, start-image, value1, value1-image, value2,
value2-image,..., valueN, valueN-image, window #">
```

Explanation:

This is very similar to the Counter parameter except that clicking on the image can activate on and off responses. When the image is clicked, the value

Comfort Webserver Module CWM02

of the counter will be checked. The On-response is activated if the counter has 0 value and the off-response is activated if the counter has a nonzero value.

The Cntr element is used for C-Bus, EIB Instabus, or Honeywell Smartfit interfacing where monitoring is by means of counters. In C-Bus and EIB systems, the counters store the current state of Group Addresses. Cntr is available from webcom.jar version 1.0.9 onwards.

"x y" is the location of the image to be displayed. Coordinates are referenced from the top left corner of the window and the size extends from the top left corner of the image to the right and downwards.

"number" is the counter number which is being monitored. The allowable values range from 0 to 255.

"On-response" is the response that will be activated when the image is clicked when the counter has a zero value (meaning that the device monitored is off).

"Off-response" is the response that will be activated when the image is clicked when the counter has a nonzero (1 to 255) value, (meaning that the device monitored is on).

"Divisor" is the value that is divided into the counter value. The value for this parameter is expressed in decimal. If the range of values desired is 0 to 100, then the required divisor value is 2.55 (255/100).

"Q" or "R" indicates if the values of interest to be displayed is the Quotient or Remainder of the result. Remainder is used for displaying exact values like temperature. In most cases "Q" is used.

"start-image" is the image file which is displayed during upon starting of Java or the lowest value image.

"value1" is the threshold value above which "value1-image" will be displayed. In other words if the computed value is greater than or equal to "value1", the "value1-image" is displayed.

"valueN" is the threshold value above which "valueN-image" will be displayed. In other words if the computed value is greater than or equal to "valueN", the "valueN-image" is displayed.

"Window#" is the window number which this parameter belongs to.

Note: The threshold value must be in ascending order for the system to work correctly.

Example 1:

Counter 100 value (0 to 255) at Location (10,20) represents a Group address on EIB or C-Bus. A value of 0 indicates that the group address is Off, while 255 means the Group Address is fully On. A value between 1 and 254 indicates that the device (normally a light) is dimmed at an intermediate level. This line will display different images depending on the dimming level at the group address divided into the ranges 25%, 50%, 75%, 100%.

```
<PARAM NAME="Cntr1" VALUE="10, 20, 100, 201,202, 1, Q, /comfort/off.gif, 64,/comfort/25pc.gif, 128, /comfort/50pc.gif, 192, /comfort/75pc.gif, 255, /comfort/on.gif, 1">
```

In this example, 10,20 is the coordinates of the image, 100 is the counter number, 201 is the Response which is activated when the counter value is 0, 202 is the Response which is activated when the counter value is nonzero, 1 is the divisor (no division), Q means Quotient is used for comparison, off.gif is the off level image, 64 is the threshold value for displaying the next parameter

Comfort Webserver Module CWM02

25pc.gif, 128 is the threshold for displaying the next parameter 50pc.gif, 192 is the threshold for displaying the next image 75pc.gif, and 255 is the threshold for displaying the last image on.gif.

Resplcon

Format:

```
<PARAM NAME="Resplcon#"      VALUE="type, x, y, image, window #,  
action, action,...,action">
```

Explanation:

This element is used to directly execute Actions via CWM as distinct from Comfort Responses which reside in the Comfort Panel U4 IC. This may be used when Comfort's 255 Responses is not enough for the application. Be careful when using this parameter so as not to conflict with the Timers, Flags and counters which are already used by Comfort Responses.

This parameter is available from webcom.jar 1.0.9 onwards

"Type" is for future use. It is ignored currently; please use a default value of 1.

"x y" is the location of the image to be displayed. Coordinates are referenced from the top left corner of the window and the size extends from the top left corner of the image to the right and downwards.

"Image" is the image file which is displayed at the location specified.

"Window#" is the window number which this parameter belongs to.

"Action",...,"action" is the list of actions to be executed. Each CWM Response is made up of a maximum of 6 Actions. More than 1 CWM Response can be executed in the same line by using "255" as a separator. For example, act1, act2, act3, act4, act5, act6, 255, act7, act8, act8, act10, act11, act12 will execute the first CWM response consisting of act1 to act6, followed by the second CWM response consisting of act7 to act12. Note that actions cannot start in a CWM response and end in the next.

Example 1:

```
<PARAM NAME="Resplcon1"      VALUE="1, 10, 20, image1.gif, 1,  
128,2,1,255, 195,65,1,5,">
```

In the example, the Type is 1, location is (10,20), and window is 1. The first CWM Action is 128, 2, 1 (Output 2 On), followed by the next CWM Response 195,65,1,5 (X10 A1 On).

IconHighlight

Format:

```
<PARAM NAME="IconHighlight"  VALUE="Off">
```

Explanation:

By default when a user hover the mouse on any click-able image, the rectangular border around the image becomes highlighted. This parameter disables the highlighting feature. One of the instances where this might be used is when multiple images are controlled by the same action as in a bank of lights. If the highlight is enabled then placing the mouse over one of the lights would cause a highlight over the whole bank of lights which some may prefer not to see.

Sample Program

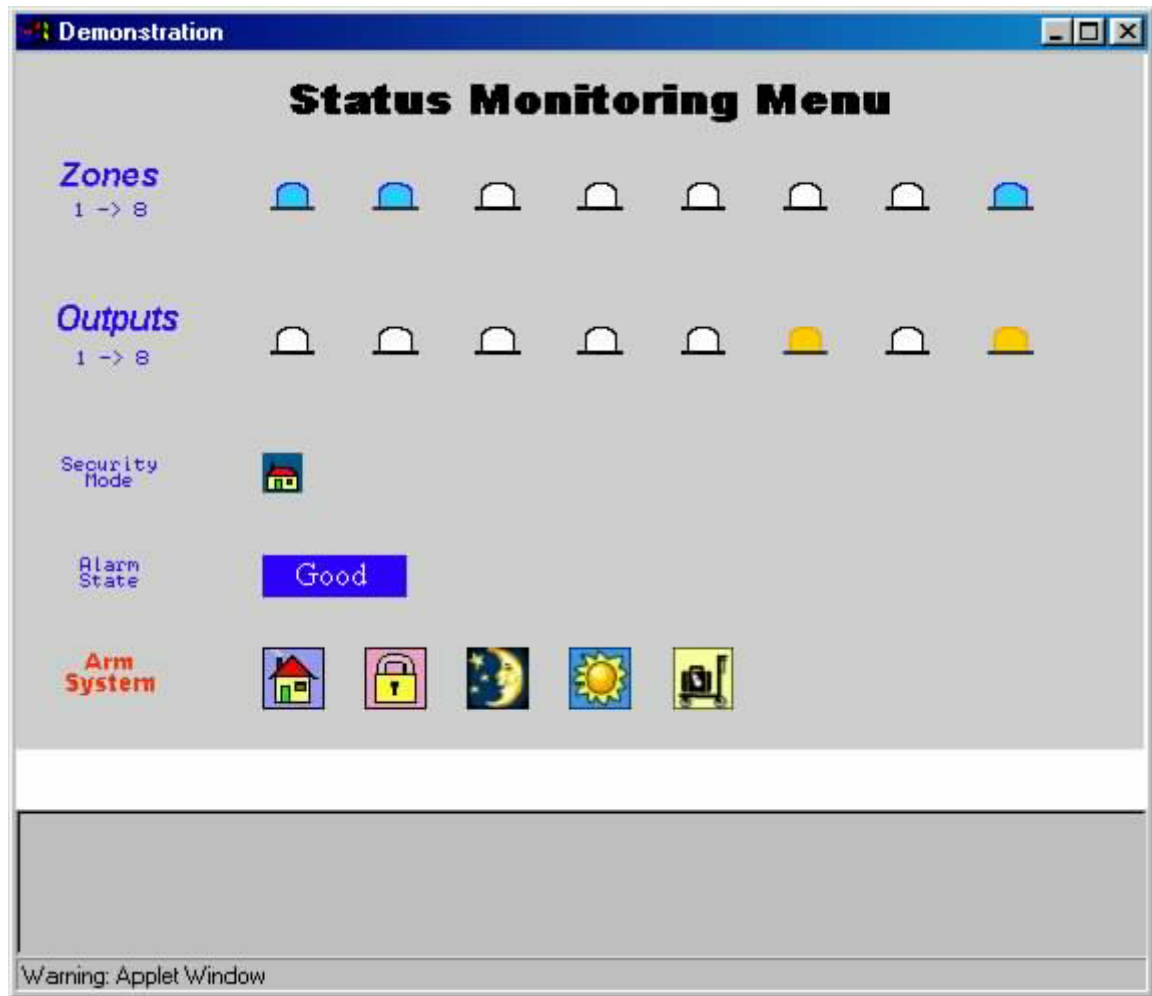


Figure 4.10 - Sample Program Screen

This sample design monitors the state of 8 input zones, 8 outputs, the Alarm State, and the security mode. Clicking on the outputs will change the state from on to off and vice versa, and the change will be reflected in the colour of the output icon. If a zone turns on the icon will change colour. Note that the monitoring of the zone depends on the zone being programmed to the appropriate zone type. If a zone is not programmed, i.e. left as Zone Type 0, it will not be monitored.

This will work with any Comfort program, even the default system with only Zone 1 programmed. Program Zones 2 to 8 to any Zone Type (except 0) to see that the Zones icons will reflect the real time changes to the Inputs.

The sample file contents are shown below for reference:

```
<HTML>
<HEAD>
<TITLE>Comfort Web Server Test Page</TITLE>
</HEAD>
<BODY background= #FFFFFF>
<H3>
```

Loading in progress...

Comfort Webserver Module CWM02

Please wait until login box appears.

</H3>

<APPLET CODE=WebComfort.class ARCHIVE=webcom.jar,cvp.jar WIDTH=1
HEIGHT=1>

<PARAM NAME="Window1" VALUE="Demonstration,
/comfort/background.gif">

<PARAM NAME="Element1" VALUE="zone,1,0,
/comfort/led_blu.gif,0 , /comfort/led.gif, 120,55,1">

<PARAM NAME="Element2" VALUE="zone,2,0,
/comfort/led_blu.gif,0 , /comfort/led.gif , 170,55,1">

<PARAM NAME="Element3" VALUE="zone,3,0,
/comfort/led_blu.gif,0 , /comfort/led.gif, 220,55,1">

<PARAM NAME="Element4" VALUE="zone,4,0,
/comfort/led_blu.gif,0 , /comfort/led.gif , 270,55,1">

<PARAM NAME="Element5" VALUE="zone,5,0,
/comfort/led_blu.gif,0 , /comfort/led.gif, 320,55,1">

<PARAM NAME="Element6" VALUE="zone,6,0,
/comfort/led_blu.gif,0 , /comfort/led.gif, 370,55,1">

<PARAM NAME="Element7" VALUE="zone,7,0,
/comfort/led_blu.gif,0 , /comfort/led.gif, 420,55,1">

<PARAM NAME="Element8" VALUE="zone,8,0,
/comfort/led_blu.gif,0 , /comfort/led.gif, 470,55,1">

<PARAM NAME="Element9" VALUE="output,1,1,
/comfort/led_ora.gif,2 , /comfort/led.gif, 120,125,1">

<PARAM NAME="Element10" VALUE="output,2,3,
/comfort/led_ora.gif,4 , /comfort/led.gif, 170,125,1">

<PARAM NAME="Element11" VALUE="output,3,5,
/comfort/led_ora.gif,6 , /comfort/led.gif, 220,125,1">

<PARAM NAME="Element12" VALUE="output,4,7,
/comfort/led_ora.gif,8 , /comfort/led.gif, 270,125,1">

<PARAM NAME="Element13" VALUE="output,5,9,
/comfort/led_ora.gif,10 , /comfort/led.gif, 320,125,1">

<PARAM NAME="Element14" VALUE="output,6,11,
/comfort/led_ora.gif,12 , /comfort/led.gif, 370,125,1">

<PARAM NAME="Element15" VALUE="output,7,13,
/comfort/led_ora.gif,14 , /comfort/led.gif, 420,125,1">

<PARAM NAME="Element16" VALUE="output,8,15,
/comfort/led_ora.gif,16 , /comfort/led.gif, 470,125,1">

Comfort Webserver Module CWM02

```
<PARAM NAME="Mode1"          VALUE="120, 195,  
/comfort/disarm_small.gif, /comfort/away_small.gif, /comfort/night_small.gif,  
/comfort/day_small.gif, /comfort/vacation_small.gif, 1">  
<PARAM NAME="State1"         VALUE="120, 245, /comfort/base.gif,  
/comfort/idle.gif, /comfort/trouble.gif, /comfort/alert.gif, /comfort/alarm.gif,  
1">  
<PARAM NAME="Arm1"           VALUE="120, 290, /comfort/disarm.jpg,  
170, 290, /comfort/away.jpg,220, 290, /comfort/night.jpg,270, 290,  
/comfort/day.jpg,320, 290, /comfort/vacation.jpg, 1">  
<FONT color=#000000>  
Sorry, your browser doesn't support java.</FONT>  
</APPLET>  
</BODY>  
</HTML>
```

This file is saved in sampleindex.htm as well as index.htm of CWM.

A More Complex Example

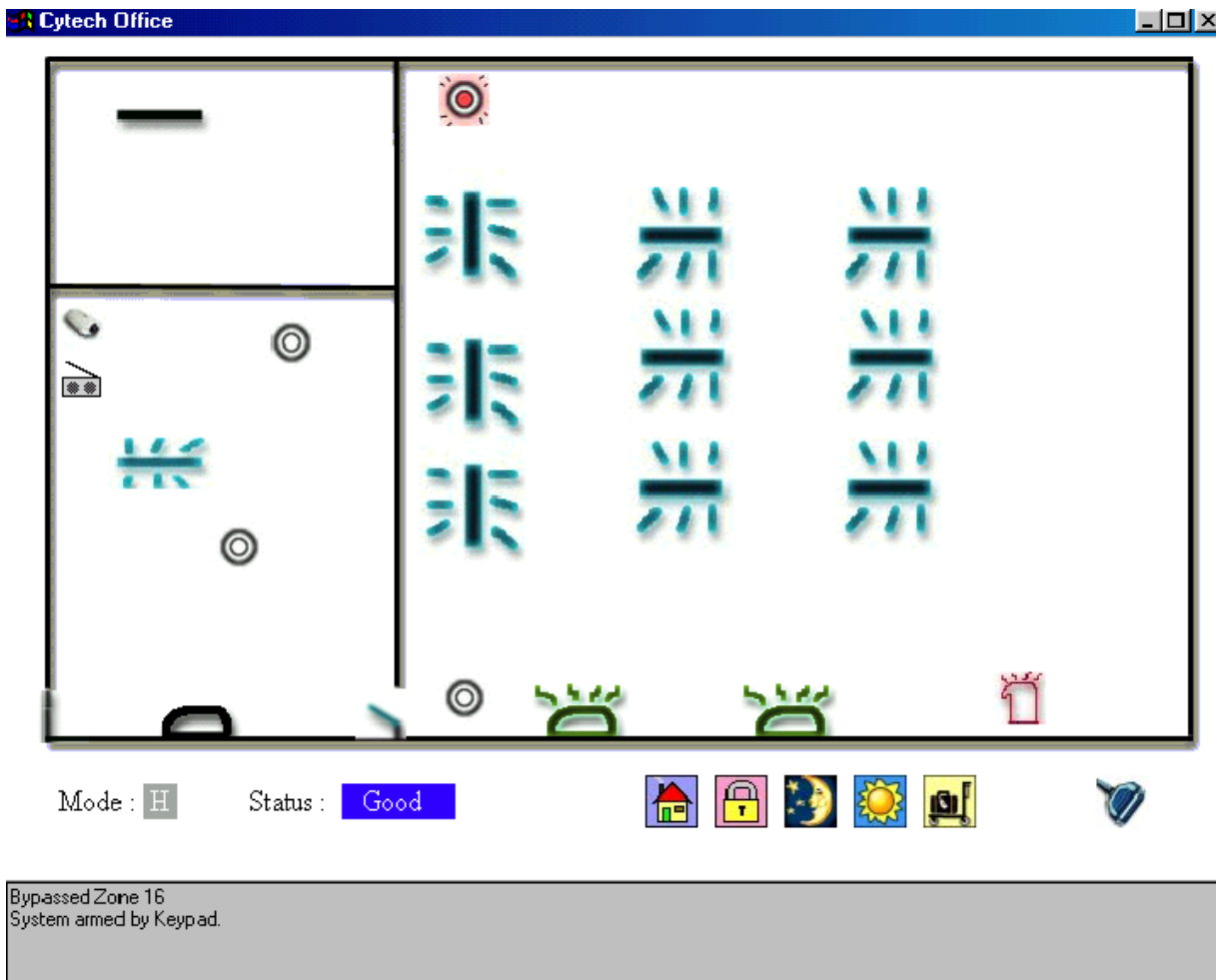


Figure 4.11 - A More Complex Example Page

The devices controlled in the example above are 5 banks of fluorescent lights, 3 air conditioners, and a water boiler for drinking water, 4 motion detectors, and 3 doors to each of the rooms. The current Security Mode and the alarm state are shown below the main image. The gray window at the bottom displays the alarm and restore messages from Comfort.

The lights shown in the example are controlled by the TWS01 Lighting Control module which has a main-rated relay to switch the light and a current sensor to sense the state of the light connected to a two way manual switch. The radio and water heater are controlled by X10 modules. The design in the example is shown below:

```
<HTML>
<HEAD>
<TITLE>Comfort Web Server</TITLE>
</HEAD>
<BODY background=#FFFFFF>
<H3>
Loading in progress.<BR>
Please wait patiently.
```

Comfort Webserver Module CWM02

</H3>

<APPLET CODE=WebComfort.class ARCHIVE=webcom.jar,cvp.jar WIDTH=1
HEIGHT=1>

<PARAM NAME="window1" /comfort/background_office.gif">	VALUE="Cytech Office,
<PARAM NAME="element1" /comfort/door_re0.gif , 19,376,1">	VALUE="zone,4,0, /comfort/door_re1.gif,0 ,
<PARAM NAME="element2" /comfort/detect0.gif , 120,278,1">	VALUE="zone,5,0, /comfort/detect1.gif,0 ,
<PARAM NAME="element3" /comfort/door_re0.gif , 195,375,1">	VALUE="zone,16,0, /comfort/door_re1.gif,0 ,
<PARAM NAME="element4" /comfort/detect0.gif , 230,20,1">	VALUE="zone,14,0, /comfort/detect1.gif,0 ,
<PARAM NAME="element5" /comfort/detect0.gif , 230,365,1">	VALUE="zone,15,0, /comfort/detect1.gif,0 ,
<PARAM NAME="element6" /comfort/detect0.gif , 150,160,1">	VALUE="zone,13,0, /comfort/detect1.gif,0 ,
<PARAM NAME="element7" /comfort/airc_n0.gif , 300,372,1">	VALUE="zone,1,17, /comfort/airc_n1.gif,18 ,
<PARAM NAME="element8" /comfort/airc_n0.gif , 420,372,1">	VALUE="zone,2,17, /comfort/airc_n1.gif,18 ,
<PARAM NAME="element9" /comfort/airc_n0.gif , 78,372,1">	VALUE="zone,3,19, /comfort/airc_n1.gif,20 ,
<PARAM NAME="element10" /comfort/lightfl_h0.gif , 60,30,1">	VALUE="zone,6,11, /comfort/lightfl_h1.gif,12 ,
<PARAM NAME="element11" /comfort/lightfl_h0.gif , 60,230,1">	VALUE="zone,7,13, /comfort/lightfl_h1.gif,14 ,
<PARAM NAME="element12" /comfort/light3fla_v0.gif , 360,70,1">	VALUE="zone,8,15, /comfort/light3fla_v1.gif,16 ,
<PARAM NAME="element13" /comfort/light3fl_v0.gif , 240,75,1">	VALUE="zone,9,128, /comfort/light3fl_v1.gif,129
<PARAM NAME="element14" /comfort/light3fla_v1.gif,131 , /comfort/light3fla_v0.gif , 480,70,1">	VALUE="zone,10,130,
<PARAM NAME="element15" /comfort/heater0.gif , no,540,370,1">	VALUE="x10,P,6, 45, /comfort/heater1.gif, 46,
<PARAM NAME="element16" /comfort/radio0.gif , no,32,180,1">	VALUE="x10,P,1, 41, /comfort/radio1.gif, 42,
<PARAM NAME="cam1" VALUE="30, 150, /comfort/webcam.gif, 10.0.0.22,80, 255.255.255.0, 8080,1">	
<PARAM NAME="element17" /comfort/mode.gif , 10,430,1">	VALUE="zone,0,0, /comfort/mode.gif,0 ,
<PARAM NAME="mode1"	VALUE="80, 430, /comfort/disarm.gif, /comfort/away.gif, /comfort/night.gif, /comfort/day.gif, /comfort/vacation.gif, 1">

Comfort Webserver Module CWM02

```

<PARAM NAME="element18"      VALUE="zone,0,0, /comfort/status.gif,0 ,
/comfort/status.gif , 125,430,1">

<PARAM NAME="state1"         VALUE="195, 430, /comfort/base.gif,
/comfort/idle.gif, /comfort/trouble.gif, /comfort/alert.gif, /comfort/alarm.gif, 1">

<PARAM NAME="element19"      VALUE="zone,0,220, /comfort/stop.gif,0 ,
/comfort/stop.gif, 535,425,1">

<PARAM NAME="arm1"  VALUE="310, 425, /comfort/disarm.gif,350, 425,
/comfort/away.gif,390, 425, /comfort/night.gif,430, 425, /comfort/day.gif,470, 425,
/comfort/vacation.gif, 1">

<FONT color=#000000>
Sorry, your browser doesn't support Java.</FONT>
</APPLET>
</BODY>
</HTML>

```

To try this example, refer to the section on Uploading Files to CWM. Rename the index.htm file as sampleindex.htm. Look for the file sampleoffice.htm and rename it to index.htm. Close the browser window and access the IP address of CWM again.

The Input and Output assignment are shown below. A Local Expansion Module LEM01 is needed as there are 16 inputs and outputs (not all used).

Zones	Description	Zone Type	Remarks
1	Office Aircon 1	8	Current Sensor
2	Office Aircon 2	8	Current Sensor
3	Outside Aircon	8	Current Sensor
4	Main Door	2	Door Contact
5	Outside Office Movement	5	PIR
6	Store Light	8	Current Sensor
7	Outside Light	8	Current Sensor
8	Office Light 2	8	Current Sensor
9	Office Light 1	8	Current Sensor
10	Office Light 3	8	Current Sensor
11	Unused		
12	Unused		
13	Outside Office Movement	5	PIR
14	Office Right Movement	5	PIR
15	Office Left Movement	5	PIR
16	Office Door	1	Door Contact

Comfort Webserver Module CWM02

Output	Description
1	Office Aircon 1 IR
2	Office Aircon 2 IR
3	Outside Aircon IR
4	Unused
5	Unused
6	Store Light
7	Outside Light
8	Office Light 2
9	Office Light 1
10	Office Light 3

Display of X,Y Coordinates

A tool is provided which aids in determining the location of the elements on the page. This causes the coordinates to be displayed in the Java Console in Java-enabled browsers when the mouse is clicked on the page. In Mozilla Firefox, click on Tools -> Java Console. In Netscape, select Tasks -> Tools -> Java Console. The following line must also be inserted in the index.htm file

```
<PARAM NAME = "MouseClicked" Value = "On">
```

This line is to be inserted together with the rest of the parameter setting lines. The word "MouseClicked" is case-sensitive.

When the web page design has been completed, this line may be removed if desired to prevent users from seeing the coordinates on every mouse click.

Remember that each image is inserted with the top left corner at the set coordinates.

Image Library

To help in developing the CWM graphics elements, a library of .gif icons are supplied with the CWM-HTML Applet Designer software. The file names give an indication of the content and orientation of the icons, for example, door_In1.gif



means a door which opens on the Left and to the North. The size of each icon is also shown in the table below, to help when positioning the icon on the background. Remember that the image is referenced from its top left corner.

Icon	File Name	Icon	File Name
	Night.gif 30x30		Away.gif 30x30
	Day.gif 30x30		Vacation.gif 30x30
	Disarm.gif 30x30		Stop.gif 30x30
	Led0.gif 30x30		Led_yel.gif 30x30
	Radio0.gif 25x30		Radio1.gif 25x30
	Heater0.gif 30x30		Heater1.gif 30x30
	Aircsm_s0.gif 39x21		Aircsm_s1.gif 42x21
	Aircsm_n0.gif 39x21		Aircsm_n1.gif 42x21

Comfort Webserver Module CWM02

	Aircsm_w0.gif 21x39		Aircsm_w1.gif 21x42
	Aircsm_e0.gif 21x42		Aircsm_e1.gif 21x42
	Airc_s0.gif 60x30		Airc_s1.gif 60x30
	Airc_n0.gif 60x30		Airc_n1.gif 60x30
	Airc_e0.gif 30x55		Airc_e1.gif 30x60
	Airc_w0.gif 30x55		Airc_w1.gif 30x60
	Aircon_a0.gif 30x30		Aircon_a1.gif 30x30
	Curtain_a0.gif 30x30		Curtain_a1.gif 30x30
	Curtain_b0.gif 30x30		Curtain_b1.gif 30x30
	Door_a0.gif 30x30		Door_a1.gif 30x30
	Door_b0.gif 30x30		Door_b1.gif 30x30
	Door_c0.gif 30x30		Door_c1.gif 30x30
	Fan_a0.gif 30x30		Fan_a1.gif 30x30
	Fire_a0.gif 30x30		Fire_a1.gif 30x30
	Fire_b0.gif 30x30		Fire_b1.gif 30x30
	Gate_a0.gif 30x30		Gate_a1.gif 30x30
	Indicator_a0.gif 30x30		Indicator_a1.gif 30x30
	Lamp_a0.gif 30x30		Lamp_a1.gif 30x30
	Lamp_b0.gif		Lamp_b1.gif

Comfort Webserver Module CWM02

	30x30		30x30
	Light_a0.gif 30x30		Light_a1.gif 30x30
	Light_dim.gif 30x30		Light_bright.gif 30x30
	Pir_a0.gif 30x30		Pir_a1.gif 30x30
	Tv_a0.gif 30x30		Tv_a1.gif 30x30
	Window_a0.gif 30x30		Window_a1.gif 30x30
	Window_b0.gif 30x30		Window_b1.gif 30x30
	Lightfl_h0.gif 60x30		Lightfl_h1.gif 60x30
	Lightfl_v0.gif 30x60		Lightfl_v1.gif 30x60

SECTION 5 PROGRAMMING COMFORT

Comfort Programming

The Comfort system should be programmed in the usual way, defining the security zones, sensors and switches connected to the inputs, and the Control menu for control of the home appliances. Refer to the Comfort Engineer Manuals, worksheet, Programming with Action codes and Programming with Configurator for programming information. As mentioned, the Java Applets send commands to Comfort using Responses, and monitor the state of Zones, outputs, X10, alarm state, and security mode.

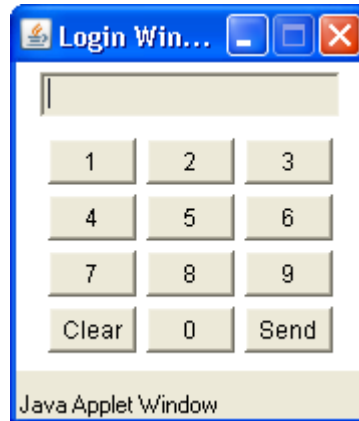
The ID of the CWM must be set correctly, as well as the number of UCMs in the system (Location 1672). Up to 8 UCMs can be connected to Comfort.

SECTION 6 TROUBLESHOOTING

Common Problems

Login windows does not appear

After typing the IP address of CWM in the URL window, the login window should appear.



If it does not, it could be due to incorrect IP address or the index.html file is missing or wrongly programmed, or the network cable may have been connected after the CWM was powered up. Always connect the network cable to the CWM RJ45 socket before connecting power to the CWM. If the CWM is powered on before the Network is connected, its network drivers will not be loaded and the network connection will NOT work.

Login window is cleared after entering code

If the Login window appears (like above picture), and the correct code is entered and transmitted, but the Login Window is cleared, without a “correct code” or “Invalid Code” message, Comfort or the CWM may not be connected correctly. The causes of this could be CWM UCM ID (SW7) not set to the correct ID, or Comfort Location 1672 (Modules and Settings Screen in Configurator) not set to the correct number of UCMs, or the CWM is not switched on, or the network cable may have been connected after the CWM was powered up.

Take note that over the Internet there could be up to 10 to 50 seconds delay (depending on Internet traffic) between the time the login code is entered and the “OK” message is received.

Web page does not appear

If the Login window does appear, and the correct code has been entered and acknowledged by CWM, but the expected background image does not appear, the most likely cause is that one or more of the image files specified in the index.htm file is missing, or the file name does not match the name specified in the file. Check all the image file names in the index.htm file against the actual files in the specified image folder.

Take note that over the Internet there could be 10 to 50 seconds delay before the CWM home page appears, depending on the speed of the connection, Internet traffic and the size of the images.

IP address lost

Use the program cwmsetup.exe to discover the IP address of the CWM.

CWM files have been corrupted

If at any time, the CWM files might have corrupted such that one is unable to access the CWM, the files in the CWM might have been corrupted. To reset the CWM back to factory default, program a response with the following action codes using Comfigurator;

Send RS232 2 52,45,53,45,54,43,4F,4E,46

Assuming the CWM is at UCM ID = 2.

This sends string of "82,69,83,69,84, 67,79,78,70" UCM to ID18 (i.e. UCM ID = 2).

🔊 The Engineer sign-in must be enabled by pressing F, 0 on keypad before sending the above action codes.

Alternately use the keypad to program a Response using the following action codes

197,18,82,69,83,69,84, 67,79,78,70,255

Triggering this response will then reset the CWM, reverting it back to the default configuration. However, the index.html file and other user files will still remain intact.

Password lost

If at any time, the password may have changed accidentally. To reset the password for the CWM, program a response with the following action codes:

197,18,82,69,83,69,84,80,87,68,255

Note that Engineer sign-in must be enabled by pressing F, 0 on keypad before sending the above action codes.

This assumes that a string of "82,69,83,69,84,80,87,68" is sent via RS232 to ID18 (i.e. UCM ID = 2).

Alternatively, this can be done by Comfigurator by setting the response as:

Send RS232 2 52,45,53,45,54,50,57,44

Triggering this response will then reset the password for the CWM, reverting it back to the default password.

TCP pass-through port does not work

If the CWM is working correctly, but the assigned TCP Pass-through port does not work, the problem is probably due to a firewall blocking the ports. Configure the firewall to allow the port assigned to TCP Passthrough (default 10001).

Firmware History

CWM 5.128 (10 January 2008)

- 1 Initial firmware for CWM02

CWM 5.070 (25 March 2005)

- 1 Engineer code needed to perform changes to the configuration setting in CWM
- 2 Cytech's dynamic IP system established

CWM 5.063 (25 September 2003)

- 1 Engineer Code enabled and disabled will send PS01/PS00 to enable and disable TCP Pass-through port operation. PS00/01 report does not require a login to allow Pass-through operation to be independent of the CWM web page. Login will be required during the TCP Pass-through operation e.g. for upload and download
- 2 RS232 Commands for corresponding UCM version have been added, including Vocabulary Download

CWM 5.012 (19 November 2001)

- 1 Initial release

Document Revision History

- 4.0.5: 5 August 2010 - Revised
- 4.0.4: 16 February 2009 – Port 80 can NOT be used for pass-through
- 4.0.2: 4 February 2009 – LED indicators and engineer sign-in updates
- 4.0.1: 20 November 2008 – Revised
- 4.0.0: 8 November 2008 – Initial release for CWM02

Important Note

The printed manual may not always be the most current version. Please check and download the latest version from <http://www.cytech.biz/manuals.html>

This manual is in A4 format. To print this manual as an A5 Booklet, on HP PCL printers select Page Scaling = Fit to Printable Area. Select Properties> Finishing Tab, Document Options = Print on Both Sides, Booklet Layout = Left Side Binding. Other printers may have different settings to achieve the same result.

Document Title: Comfort Webserver Module CWM02
Version: 4.0.5
Date Last Modified: 4 August 2010

web site: <http://www.cytech.biz>
Email: support@cytech.biz
User Group/Tech Support: <http://www.comfortforums.com>

Copyright Cytech Technology Pte Ltd. 2010