



CompuCount User Guide

INTRODUCTION

CompuCount is designed to collect data from wireless Counter-Sensors and display that data through an HTML page that can be viewed with an ordinary browser. The CompuCount System consists of three parts: the CompuCount, a Receiver to receive data from the Counter-Sensors, and the user's computer which configures the CompuCount and views the data. The CompuCount uses an electrical power supply and attaches to a 418MHz Receiver. A 10baseT Ethernet connection is used for the CompuCount to communicate to the user's computer.

The CompuCount gives reports of counts by half hour, hour, day, week and month. The CompuCount also makes this same data available as text files, which are downloadable through the browser using standard FTP (File Transfer Protocol).

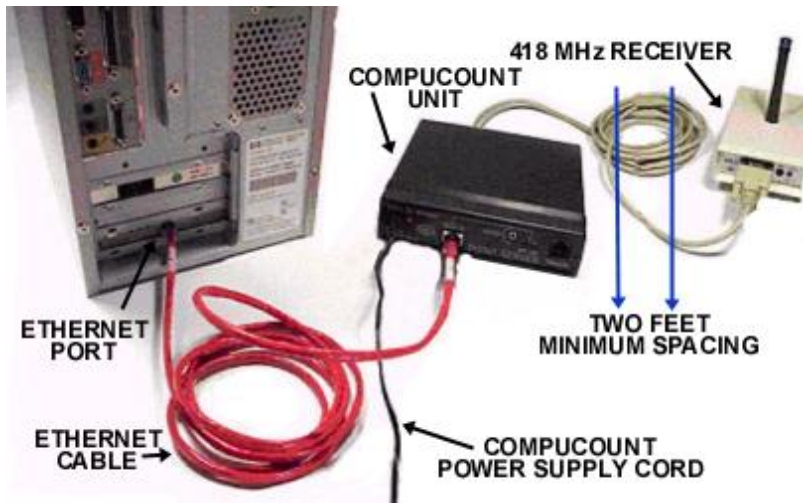
The CompuCount can manage up to 32 Counter-Sensors in the same environment. It databases 30 minute intervals for three months and can maintain counts in hourly, daily, weekly, and monthly intervals for one and one-half years. The CompuCount collects data even when not connected to a computer, but shares all data when computer connection takes place.

Cooperation Counts!

The Walker Wireless Peoplecounter System is the result of former IBM Engineers along with former Honeywell Engineers meeting with representatives of MWalker, the world's favorite Peoplecounter Company.

Special Thanks goes to Dan Piroli who brought us all together, his knowledgeable assistant Tim Harover who answers all of our foolish questions, and to the ingenious John Compton who with his team designed the whole nine yards. Also thanks to Larry Smith our own technical guru.

NOW LET'S GET THE SHOW ON THE ROAD!
STANDARD SETUP



This setup shows an example of a standard connection, used when all Counter-Sensors are located within direct signal strength (150-250 feet) from the 418 MHz Receiver. The signal is sent from the Counter-Sensors to the 418MHz Receiver, which in turn sends it to the CompuCount Unit connected to the computer Ethernet port.

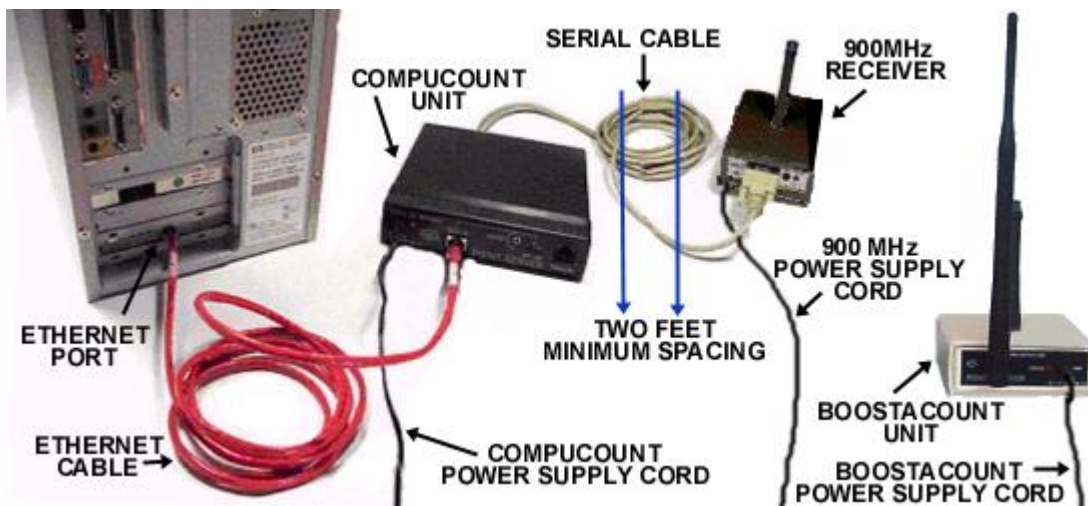
The 418MHz Receiver **MUST** be located AT LEAST 2 feet away from the CompuCount unit in order to avoid possible signal interference.

The CompuCount requires electrical power. A 9 volt 600 ma adapter is included in the set up kit for this purpose. When powered up, the red light next to the power connection will illuminate, which indicates the unit is functioning properly. When connected correctly to the computer Ethernet port, you will also have two Ethernet activity lights indicating Ethernet communications are enabled.

The 418 MHz receiver does not require electrical power.

BOOSTACOUNT SETUP

The BoostaCount can be placed in any location provided it's within 150-200 feet of the counters it's communicating with. It is capable of transmitting a signal up to 2,000 feet indoors to the 900MHz Receiver.



This setup shows an example incorporating the BoostaCount Unit in order to receive a signal when Counter-Sensors are located at a distance greater than 150-250 feet from the CompuCount. The 418MHz signal is sent from the Counter-Sensors to the BoostaCount, which then sends the signal to the 900MHz Receiver, which in turn sends it to the CompuCount Unit connected to the computer Ethernet port. The 900MHz Receiver **MUST** be located AT LEAST 2 feet away from the CompuCount unit in order to avoid possible signal interference. When powered up, the red light next to the power connection will illuminate, which indicates the unit is functioning properly. When connected correctly to the computer Ethernet port, you will also have two Ethernet activity lights indicating Ethernet communications are enabled.

The CompuCount, BoostaCount and 900 MHz units all require electrical power. A 9 volt 600 ma adapter is included with the CompuCount. Two 9V 300 ma power adapters are included as part of the BoostaCount set up kit for the 900 MHz Receiver and the BoostaCount unit.

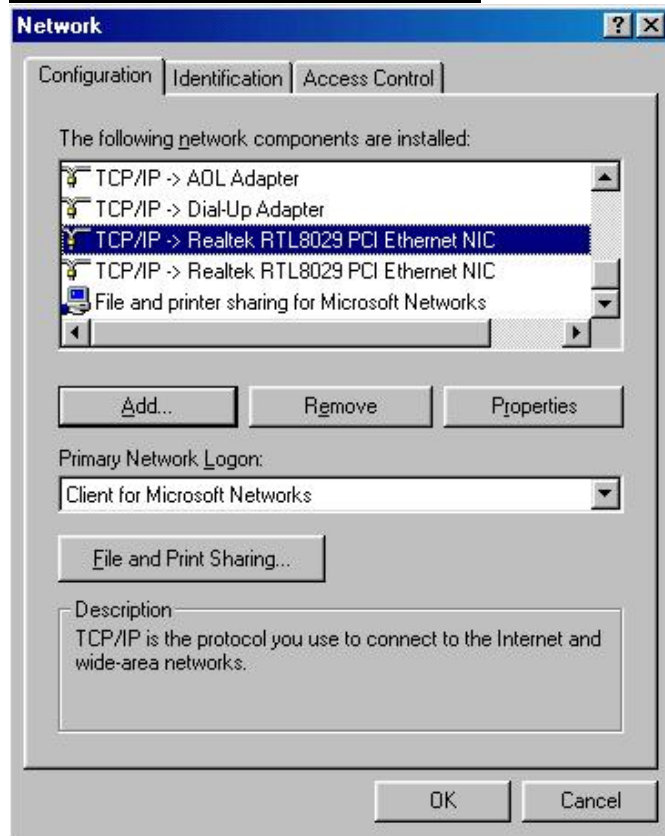
If employing more than 32 counters using a router will enable multiple CompuCounts.

GETTING STARTED

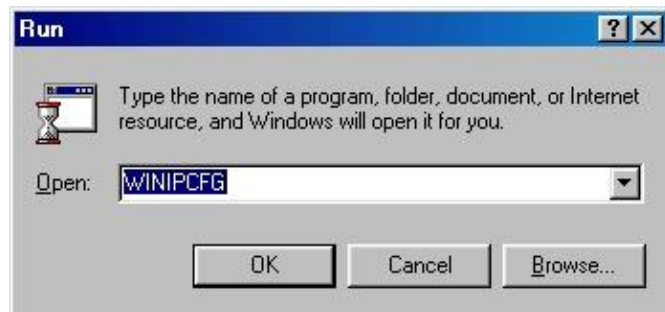
TESTING THE CONNECTION

To check if you have made a connection, open your browser and type in <http://192.168.1.55> on the address line. The browser should display the CompuCount count screen. The screen will not show sensors until they are configured.

CHANGING YOUR PC'S IP SETTINGS



Restart the PC and run WINIPCFG or IPCONFIG to confirm the changes.



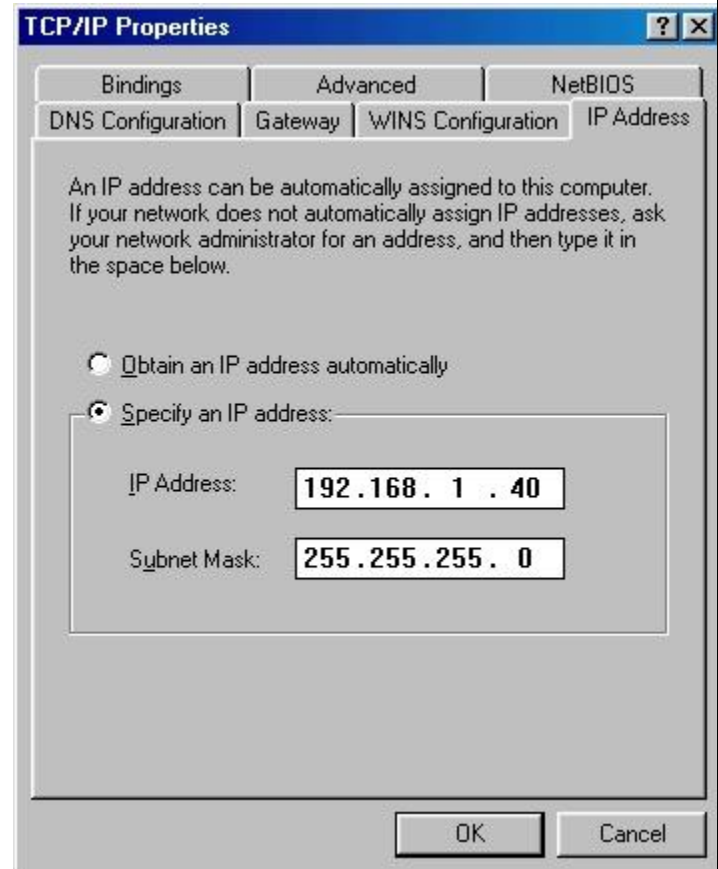
When finished changing the IP Address and connecting the CompuCount unit to the computer, use your computer's ping utility and ping the IP Address to verify your settings and connection. A successful ping will receive a reply.

If are unable to see the CompuCount's count screen, you may need to make changes to your computer's IP configuration.

First, check that the CompuCount is correctly connected to the Ethernet port on the back of your computer. If you're still unable to view the count screen, you will need to change your computer's IP settings.

To change the IP settings on a computer running the Windows® operating system, follow these steps:

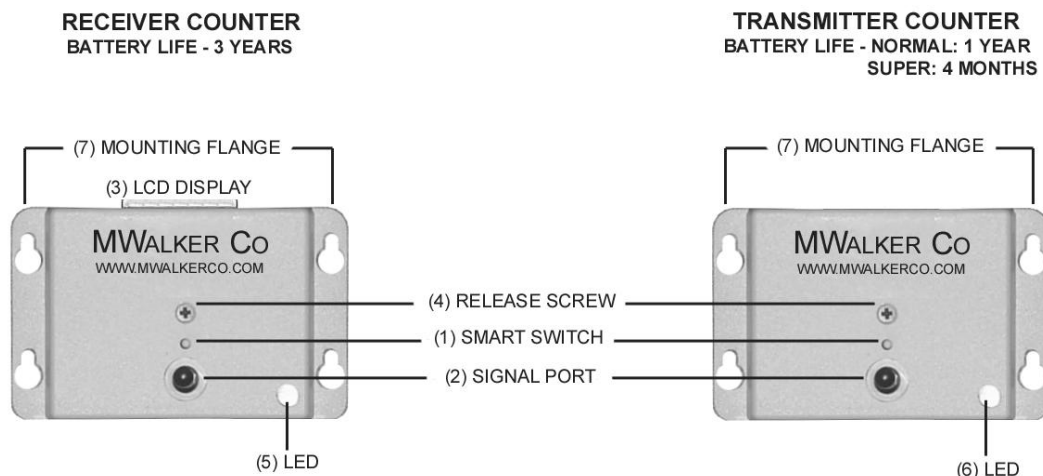
1. Select the following: Control Panel>Network>TCP/IP
2. Select the TCP/IP service for your network card
3. Choose: Properties>IP Address
4. Choose: Specify IP Address and fill in the initial values for Subnet Mask and IP Address (i.e. 192.168.1.XX and 255.255.255.0 - where XX is two random digits).



ADDING SENSORS

The Counter-Sensors will have to be activated in order for the CompuCount to recognize and monitor them.

The CompuCount by default adds Counter-Sensors to its configuration list when it receives a packet that has been transmitted in Active Mode. You can send a transmission in Active Mode by pressing the Smart Switch on the Counter-Sensors and releasing quickly.



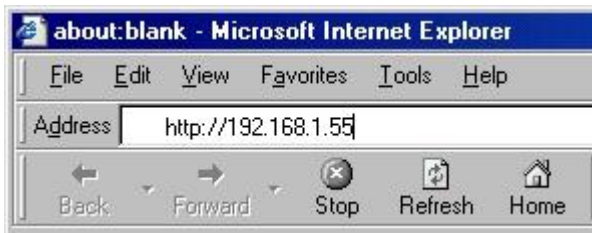
The CompuCount will add Counter-Sensors to its configuration and you may view their data from the main HTML screen. You may need to refresh the screen a couple of times before the Counter-Sensors appear.

VIEWING REPORTS

All that's required to view CompuCount Reports are a standard Web browser (such as Microsoft® Internet Explorer) and a Network connection to the CompuCount via an Ethernet port.

VIEWING COUNTS

To view the current sensors and their data, start your browser and enter the CompuCount's IP Address in the Address line.



The user can view the count total at different time granularities. The user can view counts summed per Half Hour, per Hour, per Day, per Week, or Per Month. Clicking on the links at the top of the screen will change the time granularity. The user can also navigate through count history by using the "Prev" and "Next" buttons at the bottom of the screen. Clicking the "Now" button will take you to the current date and time. If counts have been recorded for the current view, they will be displayed. Otherwise (for example, if the requested view is in the future or a time earlier than the first sensor transmission) the cell for that time period will display "n.a." (for "not applicable").

Sample PC
01/22/03 09:47:30

[Per Half Hour](#)
[Per Hour](#)
[Per Day](#)
[Per Week](#)
[Per Month](#)
[Status](#)
[Setup](#)
[Export](#)

Counts Per Half Hour

Starting 01/22/03	6:00 6:30 AM	6:30 7:00 AM	7:00 7:30 AM	7:30 8:00 AM	8:00 8:30 AM	8:30 9:00 AM	9:00 9:30 AM	9:30 10:00 AM	10:00 10:30 AM	10:30 11:00 AM
Main	0	0	0	0	14	39	15	15	n.a.	n.a.
Warehouse1	0	0	0	8	12	17	8	9	n.a.	n.a.
Warehouse2	0	0	0	7	12	16	8	9	n.a.	n.a.
4Count	0	0	0	0	0	0	0	0	n.a.	n.a.
Total	0	0	0	15	38	72	31	33	0	0

You can make the table appear smaller if you want it to fit on the screen better by (in Internet Explorer) going to View | Text Size | Smaller.

Each configured sensor has a row in the table. The total of all counts for all sensors for that time period will be displayed on the bottom row of the table.

For all time intervals greater than Half Hour, the top row of the table contains links to focus in on a smaller time interval.

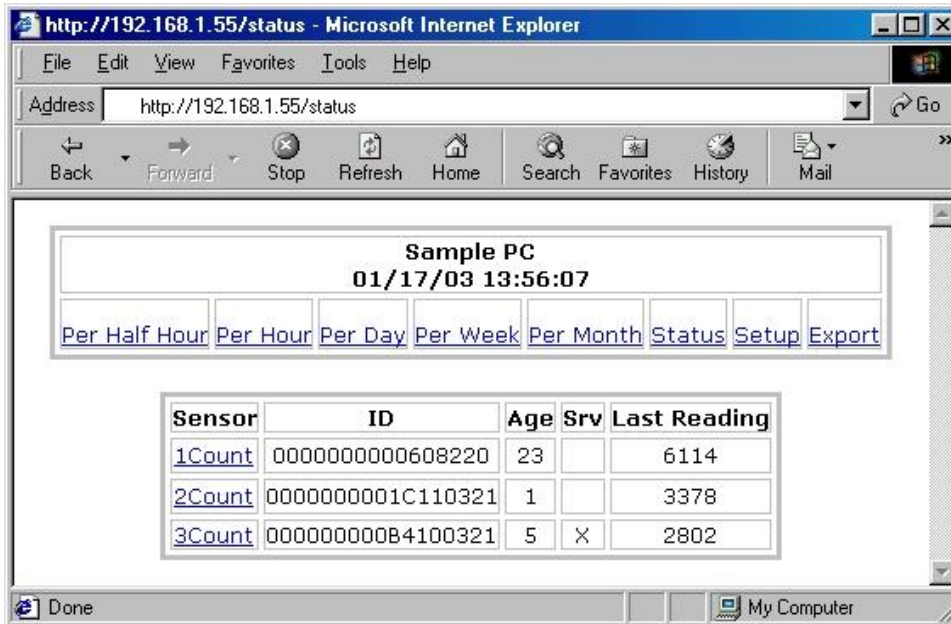
For example from the "Per Month" view you can click on a specific month, like January, in order to see the weekly breakdown of counts for January.

To get the latest data, click the "Now" button or click the "Refresh" button on the browser.

The date and time on the display show the time the report was generated.

THE STATUS SCREEN

The status screen shows detailed information about the Counter-Sensors currently being monitored. To view the status screen click on the "Status" link provided on the main screen.





The status table shows, for each sensor, the identifying label name of the sensor ("Sensor"), the serial number of the sensor ("ID"), the number of seconds elapsed since the last transmission ("Age"), whether the last transmission was sent in service mode or not ("Srv"), and the data value of the last reading ("Last Reading").

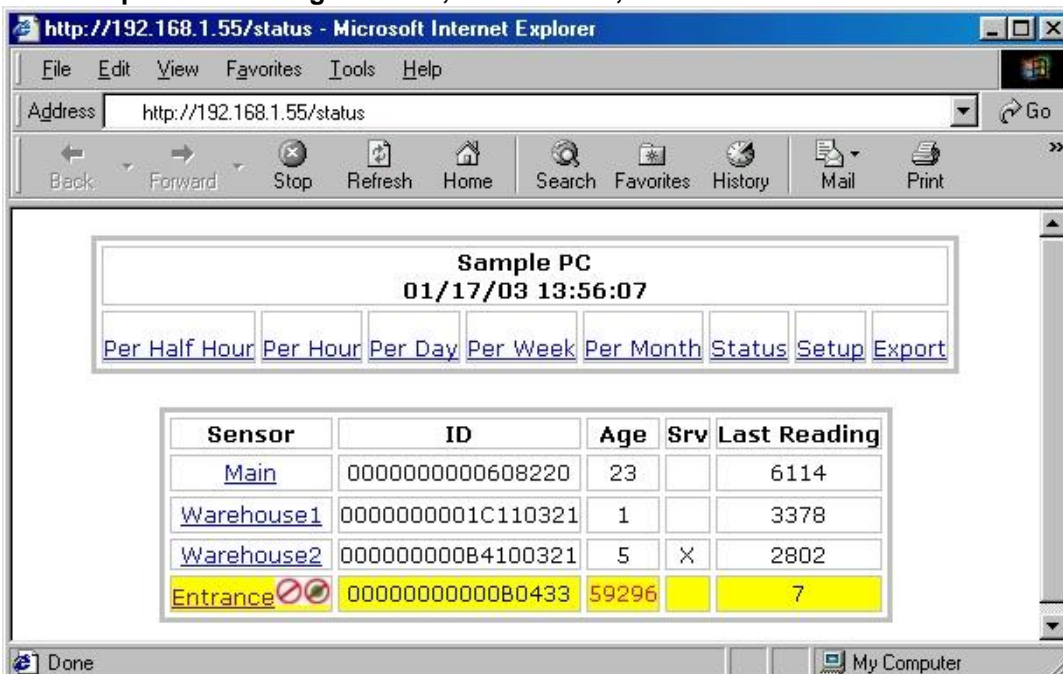
The last reading is the cumulative recorded on the sensor since startup or since the last reset.

If the transmission was sent in Active Mode, there will be an "X" in the "Srv" column.

When the CompuCount receives a transmission from a new sensor it assigns it a default label, which is the sensor position plus the sensor type ("1Count"). You can change the label assigned to the sensor by clicking on the label name in the "Sensor" column.

The status table will highlight in yellow a row in the table if the sensor is in an error state. The possible error states are "Offline"  and "Beam blocked" . "Offline" means that the CompuCount hasn't received a transmission from this sensor within the timeout interval, which is set in the "CompuCount Setup" screen under "Sensor Offline Time". "Beam blocked" means that the sensor beam seems to be blocked by some obstruction.

Here is a picture showing a sensor, Warehouse3, in an error state.



SENSOR SETUP

Here you can change the sensor name or replace a sensor.

Sensor Setup

WARNING: You may lose your connection with the sensor if you enter the wrong Serial Number.

Position
Row 3

Sensor Name
Name:

Sensor Serial Number
Serial No:

Delete Sensor

[Home](#) [Setup](#) [Menu](#) [Status](#)

Changing the Sensor's Name

Type a new name in the "Sensor Name" box.

Deleting a Sensor

The very last sensor in the table on the status screen can be deleted. Click the "Delete Sensor" box and hit the "Submit" button.

Replacing a Sensor

If you want to swap out a sensor but keep the new sensor in the same position as the old one, simply go to the sensor setup screen for the sensor you want to replace and type in the new sensor's serial number in the "Serial No." box. Hit the "Submit" button and the CompuCount will update its configuration with the new sensor information. As always, enter the serial number with care!

Click "Submit" when you are ready to apply your changes.

COMPUCOUNT SETUP

The setup screen allows you to set some parameters for the CompuCount (i.e. Server).

Server Setup

Server Name

Name of the People Counter Server
Name:

Sensor Serial Number

Serial No:

Sensor Offline Time

Amount of time for a sensors to be declared Offline

Auto Add Sensors

Automatically add sensors

[Home](#) [Setup](#) [Menu](#)

You can change the name of the CompuCount (Server).

Note: the CompuCount (Server) Name is also used as the Login User Name when passwords have been set up.

"Sensor Offline Time" allows you to set the amount of time that can elapse between transmissions from one sensor before the sensor is declared offline.

You can set the "Auto Add" mode on the CompuCount. The "Auto Add" mode tells the CompuCount what to do when it receives a transmission from a sensor that is not already in the CompuCount's sensor table.

If "Auto Add" is "Off" then the CompuCount will ignore all transmissions from sensors that are not in the table already.

If "Auto Add" is "All", the CompuCount will add a new sensor to the sensor table each time it receives a transmission from a new sensor.

If "Auto Add" is "Active Mode" then the CompuCount will only add a new sensor to the table if the transmission is received in Active Mode.

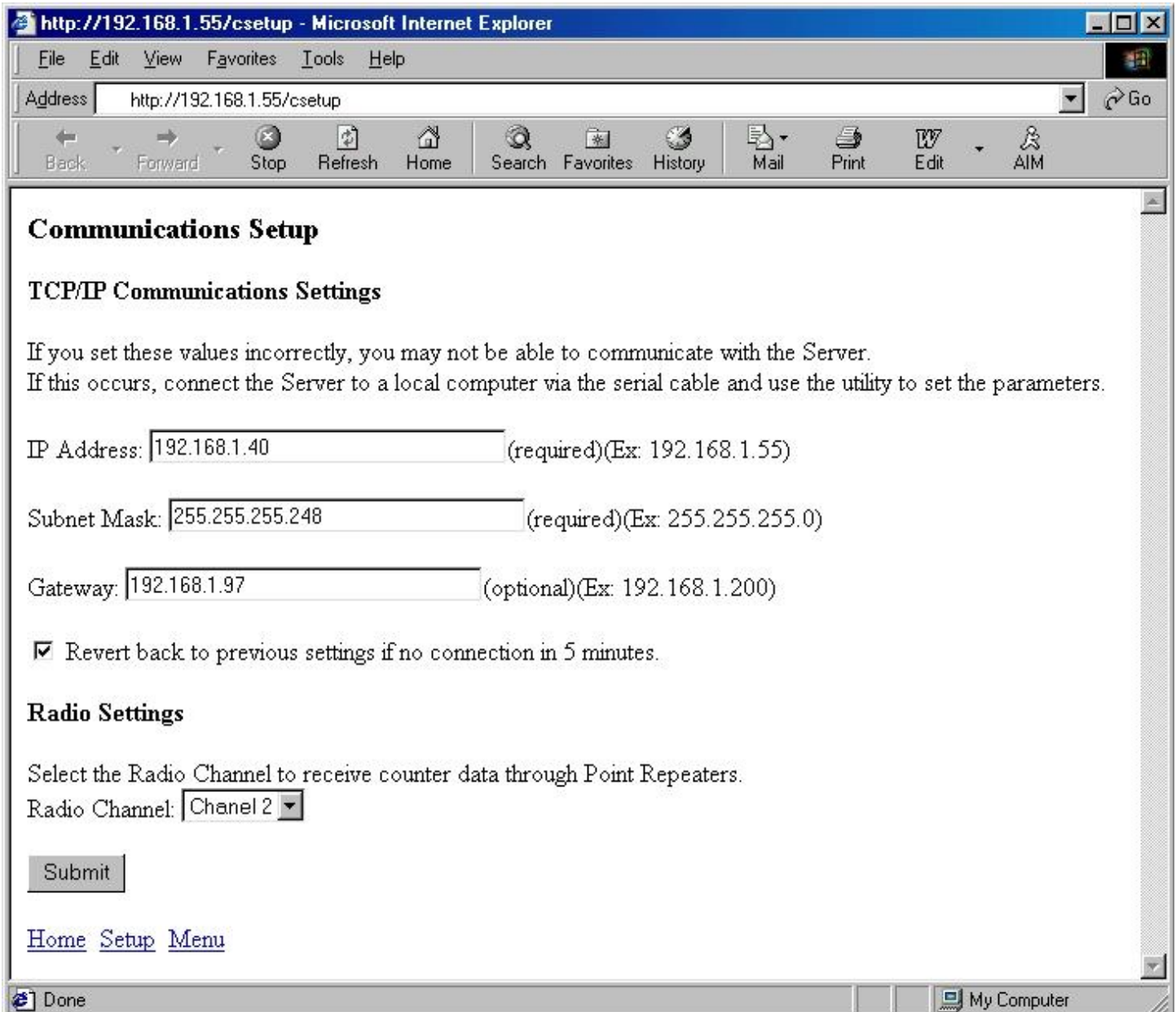
When you are ready to make changes, press the "Submit" button.

NOTE: To avoid "ghost" counter detection, set "Auto Add" to "Off" when finished adding sensors.

Click the "Home" link to see the table of counts and click the "Setup Menu" to go back to the setup menu.

THE COMMUNICATIONS SETUP SCREEN

The communications setup screen allows you to change the CompuCount's IP address, subnet mask, and gateway.



The screenshot shows a Microsoft Internet Explorer browser window with the address bar displaying "http://192.168.1.55/csetup". The browser's menu bar includes File, Edit, View, Favorites, Tools, and Help. The address bar contains "http://192.168.1.55/csetup" and a Go button. The browser's toolbar includes Back, Forward, Stop, Refresh, Home, Search, Favorites, History, Mail, Print, Edit, and AIM. The main content area displays the "Communications Setup" page. The page title is "Communications Setup". Below the title is the section "TCP/IP Communications Settings". A warning message states: "If you set these values incorrectly, you may not be able to communicate with the Server. If this occurs, connect the Server to a local computer via the serial cable and use the utility to set the parameters." Below the warning are three input fields: "IP Address: 192.168.1.40 (required)(Ex: 192.168.1.55)", "Subnet Mask: 255.255.255.248 (required)(Ex: 255.255.255.0)", and "Gateway: 192.168.1.97 (optional)(Ex: 192.168.1.200)". Below the input fields is a checkbox labeled "Revert back to previous settings if no connection in 5 minutes." which is checked. Below the checkbox is the section "Radio Settings". A message states: "Select the Radio Channel to receive counter data through Point Repeaters." Below the message is a dropdown menu labeled "Radio Channel:" with "Chanel 2" selected. Below the dropdown menu is a "Submit" button. At the bottom of the page are links for "Home", "Setup", and "Menu". The browser's status bar at the bottom shows "Done" and "My Computer".

Communications Setup

TCP/IP Communications Settings

If you set these values incorrectly, you may not be able to communicate with the Server.
If this occurs, connect the Server to a local computer via the serial cable and use the utility to set the parameters.

IP Address: (required)(Ex: 192.168.1.55)

Subnet Mask: (required)(Ex: 255.255.255.0)

Gateway: (optional)(Ex: 192.168.1.200)

Revert back to previous settings if no connection in 5 minutes.

Radio Settings

Select the Radio Channel to receive counter data through Point Repeaters.

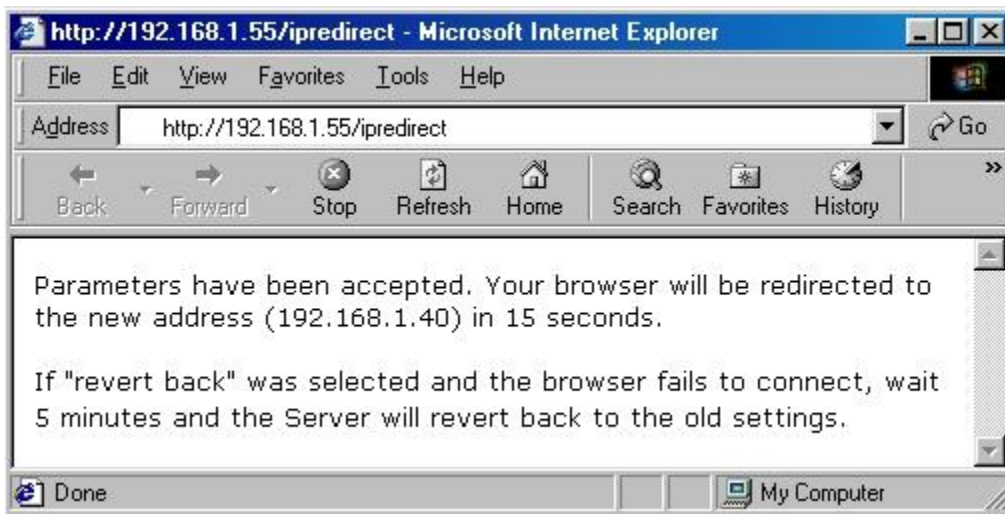
Radio Channel:

[Home](#) [Setup](#) [Menu](#)

If the CompuCount will receive data from a BoostaCount, it is necessary to set the radio channel.

Enter these parameters as necessary and click "Submit."

The new parameters are sent to the CompuCount and an intermediate screen display.



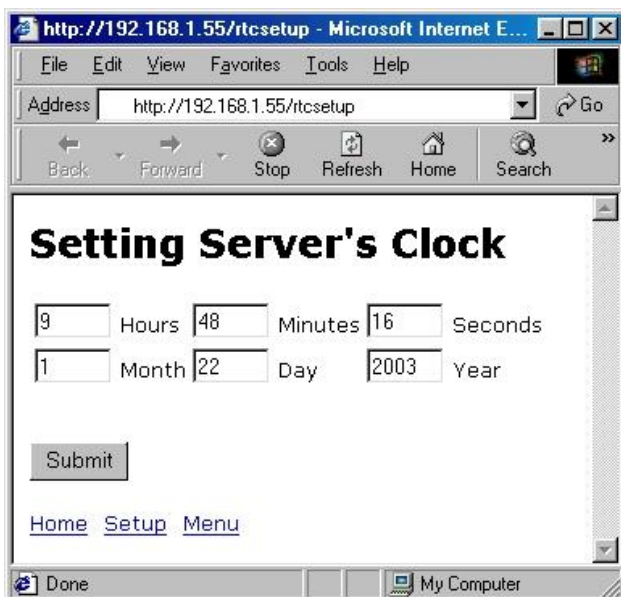
If the IP address is changed successfully, the browser will redirect itself to the new IP address and there will be a message on the screen below the "Submit" button saying: "Submission accepted! Parameters updated."

If the change of IP address was not successful, you will see a browser error page telling you that the file cannot be found.

If you check the box that says, "Revert back to previous settings if no connection in 5 minutes" then the program will try to update the CompuCount's IP address. If it cannot make a connection within 5 minutes thereafter, it will reset the IP address to the previous settings.

SETTING COMPUCOUNT'S CLOCK

You will need to make sure the CompuCount's clock is set properly so that it can display the counts and totals correctly.



Choose "Set Clock" from the Setup menu, enter the correct values, and click "Submit" to set the CompuCount's clock.

If you set the clock back more than 30 minutes the CompuCount will require you to reset the counts before updating the clock.

If you set the clock ahead more than 30 minutes the CompuCount will pad the log with zeroes (0) for the counts for those times.

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RESET OPTIONS

Be careful when you reset values. There is no way to undo these changes.



On the reset screen you may select to reset the sensor counts to zero ("Reset Counts"), delete all the sensors from CompuCount's setup table ("Delete All Sensors") or reset the People Counter Server (CompuCount) to factory settings ("Reset People Counter Server").

Resetting the CompuCount to factory settings will reset the IP address back to the default 192.168.1.55. The browser will not redirect itself and you will need to re-enter the IP address into the "Address" bar.

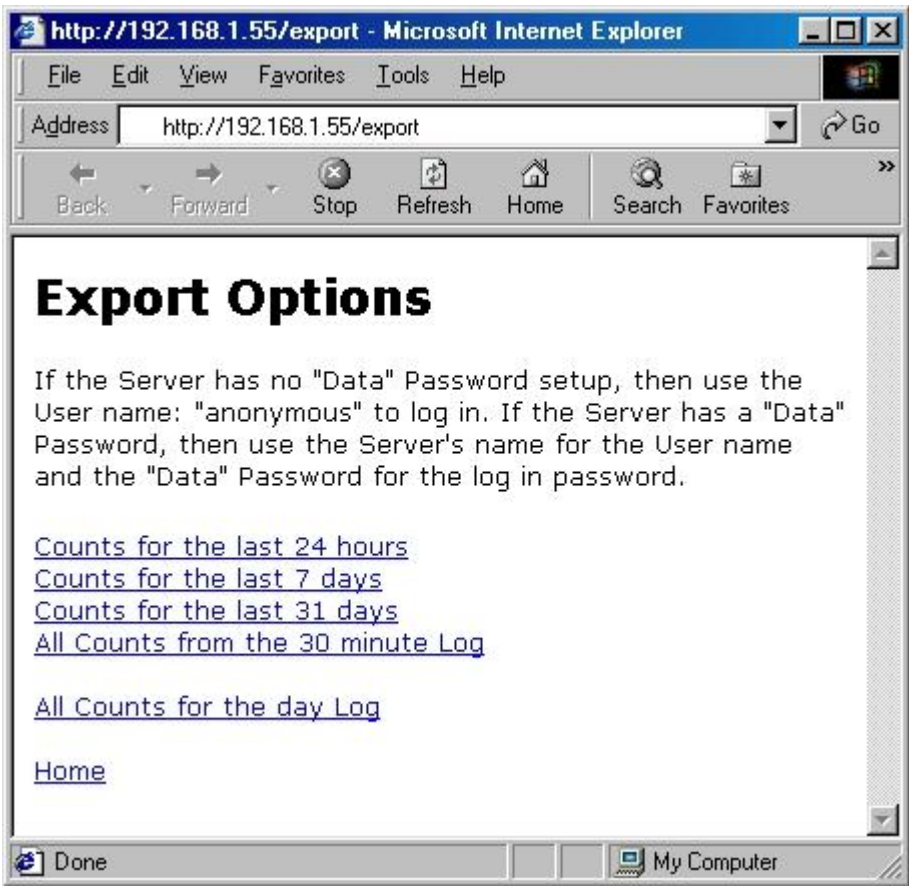
The Reset Enabler

The Reset Enabler allows you to reset and clear all the CompuCount settings in case you become unable to communicate with the CompuCount through the browser. Use the Reset Enabler with care, as it will erase the configuration and all data!

To use the Reset Enabler, first remove the power supply cord from the front of the CompuCount and then attach the Reset Enabler to the serial port located on the rear of the CompuCount. After the serial port connection is made, re-attach the power supply and the unit blinks at the rate of twice per second. If the Reset Enabler is removed within one minute, the CompuCount will reset itself back to the factory defaults. If the Reset Enabler is left on for longer than a minute, the CompuCount will ignore it.

EXPORT REPORTS

From the main screen, click on the "Export" link. You will be brought to the report section. From here you can view and save data in text format. You may also right-click with your mouse on the link. A menu will pop up. If you choose "Save Target As..." you can use the resulting Save dialog box to save the counts report to a text file on your computer. You can view these files with any text editor.



VIEWING REPORTS

The files have a title based on the time span of the report plus a timestamp. An example title is this: "CNT24-012003103434.txt"

This is the count file for the last 24 hours and the report was generated on 01/20/03 at 10:34:34 a.m.

The other reports' titles will be similar. The title of the file reporting counts for the last 7 days will be "CNT7DAYS-" plus the timestamp. The counts for the last 31 days will begin with "CNT31DAYS-" plus the timestamp. The report for the count from the 30-minute log will be titled "CNTPERALL-" plus the timestamp. The report for the counts for the day will be titled "CNTDAYALL-" plus the timestamp.

If the CompuCount has been password protected at the report level you will need that password to view reports.

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There are five different kinds of record types. Each record starts with a number that tells what kind of record it is.

0	This record contains information about the CompuCount. The fields following are the date and time that the report was generated, the name of the CompuCount, the MAC address of the CompuCount, the number of sensors that the CompuCount is currently monitoring, the date and time of the last setup change, and the time period start and finish that the report covers.
<i>Sample record: 0,01/20/03,14:36:02,Sample PC,00:90:C2:C1:0F:D9,2,01/20/03 13:10:17,01/17/03 00:00:00,01/20/03 14:36:01</i>	
1	This record shows the names of the sensors currently being monitored. The first two fields are date and time that the report was generated. The rest of the fields are the names of the sensors in the order they are configured.
<i>Sample record: 1,01/20/03,14:36:02,Main,Warehouse1</i>	
2	This record shows the serial numbers of the sensors being monitored in the order in which they were configured, with the date and time of the report generation.
<i>Sample record: 2,01/20/03,14:36:02,0000000000608220,000000001C110321</i>	
7	This record shows the total number of counts that have been logged for each sensor so far. The date and time of the beginning of the interval are shown. Next, for each sensor in the order in which they are configured, the sum of the counts for the interval.
<i>Sample record: 7,01/17/03,00:00:00,127,115</i>	
8	This record type shows the counts in the current interval. This is a partial total for the interval, as the current interval has not been completed yet. The fields are a date and time stamp that shows the time of the beginning of the interval. Following that is the count for the current time interval for each sensor in the order in which it is configured.
<i>Sample record: 8,01/20/03,00:00:00,176,147,142,1,3,353</i>	

DATE AND TIME STAMPS

Time and date stamps or times that are set or compared to the real-time clock are always expressed in military time and represented as: *mmdyyhhnss*

Where:

<p>mm - month of the year dd - day of the month yy - year starting at year 2000 hh - hours nn - minutes ss - seconds</p>

Intervals and Durations

Times that are duration are always expressed in military time and represented as: *hhnss ddhhnss*

Where:

<p>dd - number of days hh - number of hours nn - number of minutes ss - number of seconds</p>
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