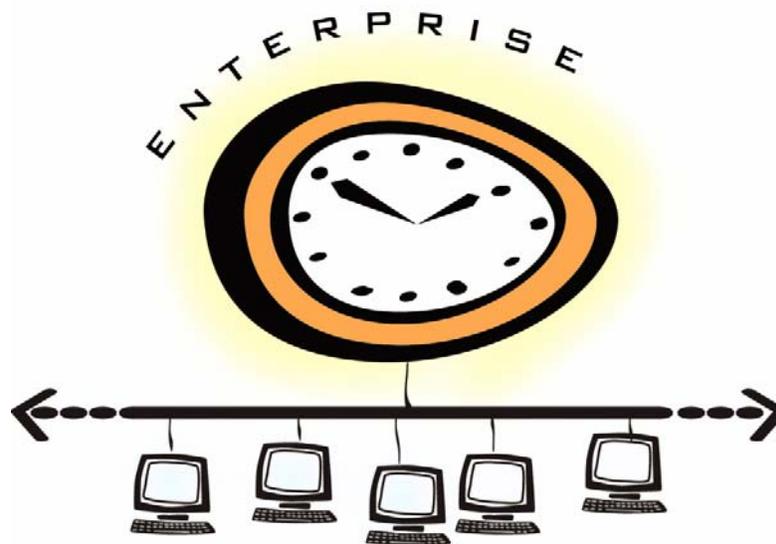


# ClockWatch® Enterprise

## User's Guide

Version 1.2.0



February 2005

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## 1.0 Introduction

ClockWatch Enterprise is Beagle Software's solution for networks that require a centralized control console. Enterprise is bundled with ClockWatch Pro to collect correct time from external timeservers, then acts as a master time clock to set time on each registered client to set time. A small software module is installed on each client to receive the command, but otherwise all control is maintained by ClockWatch Enterprise.

### 1.1 Software Installation

#### 1.1.1 Choose which machine will be the timeserver

- Console computer should have Internet or modem access in order to sync time with the Atomic Clock using ClockWatch Pro.
- Computer must be accessible on the LAN to all clients.
- Computer normally should be left running.
- Does not have to be a domain controller or an otherwise special computer on the network.

#### 1.1.2 Install ClockWatch Enterprise software on the timeserver

- Install the ClockWatch Enterprise program from CD-ROM or from the downloaded executable file.
- Use the key code provided by Beagle Software (via email and/or on the back of the CD envelope).
- After installing Enterprise, install the license upgrade utility provided by Beagle Software on the same computer for the total number of client licenses purchased.

#### 1.1.3 Install ClockWatch Pro time sync software on the timeserver (optional)

- Install the ClockWatch Pro program from CD-ROM or from the downloaded executable file.
- Use the key code provided by Beagle Software (via email and/or on the back of the CD envelope).

#### 1.1.4 Install the Client Service Module on each client

The Client Service Module needs to be installed on each registered client.

- Locate the file on the CD-ROM (\ClkWatch\CWEntM.EXE), or download the file from our website: <http://www.beaglesoft.com/CWFileXfer.htm>
- Install the Service Module on each client following the same procedures as ClockWatch Enterprise.
- Start the service or application on each client. The application or service module must be running to respond to requests from ClockWatch Enterprise.

**Notes:**

- There is no need to reinstall over the trial software—simply enter the keycode to engage full functionality.
- ClockWatch can be installed over a previously installed version or edition. Some options have changed, so you may need to reset some time setting or display options after starting the new software.
- ClockWatch Enterprise does not have a built-in utility to remotely install on each client.

**1.1.5 Installing ClockWatch Enterprise as a Service**

ClockWatch Enterprise can be installed as a Service under Windows® NT/2000/XP/2003. This allows ClockWatch Enterprise to run in the special service area of the operating system. When running as a service, ClockWatch Enterprise does all the time checking and clock synchronization activities without intervention, running from the parameters specified by the user using the normal ClockWatch Enterprise application.

**To Install ClockWatch Enterprise as a service**

1. Install and configure ClockWatch Enterprise on the system. The service uses the ClockWatch Enterprise parameters you specify in the regular ClockWatch Enterprise interface.
2. Register the Enterprise Service by choosing Options>Service and selecting “Re-register”. This will register the service with the operating system.
3. You can start and run the service from either the Service Tab within ClockWatch Enterprise or by using the Services applet available in the Windows NT/2000/XP administrative interface.

The Windows Services applet lets you start, stop, pause or continue the execution of services. You can also use it to specify if you want ClockWatch Enterprise Service to be started automatically at boot time.

**1.2 Software Removal**

Removing ClockWatch Enterprise from a system will remove all executables, help files, log files, registry settings and DLLs that are registered exclusively to ClockWatch Enterprise.

**To Remove ClockWatch Enterprise (uninstall software)**

1. Exit ClockWatch Enterprise, stop all background instances of ClockWatch Enterprise.
2. Select the **Uninstall** program (uninstall.exe) from the **Start>Program Files>Beagle Software>CWEnterprise** directory.
3. Follow the uninstall wizard. Accept the defaults.

4. You may be asked if you want to remove shared DLLs. It is safest not to remove the DLLs in case they are in used by another program.

## 1.3 Enterprise Quick Start

Start ClockWatch Enterprise program from: Start>Program Files>Beagle Software>CWEnterprise

### Remote Timecheck

1. Let Enterprise discover the computers currently on the network.
2. Select the client to test or **<all>** from the pull-down menu in the Command frame. Select **Timecheck** and Press the **Start** button.
3. The connection will be made to each client, each remote computer's time will be checked, and the findings will be displayed in the client tree and in the data log and graph displays.

### Remote Timeset

1. Allow Enterprise to discover computers on the network or manually add the client to the list of computers. It will be displayed in the client tree. Change the status of the client to **Active** by choosing **Clients>Edit**; select the status option from the list.
2. Select the client in the pull-down menu. Select **Forced Time Set** Press the "**Start**" button.
3. Each remote computer's time will be set to the time on the ClockWatch Enterprise timeserver machine. Individual settings will be displayed in the client tree and in the data log and graph display.

### Network Pinging

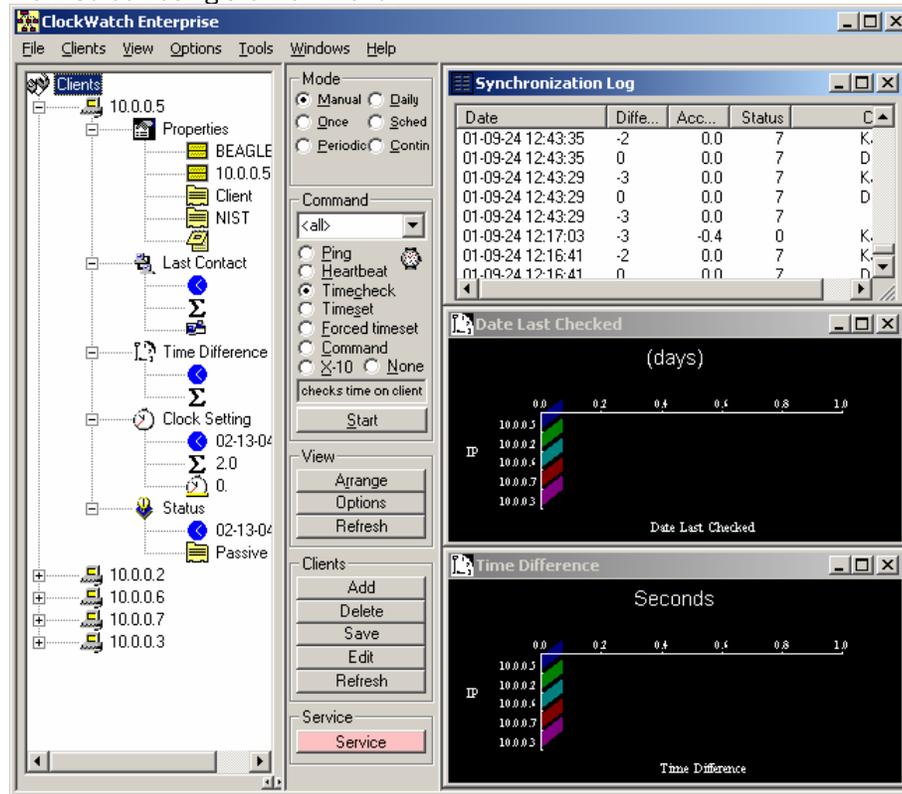
1. Start ClockWatch Enterprise program from: **Start>Program Files>Beagle Software>CWEnterprise**.
2. Let Enterprise discover the computers currently on the network.
3. Select **<all>** in the Command frame for all clients in list, **Ping** and press the **Start** button. Enterprise will ping all listed clients.
4. Each client will be pinged, the roundtrip connection time will be checked and the findings will be displayed in the client tree and in the data log and graph display.

## 2.0 User Guide

This section of the User Guide describes how to use ClockWatch Enterprise for managing time synchronization on your local network. For information on using ClockWatch Pro for external time synchronization, please see Section 6.

### 2.1 Main Screen

The Main Screen acts a central point for displaying client information and provides a base for running the ClockWatch Enterprise System. Visible from the Main Screen are the menus and the frames for Client Tree, Mode, Command, View, Clients, data log, and graphs. You can customize the Main Screen using the View menu.



### Client Tree

Shows the list of clients addressable by ClockWatch Enterprise. Exploding the node shows client properties and information about the last contact made with the ClockWatch Enterprise controller.

**Properties**

Computer Name:	Network name of the client (i.e., myclient)
IP Address:	Full IP address (i.e., 122.20.25.5)
Type:	Client
Protocol (NIST):	Protocol used to communicate with client service module.
Notes:	Annotate client as desired.

**Last Contact**

Last contacted (date/time):	Last time the client was communicated with.
Total contacts (count):	Total number of times the client has been communicated with for this session.
Reply Delay (milliseconds):	Roundtrip time to communicate with client.

**Time Difference**

Last checked (date/time):	Date and time of the last time check.
Time difference (seconds):	Difference in seconds between the client and the host computer.

**Clock Setting**

Last setting (date/time):	Date and time of the last time setting.
Setting difference (seconds):	Number of seconds that clock was changed on client.
Accuracy (seconds/day):	Accuracy of client compared with host.

**Status**

Last changed (date/time):	Date and time the status was changed.
Current status (active/inactive):	Client activity status. Inactive clients are not included in general tests.

**Mode**

Select the mode under which ClockWatch Enterprise will work. The modes available include, Manual, Once, Daily, Periodic, Schedule, and Continuous.

<b>Manual:</b>	run test on demand.
<b>Once:</b>	run once in the future.
<b>Periodic:</b>	run tests at a periodic interval.
<b>Daily:</b>	run test at the same time every day.
<b>Schedule:</b>	set up a schedule to run tests or commands.
<b>Continuous:</b>	run the same function continuously (for testing only).

### **Command**

The pull-down menu allows you to choose the client to test or select the <all> option to test all clients. Press “Start” to initiate the command.

- Ping:** Issue standard ‘ping’ request.
- Heartbeat:** Check to verify that Service Module is up and running.
- Timecheck:** Check the time on clients.
- Timeset:** Set time on registered clients, if needed.
- Forced timeset:** Forces time set on client(s).
- Command:** Run remote command on client(s).
- Relay:** Turn switch contacts on remote relay module on or off .
- None:** No action.
- Command window / next event time:** shows the current command or the date and time of the next command.
- Start:** Starts the current function for the current client immediately from the settings on the control panel.
- Stop:** (continuous mode) stops the continuous loop and returns to manual mode.

### **View**

- Arrange:** Changes how the graphs are displayed in the order listed in the Windows menu
- Options:** Opens the Settings tab of the Options screen, and allows easy access to the Options described in Section 3.
- Refresh:** Refreshes graphs or data listings.

### **Clients**

- Add:** Add a new client.
- Delete:** Remove selected client.
- Save:** Save the current client list.
- Edit:** Open the client editor
- Refresh:** Redraw the tree.

### **Service**

- Service:** Shows if service is running (Green). Press to open Service options.

### **Graph/Data**

Displays data logs, graphs, and schedule. Change the arrangement of the current windows in the frame by pressing the Arrange button.

## 2.2 Guide to the Main Screen Menus

### File Menu

**Exit:** Exits ClockWatch Enterprise. Closes log file. If options were changed asks if changes should be saved.

### Clients Menu

**Add:** Opens a window to enter the unique IP address of the new client.

**Edit:** Opens a client list window; choose the client from this list and a client edit window will open. Options are available to edit the client name, IP address, protocol, and add notes.

**Remove:** Remove client from list.

**Save:** Saves the client settings.

**Update:** Applies any changes you have made.

**Refresh:** Refreshes the client window on the main screen.

### View Menu

Use this menu to customized the windows and panels you see on the main screen. Choose the item from the menu to toggle the view on/off.

**Client Tree:** Show the client tree; options for **Clients only** or **View All**

**Control Panel:** Show the control panel frames for mode, command, view, clients.

**Data:** Show client data.

**Graphs:** Show the graph displays.

### Options Menu

Select any item from the Options menu to open the Options window, or choose Options from the View Frame of the main screen. Detailed information on each option is outline in Section 3.

### Tools Menu

Detailed information on the Tools menu is provided in Section 4.

**Client Test:** Opens up the client test screen to allow the administrator to test each client for diagnostics or troubleshooting.

**Search for Service Modules (NT/2000/XP/2003):**

Finds computers running the Enterprise Service Module. First validates individual computers, then checks to see if the computer is currently running the Service Module. Results from the test are shown on the client tree.

**ClockWatch:** Starts the ClockWatch time sync program, if installed.

### Windows Menu

- Cascade:** Displays open charts overlapping.
- Tile Horizontally:** Displays open charts stacked one atop another.
- Tile Vertically:** Displays open charts side by side.

### Help Menu

- Help Topics:** Displays a list of help topics.
- Search:** Search the help system for a key word or topic
- Using Help:** How to use help.
- Tips:** Opens the tip of the day Tip Screen
- Beagle Software Web Site:** Opens a web browser (if available) which opens Beagle Software's home page, [www.beaglesoft.com](http://www.beaglesoft.com).
- Register:** Opens the main Registration Screen which explains the different ways you can register your software (trial version).
- Software Updates:** Opens a web browser (if available) which opens the ClockWatch Enterprise software update page. This page contains information about the most current version of ClockWatch Enterprise and the options to upgrade.
- About:** Displays version, number of clients system and program copyright information.

## 3.0 The Options Window

Choose Options from the View frame of the Main Screen, or select any item from the Options menu to activate the Options window. This window is a gateway to customize a variety of options, described in detail beginning with Section 3.1.

- Setting:** Customize the timeset settings.
- Display:** Choose the graphs and panels to show.
- Function:** Select the command functions
- Logging:** Set logging on/off and establish file location
- Graph:** Select the graph displays to show on the main screen
- Clients:** Manage the client listings
- Service:** Control the ClockWatch Enterprise service, if applicable.

### Command Buttons

- OK:** Closes the screen, saving any changes made.
- Cancel:** Cancels the changes you are about to make. Any changes made to this screen will be cancelled.
- Help:** Begins on-line help.

## 3.1 Setting

The Settings option allows users to select the mode under which ClockWatch Enterprise will work. The modes available include, Manual, Once, Daily, Periodic, and Schedule.

The screenshot shows the 'Options' dialog box with the 'Setting' tab selected. The 'Setting mode:' section contains five radio button options: 'Manual' (selected), 'Once', 'Daily', 'Periodic', and 'Schedule'. Below these are several input fields: 'Once at:' (empty), 'Every day at:' (empty), 'Make settings every:' (set to '1 hour'), and 'Minimum Time Change (msec):' (set to '300'). There is also a checkbox labeled 'Warn when client time has not been checked every:' which is currently unchecked, with a dropdown menu set to '1 day'. At the bottom of the dialog are three buttons: 'OK', 'Cancel', and 'Help'. A status bar at the very bottom reads 'Choose for setting on demand'.

### Picking the right Setting Mode

- Use **Manual** when you want to make a setting quickly, providing for on-demand settings only.
- Use **Once** when you want to set the clock at a given time in the future, for example to synchronize with another computer or system. **Once at...** shows the date and time of next setting.

When the **Once** option is selected, the **Enter Time** form will appear. From here you can set the time and date to perform a time check. This is the time that the next setting will be made. The form allows a variety of time/date formats.

**Time Input Field:** Used to enter the time for the next setting. If the

setting mode is Once, then input is expected in the <date> <time> formats.

**Date formats:** Enter the date using a format that is valid for your region. For users in the US include month/day/year (i.e., 1/18/04) or in full month word format (i.e., January 18, 2004).

**Time formats:** Enter the time using a format that is valid for your region. US users can use either 12 hour AM/PM format (i.e., 1:15 PM) or 24 hour clock basis (i.e., 13:15).

**Note:** Invalid date or time strings, including dates in the past, will not be accepted by the form.

- Use **Daily** to maintain the clock accuracy at a reasonable level suitable for most users. **Every day at...:** shows the time that settings will be made each day. When the **Daily** option is selected, the **Enter Time Form** will appear. See the explanation for this in the **Once** setting section, above. Note that **Daily** does not require a date setting.
- Use **Periodic** when the accuracy of the system is crucial. **Periodic** is appropriate for the most demanding environments when the clock must be kept within several seconds of standard time.  
**Make settings every...** (pull-down): Choose the interval of time desired between settings.
- Use **Schedule** to run a series of actions on a pre-defined schedule. See the following subsection for information on editing the schedule.

**Usage Notes:** If ClockWatch Enterprise is not connected to the client on the LAN at the specified time and direct modem connection is not used, then the setting will not be made nor will it be rescheduled.

**Minimum Time Change:** The threshold value for client time change, in milliseconds. If the client exceeds this value when doing a Timeset function, then the clients clock will be changed, otherwise no time change will be made. Applies only to Timeset (not Forced Timeset) function.

**Warn when client time has not been checked every...<interval>**

ClockWatch Enterprise can warn you when a client fails to be reached during a timecheck or timeset. If the time on the client hasn't been checked within a certain amount of time a warning is issued. If the time since last successful check exceeds the interval limit entered, then a warning will be written to the Event log (if Event logging is enabled). The client must be in the current client list for the warning to be issued.

Note: warning must be enabled to send email notification.

**Send Email Warning**

Enables email notification for clock check warnings (see above). When first checked opens up Email Notification Setup screen.

### 3.1.1 Editing a Schedule

The Schedule Editor window appears on the main screen when the **Schedule** mode is selected. It allows you to add and edit individual events in a schedule. The toolbar at the top of the window allows you to open, add and edit the events in the schedule. Events can be selected for editing, viewing or playing.

#### Event List

Shows a list of events in the schedule. Events are played from top to bottom. To select a Event in the list click the left column (the Event number) of the Event to select.

#### Columns

- ID:** Event number in current schedule. This number is assigned when the Schedule editor is started. If you change the order of the events then the next time the event editor is opened the numbering of the events will reflect the new order.
- Days:** Days to run the event. Choices include all, individual days, M-F, Sat-Sun.
- Time:** Time the event will start. Time is in 24 hr format (hh:mm).
- Client:** Client to be contacted, with option for <all>.
- Function:** The function to run.
- Command:** If a command, the command string to run.

#### Editing Toolbar

The Schedule Edit toolbar contains the major options for editing Events and Schedules.

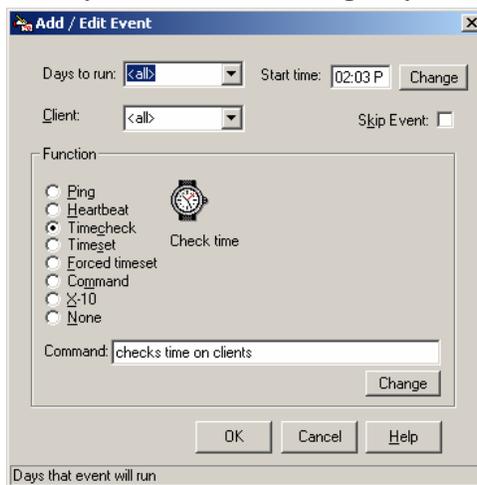
- Save:** Save the current schedule changes to the file.
- Edit:** Edit the document, sound file or pause time for the event.
- Add:** Create a new event at the end of the schedule.
- Copy:** Create a copy of the highlighted event below the existing event.
- Insert:** Insert a new event immediately below the current event.
- Skip:** When running the schedule, skip this event. When an event is designated as skipped, the icon changes to a yellow warning icon; these events remain in the schedule but are not played in the schedule. Upon reopening the schedule, skipped events are reset to the normal play mode.
- Delete:** Delete the event from the schedule. This does not delete the original image or document, just the reference to the file in the schedule.

### Hints

- Double click the event to open the Edit Event form.
- Expand/contract the Schedule Editor window by dragging any edge of the window.
- Right-click the mouse to show the Editing Toolbar options in a pop-up menu.
- Schedules can be alphabetically sorted by any of the column headings by clicking on the column title.

### Add/Edit Event

The Event Edit screen allows you to specify the time, days of the week the client and the function you want to run on a regularly schedule basis.



**Days to run:** Days to run the event. Choices include all, individual days, M-F, Sat-Sun.

**Start time:** Time to start the event. Time is in 24 hr format (hh:mm).

**Client:** Client to be contacted, with option for <all>.

**Skip Event:** Skip the event when running the schedule.

**Function:** The function to run

**Command:** When using a remote command or Relay module, shows the arguments used.

**Change button:** Opens up the command edit screen

### 3.1.2 Command Line Mode

ClockWatch Enterprise can be run from the command line allowing it to be called from another program.

If you launch ClockWatch Enterprise from the command line (Windows 95/98/Me **Run** command or MS-DOS prompt) and want the program to run once and exit without user intervention, use the **once** command argument:

#### CWEnterprise

```
<program_path> CWEnterprise.exe once
```

to run in the unattended mode, where

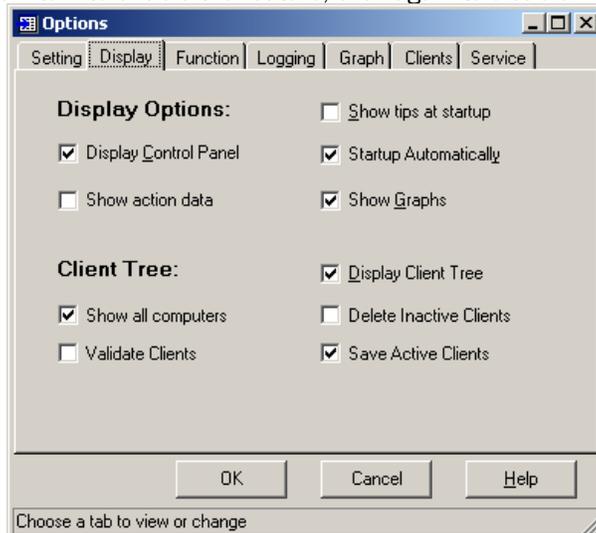
- *<program\_path>* is the path where the executable is located,
- *CWEnterprise.exe* is the executable and
- *once* is the command line option.

This is equivalent to starting the program in the Manual mode, pressing the “Start” button and exiting.

To start ClockWatch Enterprise in the normal, attended mode, omit the *once* argument.

## 3.2 Display

The Display tab offers display options for the Main Screen. Click the box next to each item to enable the feature; click again to disable.



## Display Options

**Display Control Panel:** Show the control panel in the main screen.

**Show Action Data:** Show the action event log in the Graph/Data panel of the main screen.

**Show Tips at Startup:** Turn on /off Tip screen at application startup.

**Startup Automatically:** Start the ClockWatch Enterprise application at computer startup along with other background applications, and is shown in the system tray. The ClockWatch Enterprise clock icon indicates the stay resident program is loaded and running in the background. **Note:** if this option is selected, you cannot edit the Graphs tab.

**Show Graphs:** Turns the display of graphs on or off. **Note:** Data in graphs are hidden if display is turned off but no data are lost.

## Client Tree Options

These options determine which computers (clients) are displayed on the client tree on the main screen. A client can be considered either:

- **Active:** running the Service Module,
- **Passive:** visible on the network but not running the Service Module, or
- **Inactive:** disabled or not visible on the network.

**Display Client Tree:** when checked, shows the client tree in the main screen.

**Show All Computers:** Lists all clients currently visible on the network.

**Validate Clients:** Tests clients on the network before listing them. Specifically, checks to see if individual clients will respond to a network time check request. Clients responding to the time check will be classified as *Passive*, clients failing to respond to the time check will be set as *Inactive*. The results of the check will be shown on the computers on the tree. Use the next two options to change the inactive or active client listing based on these results.

**Note:** In order to run the validation check, clients must have sharable access over the network.

**Delete Inactive Clients:** Delete clients that fail validation or that are manually set to inactive. **Note:** when inactive clients are deleted they are dropped from the client list and will not be seen unless they reappear on the network or are added manually. Use this setting to show only the computers currently live and accessible on your network.

**Save Active Clients:** Does not delete Active clients, even if they aren't currently visible or accessible over the network. Use this setting to

preserve the listing of clients running the Service Module that aren't always turned on or otherwise available on the network.

### 3.3 Function

The Function tab offers choices for the command and the client to set.

**Command:** Which command to run from the list of command options.

**Client:** Choose the client to run the command on, or all.

**Command:** Optional arguments for the command or Relay module setting.

#### Command Summary:

**Ping:** Pings clients.

**Heartbeat:** Checks for heartbeat from client. Uses functionality of Service Module on client for check.

**Timecheck:** Checks and reports current time on the client.

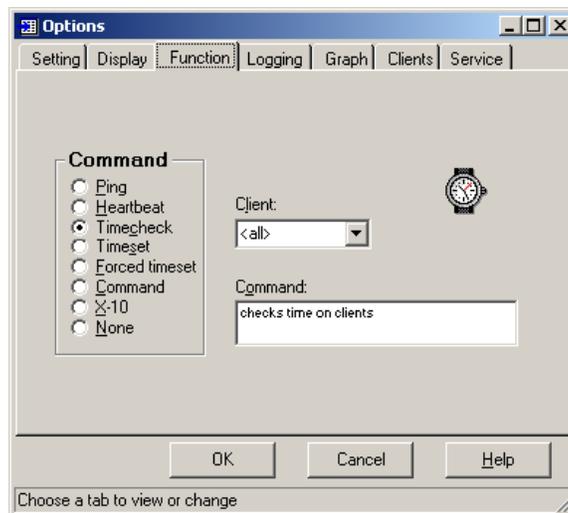
**Timeset:** Sets time on client, if necessary. Clients with more than one second difference from Enterprise are set.

**Forced timeset:** Time set on client with time on Enterprise, unconditionally.

**Command:** Execute a command on a client.

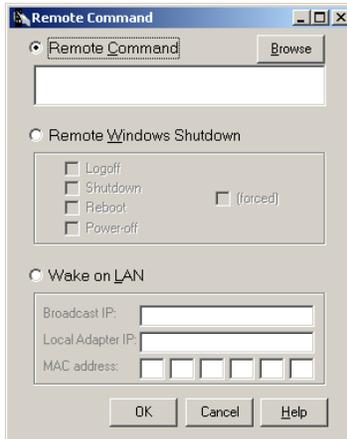
**Relay:** Sends an Relay command to a control module attached to a client.

**None:** No command issued.



### 3.3.1 Command Edit

The Remote Command screen, accessible by choosing Command from the Function tab, lets you specify a remote command to run on a client. This includes applications, MS-DOS batch files and commands. You can also specify a remote Windows shutdown. When used in conjunction with Relay device control you can do a graceful hardware and software reboot from a remote location



#### 3.3.1.1 Remote Command

Specify the command to run remotely. You can press the “Browse” button to find the correct name and complete path. Since the command will be executed on the remote computer the path should read as if you were sitting at that computer, issuing the command.

#### 3.3.1.2 Remote Windows Shutdown

Request (or force) a Windows shutdown, logoff or reboot on a remote computer running the ClockWatch Enterprise Client Service Module. Since the shutdown is executed by the Service Module, it must have the necessary permissions to shutdown the computer.

There are several shutdown options, including forced and power down, to remotely suggest or force a shutdown.

- Logoff:** Logs off current user.
- Shutdown:** Shuts down the computer.
- Reboot:** Shuts down and reboots the computer.
- Power-off:** Brings computer down to the power down state.
- (forced):** Forces the above action on the remote client, regardless of the activity of the current user.

Whether the computer will go to the power down state will depend on its

ACPI capabilities and settings. ACPI (Advanced Configuration and Power Interface) is an industry specification for the efficient handling of power consumption in desktop and mobile computers. With ACPI, the computer can enter a stand-by mode when no one is using it.

ACPI must be supported by the computer motherboard, basic input/output system (BIOS), and the operating system. One of several power schemes can be chosen. Within a power scheme, the user can control the power to individual devices. ACPI is designed to work with Windows 98/ Me/2000/ XP/2003. If you have ACPI enabled Windows, you'll find a description of ACPI in the help file.

#### **Shutdown With ACPI Compatible computers**

Send shutdown command using the remote Windows shutdown command within ClockWatch Enterprise. The computer must be running the ClockWatch Enterprise Service Module. This should place the computer in the powered-down state.

#### **Shutdown With Non ACPI Compatible computers**

Send shutdown command using the remote Windows shutdown command within ClockWatch Enterprise. The computer must be running the ClockWatch Enterprise Service Module. This should place the computer shutdown but powered on state. Turn the power off to the computer with the Relay module. See Section 3.3.2 Relay module requirements and procedures.

### **3.3.1.3 Wake On LAN**

Wake-On-LAN (WOL) capability allows you to start a WOL ready computer from a signal issued from a remote computer. WOL capable computers have WOL network cards that listen for the special WOL magic packet. In order to use the Wake-On-LAN feature, your target computer must meet the following requirements:

- Have an ATX motherboard with an onboard, 3-pin WOL connector.
- Have an ATX ONLY power supply that meets ATX 2.01 specifications. The critical part is the 5V standby current, which must be at least 800 mA.
- A network card that can support WOL with its cable to the motherboard properly installed.
- In the BIOS Power Management, you must enable the LAN Wakeup option.
- Your system must be in a Soft-Off power state.

**Note:** ClockWatch Enterprise does not need to be installed on the target computer since the network card listens for the WOL packet.

### Using Wake-On-LAN

- Verify that the target computer supports Wake-on-LAN (see above).
- Using the remote command function in ClockWatch Enterprise, send the broadcast IP address and the network card device address (MAC address) to a computer running the ClockWatch Enterprise Service Module.
- The computer running the Service Module sends the magic packet across the LAN to the target computer currently powered down.
- Upon receiving the magic packet from ClockWatch Enterprise, the computer will wake up and boot the system.

### WOL Setup Definitions

- Broadcast IP:** IP address of the target computer. Use 255.255.255.255 to broadcast to all computers on a subnet.
- Local Adapter IP:** IP address of the local host adapter. This field can be left blank. If there is only one host adapter installed on the computer this field can be left blank.
- MAC address:** The specific MAC hardware address of the LAN card on the computer to be started. This is unique hardware address specific to the adapter card.

**Tip:** You can check the MAC address by running `ipconfig /all` from the command line.

### 3.3.2 Relay Setup

The optional Relay module allows you to turn a remotely connected relay on or off over the LAN or Internet. It requires that a Relay module be connected to the remote client (which is connected via serial port to the Service Module software). The Relay Module can be used to control a variety of AC or DC powered devices including computers, peripherals, lights, and instrumentation.

**Switch 1 or Switch 2 -** Directly controls the two SPDT relays.

**On/Off:** sets switch to on or off position

**Latch:** makes new switch position change permanent

**Interval:** Make the new switch position for the number of seconds specified. For example, setting 'Switch 1 On' for an interval of 20 seconds will temporarily make the contact on switch number1 for 20 seconds and then return it to the off position.

**Data In:** sense and detect the voltage input level.

**Com Port:** The number of the COM or serial port connecting to the

Relay module interface installed on the remote client.

**Baud Rate:** Baud rate of the serial connection to the Relay module (normally 9600 baud).

**Test** – opens the Relay Test screen (must have the relay module attached locally)

### 3.3.2.1 Relay Test Screen

This screen allows you to test a locally connected Relay module. You can issue simple commands to open, close switch contacts and sense the current status of the Relay module.

Note: Commands for remotely connected Relay modules should be made in the Relay Setup screen.

**On/Off:** sets switch 1 or 2 to on or off position

**Read Input:** read voltage on the input terminals. **Latch** shows that setting has been made. **Reset** resets the sampling cycle.

**Xfer Stat** – shows transfer status with Relay interface (green shows active transfer)

**CTS** – Clear to send status line (green when CTS is holding).

**RTS** – Ready to send status line (green when RTS is holding)

#### Com Port

The number of the COM or serial port connecting to the Relay module interface installed on the remote client.

#### Baud Rate

Baud rate of the serial connection to the Relay module (normally 9600 baud).

### 3.3.3 Network Monitoring

ClockWatch Enterprise has built in network monitoring features that can work in your multi platform environment. ClockWatch Enterprise allows you to easily monitor computers on your network and quickly determine if computers are running and/or responding.

The network monitoring functionality in Enterprise can be broken down into two types: active and passive. The active client runs the Enterprise Service Module and can respond to specific requests from ClockWatch Enterprise. In the passive case there is no Enterprise software loaded on the client. Instead, the client responds to standard network requests, such as 'ping'. Enterprise should be able to communicate with any computer on the network, but can conduct the most functions with active clients.

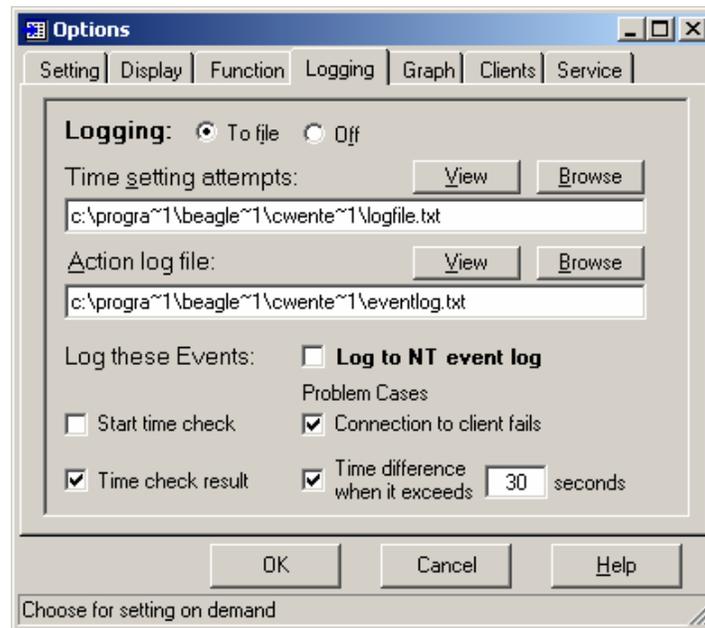
**Enterprise's monitoring capabilities by platform type**

	Windows Computers with Service Module Installed	Windows Computers without Service Module Installed	Non-Windows Computers
Ping	✓	✓	✓
Heartbeat	✓		
Timecheck	✓	✓	
Timeset	✓		
Forced timeset	✓		
Command	✓		
Relay	✓		

### 3.4 Logging

The Logging tab allows the administrator to turn on/off the system logging and, when enabled, set the log file name and location. The log provides a record of all the settings made on the system. This can be useful as a record of system performance and/or as an input to other programs such as a spreadsheet or database programs where further analysis would be done.

Once a log file is specified ClockWatch Enterprise will add data to the log file each time the program is activated and a setting is made. The log file will record every "O" setting where the clocks were in sync, but will not record setting attempts when the connection failed. Old data from previous sessions are preserved as the recent data are appended. A log file must be specified for the Previous Settings Graph to show data.



### Logging

**To file:** Turns on the log file for client time setting and action.

**Off:** Turns all logging off and stops writing to log file. This does not remove any existing log file.

#### Time Setting Attempts

Indicates the file name/location for log entry when a client is contacted for time setting.

**File Name Field:** Contains the full file name and path of the log file. (i.e., c:\program files\beagle software\cwenterprise\logfile.txt). Enter the file name in the field or press the Browse button. This file must be specified for the Previous Settings Graph to show data.

**View:** Opens up the log using Windows Notepad. Note: if there have been no setting attempts, there will be no file to view.

**Browse:** Presents the find file dialog to locate an existing file in the file system.

#### Action Log File

Indicates the file name/location for every action or event that occurs for each client.

**File Name Field:** Contains the full file name and path of the action log file. (i.e., c:\program files\beagle software\cwenterprise\eventlog.txt)

**View:** Opens up the log using Windows Notepad. Note: if there have

been no setting attempts, there will be no file to view.

**Browse:** Presents the find file dialog to locate an existing file in the file system.

See Section 6, Technical Reference, for sample file formats and status result codes.

### **Event Logging (Windows NT/2k/XP/2003)**

Event logging allows you to write selected actions to a text file and the NT event log. This log captures major time setting activities as well as warnings for when there may be a system or time setting problem. With the event log enabled Enterprise will capture the events you specify as well as any operating errors.

To view the Windows NT Event log open up the NT event reader and select 'Application'. Entries will be listed under "CWEnterprise" for the application and "CWEntSvc" for events generated by Enterprise Service.

**Log to NT event log:** When checked, Enterprise writes events to the NT event log.

**Start time check:** Logs when the time checking or setting process is started.

**Time check result:** Logs the result of time setting activity with each client.

#### **Problem Cases:**

**Connection to client fails:** Logs when Enterprise is unable to contact the client.

**Time difference when it exceeds *<interval>* seconds:** You can specify for Enterprise to log an event if the time difference exceeds a threshold limit value. Insert the threshold time (in seconds) in the box. Whenever the difference between the client's time and host time exceeds this value an event entry will be made.

**Syslog:** when checked, ClockWatch also writes events to a remote Syslog server. When option first checked, opens up Syslog Setup screen.

### **Syslog Setup**

ClockWatch Enterprise can send events to a remote syslog server. Syslog servers, common in UNIX and Linux networks, gather messages from a variety of sources such as routers, switches, and any other syslog enabled application or device. The syslog server filters, stores, displays and forwards messages gathered locally and from the network.

**Server** tab – specify the syslog server.

**Syslog Server:** Enter the name or IP address of the remote syslog server. Note that the server must have remote syslog messaging

enabled and must be accessible over the TCP/IP connection.

**Test** tab - allows you to send a test message to syslog to confirm the settings and connection.

**Level:** Choose the urgency level you want the test message to be sent at..

**Test Message:** Text of the test message.

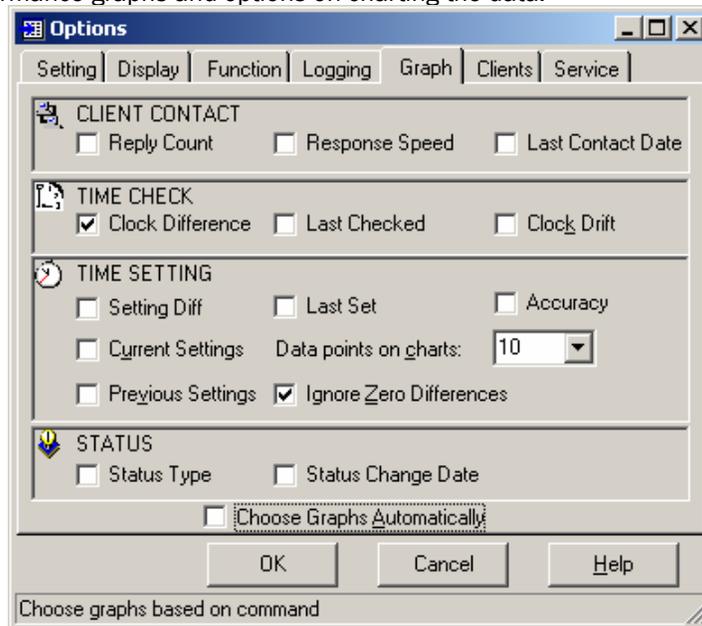
**Test** button: Press the Test button to send the test message to the current options.

*Usage Notes:*

- Remote syslog logging must be enabled on the receiving computer. This allows the Syslog server to receive messages from the network using an Internet domain socket with the *syslogd* daemon in UNIX/Linux.
- Syslog uses UDP port 514 for communication. This port must be open on both the sending and receiving computers.
- Enterprise sends messages at either the information, warning or error level priorities. Messages are sent to the NTP subsystem of Syslog.
- Event logging must be enabled in Enterprise to generate messages for remote Syslog logging. You can choose the type of events to log on the Logging and Clients tab in Enterprise.

## 3.5 Graphs

The graph tab offers options for displaying the computer clock performance graphs and options on charting the data.



Note: Select “Choose Graphs Automatically” to set default options.

### **Client Contact**

**Reply Count:** Number of times clients have been contacted by any function during this session.

**Response Speed:** Roundtrip response time (in milliseconds) to client and back.

**Last Contact Date:** Date last contact occurred since session began. Bar chart showing last client contact since session began.

### **Time Check**

**Clock Difference:** Time (in seconds) client clock deviates from Enterprise host.

**Last Checked:** Bar chart showing the last time the client's clock was checked.

**Clock Drift:** How much time, in seconds, the client's clock has drifted.

### **Time Setting**

**Setting Diff:** Amount of time (in seconds) client clock was off from host at last time setting.

**Last Set:** Bar chart showing the date the clock was last set.

**Accuracy:** Accuracy of clients in terms of seconds/day of time loss or gain from the timeserver.

**Current Settings:** Shows the amount of time client clocks have changed since the session began. The data point setting can be customized.

**Previous Settings:** This graph shows the settings made on previous settings.

**Ignore Zero Differences:** If checked, displays only the settings when the internal clock was changed. If not selected, shows all settings, including those when the clock was not changed (0 difference), in the Previous Settings graph.

**Data points on chart:** Sets the number of readings from the current session that is displayed on the bottom axis of both charts. Use a small number if you want the most recent settings only.

**Note:** Data points are shown for settings made since the application was started for the Clock Drift and Current Settings graph. The number of data points determines how many points to display in the Previous Settings graph.

### **Status**

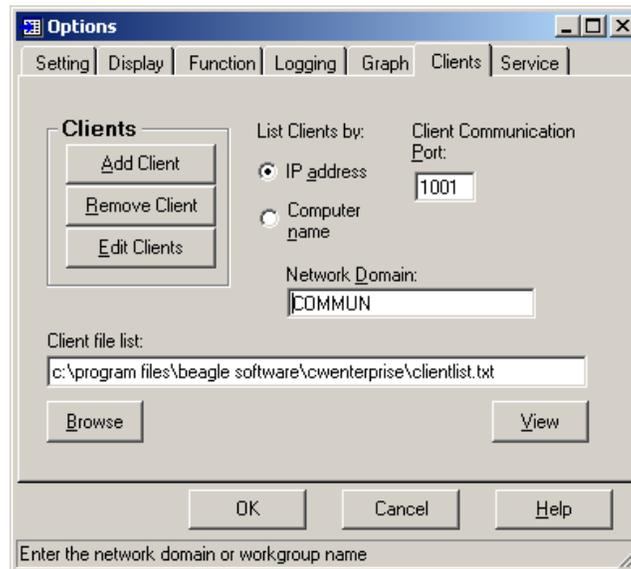
**Status Type:** Bar graph displaying active or inactive status by client.

**Status Change Date:** Bar graph displaying date of last change in status.

**Note:** Turning graphs off will also stop the Graphics Server from running. This server is used to display the graphs used by ClockWatch and other applications. It is stopped whenever all applications no longer have use for it.

## 3.6 Clients

The Clients tab allows the administrator to manage clients. This is an optional interface to the Clients menu on the main screen.



### Clients

**Add Client:** Opens a window to enter the IP address for a new client.

**Remove Client:** Removes the selected client.

**Edit Client:** Opens a window showing registered clients. Double-click a client to open an editing window.

See Section 3.6.1 for more information.

### List Clients by

**IP Address:** The clients will be listed in the ClockWatch Enterprise Client Tree frame by IP address.

**Computer name:** The clients will be listed in the ClockWatch Enterprise Client Tree frame by computer or network name.

**Note:** when switching between IP Address or name listing, Enterprise must be restarted to display the changed setting on the main screen graphs.

### Client Communication Port

The administrator may specify the port number used to communicate with ClockWatch Service Modules. The default value is 1001. ClockWatch Service Modules normally listen for instructions from ClockWatch Enterprise. This port connects with the client.

**Network Domain (Win NT/2k/XP/2003)**

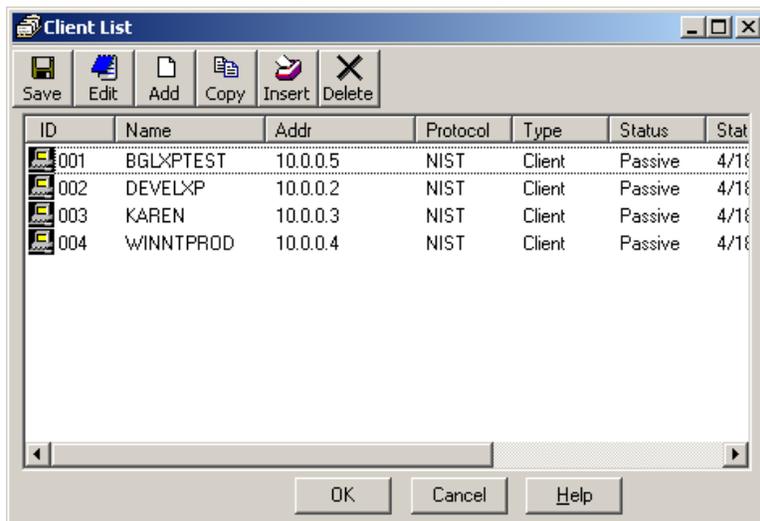
The shows the domain name or workgroup name for the network that Enterprise is monitoring. Enterprise will search this domain when looking for computers on the network. The name will appear automatically, but can be changed to point to a different domain.

**Client File List**

Shows the file name and location for the client list file (i.e., c:\program files\beagle software\cwenterprise\clientlist.txt). The administrator may change the name or location of this file.

**3.6.1 Edit Client and Client List**

The Client List window is activated by selecting Options>Clients>Edit Clients. This window allows you view and edit your client list.



**Toolbar**

The toolbar at the top of the screen allows you to edit changes to client computers in the directory.

- Save:** Save the changes to the current client directory.
- Edit:** Edit the name, location or protocol of the client.
- Add:** Add a new client at the end of the list.
- Copy:** Create a copy of the highlighted client below the existing client.
- Insert:** Insert a new client immediately below the current client.
- Delete:** Delete the client from the directory.

**Columns**

- ID:** Sequential index number in current directory, assigned when the directory editor is started. If you change the order, the numbering of the clients will reflect the new order the next time the client editor is opened.
- Name:** Network name of the client
- Addr:** IP address of the client.
- Protocol:** Protocol used to communicate with ClockWatch Enterprise.
- Type:** Client.
- Status:** Active, passive or inactive.
- Stat Date:** Date of last change.
- Notes:** Optional documentation.
- Setting Diff:** Difference in seconds from the time at last setting.
- Setting Date:** Date last time setting occurred.

#### Hints

- Expand/contract the client list and form by dragging the right or left edge of the screen.
- Selected clients can be deleted, copied, viewed or played from the toolbar, or by right-clicking with the mouse.
- Listing can be alphabetically sorted by any of the column headings by clicking on the column title.
- Double-click a client to open its Client Edit window.
- A single right-click of the mouse will give the client edit options in a pop-up context menu.

#### Client Edit

The Edit Client window is activated by double-clicking on a client in the Client List.

**Client name:** Enter the URL or IP address of the client (i.e., time-a.nist.gov).

**IP Address:** Enter the full IP address (i.e., 192.123.22.34).

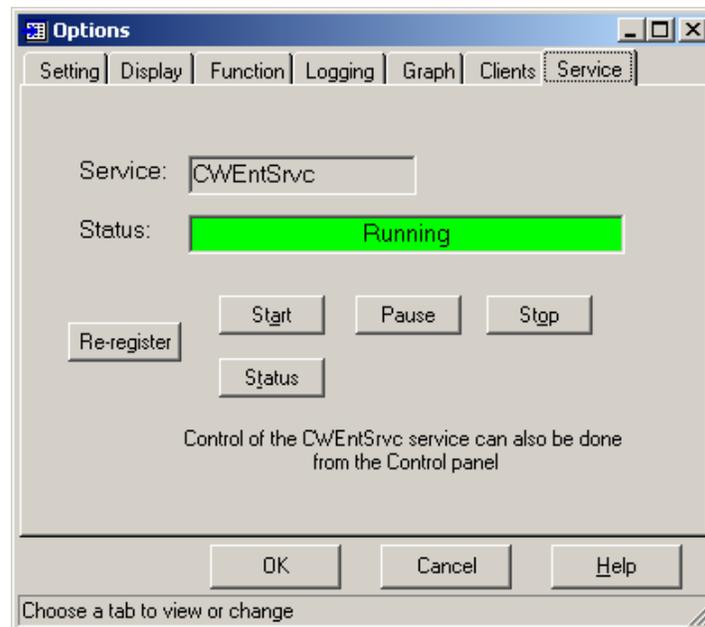
**Client Protocol:** Select the time sync protocol used to communicate with ClockWatch Enterprise. The default choice is NIST.

**Active/Passive/Inactive:** Shows if client is currently active and in use by ClockWatch Enterprise. Active clients have the service module installed; passive clients do not; inactive clients are not checked.

**Notes:** Optional field to identify location of the client, i.e., MIS Exchange Server.

### 3.7 Service (Win NT/2k/XP/2003)

The Service tab shows status of the ClockWatch Enterprise Service and allows you to stop and start the service. In Windows, a service is a separate process that runs independently of any application and is normally active whenever the computer is running. When enabled, the ClockWatch Enterprise Service runs whenever the computer is running. It functions identically to the Enterprise application or service module.



**Start:** Starts the ClockWatch Enterprise Service that is not running. The ClockWatch Enterprise Service accepts one optional startup parameter, **debug**, which gives a detailed trace of the ClockWatch Enterprise Service in the Debug.txt file in the CWEnterprise application directory.

**Pause/Continue:** Suspends/Resumes the clock synchronization

activity of the ClockWatch service.

- Stop:** Stops the Enterprise service that is currently running.
- Status:** Shows the current run status of the service.
- Register:** Register the Enterprise Service Module service with Windows.

**Notes:**

- You can also view the status, start and stop the service from the Service Applet in the Windows Control Panel.
- ClockWatch Enterprise Service must be run in the System context.

## 4.0 The Tools Menu

The Tools menu directs you to run client tests, search for client service modules, and run ClockWatch to synchronize the server's clock to the Atomic Clock. See Section 6 for detailed information on using ClockWatch Pro/Server.

### 4.1 Client Test

The Client Test allows the administrator to test each client for diagnostics or troubleshooting. The following activities can be tested:

#### **Confirming Settings in ClockWatch Enterprise**

Open the Client Test form to show the current server settings in Enterprise, which includes the server, protocol and port number used to communicate with the client. The current settings are used to set the initial test conditions. Pressing the "test" button will verify that the communication can be established with the current settings.

#### **Troubleshooting Connection Problems**

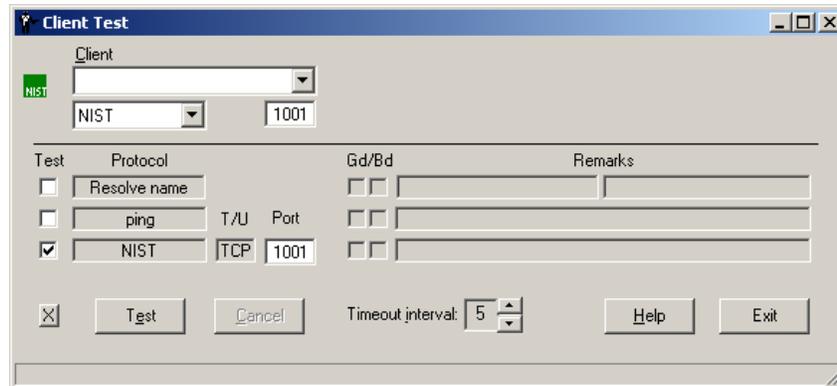
If a problem occurs where time setting does not work with a certain client, then the tests can be used to communicate with the client in a variety of common ways, as well as diagnose problems with communicating over the LAN, network or through a proxy server.

#### **Testing New Client connections**

The client test utility lets you determine if a new client is active and can be communicated with using standard protocols. A new site can undergo tests to see that the address is valid and that the Client Service Module is installed and running.

#### **Client Test Screen**

This is the main test screen for conducting client communication tests.



### Test Features

- Checks client access and connection with three different tests.
- Shows the response of the individual client.
- Includes name lookup test and ping test to check for basic accessibility of the client.

The Client Test lets you check both the connection and the capability of local or remote clients. Compatibility and connection problems can be diagnosed using the built in 3-point connection test.

### Client Section

**Address:** Name or IP of the client which will be used for testing.

**Protocol:** Time sync protocol used to communicate with this client.

**Port:** Number of TCP or UDP port used to communicate with client.

**Test Request Section:** Choose tests to run on client.

**Protocol:** Name of the test to run.

**Test:** Check to select the individual tests. All tests may be selected.

**Resolve name:** Check that network name can be resolved to an IP address.

**Ping:** Common connection test to verify connection to a remote client. The ping utility uses the ICMP echo request and echo reply packets to determine whether a particular IP system on a network is functional.

**NIST:** Time-sync protocol used to communicate with the National Institute of Standards & Technology.

**T/U:** Whether the test uses a TCP or UDP type connection.

**Port:** Port number used to communicate with client in test.

**X:** Toggle all tests on or off.

**Test button:** Start to run the tests selected from top to bottom.

**Cancel button:** Cancel any remaining tests (will finish current test).

**Timeout Interval:** Interval, in seconds, to wait for the client to respond for each test. If the client does not respond within the interval then the test fails.

**Test Results Section:** Shows the results of the communications tests.

**Pass (Gd) Test Checkmark:** The client has responded to the test with the appropriate response.

**Fail (Bd) Test Checkmark:** The client has failed to respond to the test on the port specified, or the response was in an unexpected format.

**Remarks/Data:** The string returned by the client or the results of the test.

**Directory Button:** Open the client directory list.

## 4.2 Search for Service Module

Select the “Search for Service Module” option in the Tools Menu to run a search of computers on the network that are currently running the Service Module. The results are displayed in the Client Tree on the main screen. The status of clients with running Service Modules is set to “Active”.

The module is intended to work in the background and has a simple user interface, described in detail in Section 5.

## 5.0 Client Service Module

The Client Service Module, installed on network clients, provides run-time support for ClockWatch Enterprise’s advanced features. Once installed on a client computer it provides the interface for polling the client to check or set time, and provides a means to carry out remote commands and actions.

Installation instructions for the Client Service Module are described in Section 1.0.4.

**Status Window:** Shows the current status of the service module or the last request from ClockWatch Enterprise (see next page).



*Client Service Module Main Screen*

### **Menus**

- File**
- Register Service:** Registers the Service Module Service.
  - Exit:** Exits the service module. Choose whether to minimize and return to the system tray or to exit from the program completely.
- Options**
- Port number:** Specify the port number used to listen for requests from ClockWatch Enterprise. This is the TCP or UDP port used in communication with the Server. Must be the same number as the port used in ClockWatch Enterprise for client communication. Default value is 1001
  - Protocol:** choose either NIST (default) or SNTP protocol used to communicate with Enterprise console.
  - Startup Automatically:** When checked starts up the service module whenever the regular user logs in.
  - Service:** Opens the Service control tab.
- Help**
- Help Topics:** Opens ClockWatch Enterprise Service Module help.

## **6.0 Using ClockWatch with Enterprise**

Beagle Software's ClockWatch Pro provides a fast and easy way to synchronize the computer system's clock to the Atomic Clock using the Internet or a modem.

ClockWatch queries a timeserver you specify, which returns the exact time.

ClockWatch then converts the standard time to local time and compares it to the internal system time on the computer, adjusting the system clock if necessary. Settings can be made on demand, on a regularly scheduled basis or automatically based on the specific need of the local system.

Results from clock settings are displayed on windows and charts showing the overall accuracy of your computer. Settings can also be logged to a file allowing you to save all activity in a text file for later review or archival.

ClockWatch features multiple options for time settings, display, connection, logging, and graphs.

## ClockWatch Quick Start

1. Install ClockWatch as described in Section 1.0.3.
2. Make sure the computer has an Internet or modem connection established and that the time zone is set correctly in the Date/Time area of the Windows Control Panel.
3. Start the ClockWatch program from:  
**Start>Program>Beagle Software>ClockWatch**. You can also start ClockWatch from the Tools menu in Enterprise.
4. Press the **Set Time** button on the main screen. ClockWatch will use the default timeserver settings.
5. The connection will be made, the time will be checked, and the findings will be displayed in the status windows. The internal computer time will be adjusted, if necessary.
6. If a connection is not immediately made:
  - Verify that the Internet connection is intact (for example, check to see if your browser is loading web pages).
  - Choose the **Options** menu from the ClockWatch Main Screen, then select the **Timeserver** tab. In the Source frame of this window, select "Directory." Choose another timeserver, click OK, then try to set time again.

## 6.1 Time Sync Options

ClockWatch may be set to sync time using the Internet or a modem. For alternate synchronization options, consider ClockWatch Star Sync (GPS) or Radio Sync (WWVB) editions .

This section offers a brief introduction to the base ClockWatch software. A detailed ClockWatch user manual is available for download at [www.beaglesoft.com](http://www.beaglesoft.com).

### 6.1.1 Settings

Use this window to establish how you want to sync time using the Internet.

**Manual:** Use when you want to make a setting quickly, providing for on-demand settings only.

**Once:** Use when you want to set the clock at a given time in the future.

**Daily:** Use to sync at the same time every day.

**Periodic:** Schedule settings with specific, fixed timed intervals between settings.

**Auto:** Best used when the desired level of accuracy is known and the time drift is relatively constant. It is used for Internet only.

#### **Warn me when time has not been checked every...**

ClockWatch will monitor the last time a time check was made. If the last check exceeds the interval limit selected, then a warning will be shown in the Log Window and in the system tray icon.

#### **Check time once and then exit**

When enabled, ClockWatch will check the time once using the Internet and then exit.

#### **Force Time setting**

When enabled, ClockWatch will make a time setting every time the clock is checked.

#### **Configuring for Auto Startup**

ClockWatch can be operated in an unattended mode from the System Tray. To enable auto startup, choose Options>Display>Startup Automatically. When this option is checked, ClockWatch automatically loads and operates in whichever mode it was last configured and then runs in the background. The ClockWatch Pro icon will be available in the System Tray after ClockWatch is loaded.

#### **Usage Notes**

- On Windows 9xMe machines ClockWatch Pro starts on system boot-up.
- On Windows NT/2000/XP/2003 machines ClockWatch Pro is started when the local user logs in to Windows.
- Windows NT/2000/XP/2003 users should consider using the ClockWatch Service, available as part of ClockWatch Server.

### 6.1.2 Timeserver

The Timeserver tab offers a choice for the Internet timeserver used and type of connection to the timeserver you will be using. You can choose an NIST, NTP, Time or Daytime timeserver. You can also connect directly to the server over the Internet or through a proxy server. If an Internet connection is unavailable then you can call the NIST directly on the phone using the computer's modem.

#### Connection Frame options

**Internet/LAN:** Communicates directly to the specified timeserver over the Internet, using the protocol and port specified.

**Internet/Dial up:** Will first dial your ISP to make a connection to the Internet and then sync the clock using the timeserver specified. For configuration options click **Setup**.

#### Internet Connection Setup

Click the Setup button to configure how ClockWatch will make connection with the Internet; opens the Internet connection screen. ClockWatch offers several connection options:

**Manual Connection:** If you establish the connection to the Internet manually, or you normally are connected to the Internet over a LAN or on demand methods such as DSL or cable modems, you should choose the manual connection option.

**Have ClockWatch wait for Internet connection:** Use this option if you want ClockWatch to wait for the next time you make a connection to the Internet.

**Have ClockWatch Automatically Dial my ISP:** You can have ClockWatch dial your ISP to make an Internet connection when needed.

**Direct modem connection:** When selected, uses the modem to call the NIST directly and sync up time signals over the phone line. When selected, ignores the other options in this frame.

### 6.1.3 Graphs

The **Graphs** tab offers options for graph display and data charting of computer clock performance when using the Internet. ClockWatch has three graphs: Current Settings, Clock Drift, and Previous Settings.

## 6.1.4 Logs

The log file shows information about setting attempts made. You can choose to enable logging and specify the log file name and location.

The Clock Setting log provides a record of all the settings, made on the system. This can be useful in a variety of ways:

- To store previous setting attempts for use by the Previous Settings Graph.
- As a record of system performance.
- As a long term indicator of System Clock Drift over time.
- As a source of information on when Internet access is available.
- As an input to other programs such as a spreadsheet or database programs where further analysis would be done.

Once a log file is specified, ClockWatch will add data to the log file each time the program is activated and a setting is made. The log file will record every "0" setting where the clocks were in sync but will not record setting attempts when the connection failed. Old data from previous sessions will be preserved as the recent data is appended.

### Event Logging

Event logging allows you to write selected action to a text file and/or the NT/2000/XP/2003 event log. This log captures major time setting activities as well as warnings for when there may be a system or time setting problem. With the event log enabled, ClockWatch will include the events you specify as well as any operating errors.

**Event Log (on/off):** Turns all event logging on or off.

**Event File Name (field):** Contains the full file name and path of the event file, (i.e., c:\program files\beagle software\clockwatch\eventfile.txt). Select the default file name and location or choose your own. Use the Browse button to specify the location. This file must be specified for Event logging to work.

**Log to NT event log:** When checked, ClockWatch also writes events to the NT event log.

**Log these Events:** Specify the events you want included in the text or NT event log.

#### Normal Cases:

**Start time check:** logs the timeserver and when the time setting process is started

**Time check result:** logs the result of time setting activity

#### Problem Cases:

**Connection to timeserver fails:** logs when ClockWatch is unable to contact the timeserver (after all retries).

**Time change when it exceeds <interval> seconds:** You can specify for ClockWatch to log an event if the time change exceeds a threshold limit value. Insert the threshold time (in seconds) in the box. Whenever the difference between the system time and standard time exceeds this value an event entry will be made.

### 6.1.5 Bios Clock

The BIOS Clock Options tab in ClockWatch allows the user to set how often the Computer's clock is updated from the BIOS clock.

The BIOS clock is the native PC clock located on the computer's motherboard that keeps time when the computer is off. Windows gets its time from the BIOS clock at boot time. While not a precise timekeeper, the clock on the motherboard is generally more stable than the operating system clock.

ClockWatch allows you synchronize the operating system clock with the BIOS clock. Computers experiencing significant daily time loss will find this an effective way to stabilize their clocks between external time settings.

### 6.1.6 Service (Windows NT/2000/XP/2003)

The Service options tab shows status of the ClockWatch Service and allows you to stop and start the service. In Windows, a service is a separate process that runs independently of any application and that is normally active whenever the computer is running.

When enabled, the ClockWatch Service runs when ever the computer is running. It functions identically to the ClockWatch application in checking the clock and keeping the time correctly set.

**Start:** Starts the ClockWatch service that is not running.

**Stop:** Stops the ClockWatch service that is currently running.

**Status:** Shows the current run status of the service.

**Pause/Continue:** Suspends/Resumes the clock synchronization activity of the ClockWatch service.

**Re-Register:** Registers ClockWatch as a service under Windows. Once registered, the service can be started using ClockWatch or the Windows Service manager.

**Note:** You can also view the status, start and stop the service from the Services applet in the Windows Control Panel. To start the ClockWatch service automatically every time Windows starts, set the service startup type to 'Automatic' in the properties for ClockWatch.

## 7.0 Technical Reference

### Client Setting Log File Format

This section explains how to interpret the ClockWatch Enterprise client clock setting log. This log is updated each time a setting is made on a client.

A sample of the Log is:

```

Synchronization Log          9/14/03 11:43:12 AM
Date      Time      Difference Accuracy  Status Client
-----
03-09-14 11:42:37    2         10.0         5    clientA
03-09-14 11:52:28    0          0.0         5    clientB
    
```

The first line is the title and includes the date and time the log was first used.

The second line contains the column headers; these include:\

- Date:** The date the setting was made (yy-mm-dd).
- Time:** The local time the setting was made (hh:mm:ss).
- Difference:** The difference in the client time from the CWEnterprise time.
- Accuracy:** The rate of clock drift in time in terms of seconds per day.
- Status:** The results of the setting. For an explanation of codes see Status Result codes on page 42.
- Client:** The name of the client whose time was set.

### Action Log File Format

This section explains how to interpret the ClockWatch Enterprise Action log. This log is updated each time a function is attempted.

A sample of the Log is:

```

Action Log          11/17/03 12:57:14 PM
Date Time Action  Result Client Arguments
03-11-17 12:57:14 Run    0    192.168.2.165 C:\Program
Files\Axialis\AX-Icons\AXIcons.exe
03-11-21 16:58:49 Run    0    192.168.2.167 Windows Logoff
03-11-21 17:05:50 Run    0    192.168.2.165 Windows Logoff
03-11-21 17:07:05 Run    0    192.168.2.165 Windows Logoff
03-11-21 17:20:52 Relay  0    192.168.2.167 M 7 On
03-11-21 17:37:47 Relay  0    192.168.2.167 M 7 On
03-11-21 18:17:30 Relay  0    192.168.2.167 M 7 On
03-11-22 16:10:37 Relay  0    192.168.2.167 M 7 On
03-11-22 18:10:03 Relay  0    192.168.2.167 M 1 Off
03-11-22 18:10:24 Relay  0    192.168.2.167 M 1 Off
03-11-22 18:10:58 Relay  0    192.168.2.167 M 7 Off
    
```

The first line is the title and includes the date and time the log was first used. The second line contains the column headers:

<b>Date:</b>	The date the setting was made.
<b>Time:</b>	The local time the setting was made.
<b>Action</b>	The difference in the local time from the adjusted client time.
<b>Result:</b>	The rate of clock drift in time in terms of seconds per day.
<b>Client:</b>	The results of the setting. For an explanation of codes see Status Result codes below.
<b>Arguments:</b>	The name of the client used to make the setting. Direct modem connections will show the phone number dialed.

## Status Result Codes

The status result code show the result of an action attempt.

<u>Code Result</u>	<u>Description</u>
'0' ACTION_OK	Action complete.
'1' Date or time invalid	Date/time string is invalid
'2' Time zone error	Time zone is missing. Internal error.
'3' Date Difference	Dates don't match. Setting new date
'4' Large Time Diff	Time difference exceeds max allow in single setting
'5' Time within tolerance	Time difference too small—no need to change.
'7' Time setting OK	Time set complete.
'9' Corrupt command	String was corrupt or format was wrong"
'15' Clocks in Sync	Clocks in sync, no need to set
'33' Bad Timeserver	Incompatible timeserver
'100' Client Error	Client not currently available.
'200' Parse Error	Parsing return failed: format setting was wrong or time string was corrupt.

## System Demands of ClockWatch Enterprise

The demands of ClockWatch Enterprise, when used in most modes, are minimal.

**Sequence of Events when making a setting:** ClockWatch Enterprise requests a Windows socket (Winsock) type connection to the client.

- ClockWatch Enterprise receives the time string from the client.
- ClockWatch Enterprise converts and compares the client time to local time.
- A setting is set to be made if there is a difference.

**LAN Traffic:** Since the communication over the LAN is minimal ClockWatch Enterprise should not have any significant impact on communications traffic. One packet is received for each setting request.

**System Resources:** ClockWatch Enterprise spends most of its time in the sleep mode, waiting for a scheduled setting to occur or waiting for user input. ClockWatch Enterprise uses one of the native operating system timers, which are finite in number.

Testing has shown that most users experience approximately a 1% increase in system utilization when viewed by the NT System Monitor when in the sleep mode with less than 5% increase when actually making a setting.

## **ClockWatch Enterprise Specifications**

### **System Requirements—host computer**

- Windows 95/98/Me/NT/2000/XP/2003.
- LAN connection to clients.
- Install ClockWatch Enterprise for client monitoring and/or control.
- Install ClockWatch for external time synchronization (optional).

### **System Requirements—client computer(s)**

- Windows 95/98/Me/NT/2000/XP/2003.
- LAN connection to host.
- Install Enterprise Client Service Module - only required for advanced features.

### **Accuracy**

- Sets client clocks within +/-0.1 second of ClockWatch Enterprise.

### **Network Connection**

- Uses a WinSock connection for communication.
- The local TCP port used for the connection to a proxy server is user selectable.
- ClockWatch Enterprise Server and ClockWatch Enterprise Client typically use port 1001 to communicate.

## 8.0 Troubleshooting

This section offers suggestion for some of the more common issues. Additional help is available at <http://www.beaglesoft.com/clwatroubleshooter.htm>

### **The registration window appears at software startup and shows the message, "This software must be registered".**

- Be sure to type the keycode EXACTLY as shown on your confirmation email and/or CD envelope. All letters are capitalized.
- Check that you have installed the correct ClockWatch Edition. The Software Registration window shows installed edition (just beneath "Beagle Software). If you have installed the wrong edition, simply reinstall Enterprise (no need to uninstall the existing edition).
- Check that the software version matches the version you purchased. If you have re-downloaded the application from our website the version may be more recent than your purchased software. Contact Beagle Software, [support@beaglesoft.com](mailto:support@beaglesoft.com) or call 612-370-1091 for assistance.
- The Windows System Registry has been altered or corrupted: Re-enter the keycode to re-register the software.

### **If after installing ClockWatch Enterprise you get a runtime error when starting ClockWatch Enterprise such as:**

```
Run time error "372" - failed to load control
CommonDialog from COMDLG32.OCX - your version of
COMDLG32.OCX may be outdated.
```

Or

```
OLEAUT32.dll is out of date. A newer version is
required for this program.
```

This indicates that the common control that ClockWatch Enterprise uses was not installed during installation and needs to be updated.

To update the file, follow these steps:

1. Identify the name of the control by reading the error message. Controls have file names that end in "OCX" or "DLL". Write down the name of the control.
2. Open an MS-DOS window by clicking "Start," drag to "Programs," then click on "MS-DOS Prompt." This will open the "MS-DOS Prompt" window. You should see a C:\WINDOWS> prompt.
3. Type "cd system" (do not type the quotation marks) and press <Enter.> This will change the prompt to C:\WINDOWS\SYSTEM>.
4. Rename the older version of the control identified in step 1 by typing

*"ren control control.old"* for example **"ren comdlg32.ocx comdlg32.old"** and press <Enter> (again, do not type the quotation marks.)

5. If your Run Time Error message specifies a different file, replace "comdlg32" with your specified file.] This will rename the file and return the prompt to C:\WINDOWS\SYSTEM>.
6. Close the "MS-DOS Prompt" window by clicking the X button in the top right corner.
7. Reinstall ClockWatch Enterprise over the existing installation, updating the control.

If you are still experiencing problems please contact Beagle Software support with the exact text of error message you are seeing, support@beaglesoft.com.

#### **ClockWatch Enterprise won't make setting**

- Check that the connection to the LAN is working by "pinging" the client.
- There is no LAN connection to the client selected.
- Check the Network control panel.
- Enterprise is set in the Manual mode and no settings have been made.

#### **Logs don't show anything**

- No clock settings have been needed: difference and accuracy are both "0".
- No reading has been made since startup.
- The log file has not been specified or is turned off (Previous Settings Graph only).

#### **'Address In Use' or 'Can't Reset Server' Error Message**

This is usually due to the TCP port that the Client-Server communication normally uses is being used by another application or is otherwise unavailable. ClockWatch Enterprise uses port 1001 for Client-Server communication. If another application is using this port then ClockWatch Enterprise is unable to open it and complains.

The address can be changed on both ClockWatch Enterprise and Client.

#### **Won't log to file**

- Logging is off or no file has been specified to write the log to.
- File system is full.

### **How to run the Diagnostic Routine**

ClockWatch Enterprise includes a detailed trace mode that gives detailed information about connection and communication information useful in debugging communication problems. You can run ClockWatch Enterprise in the trace mode, which provides a detailed log to pinpoint problems, by simply adding the **debug** option to the command line when starting ClockWatch Enterprise.

The following steps will run ClockWatch Enterprise in the trace mode and allow you to view the trace log file, DebugFile.txt.

1. Run ClockWatch Enterprise in diagnostic mode by running ClockWatch Enterprise from the command line with the **debug** option. Usually:  
"C:\Program Files\Beagle Software\ClockWatch Enterprise\CWEnterprise.exe" debug
2. Run the problem until the connection fails or problem occurs. Exit ClockWatch Enterprise.
3. View the diagnostic trace, DebugFile.txt, usually in the main ClockWatch Enterprise directory:  
C:\Program Files\Beagle Software\CWEnterprise\DebugFile.txt
4. Check for "ERRORS" or connection problems in the trace.
5. Beagle Software support personnel can provide detailed analysis of the trace. Email the file to support@beaglesoft.com with your contact information and a brief explanation of the problem.

## 9.0 Obtaining Technical Support

**Web site:** [www.beaglesoft.com](http://www.beaglesoft.com)

Consult our Web site for the latest product updates, technical information and documentation.

**E-mail:** [support@beaglesoft.com](mailto:support@beaglesoft.com)

Please be as specific as possible including the program version and the steps to recreate the problem, if possible.

**Phone:** **612-370-1091**

**Fax:** **612-435-4952**

**Address:** **Beagle Software**

800 Washington Ave N, Ste 418  
Minneapolis MN 55401 USA

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**[www.beaglesoft.com](http://www.beaglesoft.com)**

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