

Logging Service and Log Viewer for CPC Monitoring

Overview

CPC has developed a set of add-on programs for its Monitoring software that generates logs of events and errors encountered during operation of the Alarm Receiver software program. The add-on consists of two components: the Logging Service, which receives events to be logged and writes them to log files, and the Log Viewer, which provides an interface for viewing and performing other operations with the logs, such as sort by entry type.

Both the Logging Service and Log Viewer applications require Monitoring software version 1.54 or greater. Versions of Alarm Receiver before version 1.54 will not send log data to a Logging Service application.

Installing and Configuring the Logging Service

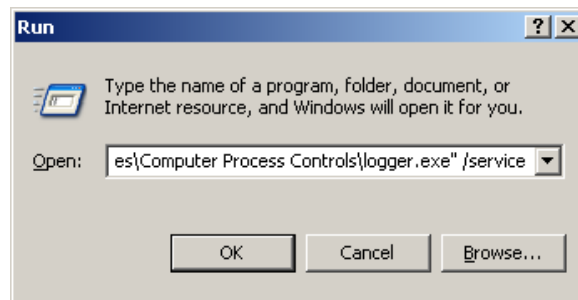
The logging service consists of a single executable called **logger.exe**. Copy this program to any directory on the PC running Alarm Receiver (if a directory called “C:/Program Files/Computer Process Controls” exists, this would be a good place to put the file).

As long as this executable is running on the same PC running Alarm Receiver, this application will receive log data from Alarm Receiver and write them to a log. However, this program must be set up as an automatic service in Windows NT or 2000 in order for it to automatically start upon reboot.

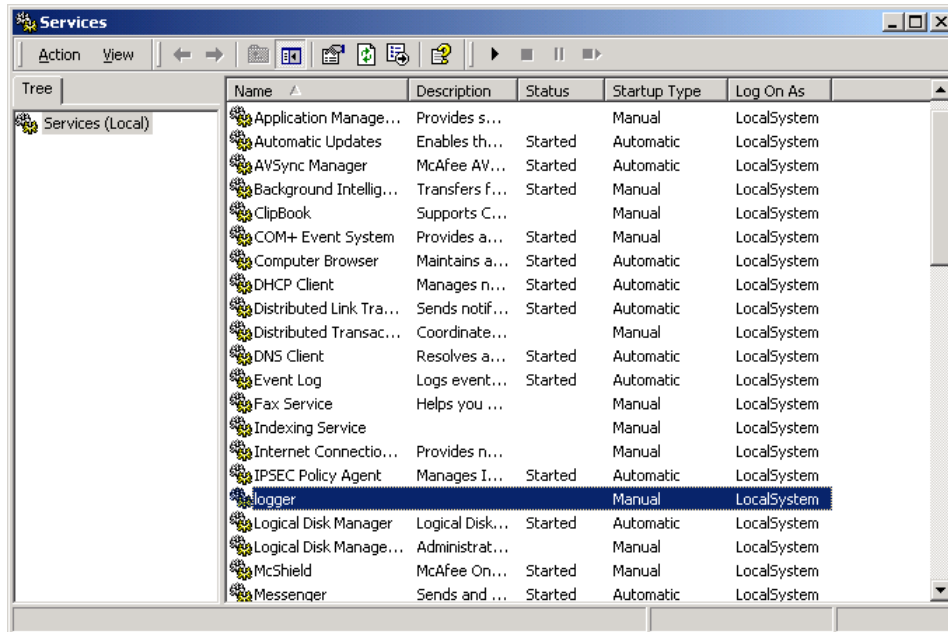
Installing Logging Service as an Windows Service

To register logger.exe as a Windows service:

1. Click the “Start” button and select “Run...”
2. Click “Browse” and direct the browser to the location of the **logger.exe** file. Click OK.
3. The complete path name for the logger.exe file should appear in the “Open” field. Click at the end of this path name and add the following string: **/service**. Make sure the slash is a forward slash (/), and the string is not inside the quotation marks (if any) surrounding the path name. The illustration below shows what your “Run” box should look like (assuming the path name is C:\Program Files\Computer Process Controls):



4. Click OK. This registers **logger.exe** as a service, but does not start the service, and it sets it up as a service that must be started manually. The next few steps will set it up as a service that starts automatically upon reboot.
5. Click the Start button and select “Settings > Control Panel > Administrative Tools > Services.”
6. In the Services dialog box, locate the service called **logger**. This service will be shown as a “Manual” service that is not started.



7. Double-left-click the **logger** service to access the Properties dialog box. In the “Startup_Type” field, change the value from Manual to Automatic.
8. Click “Apply” and then click OK. Verify the Startup Type value for **logger** changes from Manual to Automatic in the Services dialog box.
9. The service will automatically start upon reboot and every time Windows reboots. If you wish to start the service immediately, right-click the **logger** service and select “Start.” The Status field should read “Started” and the application will begin logging.

Operation of the Logging Service

The Logging Service automatically detects Alarm Receiver if both programs are running on the same PC. The Logging Service will record log events from Alarm Receiver and write them to a comma-delimited text file called “?????.log,” which it automatically places in the directory **C:\WINNT\LogFiles**. This log file will remain open in a shared mode so that it can be appended every time the Logging Service has log events to record. A user may open and view the ????.log file while the Logging Service is running, but the log file cannot be deleted unless the Logging Service is stopped.

Log Aging

The Logging Service “ages” the data in the ????.log file every 24 hours at midnight (0:00). The ????.log file is closed and renamed ?????.yyyymmdd.log, where *yyyymmdd* is the four-digit year number, two-digit month number, and two-digit day number respectively. The Logging Service then begins a new, empty ????.log file to record the next day’s events.

Aged logs are kept in the **C:\WINNT\LogFiles** directory for seven days, after which they are deleted. Aged log files can also be moved, copied, or deleted manually without restriction.

Installing and Using the Log Viewer

The logs created by the Logging Service application are simple comma-delimited text files. To make them easier to read and manipulate, CPC has bundled the Logging Service with a Log Viewer application that displays log files in an easy-to-read tabular format.

Installation

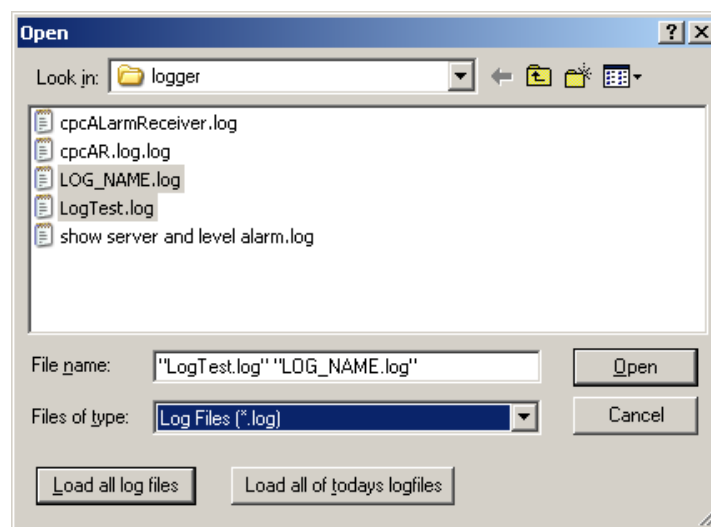
The Log Viewer requires no special installation steps. Simply copy the file **logviewer.exe** to any directory on the machine you wish to use when viewing logs (if a directory called “C:/Program Files/Computer Process Controls” exists, this would be a good place to put the file).

The PC you use to run Log Viewer does not have to be the same PC that is running Alarm Receiver or Client, nor does it have to be the same PC the logs are being written to. You may open logs from any PC on the same network as the PC that is storing the logs.

To open Log Viewer, double-click the **logviewer.exe** file or a shortcut that points to this file.

Opening Logs

When Log Viewer opens, the program immediately prompts you for the log file(s) you wish to view.



If necessary, use the “Look in” field to navigate to the local or network directory the log files are stored on. Select one or more **.log** files. Multiple logs may be individually selected by holding

down the Ctrl key and left-clicking each log file you wish to open. In addition, there are two other features in this dialog box to support the most commonly requested log files:

Load all log files. Click this button to open all **.log** files in the currently selected directory.

Load all of today's logfiles. This option opens all of today's log files, and excludes all "aged" log files (the ones that show the year, day, and month in the file name).

Click the "Open" button to open your log file(s). A separate window pane will appear in the Log Viewer for each log file you selected.

The Log View

Each log will appear in its own separate Log View, which lists all log entries in descending time stamp order (i.e. beginning with the oldest and continuing in sequence to the newest entry at the bottom of the Log View).

Each log view entry contains seven columns of data:

Time stamp. This shows the date and time of the log entry, in dd/mm/yyyy hh:mm:ss.sss format.

Thread, Module, and Sequence. Though the columns do not appear side-by-side in the log viewer, it is most helpful to explain the Thread, Module, and Sequence columns together, since they follow a hierarchical structure.

The Logging Service application generates a single thread to write multiple log entries that occur within a short period of time. The **Thread** number is the ID number of the thread that wrote this entry to the log.

Within a single thread are log entries from one or more different **Modules**. Each application and module (.dll) that makes up the CPC Monitoring software package can generate a log entry. The Module column shows the name of the module that was the source of this entry.

Finally, a module may generate more than one entry at a time within the same thread. In this case, the **Sequence** number is used to uniquely identify each entry in chronological order of its generation, starting with zero.

Together, the Thread, Module, and Sequence number can be used to understand which module generated which alarm at which time, which could sometimes be difficult by just reading time stamps.

Code. The "error code" for each entry. Refer to ???? for an explanation of the significance of the error code.

Machine. The machine name from which the log was generated.

Message. The Message column explains the specific nature of the problem or event that caused the log entry to be generated. Refer to ???? for a list of the messages.

Log View Filtering

The Log Viewer supports filtering primarily by error code level, and secondarily by Module name, Thread number, or Machine Name.

Error Code Levels and Filtering

Each log entry has an error code that denotes the severity level of the event. For easier viewing, the error codes are classified under four basic error code levels, which are denoted by the icon that appears at the beginning of each entry:



Level 0 - Error. Any entry with a Code number between 0 and 999 falls under this category. These entries are usually alarms that denote failures critical to the operation of CPC Monitoring.



Level 1 - Warning. Any entry with a Code number between 1000 and 1999 falls under this category. These entries are less severe than Level 0 alarms, but are serious enough to warrant addressing.

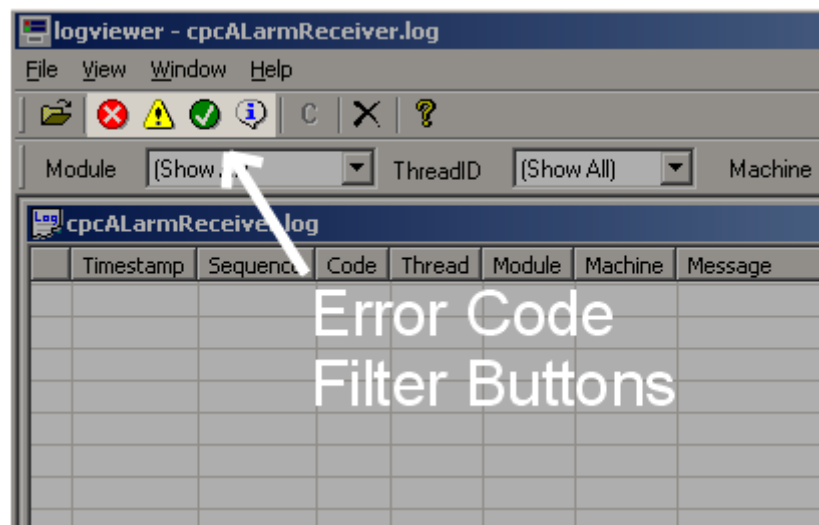


Level 2 - Success. Any entry with a Code number between 2000 and 2999 falls under this category. These entries typically denote an attempt to do something was successful (in cases where this information is useful).



Level 3 - Information. Any entry with a Code number between 30000 and 3999 falls under this category. Information entries, as the name implies, record information such as receipt of dial-ins, alarms, telephone tests, and other events that makes up typical operation of a properly-running CPC Monitoring center.

The Log Viewer allows you to enable or disable the visibility of alarms from each error code using the buttons on the Log Viewer toolbar. When an icon button is pressed in the DOWN position, log events with that error code level will be visible. When an icon button is in the UP position, log events with that error code level will be filtered out.



Module, ThreadID, and Machine Filters

You may use the Module, ThreadID, and Machine drop-down menus to view only the alarms that originated from a specific Module, Thread, or Machine. By default, all these filters are set to

Show All. Clicking the arrow on the drop-down list will call up a menu listing all the unique values of Module, ThreadID, or Machine that appear in the log entries that are currently visible on the screen.