

MCHRONICLE

QUICK START GUIDE

EMBEDDED AUTOMATION



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DOCUMENT REVISIONS

Revision	Date	Description
V0.10	October 7, 2011	Initial document

OVERVIEW

mChronicle is an open-source console application provided by Embedded Automation to process mControl v3 data log information. mChronicle allows users to parse and aggregate information into a file, database or cloud aggregation system for further analysis.

Typical use cases for mChronicle actions might be:

- Write information into a Tab-separated file for import into a spreadsheet program like Microsoft Excel for graphing or data analysis.
- Send information to a cloud-based aggregation and analysis tool – for example, Meniscus Software or TableauSoftware.com

mChronicle does the following two tasks:

- Parses the mControl data log based on a set of dates provided
- Sends/writes the parsed information via an “Upload Manager”.

The mChronicle source includes samples for two types of Upload Managers:

- **Default:** Tab-based console write
- **Research:** Write to Aggregation database in the cloud via RESTful API

mChronicle can be extended, based on user requirements to:

- Parsing can be modified to remove or add information
- Alternative Upload Managers may be added

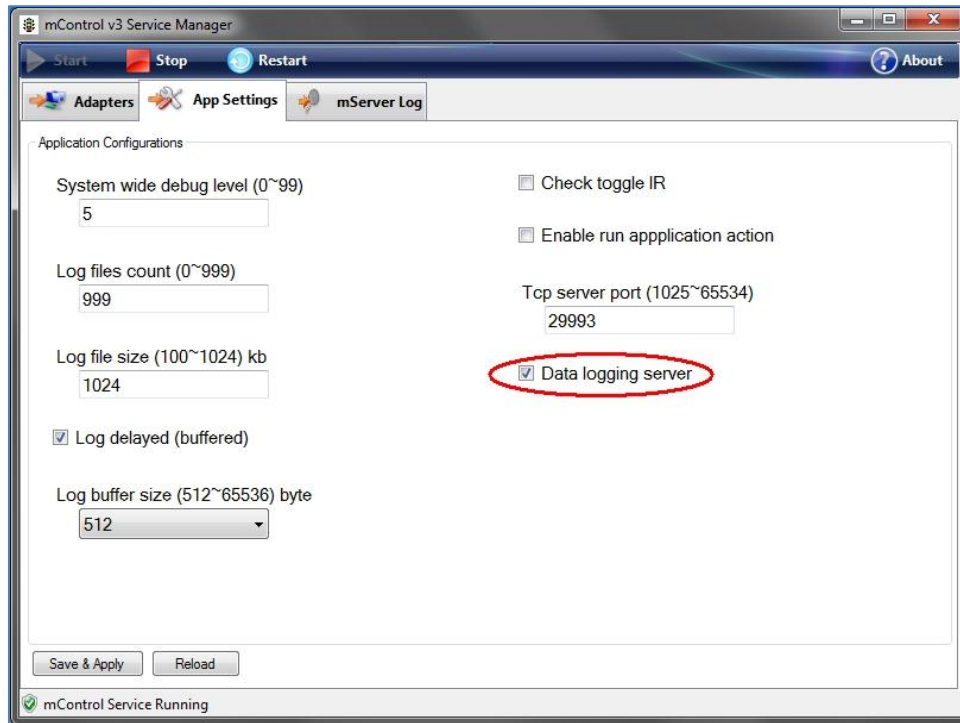
REQUIREMENTS

- mControl v3
- mChronicle source code
- Development Environment (e.g., Visual Studio Express or 2010)
- Software development knowledge (C#, .NET)

OPERATION

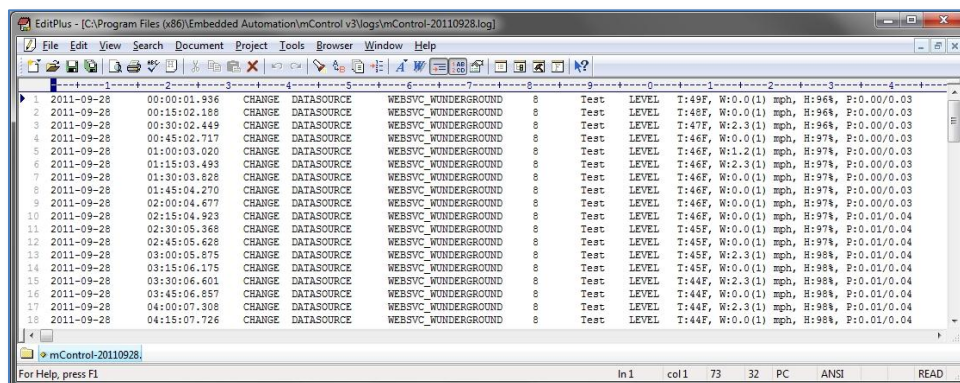
ENABLE DATA LOGGING

To be able to use mChronicle, you must first enable the Data Logging feature of mControl v3 – by default this is not enabled.



Once enabled and devices changes are encountered, mControl will start producing Data Log files in the mControl logs directory. A new file is produced daily and labeled `mControl-YYYYMMDD.log`, where YYYY is the year, MM is the month and DD is the day the file was written.

Data log information captures all device changes during mControl operation – a sample of the data log information is shown below:



RUNNING MCHRONICLE

To run mChronicle you must either create an executable or run within the Visual Studio development environment.

Once created the mChronicle.exe provides the following run-time options:

```
C:\Program Files (x86)\Embedded Automation\mControl v3\logs>mchronicle
mChronicle version 1.0.1.0. Copyright (c) 2011, Embedded Automation, Inc.
usage: mChronicle [<arguments>]

  -date1=<from-date>    Date of first log entry to upload to server (inclusive)
                        If this argument is not supplied, the earliest log
                        entry date will be used.
  -date2=<to-date>     Date of last log entry to upload to server (exclusive)
                        If this argument is not supplied, today's date will
                        be used.
  -logs_folder=<path>  Full/relative path where the automation log files are
                        located. If this argument is not supplied, the current
                        directory is used.
  -uploader=<name>     The name of uploading handler to use. Currently there
                        are two handlers are defined in the system:
                        default: produces a CSV output of the entries to
                        the console,
                        research: sends log entries to an experimental web
                        server specified in the handler options
                        (see below).
                        If this argument is not supplied, the 'default'
                        handler is used.
  -uploader_options=  Options to pass to the uploader. These options are
  <options>           specific to each handler. The 'default' handler takes
                        no options, while the 'research' handler takes the
                        following options:
                        "HOME_ID=<id>;CLOUD_TOKEN=<token>;URL=<destination-url>"
                        If this argument is not supplied, nothing will be used.

Notes:
  - Unsupplied arguments will be replaced with defaults.
  - Unknow arguments will cause a run-time error in the application.

Example:
  mChronicle -date1=2011-08-01 -date2=2011-09-01 -uploader=default \
    - logs_folder="C:\ProgramData\mControl\Logs"

The above example will filter automation log entries between 01-August-2011
and 31-August-2011 of the automation log files located in
"C:\ProgramData\mControl\Logs" folder and show them on the console.
Also note that 01-September-2011 will not be included in the filtered data.

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```

DAILY AGGREGATION

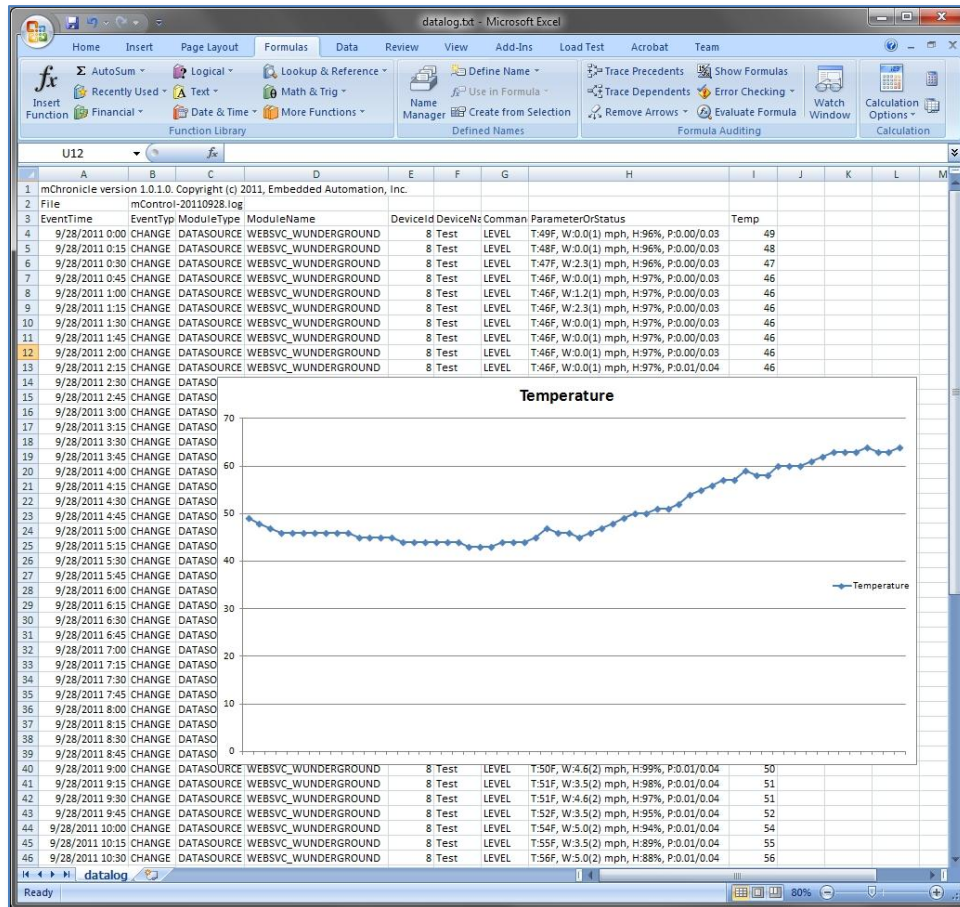
To capture information daily, you may consider using mChronicle as batched action within a scheduler.

DATA ANALYSIS

Once mChronicle has uploaded the processed mControl data log information, it can be further analyzed.

DEFAULT UPLOADER

The following shows sample screens using the Default uploader to generate a tab-separated variable file, which is then opened with Microsoft Excel and a graph is generated:



RESEARCH UPLOADER

The Research uploader has been designed to work with cloud-based aggregation systems and was validated against an academic research system.

Though not shown, the Research Uploader could be modified to support Meniscus Analytics

([http://www.meniscus.co.uk/pagedisplay.aspx?article=84&name=Energy Management](http://www.meniscus.co.uk/pagedisplay.aspx?article=84&name=Energy%20Management) – shown below) or Tableau Software (<http://www.tableausoftware.com/>).

