



Dynamic Web Pages for EnviroMon

User's Guide

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1 Introduction

This chapter describes a way of publishing EnviroMon data on a web site. By the end of this chapter, you will know how to:

- select a publishing method appropriate to your business
- generate JPEG images of graphs
- generate CSV data files for spreadsheets
- display data from different sensor groups
- display data over different time ranges
- retrieve sample files to get you started with your own live web data

2 Command line syntax

The syntax available to operate the EnviroMon application from the command line is split into two categories:

- [time-based views](#)^[4], where data is plotted against time (on the x axis)
- [instantaneous views](#)^[6], where the data is listed at a single point in time

A generic [syntax reference](#)^[2] is included for quick lookup.

2.1 Syntax reference

The command line can be used to:

- download data
- generate a CSV (comma separated value) file
- generate a JPEG (image) file

Command Line Switches

Actions

- d download data (cannot be used in conjunction with other options)
- j generate a JPEG file
- c generate a CSV file

Parameters

- r specify the time range (omit this completely for [instantaneous views](#)^[6])
- g specify a group of sensors

Generic Syntax

The following parentheses are for illustration and should not be entered in actual code (see [examples](#)^[4]):

- [] optional parameter
- <> variable or filename
- (a/b/c) use either a, b or c in the code

Downloading

```
emw32 -d
```

Generating a CSV file

```
emw32 -c"<filename>.csv" -r<start datetime>,<end datetime>  
  [-g<group  
  name>]
```

Generating a JPEG image

```
emw32 -j "<filename>.jpg,<width>,<height>,<quality>" -r<start datetime>,<end datetime> [-g<group name>]
```

<width> - an integer representing the intended width of the output JPEG image in pixels - (default 640)

<height> - an integer representing the intended height of the output JPEG image in pixels - (default 480)

<quality> - an integer between 1 and 100; a higher number creates a better image but a bigger file (default 75)

Specifying a datetime

When specifying a datetime, there are three parameters: a date, a time and an offset, in that order.

```
<date>[@<time>][(+/-)<offset>] (eg 03May01@13:00+2days)
```

...or

```
<datetime>[(+/-)<offset>] (e.g. now-1month)
```

<date> - (assumes a <time> of 00:00 unless otherwise specified)

15Dec01 or 01Jan02 etc.

today - (current date)

monday - (Monday preceding the current date)

first - (first day of the current month)

<time>

08:00 or 15:00 etc.

<datetime>

now - (date and time now)

start - (date and time at the start, valid only in <end datetime>)

end - (date and time at the end, valid only in <start datetime>)

<offset>

where <n> is a number (integer) of minutes/hours/days etc.

<n>minute[s]

<n>hours[s]

<n>day[s]

<n>week[s]

<n>month[s]

<n>year[s]

2.2 Time-based examples

The following examples are based on common scenarios you might face. The code supplied should be typed directly onto the command line in the application directory (usually `C:\PICO`). This help document may wrap MS-DOS commands onto the next line so be careful where you press 'Enter' (each new DOS command starts with 'emw32').

Scenario 1 - Absolute (Fixed) time periods

You want to download data into a CSV file (`mydata.csv`) between two fixed times (7:00am and 5:34pm) today (13 March 2002), for viewing in a spreadsheet.

```
emw32 -d
emw32 -c"mydata.csv" -r13Mar02@07:00,13Mar02@17:34
```

You now want to produce a JPEG image for the same time period. (You have already downloaded the data with `emw32 -d` so this can be omitted.)

```
emw32 -jmyimage.jpg -r13Mar02@07:00,13Mar02@17:34
```

Note the omission of double inverted commas around the filename, because the filename and path do not have spaces in them.

Scenario 2 - Relative time periods

Relative time periods are most useful for automatically generated content, which will be discussed further within the topic of [batch files](#), but they can provide a quick way of entering data for a specific data request.

For example, if you wanted all of the data from last Monday up to now, you would use the following:

```
emw32 -d
emw32 -c"mydata.csv" -rmonday@00:00,now
```

If they wanted to extend their search to include all data for this month so far (not including today as a part day):

```
emw32 -d
emw32 emw32 -c"mydata.csv" -rfirst@00:00,today@00:00
```

Offsets are very useful, within relative time periods, for specifying the length of time over which the data should be collected. For example, if you wanted to collect exactly one day's worth of data up to the present time:

```
emw32 -d
emw32 emw32 -c"mydata.csv" -rnow-1day,now
```

...or

```
emw32 emw32 -c"mydata.csv" -rnow-24hours,now
```

would give exactly the same CSV data file.

Scenario 3 - Specific sensor groups

You have set up the sensor groups: kitchen; engineering office; production and admin. You now want to isolate a single group and save a JPEG of it in a subdirectory of PICO called `engineering office`.

```
emw32 -d
emw32 -j"c:\PICO\engineering office\eng office.jpg" -
r04Jan03@08:30,10Mar03@17:55 -gengineering office
```

Scenario 4 - Resizing the JPEG image

It turns out that the image produced above is not big enough to fit the entire screen. You want to increase the size of the image to 1024x768 but you have limited disk space. You decide to reduce the file size of the image by reducing its quality to 50% instead of its default, which is 75%:

```
emw32 -d
emw32 -j"c:\PICO\engineering office\eng office.jpg,1024,768,50"
-
r04Jan03@08:30,10Mar03@17:55 -gengineering office
```

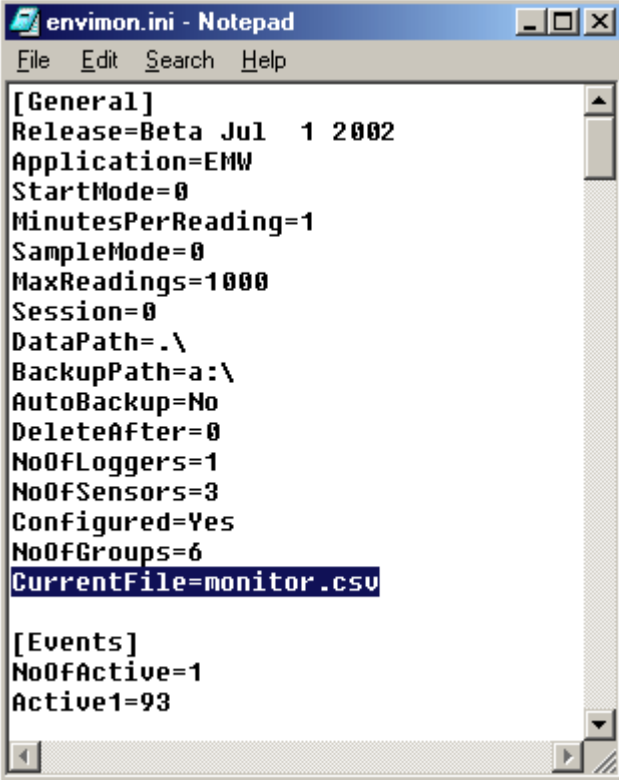
2.3 Instantaneous examples

Instantaneous CSV data files and JPEG image files are taken from the monitor view in EnviroMon. They only show data for one point in time, which is always the most recent reading.

2.3.1 Enabling monitor downloads

One modification to the `C:\PICO\envimon.ini` file is required to enable these downloads.

- Open the `envimon.ini` file.
- Insert the highlighted line of text in the location shown below (at the end of the section headed by `[General]`):



```
envimon.ini - Notepad
File Edit Search Help
[General]
Release=Beta Jul 1 2002
Application=EMW
StartMode=0
MinutesPerReading=1
SampleMode=0
MaxReadings=1000
Session=0
DataPath=.\
BackupPath=a:\
AutoBackup=No
DeleteAfter=0
NoOfLoggers=1
NoOfSensors=3
Configured=Yes
NoOfGroups=6
CurrentFile=monitor.csv

[Events]
NoOfActive=1
Active1=93
```

- Save and close this file.

2.3.2 Examples of creating files

2.3.2.1 Monitor CSV files

To manually download and create a monitor.csv file use the following code at the command line:

```
emw32 -d
```

To do this automatically, just leave EnviroMon running and a new CSV file will be created every time a sample is taken.

2.3.2.2 Monitor JPEG files

To download and create a JPEG file use the following code at the command line:

```
emw32 -d  
emw32 -jmonitor.jpg
```

The `-g<group name>` can be appended optionally to view specific groups in the JPEG image.

2.4 Batch files

Batch files are text files that the operating system uses to run a sequence of MS-DOS operations through the command line. This section shows you how to create a basic batch file and where it may be applicable.

For sample batch files see [Customer Support](#)^[13].

This help file does not cover scheduling batch files. For information on this see the Windows help file on Scheduled Tasks.

Creating a new batch file

1. Open notepad from the Start menu
2. Write the batch instructions using the [Syntax Reference](#)^[2] and the guidance below
3. Select File|Save As... and name the file with the extension '.bat' (e.g. myBatch.bat)
4. If you want to edit the batch file further, open it in Notepad

Note: double-clicking the batch file with the mouse will run the commands within the file.

You are now ready to start entering commands into the open batch file.

Writing the batch file

For [basic syntax](#)^[2] and [samples](#)^[4] of various scenarios see the applicable link. It is important to always use relative dates and times if your batch file is for a scheduled task, otherwise your data will quickly become out of date. The following code is an example of a basic batch file for taking the last week's data, yesterday's data, today's data up to now and an instantaneous monitor view:

```
emw32 -d
emw32 -cweek.csv -rtoday@00:00-1week,today@00:00
emw32 -jweek.jpg -rtoday@00:00-1week,today@00:00
emw32 -cweek.csv -rtoday@00:00-1day,today@00:00
emw32 -jweek.jpg -rtoday@00:00-1day,today@00:00
emw32 -cweek.csv -rtoday@00:00,now
emw32 -jweek.jpg -rtoday@00:00,now
emw32 -jmonitor.jpg
```

Remember

- Always download first with the -d switch (first line).
- Always use relative dates and times unless there is a particular reason not to.

3 Publication methods

Methods

Two main publication methods are supported by the EnviroMon software:

- a very [safe method](#)^[10], where a computer inside the firewall periodically generates a fixed set of images and posts them through the firewall
- a more [interactive method](#)^[12], where the EnviroMon software dynamically creates images on request.

Applications

These methods could be used in many commercial applications such as:

- to provide several users, within a company, with access to EnviroMon data
- to provide customers with access to EnviroMon data
- to enable remote access (for example, so that you can check a system from home when an alarm occurs)

Requirements

The EnviroMon system generates only JPEG images or CSV text files, not web pages. This means that you can easily design web pages tailored to your requirements, incorporating the JPEG images and the buttons to download the CSV files.

The safe method does not require a permanent internet connection. It could connect to the internet through a dial-up line, or could be placed safely behind a firewall on a company network. It is also relatively easy to set up, as you only need to customise the simple [example files](#)^[12] to provide the images that you require. The EnviroMon software can run on any Windows computer, and the web server can run on any platform (including an ISP's server).

The interactive version must have the EnviroMon software running on an Windows 32-bit machine that is directly connected to the Internet. You will need to be capable of writing HTML and CGI scripts to provide fully interactive operation.

3.1 Periodic updates

To create a fixed set of images, the following steps are required:

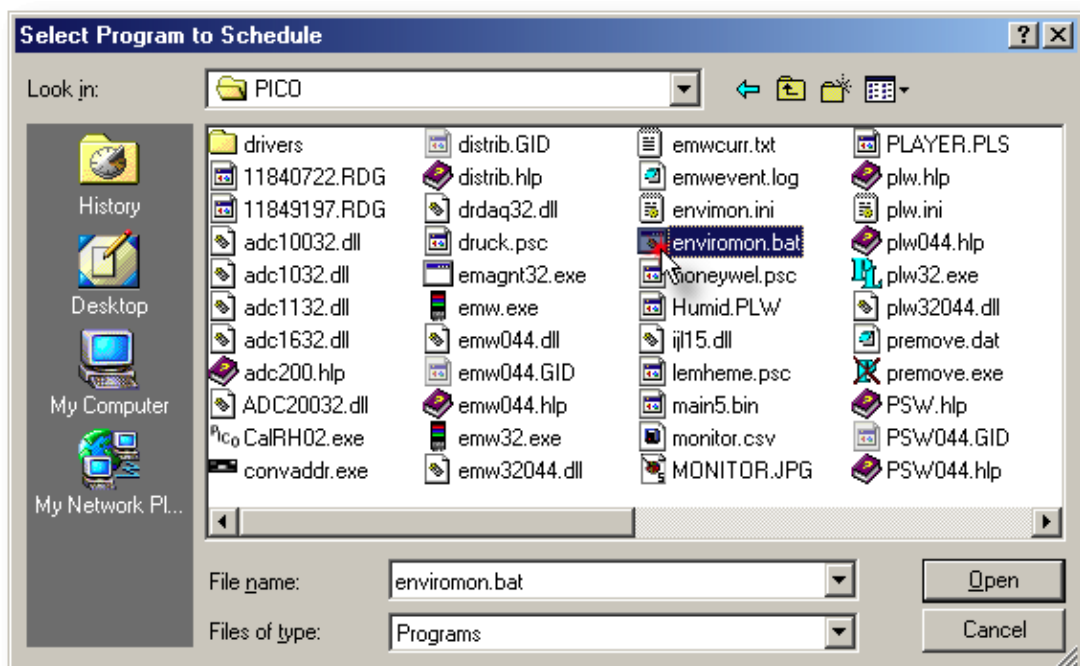
1. Install and configure EnviroMon fully.
2. Create a user account on your web server, and authorise the user to FTP data into the directory for the image files. If possible, you should ensure that this user account cannot modify any other directories on your server.
3. Copy [upload.ftp](#) and [enviromon.bat](#) to your EnviroMon installation directory (usually C:\PICO).
4. Modify the FTP control file, [upload.ftp](#), with the name of your server, your username and your password:



```
UPLOAD.FTP - Notepad
File Edit Search Help
Rem change next line to contain your password and username
open MyURL
user MyUsername myPassword
bin
prompt off
mput *.jpg
disconnect
quit
```

5. (Optional - HTML experts only) Modify the [enviromon.html](#) (e.g. - to contain your company details)
6. Upload [enviromon.html](#) to your web server.
7. (Optional - if you have customised the HTML page) Modify the sample [batch file](#), [enviromon.bat](#), to produce the different JPEGs or CSVs that you may require.

- Set [enviromon.bat](#) to run as a scheduled task. Select Start | Settings | Control Panel, then open Scheduled Tasks and use addScheduledTask to begin the Windows wizard. Select C:\PICO\enviromon.bat as the file to run with the Browse button:



- Sit back and wait for the first update...

[Customer support](#)^[13] is detailed here.

3.2 Interactive updates


An interactive system could specify time ranges fully, using the following style of [command line syntax](#)^[2]:

```
emw32 -jfred.jpg -r01May02@00:00,08May02@23:59
```

The way in which this example line of code can be generated is dependent on your choice of web technologies. The customer support given in this area is listed [here](#)^[13].

4 Customer support

We provide the following support:

- step by step [instructions](#)  in the help file
- sample batch file to periodically generate a JPEG file and run FTP
- sample FTP control file to log into an FTP account and upload the JPEG file
- a sample HTML file that displays the JPEG image

These 3 files are located the 'examples\periodic\' subdirectory of the EnviroMon installation directory (usually C:\PICO) or they are available online from here.

Examples for developing interactive update websites are not currently available, but you can develop systems using your own server-side scripting languages to operate EnviroMon from the command line.

5 Glossary

CSV - A CSV (comma-separated value) file is a text file that delimits (separates) entries with commas.

JPEG - A JPEG is one of the most widely supported cross-platform image formats. The JPEG is most effective when used to compress photographic images.

FTP - FTP (file transfer protocol) is the most standard way of uploading and downloading files across an internet connection. There are many Windows applications available to automate FTP actions. Type '`ftp -?`' from the MS-DOS command line for more information.

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