

From: Kent Headley headley@mbari.org
Subject: OASIS3 programming notes
Date: August 27, 2021 at 5:25 PM
To: headley Kent headley@mbari.org

KH

On Dave's Programming board

```
OASIS> Timeout
oasis.c: Sep  9 2004 14:55:36
Persistor CF2 SN:1335  BIOS:2.28  PicoDOS:2.28
Driver not found:  "viper"
Driver not found:  "HyperOCR"
Driver not found:  "Durafet_pH"
Driver not found:  "HS2_REV1"
Driver not found:  "iHS2"
Driver not found:  "gpsClock"
Driver not found:  "OASlave"
OASIS3 $Revision: 1.7 $

OASIS3 $Revision: 1.7 $
2021M1

[in picodos]
```

```
-----
Persistor CF2I5  SN 01335  PicoDOS V2.28r3  PBM V2.27
(C) 1998-2003 Persistor Instruments Inc. - www.persistor.com
-----
```

The clock needs setting if it's not May 14, 1908!

```
C:\>ver
CF2I5  SN 01335
PicoDOS 2.28r3
BIOS 2.28r3
PBM 2.27
SPV 4.05
TPU P.01
TLC 1.02
```

After programming per O3 doc instructions

- reset pico
- [from picodos via motocross]
- Transfer > Load... > [OASIS.APP]
- [returns to PBM or picodos]
- [from PBM] pico
- boot app

There is a problem:

```
<<<< SEVERE PROBLEM >>>> Incompatible BIOS <<<< SEVERE PROBLEM >>>>
FLASHAPP.PXE expects 3.0x not 2.28
[repeats until pbm button pressed, which goes to PicoDOS (or PBM?)]
```

On Rich's test chassis

```
OASIS3 $Revision: 1.18 $
oasis.c: May 24 2016 09:23:57
Persistor CF2 SN:3408  BIOS:4.3  PicoDOS:4.3

2016Test
OASIS>
OASIS> reset pico
reset pico
```

```
-----
Persistor CF21M  SN 03408  PicoDOS V4 03r1  PBM V4 03
-----
```

The clock needs setting if it's not March 06, 2006!

```
C:\>ver
ver
CF21M    SN 03408
PicoDOS  4.03r1
BIOS      4.03r1
PBM       4.03
SPV       5.20-P
TPU       P.01
TLC       1.03
```

C:\>

////////

Confirmed that CW v9.0 is installed
Uninstalled PicoDev tools (had 2.28 + 3.05(?) installed) using Control Panel add/remove programs
Manually deleted C:\ProgramFiles\Persistor (a few files/directories remained)
Checked to make sure that C:\ProgramFiles\Metroworks\CodeWarrior\MotoCross Support had been deleted
Reinstalled PicoDev 4.03 from CD using installation defaults (per release notes, Installs to C:\Program Files\Persistor)

The install wizard shows some notes about deleting old installation, accepting default directories (required), and importing Source Trees from
C:\Program Files\Persistor\MotoCross Support\CFX\XMLSettings\Panels\IDE

The main difference with O3 doc is that it reflects some beta versions of persistor tools that install in funky locations (CW v8.3, PicoDev 2.28r3).

With CW9 and PicoDev 4.03, it's more mainstream; just have to be sure old stuff is not installed, and accept default locations. Once it's installed, it's important to reload the panels Source Trees, per the release notes/installer (this should be done via CodeWarrior: Edit > Preferences > Source Trees > Import Panel)

After installing Source Trees, it's important to refresh the OASIS3 project paths via CodeWarrior: Project > Re-search for Files
Then the project may be re-built (Note: the isfet_pH.c file was missing from the oasis3.mcp project, but is referenced in the DrvTable, resulting in a linker error; just added the file to the project and re-built).

The Persistor firmware must also be updated for compatibility w/ the CW9/PicoDev 4.03 tool chain.
Otherwise, the app may be loaded via motocross, but will fail at boot e.g.:

```
<<<< SEVERE PROBLEM >>>> Incompatible BIOS <<<< SEVERE PROBLEM >>>>
FLASHAPP.PXE expects 3.0x not 2.28
[repeats until pbm button pressed, which goes to PicoDOS (or PBM?)]
```

To update the firmware:

Get a CF card (prepared for Persistor) or power off the persistor and eject the CF card
Mount the CF card on the machine hosting PicoDev tools (e.g. using a USB CF card reader)
Copy all of the files from C:\Program Files\Persistor\MotoCross Support\CFX\bin\CF2 to the CF Card
CF2R4031.APP
RESTORE2.RUN
SPV520R7.RUN
Unmount the CF card and re-install it on the CF2
Power up the CF2
[should boot to PicoDOS]
[if boot to PBM: pico]
[if boot to OASIS: reset pico]
[if error messages: push the PBM button or follow the Persistor doc for using Pin 39 to force a reset to PicoDOS]
at the PicoDOS prompt install the firmware update

```
C:\>restore2

CF2 Restore to ROM
Version 2.20 (using PicoDOS 4.02r1)

Searching for *.APP files on C: ...

Restore CF2R4031.APP [N] ? Y
Checking file CRC ... ..... Ok
```

```
-----
Erasing flash from E08000 to E4FFFF ...
Writing flash .....
Confirming flash CRC32 ... Ok
Checking PBM, hit any key to stop ...
Updating PBM 227 to 403 ...
Complete, resetting
```

```
-----
Persistor CF2I5    SN 99999    PicoDOS V4.03r1    PBM V4.03
(C) 1998-2007 Persistor Instruments Inc. - www.persistor.com
-----
```

The clock needs setting if it's not May 14, 1908!

Warning: You need to update your SPV firmware!
To do this now, type: UPDSPV <enter>

at the PicoDOS prompt, install the supervisor update using

C:\>UPDSPV

```
CF2 99999 Supervisor Firmware Updater Version 5.20r7
Build: SPVX520r7 Apr 15 2005 04:02:29
(C) 2004-2005 Persistor Instruments Inc.
```

This program will verify, or update then verify, the 4.05 firmware
that is currently installed with the latest version 5.20 firmware.

ONCE BEGUN, UPDATING TAKES ABOUT A MINUTE AND MUST NOT BE ABORTED!
Are you sure [N] ? Y

```
Installing ..... OK
Verifying .....CRCX=CDFD...CRCM=249C.. OK
Resetting...
```

Now the issue the version command and confirm the versions

```
-----
Persistor CF2I5    SN 01335    PicoDOS V4.03r1    PBM V4.03
(C) 1998-2007 Persistor Instruments Inc. - www.persistor.com
-----
```

The clock needs setting if it's not January 01, 1970!

```
C:\>ver
CF2I5    SN 01335
PicoDOS  4.03r1
BIOS     4.03r1
PBM      4.03
SPV      5.20-P
TPU      P.01
TLC      1.03
```

```
C:\>
###MX Load: CRC E40000 E6FFFF = B7D5FA6E
```

Note: after rebooting, the output may end with "G"
if so, enter "S OASIS" and enter:

```
GS OASIS
Huh?
```

at the PBM prompt, return to picoDOS

PBM>pico

```
-----
Persistor CF2I5    SN 01335    PicoDOS V4.03r1    PBM V4.03
(C) 1998-2007 Persistor Instruments Inc. - www.persistor.com
-----
```

The clock needs setting if it's not January 01, 1970!

[the PicoDOS and PBM versions should be 4.03]

Use the ver command to verify SPV ver 5.20

Updating Persistor Firmware from 2.28r3 to 4.03

```
C:\>ver
CF2I5      SN 01335
PicoDOS 2.28r3
BIOS       2.28r3
PBM        2.27
SPV        4.05
TPU        P.01
TLC        1.02
```

Now it should be possible to boot the application:
Set picoDOS to boot the resident APP file in flash and reboot:

```
C:\boot app
C:\reset
```

Should now boot to the new app image:

```
Resetting...
oasis.c: Aug 20 2021 16:00:54
Persistor CF2 SN:1335 BIOS:4.3 PicoDOS:4.3
Setting minvalidyear to: 2021
Setting maxvalidyear to: 2023
OASIS3 $Revision: 1.18 $

OASIS3 $Revision: 1.18 $
2021M1
OASIS>
```

```
////////////////
////////////////
////////////////
```

C:\>dir

Volume in drive C is NONAME
Volume Serial Number is 05BD-6FFE
Directory of C:\

OAS00000.DAT	30,599	05-14-36	6:20p
OAS00000.IDX	864	05-14-36	6:20p
CF2R4031.APP	311,332	06-01-07	2:03a
OASIS.CFG	3,601	04-27-21	11:35p
OASIS.OLD	3,399	04-27-21	11:35p
OASISUP.NEW	3,601	04-27-21	11:34p
RESTORE2.RUN	153,914	07-20-05	2:02a
SPV520R7.RUN	205,032	07-20-05	2:02a

```
      8 file(s)      712,342 bytes
      0 dir(s)      254,439,424 bytes free
```

C:\>restore2

CF2 Restore to ROM
Version 2.20 (using PicoDOS 4.02r1)

Searching for *.APP files on C: ...

```
Restore CF2R4031.APP [N] ? Y
Checking file CRC ... ..... Ok
Erasing flash from E08000 to E4FFFF ...
Writing flash .....
Confirming flash CRC32 ... Ok
Checking PBM, hit any key to stop ...
Updating PBM 227 to 403 ...
Complete, resetting
```

Persistor CF2I5 SN 99999 PicoDOS V4.03r1 PBM V4.03
(C) 1998-2007 Persistor Instruments Inc. - www.persistor.com

The clock needs setting if it's not May 14, 1908!

Warning: You need to update your SPV firmware!
To do this now, type: UPDSPV <enter>

C:\>UPDSPV

CF2 99999 Supervisor Firmware Updater Version 5.20r7
Build: SPVX520r7 Apr 15 2005 04:02:29
(C) 2004-2005 Persistor Instruments Inc.

This program will verify, or update then verify, the 4.05 firmware
that is currently installed with the latest version 5.20 firmware.

ONCE BEGUN, UPDATING TAKES ABOUT A MINUTE AND MUST NOT BE ABORTED!
Are you sure [N] ? Y

Installing OK
VerifyingCRCX=CDFD...CRCM=249C.. OK
Resetting...

Persistor CF2I5 SN 01335 PicoDOS V4.03r1 PBM V4.03
(C) 1998-2007 Persistor Instruments Inc. - www.persistor.com

The clock needs setting if it's not January 01, 1970!

C:\>ver
CF2I5 SN 01335
PicoDOS 4.03r1
BIOS 4.03r1
PBM 4.03
SPV 5.20-P
TPU P.01
TLC 1.03

C:\>

C:\>
###MX Load: CRC E40000 E6FFFF = B7D5FA6E
GS OASIS
Huh?
PBM>pico

Persistor CF2I5 SN 01335 PicoDOS V4.03r1 PBM V4.03
(C) 1998-2007 Persistor Instruments Inc. - www.persistor.com

The clock needs setting if it's not January 01, 1970!

C:\>boot app
Will boot Application at 0xE40000
Resetting...
oasis.c: Aug 20 2021 16:00:54
Persistor CF2 SN:1335 BIOS:4.3 PicoDOS:4.3
Setting minvalidyear to: 2021
Setting maxvalidyear to: 2023
OASIS3 \$Revision: 1.18 \$

OASIS3 \$Revision: 1.18 \$

2021M1

OASIS>

OASIS>

OASIS> dp

UserIF Sampling

radio Delay 3.41 secs

emeter Delay 0.02 secs

GPS 1771 secs

Metsys Pending

LWR Sampling

