



## Thread: John Locke explains... - CM Wiki

Thread Tools

01-07-12, 02:46 PM

#1

**Patinoz**  
Player

Join Date: 18-12-11  
Location: Dresden  
Posts: 6,429

### John Locke explains... - CM Wiki

Here you have the posts which were formerly part of the wiki.  
couldnt think of a better thread title but feel free to suggest one

01-07-12, 02:46 PM

#2

**Patinoz**  
Player

Join Date: 18-12-11  
Location: Dresden  
Posts: 6,429

### Oly

OllyDbg, Oly for short, is a piece of software useful for analysing and editing the CM executable file.

It can be downloaded here: <http://www.ollydbg.de/>

01-07-12, 02:47 PM

#3

**Patinoz**  
Player

Join Date: 18-12-11  
Location: Dresden  
Posts: 6,429

### Assembly

Assembly language is a low-level programming language, when editing the CM01/02 exe file a knowledge of this language is extremely helpful in order to understand what is happening.

Links:  
[http://en.wikipedia.org/wiki/Assembly\\_language](http://en.wikipedia.org/wiki/Assembly_language)  
<http://faydoc.tripod.com/cpu/index.htm>  
<http://www.skynet.ie/~darkstar/assembler/>  
<http://www.friedspace.com/assembly/intro.php>

01-07-12, 02:48 PM

#4

**Patinoz**

## Flex Editor Tutorial

The Flex Editor is a tool written by JohnLocke, it allows the user to edit cm0102.exe without needing to manually edit the file with Olly.

The tool can be downloaded [here](#).

Rather than have hard-coded features the Flex Editor works by parsing a text file, new features can be added by writing new text files.

### Format:

Files are stored as text, a new line separates each value to be edited.

Each line consists of 4 values, they are:

- 1 - name of the offset, this is primarily used by the Flex Script Runner as a unique identifier.
- 2 - offset, this is the position in the file the value to be edited is stored.
- 3 - type of value being stored
- 4 - label, a piece of text the user will see to inform them what the value does.

### Hexadecimal Numbers:

If you're not familiar with hexadecimal numbers you might want to read this before reading any further:

<http://en.wikipedia.org/wiki/Hexadecimal>

### Offset:

The offset is the number of bytes into the file that the value is stored, all manner of offsets are available in the Offsets thread. Please note that most of the offsets posted on the forum are for use with the Olly Debugger, in order to get the literal offset one must subtract 0x400000. For example, one of the first offset in that thread is: 00407EE5 - Argentine 2nd Division Number of Subs, the literal offset (where it actually is within the .exe) would be 00007EE5, or simply 7EE5.

Another thing to point out is that almost all offsets given are the offset of the instruction rather than the actual value. Using the above example, in Olly the above offset gives us: "MOV BYTE PTR DS:[ESI+49],5", just to the left of this we can see the actual byte values of this instruction: "C646 49 05". So, in order to get the actual offset we want we need to skip over the instructions (C646 49, 3 bytes), so the actual offset is 7EE8.

### Type:

The type controls how many bytes are edited and the way in which the user's input is treated. It must be one of the following: byte, short, int, long, float, double, String:numberOfBytes.

### Sizes:

byte = 1 byte  
short = 2 bytes  
int = 4 bytes  
long = 8 bytes  
float = 4 bytes, 2 bytes either side of a decimal point  
double = 8 bytes, 4 bytes either side of a decimal point  
String:n = n bytes of Text

### Example:

Title 0x680288 string:31 "Championship Manager 2001/02"

- 'Title' is the name of the value.
- 0x680288 is the offset in the exe where the value is stored.
- string:31 indicates that there is a maximum 31 bytes of text available.
- "Championship Manager 2001/02" is the label the user will see to explain what this is, in this case it is the title of the game shown when the game first loads.

When the above is saved to a file and opened with the Flex Editor the user can edit the text value, for example:

Running the game then shows the impact of the change:

(Work in progress)

01-07-12, 02:49 PM

# 5

Patinoz  
Player

Join Date: 18-12-11  
Location: Dresden  
Posts: 6,429

## Big On/Off Switch

The Big On/Off Switch is a tool written by JohnLocke - it can be downloaded here:  
<http://champman0102.co.uk/forum/down...do=file&id=254>

### What does it do?

The tool allows the user to turn any / all active competitions on and off. So if you're fed up of the World Cup, or that stupid cup competition getting in the way - just turn it off.

### How does it work?

The tool works by parsing a text file (legion/config/onoff/offsets.txt) to get the relevant offsets and labels visible to the user. If more offsets are found, then providing they work in the same way, adding them to this file will allow those competitions to be turned off too.

### Format

Each line contains one competition and should be in the format:

offset - label

The offset is that taken directly from Olly and not the literal offset, the tool subtracts 0x400000 internally to get the correct location.

The offset should be in hexadecimal format (as opposed to decimal) but must not be prefixed with '0x'.

The label can be any amount of text, spaces are allowed.

### Example

An example offset can be found in the first post in the Offsets Thread: <http://champman0102.co.uk/forum/show...p/7439-Offsets>.

008322A2 - Argentine Premier League (Change JE to JMP to disable league)

Open Olly, Ctrl+G, 8322A2.

In Olly the line is: JE SHORT 008322C8, changing this to JMP SHORT 008322C8 will disable this competition.

To explain what is happening look at the following lines:

```
00832299 CMP EAX,EDI
```

```
...
```

```
008322A2 JE SHORT 008322C8
```

```
...
```

```
008322C1 CALL 00404250
```

Without giving too much info, the game is comparing two values called EAX and EDI.

JE is short for Jump if Equal, i.e. if two values are the same jump (go) to a specified location. So if EAX & EDI are equal the game skips a chunk of code, if they are not equal the chunk of code is run.

This chunk contains the instruction CALL 00404250 - this is bit that initialises the competition. So, by changing the JE to JMP then the chunk of code is always skipped, the competition is never initialised and thus never appears in the game.

01-07-12, 02:49 PM

#6

Patinoz 

Player

Join Date:  
Location:  
Posts:

18-12-11  
Dresden  
6,429

### city.dat

city.dat is a file within the Data directory of the game, as the name suggests it stores details about all the cities in the game.

### Format:

The file consists of a repeating block of 56 bytes for each city, these consist of:

4 bytes - city id, sequential, starting from 0

26 bytes - city name, space for 25 characters and the null termination character.

1 byte - 'gender' of the city, not sure this is ever used - maybe for languages like French that have nouns that either masculine and feminine.

4 bytes - nation id, links to nation.dat

8 bytes - latitude

8 bytes - longitude

1 byte - attraction, a value between 1 and 20.

4 bytes - weather id, links to weather.cfg

01-07-12, 02:50 PM

#7

Patinoz 

Player

Join Date:  
Location:  
Posts:

18-12-11  
Dresden  
6,429

## index.dat

**index.dat** is a file within the Data directory of the game, the file stores the names of each of the other data files (city.dat, club.dat etc) and the number of objects stored in each file.

Should city.dat have a new city inserted at the end of the file the game would only recognise it if the corresponding 'count' within index.dat is incremented to reflect this.

### Format:

Header - 8 bytes at the beginning of the file.

File name - 51 bytes - space for 50 characters plus the null termination character.

id - 4 bytes - the id number of the file (a number between 0 and 22).

count - 4 bytes - the number of this type of object stored, the game / editor will stop reading once this number have been read.

offset - 4 bytes - the position in the .dat file that data starts, more on this below.

type / version - 4 bytes - can't remember what this is.

### Offset:

Most files store just one type of data, so the value stored in the offset will be 0; thus indicating that data should be read from the beginning of the file. The exception to this is staff.dat which stores 4 types of information (people, players, non players, preferences) - rather than store each in their own file they are all stored in staff.dat. In order for the game to read data from the right place index.dat need to record where in the file the players data starts etc.

### Saved Games:

A version of index.dat is also stored inside a saved game, the format is exactly the same.

01-07-12, 02:50 PM

#8

Patinoz ◊  
Player

Join Date: 18-12-11  
Location: Dresden  
Posts: 6,429

## colour.dat

The file colour.dat, unsurprisingly, stores colours used by the game.

The can be found in the Data directory and also within a save game.

The file consists of a 58 byte long repeating block with the following format:

0 - 4 bytes - colour id, starting from 0.

4 - 51 bytes - colour name, space for 50 characters plus the null termination.

55 - 1 byte - red component

56 - 1 byte - green component

57 - 1 byte - blue component

01-07-12, 02:51 PM

#9

Patinoz ◊  
Player

Join Date: 18-12-11  
Location: Dresden  
Posts: 6,429

## continent.dat

The file continent.dat can be found both in the data directory and within a save game.

As the name suggests it stores information about continents.

The files consists of a repeating block that is 198 bytes long.

0 - 4 bytes - continent id, starting at zero

4 - 51 bytes - continent name

Work in progress...

01-07-12, 02:52 PM

#10

Patinoz ◊  
Player

Join Date: 18-12-11  
Location: Dresden  
Posts: 6,429

### first\_names.dat, second\_names.dat & common\_names.dat

These three files store all the names that are used in the game.

They appear in both the data directory and within a save game.

They share a common format which is as follows:

- 0 - 4 bytes - name id, starting from 0
- 4 - 51 bytes - the name
- 55 - 4 bytes - nation id, links to nation.dat, -2 is used to not link the name to a nation
- 9 - 1 byte - number of who have this name (I think).

This 60 byte block repeats for every name.

When found in a save game space for an extra 16 names is added for the names of human players.

01-07-12, 02:52 PM

#11

Patinoz ◊  
Player

Join Date: 18-12-11  
Location: Dresden  
Posts: 6,429

### officials.dat

officials.dat stores the details of referees and linesmen.

Format:

- 0 - 4 bytes - official id, starting from 0
- 4 - 4 bytes - forename id, linked to first\_names.dat
- 8 - 4 bytes - surname id, linked to second\_names.dat
- 12 - 8 bytes - date of birth
- 20 - 2 bytes - year of birth, used when date of birth is unknown
- 22 - 4 bytes - nationality, nation id linked to nation.dat
- 26 - 4 bytes - city they're from, city id linked to city.dat - could be used to ensure they don't officiate their local club?
- 30 - 2 bytes - current ability
- 32 - 2 bytes - potential ability
- 34 - 2 bytes - reputation
- 36 - 1 byte - allowing flow, how likely they are to
- 37 - 1 byte - discipline
- 38 - 1 byte - important matches
- 39 - 1 byte - pressure
- 40 - 1 byte - refereeing
- 41 - 1 byte - running the line
- 42 - 1 byte - time keeping

01-07-12, 02:53 PM

#12

Patinoz ◊  
Player

Join Date: 18-12-11  
Location: Dresden  
Posts: 6,429

### stadium.dat

stadium.dat - stores data about stadiums (who'd have guessed?)

Format:

- 0 - 4 bytes - stadium id, starting from 0
- 4 - 51 bytes - stadium name
- 55 - 1 byte - name 'gender'
- 56 - 4 bytes - location, city id - links to city.dat
- 60 - 4 bytes - total capacity
- 64 - 4 bytes - seating capacity
- 68 - 4 bytes - expansion capacity
- 72 - 4 bytes - nearby stadium, stadium id (-1 for none)
- 76 - 1 byte - whether it has a roof
- 77 - 1 byte - whether it has under-soil heating

01-07-12, 02:53 PM

#13

Patinoz ◊  
Player

Join Date: 18-12-11  
Location: Dresden  
Posts: 6,429

## contract.dat

contract.dat - a file within a save game - stores data about contracts.

Format:

0 - 4 bytes - staff id, links to staff.dat

...

12 - 4 bytes - wage

16 - 4 bytes - goal bonus

20 - 4 bytes - assist bonus

24 - 4 bytes - clean sheet bonus

...

37 - 8 bytes - contract start date

45 - 8 bytes - contract end date

53 - 1 byte - contract type (not sure what I meant when I made the note, I'm guessing whether it's a loan or not?)

...

01-07-12, 02:55 PM

#14

Patinoz   
Player

Join Date: 18-12-11  
Location: Dresden  
Posts: 6,429

## club.dat & nat\_club.dat

club.dat & nat\_club.dat are two files within the Data directory of the game, they share the same structure and as the names suggests it stores details about domestic and national clubs respectively.

The file stores a repeating block of 581 bytes, the format of this block is as follows:

Offset	Size (bytes)	Description
0	4	Club id, starting from 0
4	51	Long name (e.g. Manchester United), space for 50 characters and the null termination character
55	1	Long name 'gender' - maybe for languages like French that have nouns that either masculine and feminine
56	26	Short name (e.g. Man Utd), space for 25 characters and the null termination character
82	1	Short name 'gender'
83	4	Nation id of the country the club is in; links to nation id in nation.dat
87	4	Division id of the club's current division; links to links to club_comp.dat
91	4	Division id of the division the club played in last season, links to club_comp.dat
95	1	Last position, position the club finished last season
96	4	Reserve division, used for clubs who play in more than one competition (like in Brazil)
100	1	Professional status; 0=unknown (not set), 1=professional, 2=semi-pro; 3=amateur
101	4	Bank balance
105	4	Stadium id; links to stadium.dat
109	1	Whether the club owns their stadium or not
110	4	Reserve stadium, id number of where the club's reserves play, -1 for n/a; links to stadium.dat
114	1	Match day; preferred match day (Saturday in England, Sunday in Italy etc).
115	4	Average attendance
119	4	Minimum attendance
123	4	Maximum attendance
127	1	Training facilities, quality of - between 1 and 20
128	2	Reputation
130	1	Whether the club is a PLC or not
131	4	Home shirt foreground colour id, links to colour.dat
135	4	Home shirt background colour id, links to colour.dat
139	4	Away shirt foreground
143	4	Away shirt background
147	4	Third shirt foreground
151	4	Third shirt background
155	12	Liked staff, 3 staff id numbers; each links to staff.dat
167	12	Disliked staff, 3 staff id numbers; each links to staff.dat
179	12	Rival clubs, 3 club id numbers; each links to club.dat
191	4	Chairman, staff id number; links to staff.dat

195	12	Directors, 3 staff id numbers; each links to staff.dat
207	4	Manager, staff id number; links to staff.dat
211	4	Assistant manager, staff id number; links to staff.dat
215	200	Playing squad, 50 x staff id numbers, -1 for nobody; each links to staff.dat
415	20	Coaches, 5 x staff id numbers, -1 for nobody; each links to staff.dat
435	28	Scouts, 7 x staff id numbers, -1 for nobody; each links to staff.dat
463	12	Physios, 3 x staff id numbers, -1 for nobody; each links to staff.dat
475	4	'Euro flag' - not sure what this is...
479	1	Euro seeding
480	80	Current squad, 20 x staff id, -1 for nobody
560	16	Tactics, 4 x tactic id; not sure how tactics are identified exactly...
576	4	Current tactics
580	1	Whether the club is 'linked' to another or not

The number of clubs in the file can be calculated by dividing the file length by 581.

#### Differences:

Inside nat\_club.dat the club id numbers start where the domestic club ids finish. For this reason when a new domestic club is created the contents of nat\_club.dat also needs changing to ensure id numbers are uplifted.

Work in progress...

01-07-12, 02:57 PM

#15

**Patinoz** ◊  
Player

Join Date: 18-12-11  
Location: Dresden  
Posts: 6,429

#### Saved Game "Genome"

Each save game consists of a series of files, each storing specific data needed by the game.

This page is to record the structure of a save, the ultimate goal is to identify what every single byte of data stores.

Files:

index.dat  
colour.dat  
continent.dat  
contract.dat  
city.dat  
club.dat & nat\_club.dat  
first\_names.dat, second\_names.dat & common\_names.dat  
officials.dat  
stadium.dat

Work in progress.

29-07-12, 07:51 PM

#16

**MarcoVanBast** ◊  
Reserve Team Player

Join Date: 17-06-12  
Posts: 455

And what about staff.dat? why no explains how info stored in it? for example i want to edit 1982 DOB players, is that info stored in hex bytes in staff.dat?

29-07-12, 08:05 PM

#17

**MarcoVanBast** ◊  
Reserve Team Player

Join Date: 17-06-12  
Posts: 455

I search for all 7bf values in staff.dat (1983) and changed it to 7be 😊 but game crashes, its not so simple as i hope 😊

29-07-12, 08:15 PM

#18

**MarcoVanBast** ◊  
Reserve Team Player

Join Date: 17-06-12  
Posts: 455

ok i got it! 😊

05-01-13, 10:36 PM

#19

apg186  
Unattached

hi,

i'm looking at adjusting the figures for prize money for the german league, ive gone to the tv and prize money editor (flex) in the flex download and I don't understand any of the numbers! the prize money for the league is -2080080447 and for the champions league is 0. Im scared of changing it in case it takes milions off me. I've read the hexadecimal section and it doesnt seem to have any relevance. you've probably realised by now im not a computer person. can i just change the number to say, 20,000,000 and that number will turn up in the game? also will it apply to games that are currently saved now?

cheers

05-01-13, 11:07 PM

#20

JohnLocke  
Programmer  
VIP

Join Date: 05-06-12  
Posts: 1,032

The editor should look like this:

In the case of the Bundesliga, clubs get £500,000 TV money and £200,000 x number of team in the division for winning the league, then £200,000 less for each position below that.

05-01-13, 11:24 PM

#21

apg186  
Unattached

wow, mine looks nothing like that all the numbers are 11 or 12 digits long and a collection of positives and negatives. odd. I'll try changing and see what happens

25-08-14, 09:16 AM

#22

Edgars  
Decent Young Player

Join Date: 04-12-13  
Location: Latvija  
Posts: 74

I don't really understand that flex editor tutorial... 😞

For example I have found such offsets:

```
0078EC72
0078EC6B
0078E36A
0078ED92
```

How I can convert these offsets that I can edit them using flex editor?

25-08-14, 09:34 AM

#23

JohnLocke  
Programmer  
VIP

Join Date: 05-06-12  
Posts: 1,032

```
0078EC72 MOV WORD PTR DS:[ESI+3E],0A
0078EC6B PUSH 24E
0078E36A MOV WORD PTR DS:[EAX],24
0078ED92 MOV WORD PTR DS:[ESI+3C],4
```

Flex Editor file (untested):

Code:

```
NumberOfTeams 0x38EC76 short "N. Ireland Premier - Number of teams"
Memory 0x38EC6C int "N. Ireland Premier - Memory required (teams * 59)"
FixturesIThink 0x38E36D short "N. Ireland Premier - Number of fixtures (I think)"
RoundsIThink 0x38ED96 short "N. Ireland Premier - Number of rounds (I think)"
```

First value isn't important, there just needs to be a piece of text (no spaces) - this is used by the 'Flex Script Runner' (which even I never use).

Offsets are literal (so -0x400000 from the olly offset) but you need to calculate the offset of the value that is being edited - which will be a few bytes further than the instruction.

Last edited by JohnLocke; 25-08-14 at 11:15 AM. Reason: Typos fixed - thanks to Edgars for pointing them out

25-08-14, 10:28 AM

#24

Edgars  
Decent Young Player

Join Date: 04-12-13  
Location: Latvija



Originally Posted by **JohnLocke**

```
0078EC76 MOV WORD PTR DS:[ESI+3E],0A
0078EC6B PUSH 24E
0078E36A MOV WORD PTR DS:[EAX],24
0078ED92 MOV WORD PTR DS:[ESI+3C],4
```

Flex Editor file (untested):

Code:

```
NumberOfTeams 0x38EC72 short "N. Ireland Premier - Number of teams"
Memory 0x38EC6C int "N. Ireland Premier - Memory required (teams * 59)"
FixturesIThink 0x38E36D short "N. Ireland Premier - Number of fixtures (I think)"
RoundsIThink 0x38ED96 short "N. Ireland Premier - Number of rounds (I think)"
```

First value isn't important, there just needs to be a piece of text (no spaces) - this is used by the 'Flex Script Runner' (which even I never use). Offsets are literal (so -0x400000 from the olly offset) **but you need to calculate the offset of the value that is being edited** - which will be a few bytes further than the instruction.

Thank you,

But can you explain me how to do the bold part?

**P.S.** You were right about what those offsets do/are responsible for!

25-08-14, 10:51 AM

#25

**JohnLocke**  
Programmer  
VIP

Join Date: 05-06-12  
Posts: 1,032

Sure, using a couple of the same examples:

```
0078EC72 |. 66:C746 3E 0A00 MOV WORD PTR DS:[ESI+3E],0A
```

0078EC72 is where the instruction starts but we want to edit the 0A, so check the 2nd column to see how far in the value is located.

```
0078EC72 = 66,
0078EC73 = C7,
0078EC74 = 46,
0078EC75 = 3E,
0078EC76 = 0A (and it's two bytes long, hence we use 'short')
```

```
0078EC6B |. 68 4E020000 PUSH 24E
```

0078EC6B is the instruction PUSH (68) but we want to edit the value being pushed which is at 0078EC6C (4 bytes long, so we use 'int').

Last edited by JohnLocke; 28-12-14 at 09:18 PM. Reason: formatting

Page 1 of 2 1 2 Last

« Database Structure | Making the .60 Data Compatible with the Saturn Patch »

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## Thread: John Locke explains... - CM Wiki

Thread Tools

25-08-14, 11:10 AM

#26

**Edgars**  
Decent Young Player

Join Date: 04-12-13  
Location: Latvija  
Posts: 74

OK - I guess that I understand now - thank you!!

By the way - if anyone else needs/are interested in this code, then it works like a charm, but only with this correction:

Code:

```
NumberOfTeams 0x38EC76 short "N. Ireland Premier - Number of teams"
Memory 0x38EC6C int "N. Ireland Premier - Memory required (teams * 59)"
Fixtures 0x38E36D short "N. Ireland Premier - Number of fixtures"
Rounds 0x38ED96 short "N. Ireland Premier - Number of rounds"
```

Correction is from 0x38EC72 to 0x38EC76 in number of teams, but JohnLocke corrected it in his explanation, but in his code that value is wrong!

29-04-20, 02:26 PM

#27

**MarcoVanBast**  
Reserve Team Player

Join Date: 17-06-12  
Posts: 455

Originally Posted by **MarcoVanBast**  
ok i got it! 😊

Really wonder what i meant by "i got it!" 8 years ago.

coz now my question the same, why every .dat explained except staff.dat?

30-04-20, 11:51 AM

#28

**tonytony**  
Youth Team Player

Join Date: 29-07-19  
Posts: 41

Originally Posted by **MarcoVanBast**  
Really wonder what i meant by "i got it!" 8 years ago.  
coz now my question the same, why every .dat explained except staff.dat?

I wish all the .dat were defined!

30-04-20, 01:37 PM

#29

**Nick+Co**  
Programmer

Join Date: 18-07-15  
Posts: 795

Because staff.dat has multiple sections (of different sizes) which are all referenced within index.dat. So makes it more tricky to layout easily 😊

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