

This PDF is an OCaml bytecode

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This PDF is an OCaml bytecode. The OCaml bytecode is a program which takes an arbitrary pdf, a bytecode, and merges them in a file that is both a valid PDF and a valid bytecode. For users of Adobe Reader, this PDF also contains an attached file, which is a (different!) OCaml bytecode of the same program [1]. To execute the program, simply do:

```
% ocamlrun abstract.pdf --ml foo.byte --pdf foo.pdf -o bar.pdf
```

You can also consult the help with:

```
% ocamlrun abstract.pdf --help
```

The second page of this PDF is a poster that describes its internal structure.

References

- [1] POC||GTFO, Issue 4, 27 June 2014.

Metadata

```

1 0 obj
<<
/Title(This PDF is an OCaml bytecode)
/Author(Gabriel Radanne)
/Creator(radanne@informatik.uni-freiburg.de)
/Subject(This PDF is an OCaml bytecode. The OCaml bytecode is a
program which takes and arbitrary pdf, a bytecode, and merges
them in a file that is both a valid PDF and a valid bytecode.
This Poster contains the code of the PDF.)
/Keywords(OCaml, PDF, Bytecode, Polyglot files)
/Producer(Pdflatex, Mutool, ocamlc and Emacs)>>
endobj

```

Fonts and content

```

2 0 obj
<</Type/Filespec/F(bytepdf.bc)/EF<</F 23 0 R>>>
endobj

3 0 obj
<</Length 13139/Subtype/Type1C/Filter/ASCIIHexDecode>>
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0100040200010106434d5231300001010131f81b01f81c02f81d038bf80ef9c1f982051d000f42401d1ed9b0ee0e8b0c038b0c04ad1c192012f7fd11f7960ff76110000301016e7382436f707972696768742
028632920313939372c203230303920416d65726963616e204d617468656d617469663616c20536f636965747920283c68747f03a2f2f77772e616d73e292c20776974682052673657276656420
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02001b0009000a003c006d000d003e000e00...
endstream
endobj
...
14 0 obj
<</Length 9805>>
stream
q .1 0 0 .1 0 0 cm /R9 gs q BT 1 0 0 1 191.844 615.392 Tm 10 0 0 10 0 0 cm 0 g /R10 17.2154 Tf [(T)-.5998781(h)-.90052708(i)-.59846(s)-302.39583(P)-.199959(D)-.
5998781(F)-302.11(l)-.5998781(s)-302.39805(a)-.5998781(n)-301.90605(O)-1.8067302(C)-.5998781(a)-.601297(m)-.10068901(l)-301.61(b)25.1056(y)-.700567(t)-.09927071(e)-.
39991904(c)-.39991904(o)-26.591803(d)-.90194500(e)-.39991904)...
endstream
endobj
...

```

Embedded File

```

23 0 obj
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00000740000007d000000860000008f0000009800000099000000a0000000a100000000a200000000a300000000a400000000a500000000a600000000a700000000a800000000a900000000aa00000000ab00000000ac00000000ad00000000ae00000000af00000000b000000000b100000000b200000000b300000000b400000000b500000000b600000000b700000000b800000000b900000000ba00000000bb00000000bc00000000bd00000000be00000000bf00000000c000000000c100000000c200000000c300000000c400000000c500000000c600000000c700000000c800000000c900000000ca00000000cb00000000cc00000000cd00000000ce00000000cf00000000d000000000d100000000d200000000d300000000d400000000d500000000d600000000d700000000d800000000d900000000da00000000db00000000dc00000000dd00000000de00000000df00000000e000000000e100000000e200000000e300000000e400000000e500000000e600000000e700000000e800000000e900000000ea00000000eb00000000ec00000000ed00000000ee00000000ef00000000f000000000f100000000f200000000f300000000f400000000f500000000f600000000f700000000f800000000f900000000fa00000000fb00000000fc00000000fd00000000fe00000000ff00000000
dllibunix\000dllibarray\000

caml_abs_float\000caml_acos_float\000caml_add_debug_info\000caml_add_float\000caml_alloc_dummy\000caml_alloc_dummy_float\000c
aml_alloc_dummy_function\000caml_alloc_float_array\000caml_array_append\000caml_array_bit\000caml_array_concat\000caml_array
_get\000caml_array_get_addr\000caml_array_get_float\000...

\000\000\000$su\000\000\000\000-\000=\000\000\000Out_of_memory\000\000\000)Sys_error\000\000\000'Failure\000\000\000Invalid_a
rgument\000\000\000+End_of_file\000\000\000Division_by_zero\000\000\000)Not_found...

};\000\000\000nG\000\000\001 \000\000\0007B\000\000\006 \001\015DDDDDD@%ArrayA\000yD@%'AstringA\001\0120@AB@,Astring_baseA\0
01\0120D@,@,Astring_charA\001\0120@AC@,Astring_escapeA\001\0120YD@,@.Astring_stringA\001\0120n@,@+Astring_subA\001\0120a@BD@
.Astring_unsafeA\001\0120EDDDDD@@"...

UnixLabels1768838436Unix1751340325Uchar1937330979Sys1920226086String1685345064Stack1952797475Set1701990951Rresult1936020006Re
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CODE000F8668 DLPT00000000 DLLS00000014 PRIM000023BC DATA000117B6 SYMB000009C1 CRCS000009C1 DBUG0043B769 00000008
Caml1999X011
endstream
endobj
24 0 obj
<</Type/Encoding/BaseEncoding/WinAnsiEncoding/Differences[11/ff/fi]>>
endobj
25 0 obj
<</Type/Annot/C[0 1 0]/Rect[175.446 472.783 182.419 481.195]/Border[0 0 0]/Dest[5 0 R/XYZ 133.768 325.363 null]/Subtype/Link>>
endobj
...

```

Table of PDF objects

```

36 0 obj
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endobj
37 0 obj
<</Type/FontDescriptor/FontName/ZSEZIN+CMITTI0/FontBBox[0 -228 593 617]/Flags 131105/Ascent 617/CapHeight 611/Descent -228/ItalicAngle 0/StemV 88/AvgWidth 525/MaxWidth
525/MissingWidth 525/XHeight 437/CharSet(/D/a/c/d/e/f/hyphen/i/l/n/numbersign/o/t/u)/FontFile3 35 0 R>>
endobj
...
xref
0 42
0000000000 65535 f
0000000015 00000 n
0000000420 00000 n
0000000499 00000 n
0000013726 00000 n
...
0005604545 00000 n
0005604833 00000 n
0005605296 00000 n
0005605640 00000 n
0005605926 00000 n
trailer
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/Info 1 0 R
/Root 7 0 R
/ID [ (l0.\214N\263\323\221\032Vd\310\023c<v) <FBC9DF422D8B8E6FE7DDBD0C0815AF47> ]
>>
startxref
%%EOF

```

CODE... DLLS... PRIM... DATA... SYMB... CRCS

Regular Index

Additional Dummy section: XPDF

Sections of an OCaml Bytecode

Enhanced Index with XPDF section

Not read by PDF readers

```

CODE000F8668 DLPT00000000 DLLS00000014 PRIM000023BC DATA000117B6 SYMB000009C1 CRCS000009C1 DBUG0043B769 XPDF0000475A
00000009
Caml1999X011

```