

```
103 save and add abcd back 0 org cr
2301 , 6745 , ab89 , efcd , cr
dcfe , 98ba , 5476 , 1032 , cr
put 008 dup dup or at 3 for indent
    left b! @+ !b up bt @+ !b next ; cr
sum 012 dup dup or at 3 for indent
    left b! @b @ . + dup ffff and !+ indent
    up b! @b @ . + over 2* indent
    -if drop 1. + dup then drop indent
    ffff and !+ next break);
sums 025 left at @p .. / msg / ! put indent
    left a! 63 for @b ! unext sum ; cr
02f ' r--- boot
```

```
s o t yrgx
cdfj ludr
ab k -mc+
edit x.i
```

colorForth

The screenshot shows the colorForth debugger interface. The left side displays a memory dump with columns for address (00 to FF), type (e.g., 4fetch, 4fetch, 4fetch, etc.), and value (e.g., 15555, 15555, 15555, etc.). The right side shows stack frames for functions like 134a9, call, Da9, and others, with labels for parameters like tw+, ludr, pfgs, and sn+. A blue box highlights a specific memory location at address 000000.

00 0aa 301all 302all 303all 304all 305all 306all 307all
4fetch 4fetch 4fetch 4fetch 4fetch 4fetch 4fetch 4fetch 4fetch
15555 15555 15555 15555 15555 15555 15555 15555 15555
2 0aa 1 all
15555 01555500155550015555001555500155550015555001555500
io io io io io io io io io
15555 15555 15555 15555 15555 15555 15555 15555 15555
15555 15555 15555 15555 15555 15555 15555 15555 15555
15555 15555 15555 15555 15555 15555 15555 15555 15555
15555 15555 15555 15555 15555 15555 15555 15555 15555
0 e e
200rd 201all 202u 203r 204i 205r 206i 207r
4fetch 4fetch 4fetch 4fetch 4fetch 4fetch 4fetch 4fetch
15555 15555 15555 15555 15555 15555 15555 15555 15555
1 rdu 1 all 1 u 1 r 1 i 1 r 1 i 1 r
1555500155550 15555 015555 015555 015555 015555 015555
io io io io io io io io
15555 15555 15555 15555 15555 15555 15555 15555 15555
15555 15555 15555 15555 15555 15555 15555 15555 15555
15555 15555 15555 15555 15555 15555 15555 15555 15555
15555 15555 15555 15555 15555 15555 15555 15555 15555
0 e e e
100rd 101all 102d 103r 104i 105r 106i 107r
4fetch 4fetch 4fetch 4fetch 4fetch 4fetch 4fetch 4fetch
15555 15555 15555 15555 15555 15555 15555 15555 15555
1 rdu 1 all 1 d 1 r 1 l 1 r 1 l 1 r
1555500155550 15555 015555 015555 015555 015555 015555
io io io io io io io io
15555 15555 15555 15555 15555 15555 15555 15555 15555
15555 15555 15555 15555 15555 15555 15555 15555 15555
15555 15555 15555 15555 15555 15555 15555 15555 15555
15555 15555 15555 15555 15555 15555 15555 15555 15555
0 e e e
000rd 0010aa 002031 003030 004rdi 005rdi 006rdi 007rdi
4fetch 4fetch 4fetch 4fetch 4fetch 4fetch 4fetch 4fetch
15555 15555 15555 15555 15555 15555 15555 15555 15555
1 rd 2 0aa 2 031 2 030 1 rdi 1 rdi 1 rdi 1 rdi
155550 15555 15555 15555 01555500155550015555001555500
io io io io io io io io
15555 15555 15555 15555 15555 15555 15555 15555 15555
15555 15555 15555 15555 15555 15555 15555 15555 15555
15555 15555 15555 15555 15555 15555 15555 15555 15555
000000 000000 000000 000000 000000 000000 000000 000000 000000
0
1
tw+ ludr
pfgs ludr
sn+ ohlw
so *

colorForth

The screenshot shows the colorForth development environment. The left pane displays a memory dump with addresses from 000 to 200. The right pane shows a stack dump with frames for functions like `200rd`, `100rd`, and `000rd`. The bottom right contains assembly code and memory addresses. A status bar at the bottom indicates memory usage: 27211 tw -+ ludr, 100 pfgs, and sn -+ ohlw.

000 001all 002d 003rdl 004rdl 005rdl 006rdl 007rdl
4fetch Ocall 0fb Ojump 4fetch 4fetch 4fetch 4fetch
15555 135a5 09017 115b5 15555 15555 15555 15555
- rd - Oaf - 019 - Oaa - rdl - rdl - rdl - rdl
15555 0031410 00000 00020 0015555 0015555 0015555 0015555
io io d r io io io io
15555 15555 15555 15555 15555 15555 15555 15555
15555 00037 15555 15555 15555 15555 15555 15555
3ffe 00000 00039 15555 15555 15555 15555 15555
15555 15555 15555 00037 15555 15555 15555 15555
00e

000all 301all 302all 303all 304all 305all 306all 307all
4fetch 4fetch 4fetch 4fetch 4fetch 4fetch 4fetch 4fetch
15555 15555 15555 15555 15555 15555 15555 15555
- Oac - all - all - all - all - all - all
0031a500 15555 0015555 0015555 0015555 0015555 0015555 0015555 0015555
io io io io io io io io
15555 15555 15555 15555 15555 15555 15555 15555
15555 15555 15555 15555 15555 15555 15555 15555
15555 15555 15555 15555 15555 15555 15555 15555
0 e e e e e e e e
0 e e e e e e e e
200rd 201all 202011 203r 204i 205r 206i 207r
4fetch 4fetch 2unext 0ep 3; 3; 0; 3.
15555 15555 07b72 05b72 01a75 07b75 15555 079b2
- rdu - all 0 011 1 r - 039 - 00b - 014 - r
15555 0015555 00005 0 1 0 1 00004 0 1 00040
io io r r u u io
15555 15555 15555 15555 15555 15555 15555 15555
15555 15555 00004 00014 15575 155d5 15575 15555
15555 15555 15555 0003f 15555 15555 15555 15555
15555 15555 15555 0003e 15555 15555 15555 15555
0 e e e e e e e e
0 e e e e e e e e
100rd 101all 102r 103r 104i 105r 106i 107r
4fetch 4fetch 1fb 0 3; 3; 0; 3.
15555 15555 07b72 15555 01a75 07b75 15555 079b2
- rdu - all - 01b 1 025 - 039 - 00b - 014 - r
15555 0015555 0 0001 00008 0 1 00004 0 1 00040
io io r r u u io
15555 15555 15555 15555 15555 15555 15555 15555
15555 15555 00008 155d5 15575 155d5 15575 15555
15555 15555 04b12 0932a 15555 15555 15555 15555
15555 15555 15555 1642f 15555 15555 15555 15555
0 e e e e e e e e
0 e e e e e e e e
000rd 001all 002d 003rdl 004rdl 005rdl 006rdl 007rdl
4fetch Ocall 0fb Ojump 4fetch 4fetch 4fetch 4fetch
15555 135a5 09017 115b5 15555 15555 15555 15555
- rd - Oaf - 019 - Oaa - rdl - rdl - rdl - rdl
15555 0031410 00000 00020 0015555 0015555 0015555 0015555
io io d r io io io io
15555 15555 15555 15555 15555 15555 15555 15555
15555 00037 15555 15555 15555 15555 15555 15555
3ffe 00000 00039 15555 15555 15555 15555 15555
15555 15555 15555 00037 15555 15555 15555 15555
00e

2f 134a9 call 0a9
2e 11412 jump 012
2d 01a72 @b ; unext .
2c 2e9b2 push . .
2b 0003f @b and + @p
2a 00175 @b + unext :
29 04a12 @p at @p .
28 0b608 ; call 08
27 1341c call 01c
26 00175 @b + unext ;
25 04a12 @p at @p .
24 15555 ;
23 0f015 ;+ next 15
22 0ffff ;+ @b and @p
21 3bdta drop @p and .
20 249b2 dup . . .
27211
100
tw -+ ludr
pfgs ludr
sn -+ ohlw
so *

g18 software simulator compile empty br
prelude 1250 load cr
engine 1252 8 loads cr
opcodes 1268 4 loads cr
display 1240 load 1276 8 loads cr
keyboard 1292 2 loads cr
ports and pins 1296 2 loads br

connect ports cr
cfsoft 1248 load initialize pins and testbeds
cr
start power ok h exit

s o t yrgx
cdfj ludr
ab k -mc+
edit x.i