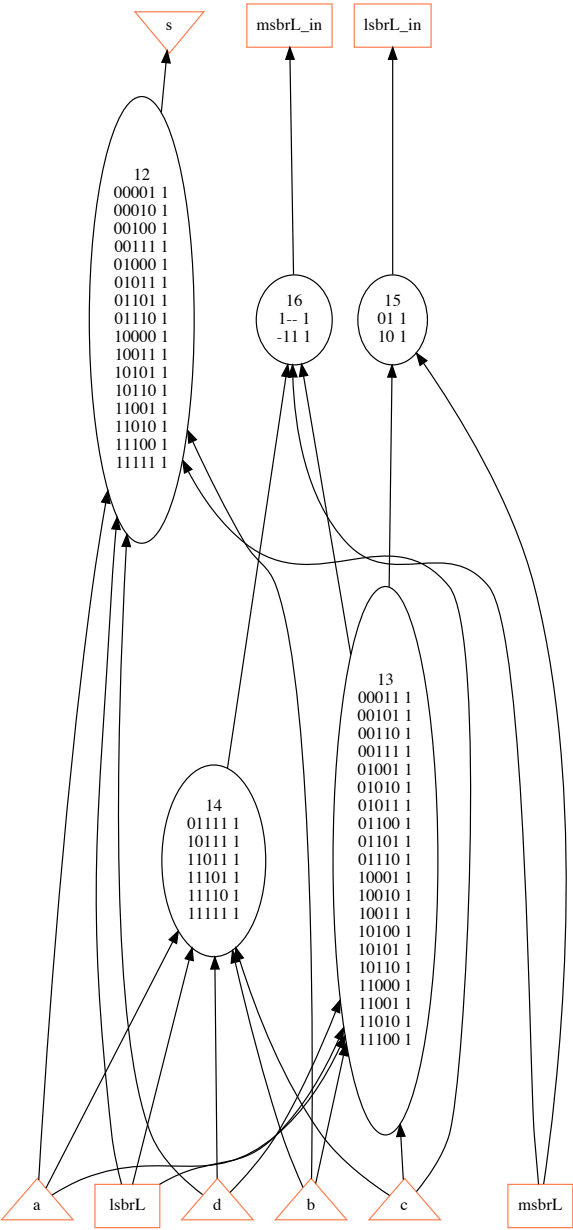Network structure visualized by ABC
Benchmark "simple". Time was Thu Oct 7 21:28:24 2021.

The network contains 5 logic nodes and 2 latches.

s

msbrL_in

lsbrL_in

12
00001 1
00010 1
00100 1
00111 1
01000 1
01011 1
01101 1
01110 1
10000 1
10011 1
10101 1
10110 1
11001 1
11010 1
11100 1
11111 1

16
1-- 1
-11 1

15
01 1
10 1

13
00011 1
00101 1
00110 1
00111 1
01001 1
01010 1
01011 1
01100 1
01101 1
01110 1
10001 1
10010 1
10011 1
10100 1
10101 1
10110 1
11000 1
11001 1
11010 1
11100 1

14
01111 1
10111 1
11011 1
11101 1
11110 1
11111 1

a

lsbrL

d

b

c

msbrL

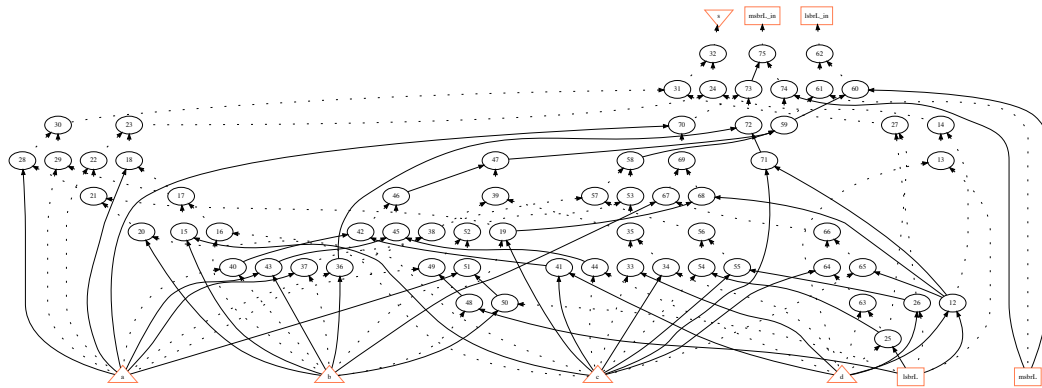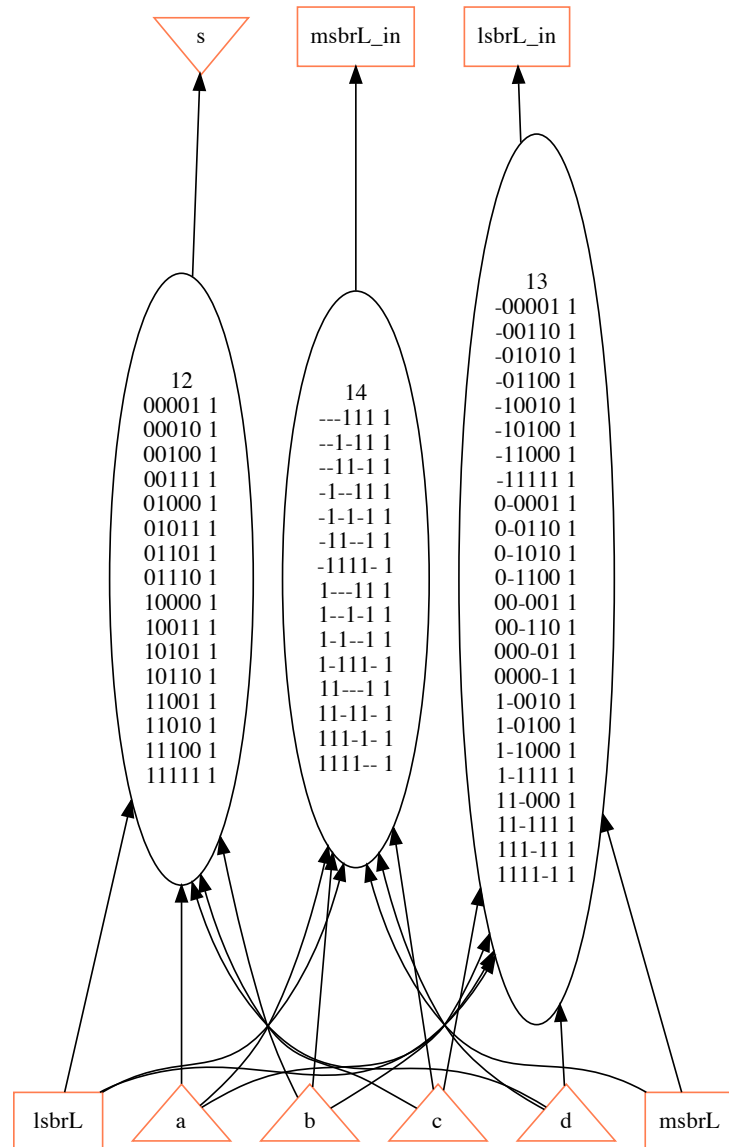Network structure visualized by ABC
Benchmark "aig". Time was Thu Oct 7 21:29:03 2021.

The network contains 64 logic nodes and 2 latches.

Network structure visualized by ABC
Benchmark "bdd". Time was Thu Oct 7 21:29:38 2021.

The network contains 3 logic nodes and 2 latches.

s msbrL_in lsbrL_in

```
     12            14              13
   00001 1      ---111 1       -00001 1
   00010 1      --1-11 1       -00110 1
   00100 1      --11-1 1       -01010 1
   00111 1      -1--11 1       -01100 1
   01000 1      -1-1-1 1       -10010 1
   01011 1      -11--1 1       -10100 1
   01101 1      -1111- 1       -11000 1
   01110 1      1---11 1       -11111 1
   10000 1      1--1-1 1       0-0001 1
   10011 1      1-1--1 1       0-0110 1
   10101 1      1-111- 1       0-1010 1
   10110 1      11---1 1       0-1100 1
   11001 1      11-11- 1       00-001 1
   11010 1      111-1- 1       00-110 1
   11100 1      1111-- 1       000-01 1
   11111 1                     0000-1 1
                              1-0010 1
                              1-0100 1
                              1-1000 1
                              1-1111 1
                              11-000 1
                              11-111 1
                              111-11 1
                              1111-1 1
```

lsbrL a b c d msbrL

(a)

1.The command aig only change the structure in nodes, but strash change the whole structure of the circuit.

2. The command bdd only change the structure in nodes, but collapse change the whole structure of the circuit.

(These results can be known by entering ps.)

(b)

We can do this simply by entering sop after collapse.