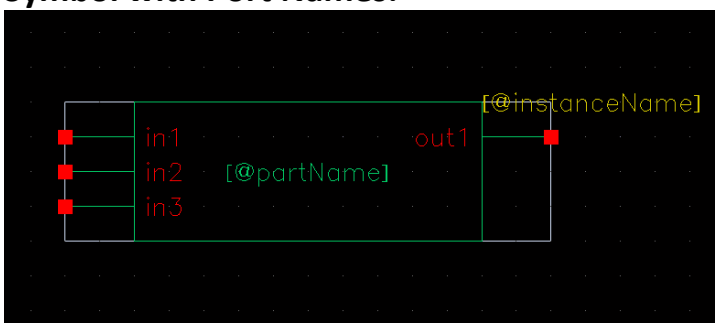
Name:_____

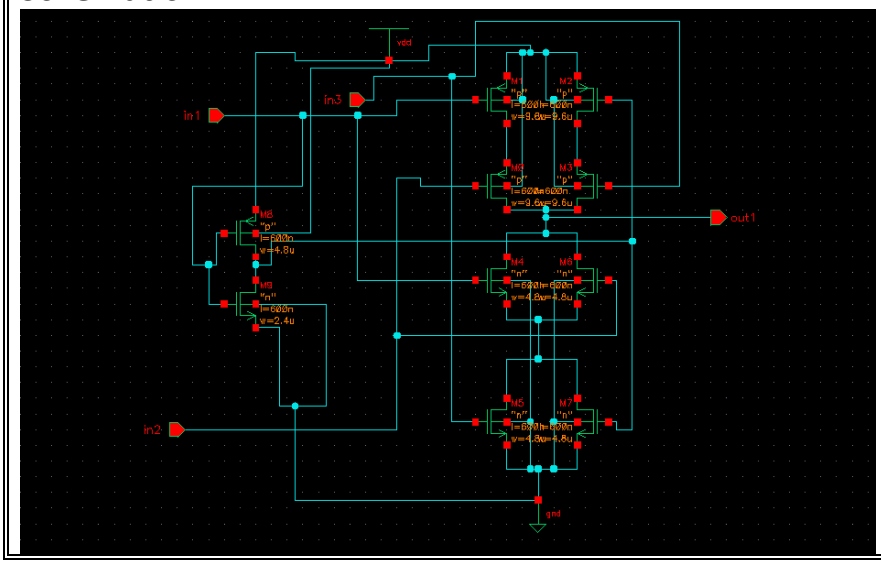
Library Name:	**Zxw_lib**
Cell Name:	**Zxw_2to1mux**
Function/Truth Table:	
S A1 A0	**Y**
0 0 0	**0**
0 0 1	**0**
0 1 0	**1**
0 1 1	**1**
1 0 0	**0**
1 0 1	**1**
1 1 0	**0**
1 1 1	**1**
Layout Area: 1046 um^2	

Name:_____

Symbol with Port Names:

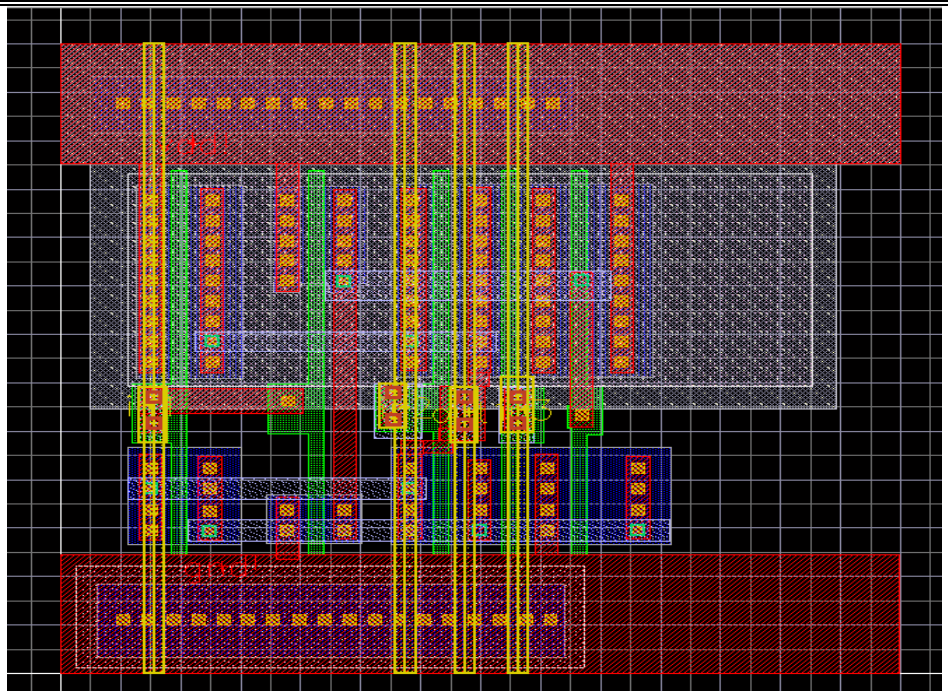


Schematic:



Name:_____

Layout:



Verilog Model:

```
module zxw_mux2to1(in1,in2,in3,in4,out1);
  Input in1;
  Input in2;
  Input in3;
  Input in4;
output out1;
and(a1, in1,in2);
and (a2,in3,in4);
or(a3,a1,a2);
endmodule
```

Comments/Notes:

```
*
*Parasitic capacitance sheets
*
*
*
*
*  PROGRAM  advgen
*
*  CDL LIBRARY
```

```
*
*
*

*
.SUBCKT zxw_mux2to1 vdd! gnd! in1 in2 in3 out1
*
*
*  caps2d version: 7
*
*
*      TRANSISTOR CARDS
*
*
M4    out1#1      in1#6 net16#2     gnd!#2      nmos L=0.6 W=4.8
+ AD=8.4    AS=10.56    PD=8.3      PS=9.2
M9    net4#4      in1#10      gnd!#5      gnd!#2      nmos L=0.6
      W=2.4
+ AD=3.72   AS=3.96     PD=5.5      PS=5.7
M6    out1#6      in2#6 net16#3     gnd!#2      nmos L=0.6 W=4.8
+ AD=8.16   AS=5.16     PD=8.2      PS=2.15
M5    net16#3     in3#4 gnd!#1      gnd!#2      nmos L=0.6 W=4.8
+ AD=5.16   AS=5.28     PD=2.15     PS=2.2
M7    net16#6     net4#8      gnd!#1      gnd!#2      nmos L=0.6
      W=4.8
+ AD=16.08  AS=5.28     PD=11.5     PS=2.2
M1    net089#2    in1#3 vdd!#5      vdd!#2      pmos L=0.6 W=9.6
+ AD=21.6   AS=13.44    PD=14.1     PS=12.4
M8    net4  in1#8 vdd!#6       vdd!#2      pmos L=0.6 W=4.8
+ AD=8.94   AS=7.695    PD=9.2      PS=8.7
M0    out1#4      in2#4 net089#4    vdd!#2      pmos L=0.6 W=9.6
+ AD=10.32  AS=14.88    PD=2.15     PS=12.7
M3    out1#4      in3#3 net43 vdd!#2      pmos L=0.6 W=9.6
+ AD=10.32  AS=10.56    PD=2.15     PS=2.2
M2    net43 net4#7      vdd!#1      vdd!#2      pmos L=0.6 W=9.6
+ AD=10.56  AS=25.44    PD=2.2      PS=14.9
```

```
*
*
*     RESISTOR AND CAP/DIODE CARDS
*
Re1   in1#3 in1#4   320.0016
Re2   in1#4 in1#1    27.6271
Re3   in1#4 in1#6   197.5015
Re4   in1#8 in1#9   426.9459
Re5   in1#9 in1#7     9.6000
Re6   in1#9 in1#10          266.9459
Re7   in2#4 in2#5   308.4531
Re8   in2#5 in2#2    20.4255
Re9   in2#5 in2#6   213.4531
Re10  in3#3 in3#2   294.6140
Re11  in3#2 in3#4   172.7959
Re12  net4#7        net4#6         301.6059
Re13  net4#6        net4#8         175.7406
Rc1   out1#1        out1#2          21.0496
Rc2   net16 net16#2         21.1387
Rc3   net089        net089#2       12.3944
Rc4   in1#7 in1#1    40.3692
Rc6   net4#2        net4#3          0.1936
Rc7   net4#3        net4#4         41.1144
Rc8   net4   net4#2          20.0000
Rc9   in2#1 in2#2    20.5000
Rc10  net089#3      net089#5        1.1700
Rc11  net089#5      net089#6     8.500E-02
Rc12  net089#6      net089#7        0.2550
Rc13  net089#7      net089#4      100.0850
Rc14  net089#4      net089#5       14.2857
Rc15  net089#4      net089#6       11.1111
Rc16  net089#4      net089#7      100.0000
Rc17  out1#4        out1#5         11.7171
Rc18  out1#5        out1#3          0.4378
Rc19  out1#3        out1#6         20.0470
Rc20  net16#3       net16#4        27.8579
```

```
Rc21  in3#1 in3#2   20.5000
Rc22  net4#5      net4#6       41.6281
Rc23  net16#5     net16#6      21.1364
Rc24  gnd!#1      gnd!#3       20.4314
Rc25  gnd!#3      gnd!#4     2.868E-02
Rc26  gnd!#4      gnd!  3.731E-02
Rc27  gnd!#4      gnd!#5       40.2197
Rc28  gnd!#2      gnd!#3        5.5556
Rc29  vdd!#1      vdd!#3       11.8688
Rc30  vdd!#3      vdd!#4     2.915E-02
Rc31  vdd!#4      vdd!  5.343E-02
Rc32  vdd!  vdd!#5        11.7265
Rc33  vdd!#4      vdd!#6       20.4183
Rc34  vdd!#2      vdd!#3        4.4444
Rb1   in1#1 in1      1.0000
Rb2   in2#1 in2#3    0.5000
Rb3   out1#3      out1#2       1.8379
Rb4   out1#5      out1     1.0000
Rb5   net089#3    net089       0.7158
Rb6   in3#1 in3      0.5000
Rb7   net4#5      net4#3       1.5569
Rb8   net16#5     net16#4      0.5140
Rb9   net16#4     net16    0.8743
Ra2   in2#3 in2    9.100E-03
*
*     CAPACITOR CARDS
*
*
C1    in1    vdd!  4.217E-16
C2    vdd!#5      in1#4 5.879E-17
C3    in2#5 gnd!#2      3.680E-16
C4    out1#2      net089#2    2.916E-17
C5    in3#4 gnd!#2      3.893E-16
C6    vdd!  in1#3 6.617E-17
C7    in3#1 net4#5      1.143E-17
C8    out1#2      in1#6 1.131E-17
```

C9	vdd!	gnd!#2	6.202E-17
C10	out1#2	net16#2	2.395E-17
C11	out1#4	vdd!#2	6.695E-17
C12	gnd!#1	net4#8	1.999E-16
C13	vdd!#6	in1#8	1.652E-16
C14	in2#6	gnd!#2	5.381E-16
C15	in2#3	net4#4	6.092E-17
C16	net089#2	vdd!	7.404E-17
C17	out1#5	net16#3	8.886E-17
C18	net4#3	in2#2	1.321E-17
C19	out1#1	in1#4	1.994E-17
C20	net16#4	out1#6	1.037E-16
C21	out1#6	gnd!#2	8.946E-17
C22	net089#3	out1#4	1.944E-16
C23	net4#3	vdd!#2	7.155E-17
C24	net16#4	in3#1	2.587E-17
C25	gnd!#1	in3#4	1.658E-16
C26	in1#7	net4#3	1.217E-17
C27	in1#10	gnd!#2	4.548E-16
C28	in1	out1#2	1.224E-16
C29	net089#3	net4#5	4.107E-17
C30	out1#5	in3#1	2.893E-16
C31	net16#4	net4#4	4.313E-17
C32	in1	gnd!#2	2.595E-16
C33	net16#3	in3#4	8.251E-17
C34	in3#3	net4#7	7.801E-18
C35	net089#2	in1#3	1.768E-16
C36	in1#6	gnd!#2	3.083E-16
C37	gnd!#5	net4#4	5.618E-17
C38	net16#4	out1#5	7.475E-18
C39	in2#4	in3#3	7.851E-18
C40	out1#3	net16#3	1.679E-17
C41	out1	net4#5	6.555E-17
C42	in1	vdd!#6	8.424E-17
C43	net4#4	gnd!#2	2.457E-16
C44	vdd!#5	in1#3	2.260E-16

C45	out1	in3#1	3.374E-17
C46	in1	gnd!#5	2.025E-17
C47	in1	net089#2	1.028E-16
C48	out1#6	net089#3	1.378E-17
C49	out1	net16#4	1.128E-16
C50	in1	vdd!#5	2.910E-16
C51	in1	out1#1	1.265E-16
C52	net16#3	in2#6	4.369E-17
C53	net4#6	gnd!#2	4.569E-16
C54	out1	net089#3	1.457E-16
C55	out1#2	gnd!#2	5.396E-17
C56	out1	in2#1	3.619E-17
C57	out1	net4#3	5.960E-17
C58	net4#6	vdd!#1	1.522E-16
C59	net16#4	out1#3	1.438E-16
C60	net089#3	out1#5	1.529E-16
C61	out1#6	in2#6	1.027E-16
C62	in3#2	gnd!#2	4.671E-16
C63	net4#3	out1#4	1.973E-17
C64	net16#3	gnd!#1	5.609E-17
C65	in2#1	net089#4	1.037E-17
C66	in2#3	out1	1.209E-15
C67	net4#4	net16#2	4.399E-18
C68	out1	gnd!#2	3.331E-17
C69	net089#2	vdd!#6	1.268E-16
C70	out1	vdd!#2	2.115E-16
C71	in2#2	gnd!#2	3.026E-16
C72	in2#1	out1#5	1.981E-16
C73	vdd!#4	in1#8	4.806E-17
C74	in2#1	out1#6	1.056E-16
C75	out1	gnd!#1	2.238E-16
C76	gnd!#1	net4#6	1.555E-17
C77	out1#3	net4#4	1.336E-16
C78	out1	net16#3	5.783E-17
C79	in2#1	net089#3	1.401E-16
C80	net4#4	in1#10	9.205E-17

C81	in1#7	gnd!#2	2.911E-16
C82	in2#3	gnd!#2	4.213E-16
C83	net089#3	net4#3	6.289E-16
C84	gnd!#1	in3#2	4.023E-17
C85	out1#3	in2#1	6.549E-17
C86	net4#4	in2#1	1.255E-16
C87	gnd!#5	in1#10	7.339E-17
C88	out1#3	gnd!#5	4.044E-17
C89	out1#5	in3#3	9.171E-18
C90	net16#5	gnd!#2	1.020E-17
C91	net089#3	in2#4	2.251E-16
C92	net4#3	in2#1	4.531E-17
C93	in2#3	vdd!#2	3.660E-16
C94	net16#5	net4#8	4.344E-17
C95	net16#5	vdd!#1	1.228E-17
C96	in2#3	in1#9	4.546E-17
C97	vdd!#6	net4#3	1.821E-16
C98	out1#6	net16#3	4.907E-17
C99	vdd!#1	gnd!#2	1.432E-16
C100	in3#2	net4#6	9.610E-17
C101	in1#4	gnd!#2	3.174E-16
C102	net4#5	vdd!#1	4.326E-16
C103	in2#3	net16#4	1.254E-16
C104	net16#3	in2#5	6.826E-18
C105	net4#3	in1#8	1.855E-16
C106	out1#6	in2#2	3.113E-17
C107	out1#1	in1#6	9.727E-17
C108	vdd!#1	net4#7	2.043E-16
C109	in3#1	gnd!#2	1.208E-17
C110	vdd!#5	net089#2	1.944E-16
C111	net16#4	in3#4	3.917E-17
C112	net089#2	net4#3	2.621E-17
C113	net4#3	in1#3	4.214E-17
C114	in2#3	out1#5	3.891E-17
C115	net089#3	in1#9	3.338E-17
C116	net16#4	in2#6	3.156E-17

C117 net4#4 in2#2 3.252E-17
C118 net4#4 in1#9 1.484E-16
C119 vdd!#1 in3#3 6.208E-17
C120 net16#4 gnd!#2 1.919E-16
C121 net16#5 gnd!#1 3.397E-16
C122 net16#5 net4#6 5.068E-18
C123 in2#3 net089#3 2.601E-16
C124 in1#9 gnd!#2 4.508E-16
C125 in2#3 out1#4 2.963E-17
C126 out1#5 gnd!#2 1.164E-16
C127 out1#5 in2#5 2.200E-16
C128 out1#3 in2#6 9.782E-18
C129 in1#7 net4#4 4.642E-17
C130 vdd!#2 in2#4 6.617E-17
C131 out1#4 in3#3 1.854E-16
C132 in3#1 net4#6 8.790E-17
C133 gnd!#4 in1#10 5.363E-17
C134 in2#3 out1#3 1.311E-16
C135 net089#2 in1#4 4.984E-17
C136 net4#5 out1#4 1.487E-16
C137 out1#6 in2#5 3.468E-17
C138 out1#3 in1#10 3.056E-17
C139 in2#3 net16#3 9.490E-18
C140 in3#1 gnd!#1 1.563E-17
C141 vdd!#2 in1#8 3.915E-17
C142 out1#4 in2#4 1.119E-16
C143 net089#3 in2#5 9.828E-17
C144 in2#1 in1#9 2.481E-17
C145 in1#7 net089#2 2.382E-17
C146 net4#4 out1#6 9.594E-17
C147 in2#3 net089#4 7.294E-17
C148 out1#3 gnd!#2 7.813E-17
C149 out1#5 in3#2 1.212E-16
C150 net16#4 gnd!#1 3.330E-16
C151 in2#3 net4#3 2.274E-16
C152 net089#3 vdd!#2 6.532E-17

```
C153  net089#3   in3#2   4.383E-18
C154  net4#8     gnd!#2  3.588E-16
C155  out1#2     gnd!#5  1.695E-17
C156  in2#3 out1#6       5.448E-17
C157  in2#1 gnd!#2       2.984E-17
C158  net4#3     in1#9   1.488E-16
C159  net089#3   in2#2   2.400E-17
C160  net16 net4#4       5.863E-17
C161  in3   gnd!#1       4.155E-16
C162  gnd!#1     net43   2.910E-17
C163  net089     net16#2 2.231E-17
C164  in3   out1#4       4.082E-17
C165  net16 in1#1 3.357E-17
C166  out1#4     net43   1.367E-16
C167  in1#1 net089#2     6.641E-17
C168  net16 in1#10       9.338E-18
C169  in3   net16#3      2.292E-17
C170  net089     in1#1   2.246E-17
C171  net089     vdd!#5  2.013E-17
C172  in1#1 vdd!#5       1.199E-16
C173  net16 gnd!#5       1.794E-16
C174  out1#2     net16   3.226E-16
C175  out1#2     in1#1   3.631E-17
C176  in3   net4#5       1.436E-16
C177  net16 in1#6 1.054E-16
C178  net089     in1#7   1.162E-16
C179  in1   net16 9.724E-17
C180  net4#5     net43   4.797E-16
C181  in3   net16#4      1.368E-16
C182  net43 net4#7       1.364E-16
C183  net089     in1#4   8.058E-18
C184  net43 vdd!#1       1.490E-16
C185  in3   out1#5       4.062E-17
C186  in1   net089       6.258E-17
C187  in3#1 net43 3.594E-17
C188  out1  in3   1.500E-15
```

C189	net43	in3#3	1.594E-16
C190	net16	out1#3	1.217E-16
C191	in3	gnd!#2	5.175E-17
C192	in3	net089#3	4.289E-17
C193	net089	vdd!#6	3.625E-17
C194	net16	gnd!#4	6.832E-17
C195	out1#1	net16	1.117E-16
C196	in3	vdd!#1	3.407E-16
C197	net4#6	net43	1.464E-16
C198	in3	net43	3.467E-16
C199	net16	in1#7	9.455E-18
C200	out1#1	in1#1	9.950E-17
C201	net089	in1#9	1.957E-17
C202	net16	in1#4	2.346E-17
C203	in3	net4#6	5.128E-17
C204	out1#5	net43	3.753E-17
C205	net16	gnd!#2	6.757E-17
C206	net43	in3#2	7.311E-17
C207	out1	net43	2.381E-17
C208	in3	net16#6	7.108E-17
C209	in1#1	gnd!#2	4.125E-16
C210	net089#3	net43	1.872E-17
C211	in1#9	in2#2	4.337E-18
C212	in2#3	in1#8	6.743E-18
C213	out1#3	in1#7	8.567E-18
C214	in2#6	in3#4	5.470E-18
C215	in2#5	in3#2	6.131E-18
C216	out1#4	in2#5	4.191E-18
C217	net4#5	in3#2	3.729E-18
C218	in3	net4#8	5.763E-18
C219	out1#5	net4#6	4.924E-18
C220	vdd!	gnd!	1.514E-15
C221	in1	gnd!	7.912E-16
C222	in3	gnd!	7.151E-17
C223	out1	gnd!	3.420E-17
C224	net16	gnd!	1.710E-16

C225	net089	gnd!	1.523E-16
C226	net4#7	gnd!	6.350E-16
C227	in3#3	gnd!	6.354E-16
C228	in2#4	gnd!	7.647E-16
C229	in1#8	gnd!	6.770E-16
C230	in1#3	gnd!	5.711E-16
C231	net4#8	gnd!	2.291E-18
C232	in3#4	gnd!	2.921E-18
C233	in2#6	gnd!	1.211E-18
C234	in1#10	gnd!	1.630E-18
C235	in1#6	gnd!	7.960E-17
C236	net4#6	gnd!	4.920E-16
C237	in3#2	gnd!	4.124E-16
C238	in2#2	gnd!	3.316E-16
C239	in1#7	gnd!	3.698E-16
C240	net4#5	gnd!	5.875E-18
C241	in3#1	gnd!	1.160E-17
C242	out1#5	gnd!	5.465E-17
C243	net089#3	gnd!	7.618E-17
C244	out1#3	gnd!	4.664E-18
C245	in2#1	gnd!	2.408E-17
C246	net4#3	gnd!	2.373E-16
C247	in1#1	gnd!	3.481E-16
C248	out1#2	gnd!	8.478E-18
C249	in2#3	gnd!	1.030E-16
C250	vdd!#1	gnd!	4.092E-15
C251	vdd!#2	gnd!	1.181E-15
C252	out1#4	gnd!	1.150E-19
C253	net16#3	gnd!	2.314E-18
C254	net089#4	gnd!	1.336E-18
C255	out1#6	gnd!	1.133E-18
C256	net4#4	gnd!	3.130E-17
C257	vdd!#6	gnd!	1.873E-17
C258	vdd!#5	gnd!	7.781E-17
C259	out1#1	gnd!	9.117E-17
C260	in1#4	gnd!	3.215E-16

```
C261  in1#9 gnd!   5.471E-16
C262  in2#5 gnd!   4.853E-16
C263  vdd!#4       gnd!   5.686E-16
*
*
.ENDS zxw_mux2to1
*
```