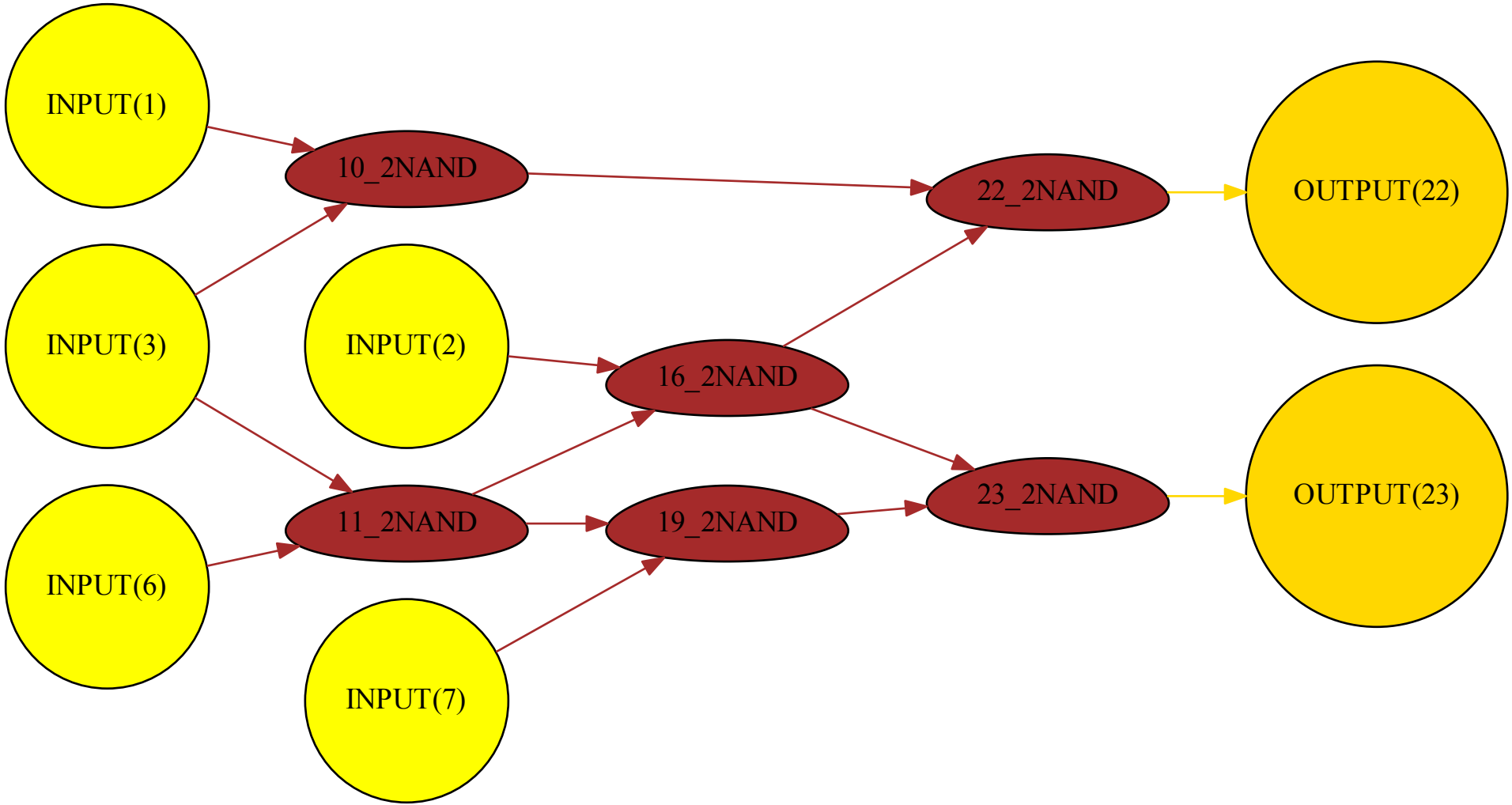
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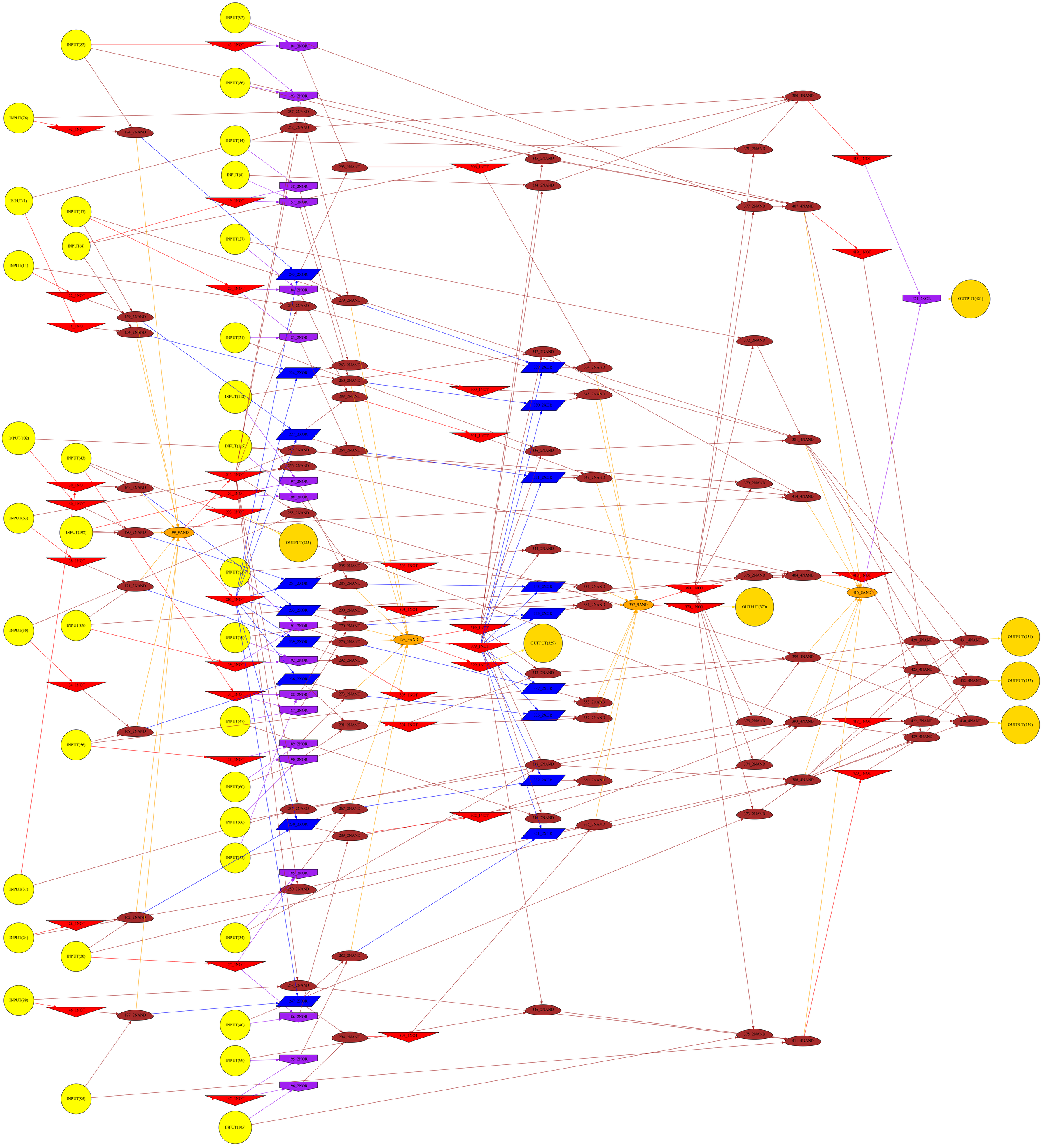
INPUT(2)
INPUT(7)
10_2NAND
11_2NAND
16_2NAND
19_2NAND
22_2NAND
23_2NAND
OUTPUT(22)
OUTPUT(23)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143_1NOT
194_2NOR
INPUT(86)
193_2NOR
INPUT(76)
257_2NAND
142_1NOT
174_2NAND
242_2NAND
INPUT(14)
380_4NAND
371_2NAND
345_2NAND
415_1NOT
293_2NAND
306_1NOT
INPUT(8)
158_2NOR
334_2NAND
INPUT(1)
119_1NOT
157_2NOR
377_2NAND
407_4NAND
INPUT(17)
INPUT(4)
INPUT(27)
419_1NOT
INPUT(11)
243_2XOR
123_1NOT
184_2NOR
279_2NAND
421_2NOR
OUTPUT(421)
122_1NOT
246_2NAND
159_2NAND
118_1NOT
154_2NAND
INPUT(21)
183_2NOR
372_2NAND
347_2NAND
263_2NAND
339_2XOR
354_2NAND
224_2XOR
260_2NAND
300_1NOT
INPUT(112)
288_2NAND
348_2NAND
330_2XOR
INPUT(102)
227_2XOR
301_1NOT
381_4NAND
INPUT(43)
INPUT(185)
259_2NAND
264_2NAND
336_2NAND
256_2NAND
213_1NOT
197_2NOR
331_2XOR
349_2NAND
379_2NAND
130_1NOT
165_2NAND
151_1NOT
198_2NOR
414_4NAND
159_1NOT
INPUT(63)
223_1NOT
255_2NAND
INPUT(108)
180_2NAND
199_9AND
OUTPUT(223)
344_2NAND
138_1NOT
295_2NAND
308_1NOT
INPUT(73)
376_2NAND
404_4NAND
418_1NOT
171_2NAND
251_2XOR
285_2NAND
343_2XOR
356_2NAND
360_1NOT
416_8AND
203_1NOT
351_2NAND
357_9AND
370_1NOT
OUTPUT(370)
INPUT(50)
INPUT(69)
233_2XOR
290_2NAND
303_1NOT
332_2XOR
191_2NOR
270_2NAND
319_1NOT
INPUT(79)
239_2XOR
276_2NAND
296_9AND
309_1NOT
OUTPUT(329)
428_3NAND
431_4NAND
OUTPUT(431)
139_1NOT
192_2NOR
292_2NAND
329_1NOT
399_4NAND
425_4NAND
342_2NAND
134_1NOT
236_2XOR
337_2XOR
432_4NAND
OUTPUT(432)
131_1NOT
188_2NOR
273_2NAND
305_1NOT
353_2NAND
187_2NOR
335_2XOR
INPUT(47)
291_2NAND
304_1NOT
352_2NAND
375_2NAND
393_4NAND
417_1NOT
422_2NAND
430_4NAND
OUTPUT(430)
168_2NAND
INPUT(56)
189_2NOR
429_4NAND
135_1NOT
190_2NOR
238_2NAND
374_2NAND
420_1NOT
INPUT(60)
332_2XOR
350_2NAND
386_4NAND
254_2NAND
267_2NAND
302_1NOT
340_2NAND
373_2NAND
INPUT(66)
230_2XOR
355_2NAND
289_2NAND
341_2XOR
INPUT(185)
185_2NOR
INPUT(37)
250_2NAND
162_2NAND
126_1NOT
INPUT(24)
INPUT(34)
INPUT(30)
282_2NAND
127_1NOT
258_2NAND
INPUT(89)
247_2XOR
146_1NOT
177_2NAND
346_2NAND
INPUT(40)
186_2NOR
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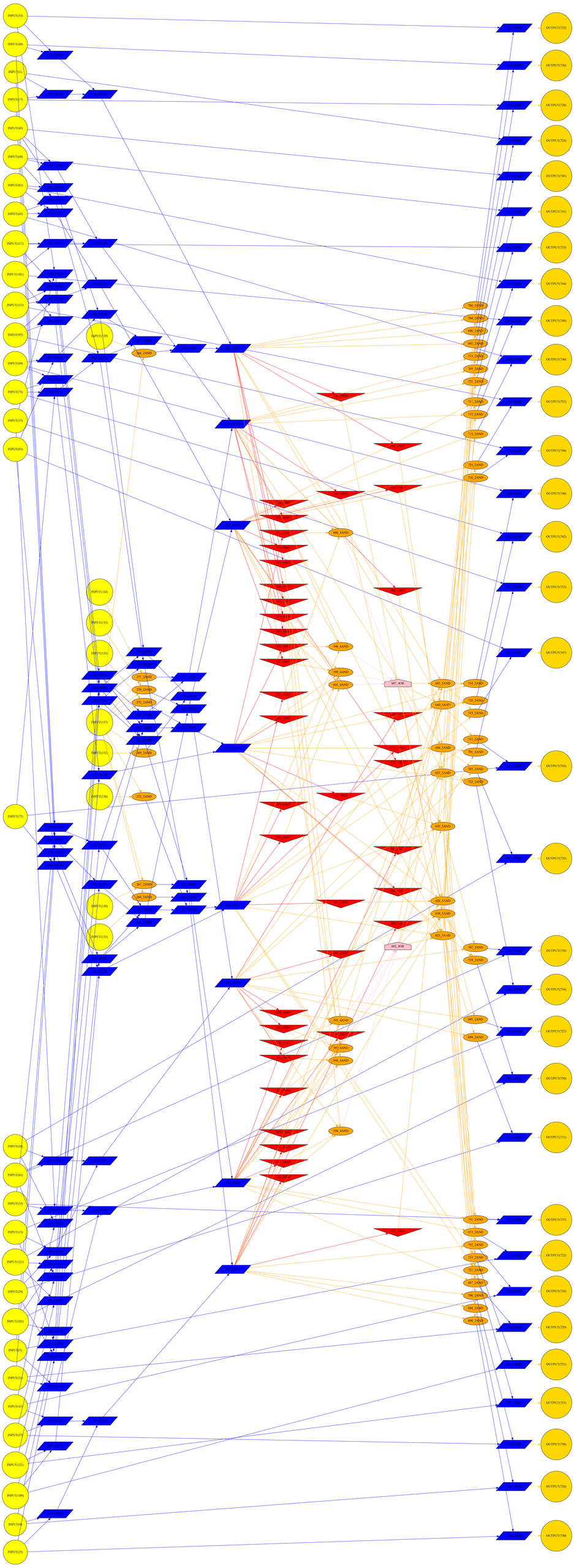
INPUT(99)
195_2NOR
196_2NOR
INPUT(95)
147_1NOT
INPUT(105)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INPUT(101)
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INPUT(89)
INPUT(73)
INPUT(37)
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INPUT(129)
INPUT(134)
INPUT(133)
INPUT(135)
INPUT(137)
INPUT(132)
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INPUT(130)
INPUT(131)
INPUT(145)
INPUT(161)
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INPUT(121)
INPUT(29)
INPUT(105)
INPUT(93)
INPUT(125)
INPUT(61)
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INPUT(109)
INPUT(9)
INPUT(25)
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OUTPUT(756)
OUTPUT(728)
OUTPUT(724)
OUTPUT(745)
OUTPUT(741)
OUTPUT(753)
OUTPUT(744)
OUTPUT(749)
OUTPUT(740)
OUTPUT(748)
OUTPUT(746)
OUTPUT(742)
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OUTPUT(751)
OUTPUT(757)
OUTPUT(725)
OUTPUT(734)
OUTPUT(729)
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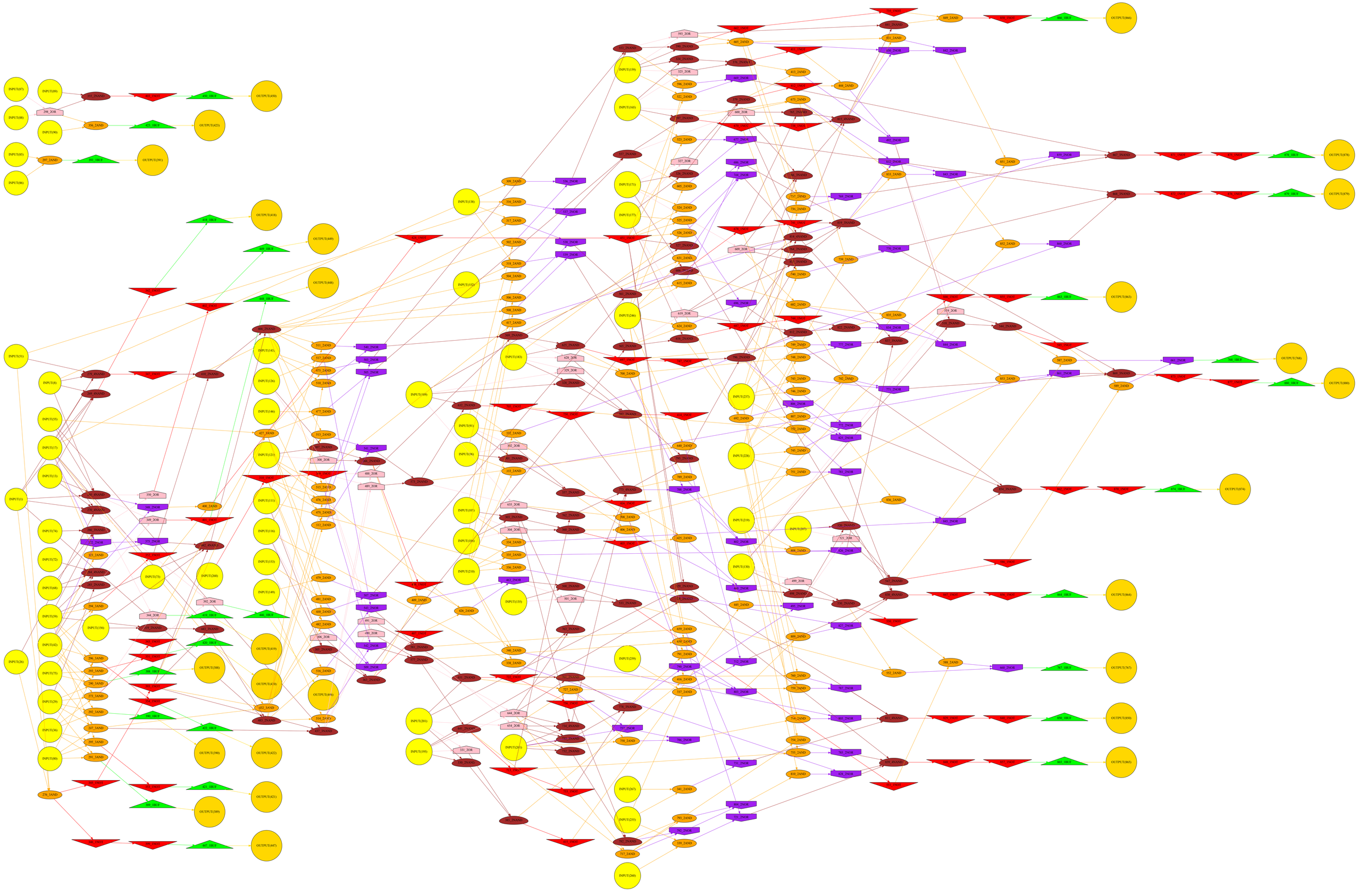
OUTPUT(755)
OUTPUT(738)
OUTPUT(726)
OUTPUT(750)
607_AOR
602_AOR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OUTPUT(450)
OUTPUT(423)
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OUTPUT(418)
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OUTPUT(866)
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OUTPUT(874)
OUTPUT(864)
OUTPUT(767)
OUTPUT(858)
OUTPUT(865)
OUTPUT(419)
OUTPUT(388)
OUTPUT(430)
OUTPUT(466)
OUTPUT(390)
OUTPUT(422)
OUTPUT(421)
OUTPUT(389)
OUTPUT(447)
INPUT(51)
INPUT(8)
INPUT(55)
INPUT(17)
INPUT(13)
INPUT(1)
INPUT(74)
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INPUT(62)
INPUT(75)
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INPUT(80)
INPUT(26)
INPUT(145)
INPUT(126)
INPUT(146)
INPUT(121)
INPUT(111)
INPUT(116)
INPUT(153)
INPUT(149)
INPUT(73)
INPUT(266)
INPUT(156)
INPUT(138)
INPUT(152)
INPUT(189)
INPUT(183)
INPUT(91)
INPUT(96)
INPUT(107)
INPUT(106)
INPUT(210)
INPUT(135)
INPUT(201)
INPUT(195)
INPUT(159)
INPUT(165)
INPUT(171)
INPUT(177)
INPUT(246)
INPUT(237)
INPUT(228)
INPUT(219)
INPUT(207)
INPUT(130)
INPUT(259)
INPUT(253)
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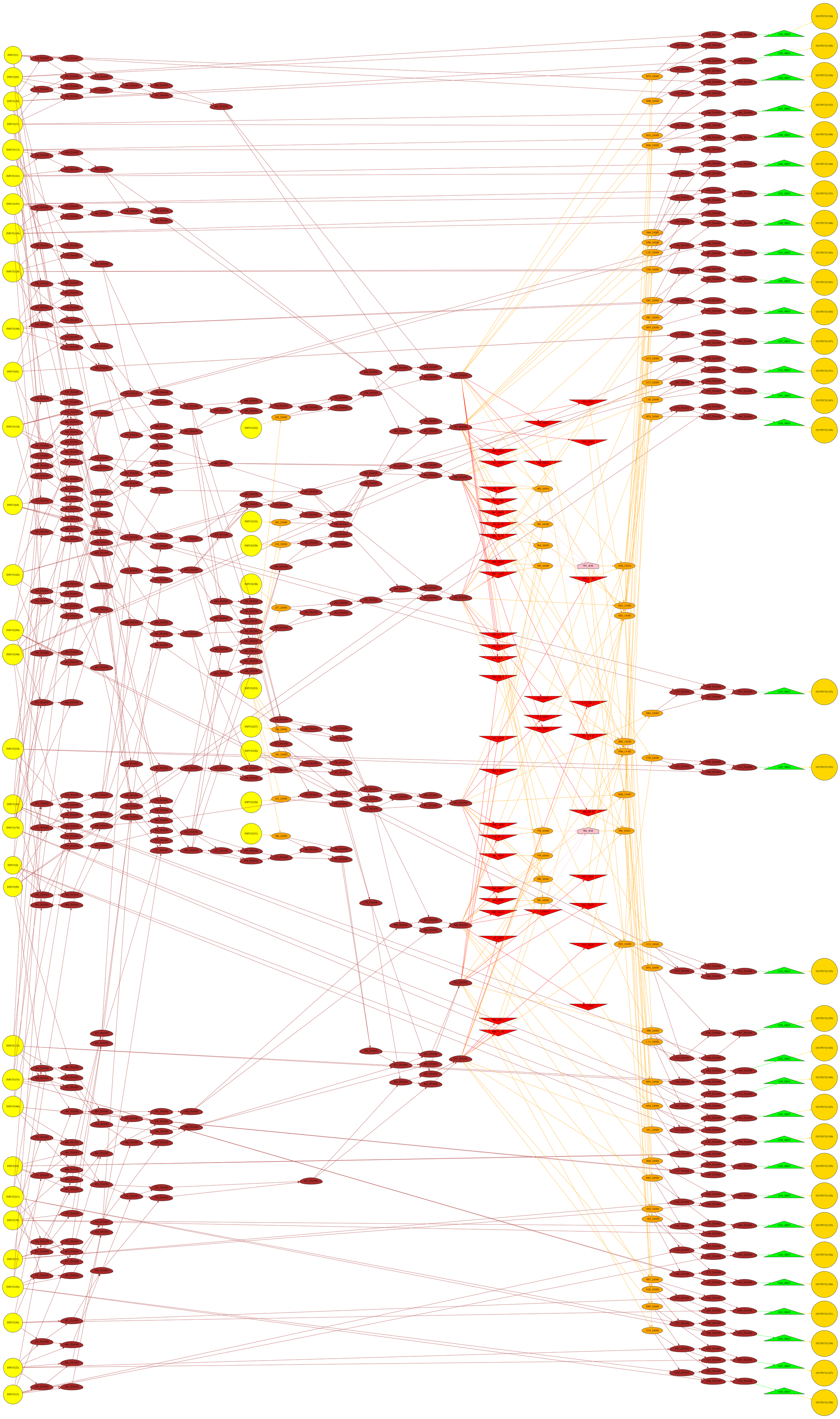
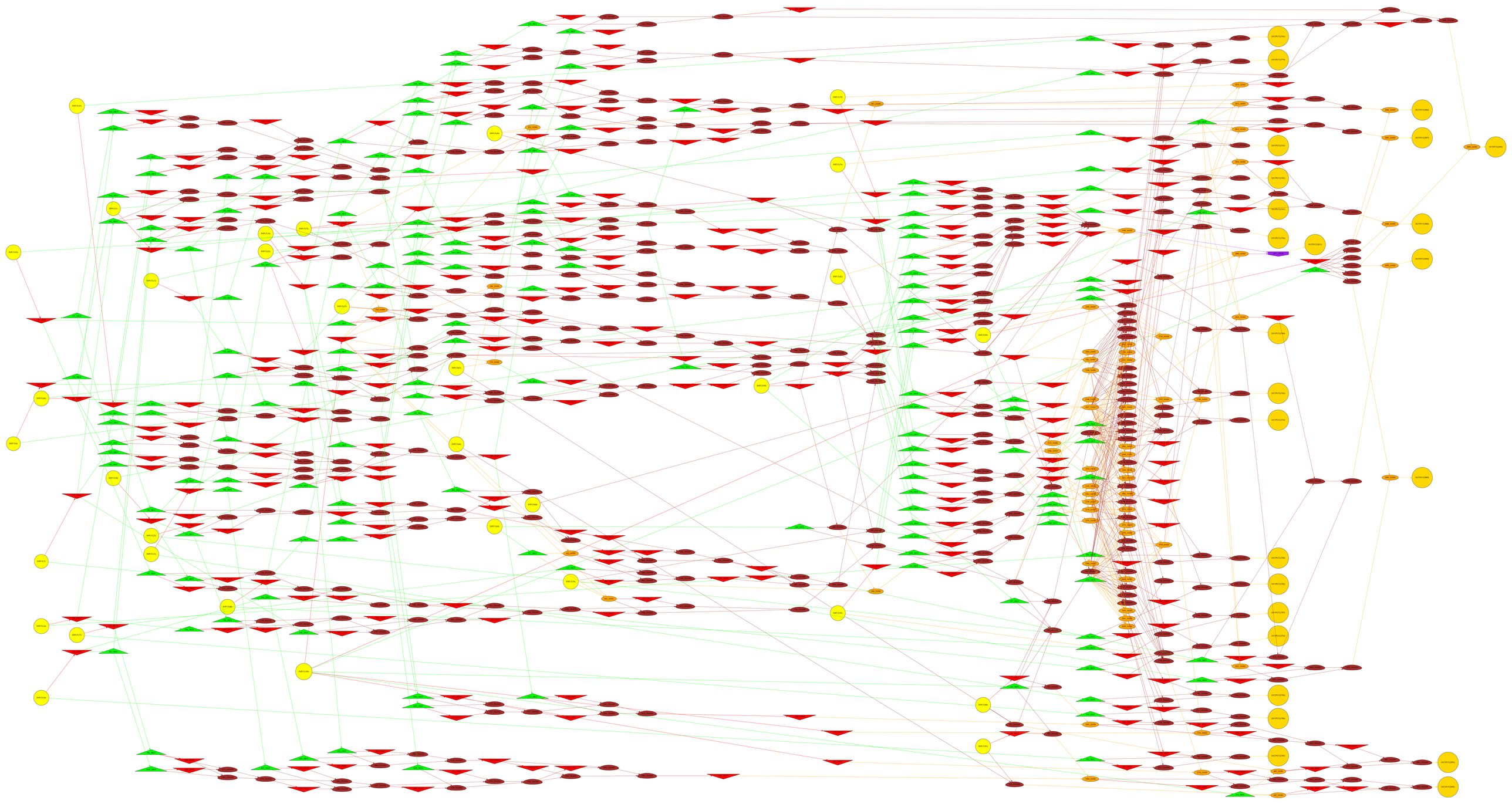
INPUT(260)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INPUT(92)
INPUT(134)
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INPUT(211)
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