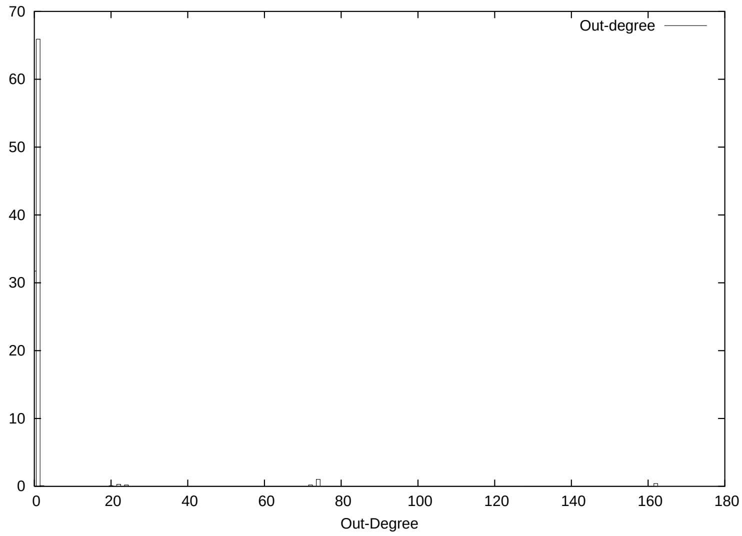
Graph: murphi/ns

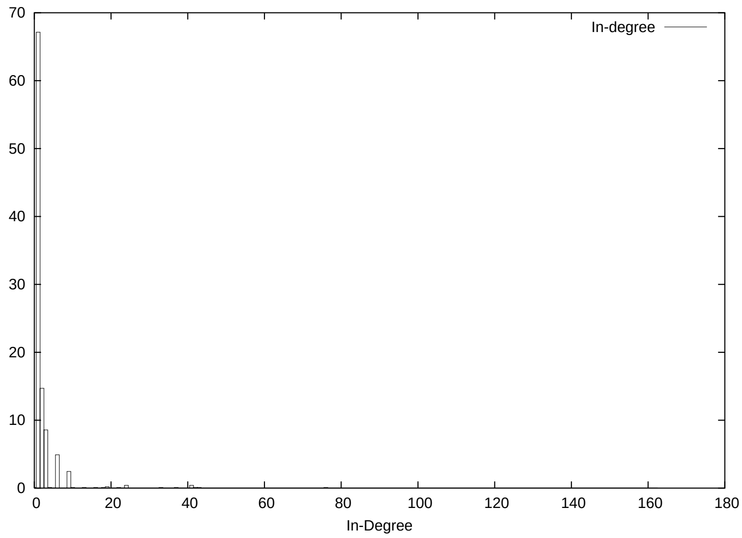
General Info

Example title	Needham-Schroeder protocol
Parameter	
Reduction	
Modification	
States	980
Edges	2,314
Average degree	2.3

Out-Degrees distribution:



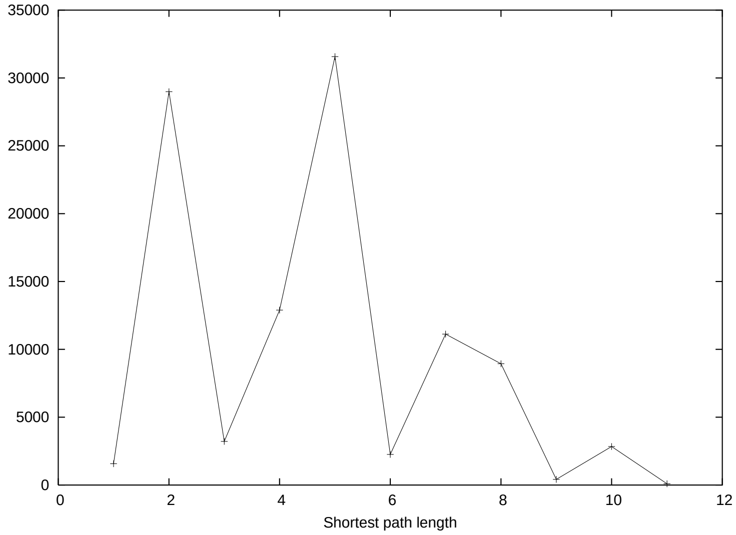
In-Degrees distribution:



Shortest Paths Info

Diameter: 11
Average shortest path length: 4.56879

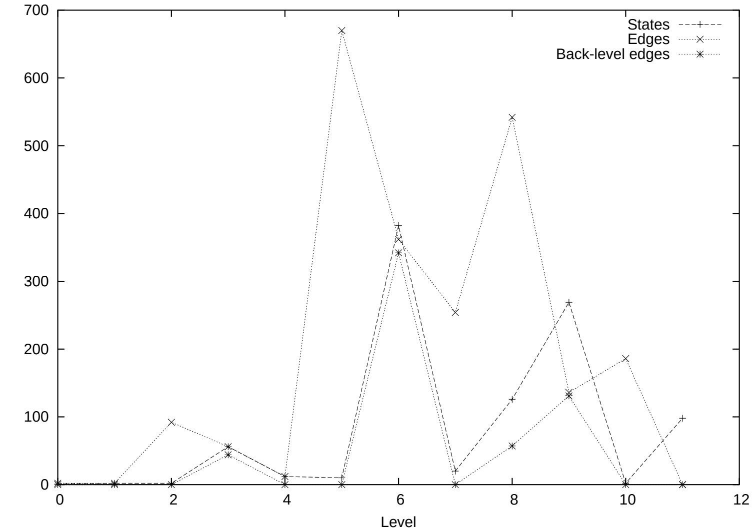
Shortest paths lengths frequencies:



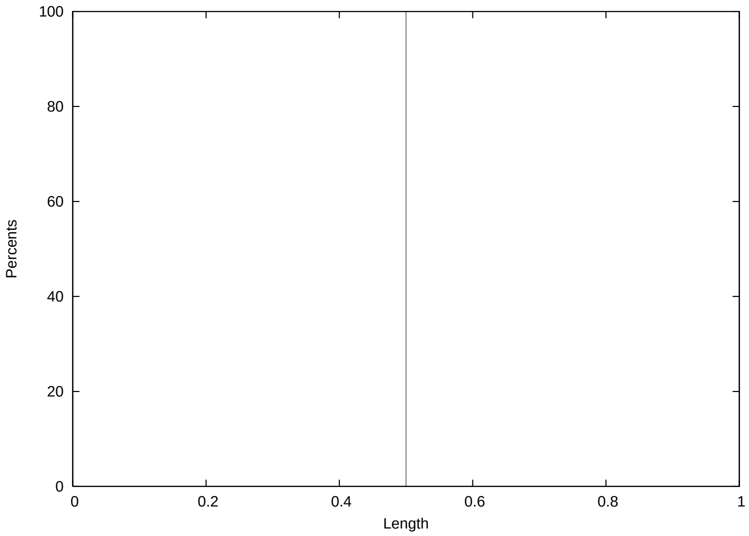
BFS Info

BFS height	11
BFS width	382 (38.9%)
Back level edges	574 (24.8%)

BFS level info:



Back level edges lengths:



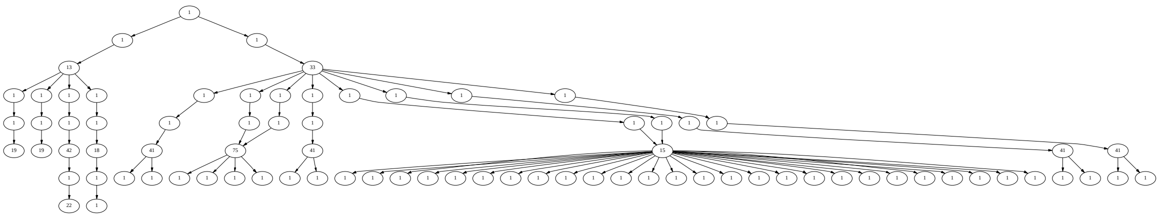
SCC Info

SCC components	406
SCC quetient height	11
SCC quetient nontrivial height	6
Number of terminal components	313
The largest component is	intermediate

Statistics according to **sizes**:

Size	Number of components	Number of states here
75	1	7.6%
42	1	4.2%
41	4	16.7%
39	1	3.9%
37	1	3.7%
33	1	3.3%
22	5	11.2%
19	2	3.8%
18	1	1.8%
15	1	1.5%
13	1	1.3%
10	1	1%
1	386	39.3%

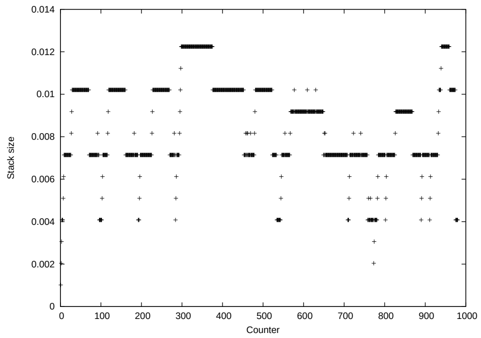
SCC component graph (part):



DFS Info

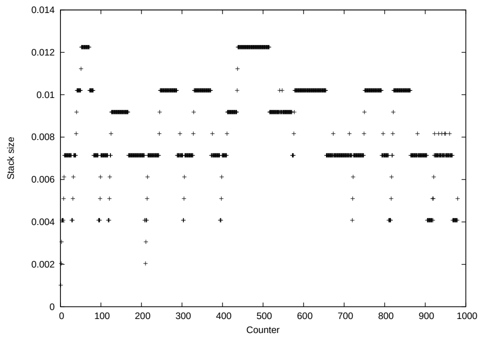
Run 0

front-edges : back-edges : cross-edges = 979 : 574 : 761 = 42.3%:24.8%:32.8%
Max. stack size: 12 (1.2%)
Shortest cycle detected: 2
Most often detected lengths of cycles: 2 (574), (), (), (), ()
Stack graph:



Run 1

front-edges : back-edges : cross-edges = 979 : 574 : 761 = 42.3%:24.8%:32.8%
Max. stack size: 12 (1.2%)
Shortest cycle detected: 2
Most often detected lengths of cycles: 2 (574), (), (), (), ()
Stack graph:



Local Structure

Short cycles(up to 6)

2	594	(60.6%)

Diamonds

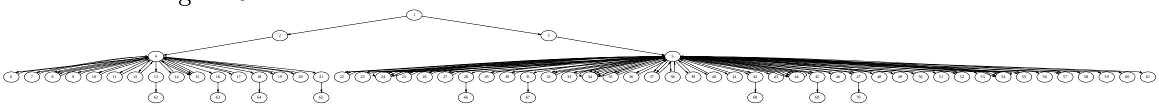
20 (2%)

Neighborhoods

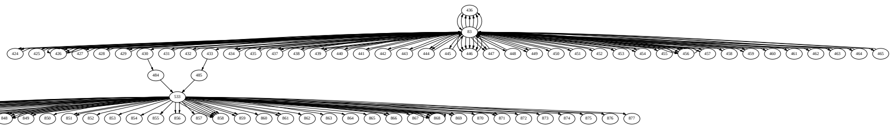
k	avg size	avg clustering
1	2.6	1
2	32.1	1.5
3	35.4	1.8
4	48.6	1.8

Visualization of some parts of the state state space:

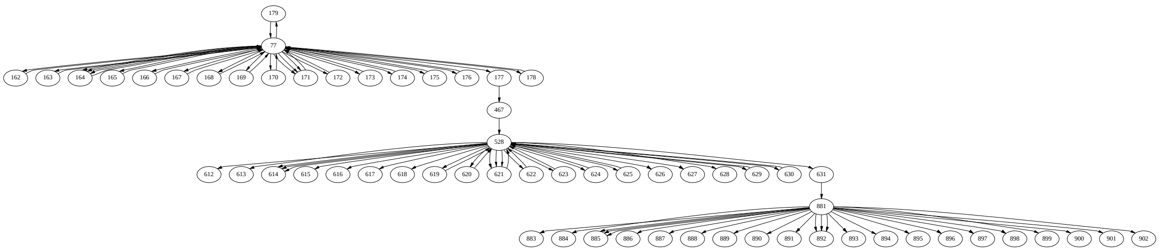
Initial walk length: 0



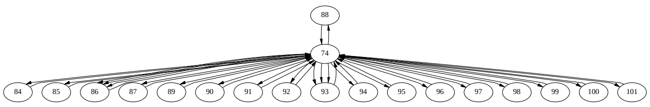
Initial walk length: 20



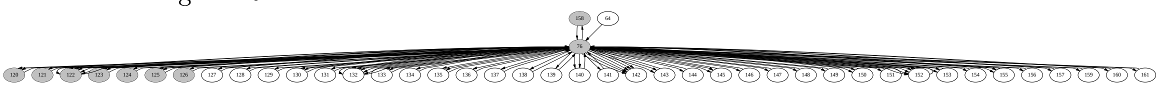
Initial walk length: 40



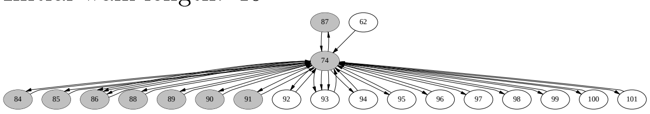
Initial walk length: 60



Initial walk length: 20



Initial walk length: 40



Initial walk length: 60