Parsing...  
Parsing: [0.010s CPU, 0.026s wall-clock]  
Normalizing task... [0.010s CPU, 0.002s wall-clock]  
Instantiating...  
Generating Datalog program... [0.000s CPU, 0.002s wall-clock]  
Normalizing Datalog program...  
Normalizing Datalog program: [0.020s CPU, 0.020s wall-clock]  
Preparing model... [0.010s CPU, 0.008s wall-clock]  
Generated 143 rules.  
Computing model... [0.010s CPU, 0.016s wall-clock]  
232 relevant atoms  
384 auxiliary atoms  
616 final queue length  
675 total queue pushes  
Completing instantiation... [0.010s CPU, 0.007s wall-clock]  
Instantiating: [0.050s CPU, 0.053s wall-clock]  
Computing fact groups...  
Finding invariants...  
36 initial candidates  
Finding invariants: [0.030s CPU, 0.030s wall-clock]  
Checking invariant weight... [0.000s CPU, 0.000s wall-clock]  
Instantiating groups... [0.000s CPU, 0.001s wall-clock]  
Collecting mutex groups... [0.000s CPU, 0.000s wall-clock]  
Choosing groups...  
33 uncovered facts  
Choosing groups: [0.000s CPU, 0.000s wall-clock]  
Building translation key... [0.000s CPU, 0.001s wall-clock]  
Computing fact groups: [0.030s CPU, 0.034s wall-clock]  
Building STRIPS to SAS dictionary... [0.000s CPU, 0.000s wall-clock]  
Building dictionary for full mutex groups... [0.000s CPU, 0.000s wall-clock]  
Building mutex information...  
Building mutex information: [0.000s CPU, 0.000s wall-clock]  
Translating task...  
Processing axioms...  
Simplifying axioms... [0.000s CPU, 0.001s wall-clock]  
Processing axioms: [0.000s CPU, 0.003s wall-clock]  
Translating task: [0.000s CPU, 0.009s wall-clock]  
2 effect conditions simplified  
0 implied preconditions added  
Detecting unreachable propositions...  
0 operators removed  
0 axioms removed  
16 propositions removed  
Detecting unreachable propositions: [0.000s CPU, 0.003s wall-clock]  
Reordering and filtering variables...  
37 of 37 variables necessary.  
0 of 8 mutex groups necessary.  
34 of 34 operators necessary.  
33 of 33 axiom rules necessary.  
Reordering and filtering variables: [0.010s CPU, 0.002s wall-clock]  
Translator variables: 37  
Translator derived variables: 21  
Translator facts: 96  
Translator goal facts: 2  
Translator mutex groups: 0  
Translator total mutex groups size: 0  
Translator operators: 34  
Translator axioms: 33  
Translator task size: 444  
Translator peak memory: 28260 KB  
Writing output... [0.000s CPU, 0.002s wall-clock]  
Done! [0.120s CPU, 0.132s wall-clock]  
INFO     Running search (release32).  
INFO     search input: output.sas  
INFO     search arguments: ['--if-unit-cost', '--heuristic',  
'hlm=lama\_synergy(lm\_rhw(reasonable\_orders=true))', '--heuristic',  
'hff=ff\_synergy(hlm)', '--search',  
'iterated([lazy\_greedy([hff,hlm],preferred=[hff,hlm]),lazy\_wastar([hff,hlm],preferred=[hff,hlm],w=5),lazy\_wastar([hff,hlm],preferred=[hff,hlm],w=3),lazy\_wastar([hff,hlm],preferred=[hff,hlm],w=2),lazy\_wastar([hff,hlm],preferred=[hff,hlm],w=1)],repeat\_last=true,continue\_on\_fail=true)',  
'--if-non-unit-cost', '--heuristic',  
'hlm1=lama\_synergy(lm\_rhw(reasonable\_orders=true,lm\_cost\_type=one),transform=adapt\_costs(one))',  
'--heuristic', 'hff1=ff\_synergy(hlm1)', '--heuristic',  
'hlm2=lama\_synergy(lm\_rhw(reasonable\_orders=true,lm\_cost\_type=plusone),transform=adapt\_costs(plusone))',  
'--heuristic', 'hff2=ff\_synergy(hlm2)', '--search',  
'iterated([lazy\_greedy([hff1,hlm1],preferred=[hff1,hlm1],cost\_type=one,reopen\_closed=false),lazy\_greedy([hff2,hlm2],preferred=[hff2,hlm2],reopen\_closed=false),lazy\_wastar([hff2,hlm2],preferred=[hff2,hlm2],w=5),lazy\_wastar([hff2,hlm2],preferred=[hff2,hlm2],w=3),lazy\_wastar([hff2,hlm2],preferred=[hff2,hlm2],w=2),lazy\_wastar([hff2,hlm2],preferred=[hff2,hlm2],w=1)],repeat\_last=true,continue\_on\_fail=true)',  
'--always']  
INFO     search time limit: None  
INFO     search memory limit: None  
INFO     search executable: /home/akshay/downward/builds/release32/bin/downward  
INFO     callstring:  
/home/akshay/downward/builds/release32/bin/downward --if-unit-cost  
--heuristic 'hlm=lama\_synergy(lm\_rhw(reasonable\_orders=true))'  
--heuristic 'hff=ff\_synergy(hlm)' --search  
'iterated([lazy\_greedy([hff,hlm],preferred=[hff,hlm]),lazy\_wastar([hff,hlm],preferred=[hff,hlm],w=5),lazy\_wastar([hff,hlm],preferred=[hff,hlm],w=3),lazy\_wastar([hff,hlm],preferred=[hff,hlm],w=2),lazy\_wastar([hff,hlm],preferred=[hff,hlm],w=1)],repeat\_last=true,continue\_on\_fail=true)'  
--if-non-unit-cost --heuristic  
'hlm1=lama\_synergy(lm\_rhw(reasonable\_orders=true,lm\_cost\_type=one),transform=adapt\_costs(one))'  
--heuristic 'hff1=ff\_synergy(hlm1)' --heuristic  
'hlm2=lama\_synergy(lm\_rhw(reasonable\_orders=true,lm\_cost\_type=plusone),transform=adapt\_costs(plusone))'  
--heuristic 'hff2=ff\_synergy(hlm2)' --search  
'iterated([lazy\_greedy([hff1,hlm1],preferred=[hff1,hlm1],cost\_type=one,reopen\_closed=false),lazy\_greedy([hff2,hlm2],preferred=[hff2,hlm2],reopen\_closed=false),lazy\_wastar([hff2,hlm2],preferred=[hff2,hlm2],w=5),lazy\_wastar([hff2,hlm2],preferred=[hff2,hlm2],w=3),lazy\_wastar([hff2,hlm2],preferred=[hff2,hlm2],w=2),lazy\_wastar([hff2,hlm2],preferred=[hff2,hlm2],w=1)],repeat\_last=true,continue\_on\_fail=true)'  
--always --internal-plan-file sas\_plan < output.sas  
reading input... [t=3.6039e-05s]  
done reading input! [t=0.00135635s]  
packing state variables...done! [t=0.00141126s]  
Variables: 37  
FactPairs: 96  
Bytes per state: 8  
Building successor generator...done! [t=0.00154306s]  
peak memory difference for root successor generator creation: 0 KB  
time for root successor generation creation: 6.5981e-05s  
done initializing global data [t=0.00162967s]  
Initializing Exploration...  
Initializing landmarks count heuristic...  
Generating landmarks using the RPG/SAS+ approach  
approx. reasonable orders  
approx. obedient reasonable orders  
Removed 0 reasonable or obedient reasonable orders  
Landmarks generation time: 0.000472779s  
Discovered 4 landmarks, of which 0 are disjunctive and 0 are conjunctive  
2 edges  
Initializing LAMA-FF synergy master  
Initializing LAMA-FF synergy slave  
Starting search: lazy\_greedy(list(hff, hlm), preferred = list(hff, hlm))  
Conducting lazy best first search, (real) bound = 2147483647  
2 initial landmarks, 2 goal landmarks  
New best heuristic value for lama\_synergy(lm\_rhw(reasonable\_orders = true)): 0  
New best heuristic value for ff\_synergy(hlm): 6  
[g=0, 1 evaluated, 0 expanded, t=0.003373s, 4472 KB]  
Initial heuristic value for lama\_synergy(lm\_rhw(reasonable\_orders = true)): 0  
Initial heuristic value for ff\_synergy(hlm): 6  
New best heuristic value for ff\_synergy(hlm): 5  
[g=1, 2 evaluated, 1 expanded, t=0.00345803s, 4472 KB]  
New best heuristic value for ff\_synergy(hlm): 4  
[g=2, 3 evaluated, 2 expanded, t=0.00355375s, 4472 KB]  
New best heuristic value for ff\_synergy(hlm): 3  
[g=9, 31 evaluated, 30 expanded, t=0.00419263s, 4472 KB]  
New best heuristic value for ff\_synergy(hlm): 2  
[g=10, 32 evaluated, 31 expanded, t=0.00426237s, 4472 KB]  
New best heuristic value for ff\_synergy(hlm): 1  
[g=17, 111 evaluated, 110 expanded, t=0.00581555s, 4472 KB]  
Solution found!  
Actual search time: 0.00254249s [t=0.00587504s]  
activate-trans philosopher-0 philosopher forks--pid-wfork state-1 state-6 (1)  
activate-trans philosopher-1 philosopher forks--pid-wfork state-1 state-6 (1)  
queue-write philosopher-1 forks--pid-wfork forks-1- fork (1)  
advance-empty-queue-tail forks-1- queue-1 qs-0 qs-0 fork empty zero one (1)  
perform-trans philosopher-1 philosopher forks--pid-wfork state-1 state-6 (1)  
activate-trans philosopher-1 philosopher forks--pid-rfork state-6 state-3 (1)  
queue-read philosopher-1 forks--pid-rfork forks-1- fork (1)  
advance-queue-head forks-1- queue-1 qs-0 qs-0 fork one zero (1)  
perform-trans philosopher-1 philosopher forks--pid-rfork state-6 state-3 (1)  
queue-write philosopher-0 forks--pid-wfork forks-0- fork (1)  
advance-empty-queue-tail forks-0- queue-1 qs-0 qs-0 fork empty zero one (1)  
perform-trans philosopher-0 philosopher forks--pid-wfork state-1 state-6 (1)  
activate-trans philosopher-0 philosopher forks--pid-rfork state-6 state-3 (1)  
queue-read philosopher-0 forks--pid-rfork forks-0- fork (1)  
advance-queue-head forks-0- queue-1 qs-0 qs-0 fork one zero (1)  
perform-trans philosopher-0 philosopher forks--pid-rfork state-6 state-3 (1)  
activate-trans philosopher-0 philosopher forks-\_\_-pidp1\_\_2\_-rfork  
state-3 state-4 (1)  
activate-trans philosopher-1 philosopher forks-\_\_-pidp1\_\_2\_-rfork  
state-3 state-4 (1)  
Plan length: 18 step(s).  
Plan cost: 18  
Expanded 111 state(s).  
Reopened 0 state(s).  
Evaluated 112 state(s).  
Evaluations: 224  
Generated 191 state(s).  
Dead ends: 0 state(s).  
Number of registered states: 112  
Int hash set load factor: 112/128 = 0.875  
Int hash set resizes: 7  
Best solution cost so far: 18  
Solution found - keep searching  
Starting search: lazy\_wastar(list(hff, hlm), preferred = list(hff, hlm), w = 5)  
Conducting lazy best first search, (real) bound = 18  
2 initial landmarks, 2 goal landmarks  
New best heuristic value for lama\_synergy(lm\_rhw(reasonable\_orders = true)): 0  
New best heuristic value for ff\_synergy(hlm): 6  
[g=0, 1 evaluated, 0 expanded, t=0.00624412s, 4472 KB]  
Initial heuristic value for lama\_synergy(lm\_rhw(reasonable\_orders = true)): 0  
Initial heuristic value for ff\_synergy(hlm): 6  
New best heuristic value for ff\_synergy(hlm): 5  
[g=1, 2 evaluated, 1 expanded, t=0.00632347s, 4472 KB]  
New best heuristic value for ff\_synergy(hlm): 4  
[g=2, 3 evaluated, 2 expanded, t=0.00638969s, 4472 KB]  
New best heuristic value for ff\_synergy(hlm): 3  
[g=9, 36 evaluated, 35 expanded, t=0.0072512s, 4472 KB]  
New best heuristic value for ff\_synergy(hlm): 2  
[g=10, 37 evaluated, 36 expanded, t=0.00732515s, 4472 KB]  
New best heuristic value for ff\_synergy(hlm): 1  
[g=17, 106 evaluated, 105 expanded, t=0.00887572s, 4472 KB]  
Completely explored state space -- no solution!  
Actual search time: 0.00357013s [t=0.0097791s]  
Expanded 123 state(s).  
Reopened 0 state(s).  
Evaluated 125 state(s).  
Evaluations: 250  
Generated 210 state(s).  
Dead ends: 2 state(s).  
Number of registered states: 125  
Int hash set load factor: 125/128 = 0.976562  
Int hash set resizes: 7  
Best solution cost so far: 18  
No solution found - keep searching  
Starting search: lazy\_wastar(list(hff, hlm), preferred = list(hff, hlm), w = 3)  
Conducting lazy best first search, (real) bound = 18  
2 initial landmarks, 2 goal landmarks  
New best heuristic value for lama\_synergy(lm\_rhw(reasonable\_orders = true)): 0  
New best heuristic value for ff\_synergy(hlm): 6  
[g=0, 1 evaluated, 0 expanded, t=0.0100017s, 4472 KB]  
Initial heuristic value for lama\_synergy(lm\_rhw(reasonable\_orders = true)): 0  
Initial heuristic value for ff\_synergy(hlm): 6  
New best heuristic value for ff\_synergy(hlm): 5  
[g=1, 2 evaluated, 1 expanded, t=0.0100928s, 4472 KB]  
New best heuristic value for ff\_synergy(hlm): 4  
[g=2, 3 evaluated, 2 expanded, t=0.0101645s, 4472 KB]  
New best heuristic value for ff\_synergy(hlm): 3  
[g=9, 36 evaluated, 35 expanded, t=0.0111556s, 4472 KB]  
New best heuristic value for ff\_synergy(hlm): 2  
[g=10, 37 evaluated, 36 expanded, t=0.0112298s, 4472 KB]  
New best heuristic value for ff\_synergy(hlm): 1  
[g=17, 110 evaluated, 109 expanded, t=0.013269s, 4472 KB]  
Completely explored state space -- no solution!  
Actual search time: 0.00420448s [t=0.0141512s]  
Expanded 123 state(s).  
Reopened 0 state(s).  
Evaluated 125 state(s).  
Evaluations: 250  
Generated 210 state(s).  
Dead ends: 2 state(s).  
Number of registered states: 125  
Int hash set load factor: 125/128 = 0.976562  
Int hash set resizes: 7  
Best solution cost so far: 18  
No solution found - keep searching  
Starting search: lazy\_wastar(list(hff, hlm), preferred = list(hff, hlm), w = 2)  
Conducting lazy best first search, (real) bound = 18  
2 initial landmarks, 2 goal landmarks  
New best heuristic value for lama\_synergy(lm\_rhw(reasonable\_orders = true)): 0  
New best heuristic value for ff\_synergy(hlm): 6  
[g=0, 1 evaluated, 0 expanded, t=0.0144098s, 4472 KB]  
Initial heuristic value for lama\_synergy(lm\_rhw(reasonable\_orders = true)): 0  
Initial heuristic value for ff\_synergy(hlm): 6  
New best heuristic value for ff\_synergy(hlm): 5  
[g=1, 2 evaluated, 1 expanded, t=0.0144961s, 4472 KB]  
New best heuristic value for ff\_synergy(hlm): 4  
[g=2, 3 evaluated, 2 expanded, t=0.0145645s, 4472 KB]  
New best heuristic value for ff\_synergy(hlm): 3  
[g=9, 36 evaluated, 35 expanded, t=0.0155257s, 4472 KB]  
New best heuristic value for ff\_synergy(hlm): 2  
[g=10, 37 evaluated, 36 expanded, t=0.015598s, 4472 KB]  
New best heuristic value for ff\_synergy(hlm): 1  
[g=17, 110 evaluated, 109 expanded, t=0.017468s, 4472 KB]  
Completely explored state space -- no solution!  
Actual search time: 0.00384021s [t=0.0182154s]  
Expanded 123 state(s).  
Reopened 0 state(s).  
Evaluated 125 state(s).  
Evaluations: 250  
Generated 210 state(s).  
Dead ends: 2 state(s).  
Number of registered states: 125  
Int hash set load factor: 125/128 = 0.976562  
Int hash set resizes: 7  
Best solution cost so far: 18  
No solution found - keep searching  
Starting search: lazy\_wastar(list(hff, hlm), preferred = list(hff, hlm), w = 1)  
Conducting lazy best first search, (real) bound = 18  
2 initial landmarks, 2 goal landmarks  
New best heuristic value for ff\_synergy(hlm): 6  
New best heuristic value for lama\_synergy(lm\_rhw(reasonable\_orders = true)): 0  
[g=0, 1 evaluated, 0 expanded, t=0.0184375s, 4472 KB]  
Initial heuristic value for ff\_synergy(hlm): 6  
Initial heuristic value for lama\_synergy(lm\_rhw(reasonable\_orders = true)): 0  
New best heuristic value for ff\_synergy(hlm): 5  
[g=1, 2 evaluated, 1 expanded, t=0.0185119s, 4472 KB]  
New best heuristic value for ff\_synergy(hlm): 4  
[g=2, 4 evaluated, 3 expanded, t=0.0185947s, 4472 KB]  
New best heuristic value for ff\_synergy(hlm): 3  
[g=9, 46 evaluated, 45 expanded, t=0.0196143s, 4472 KB]  
New best heuristic value for ff\_synergy(hlm): 2  
[g=10, 56 evaluated, 55 expanded, t=0.0198867s, 4472 KB]  
New best heuristic value for ff\_synergy(hlm): 1  
[g=17, 115 evaluated, 114 expanded, t=0.0212297s, 4472 KB]  
Completely explored state space -- no solution!  
Actual search time: 0.0034632s [t=0.0218716s]  
Expanded 123 state(s).  
Reopened 0 state(s).  
Evaluated 125 state(s).  
Evaluations: 250  
Generated 210 state(s).  
Dead ends: 2 state(s).  
Number of registered states: 125  
Int hash set load factor: 125/128 = 0.976562  
Int hash set resizes: 7  
Best solution cost so far: 18  
No solution found - keep searching  
Actual search time: 0.0186908s [t=0.0219156s]  
Cumulative statistics:  
Expanded 603 state(s).  
Reopened 0 state(s).  
Evaluated 612 state(s).  
Evaluations: 1224  
Generated 1031 state(s).  
Dead ends: 0 state(s).  
Search time: 0.018696s  
Total time: 0.0219185s  
Solution found.  
Peak memory: 4472 KB