Performance Analysis of a PDEVS Simulator Supporting Multiple Synchronization Protocols

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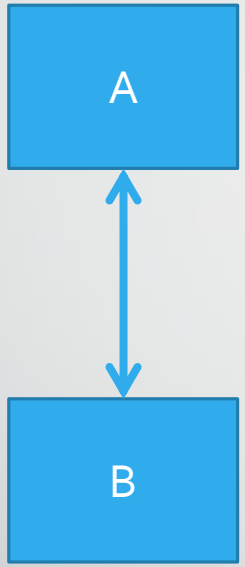
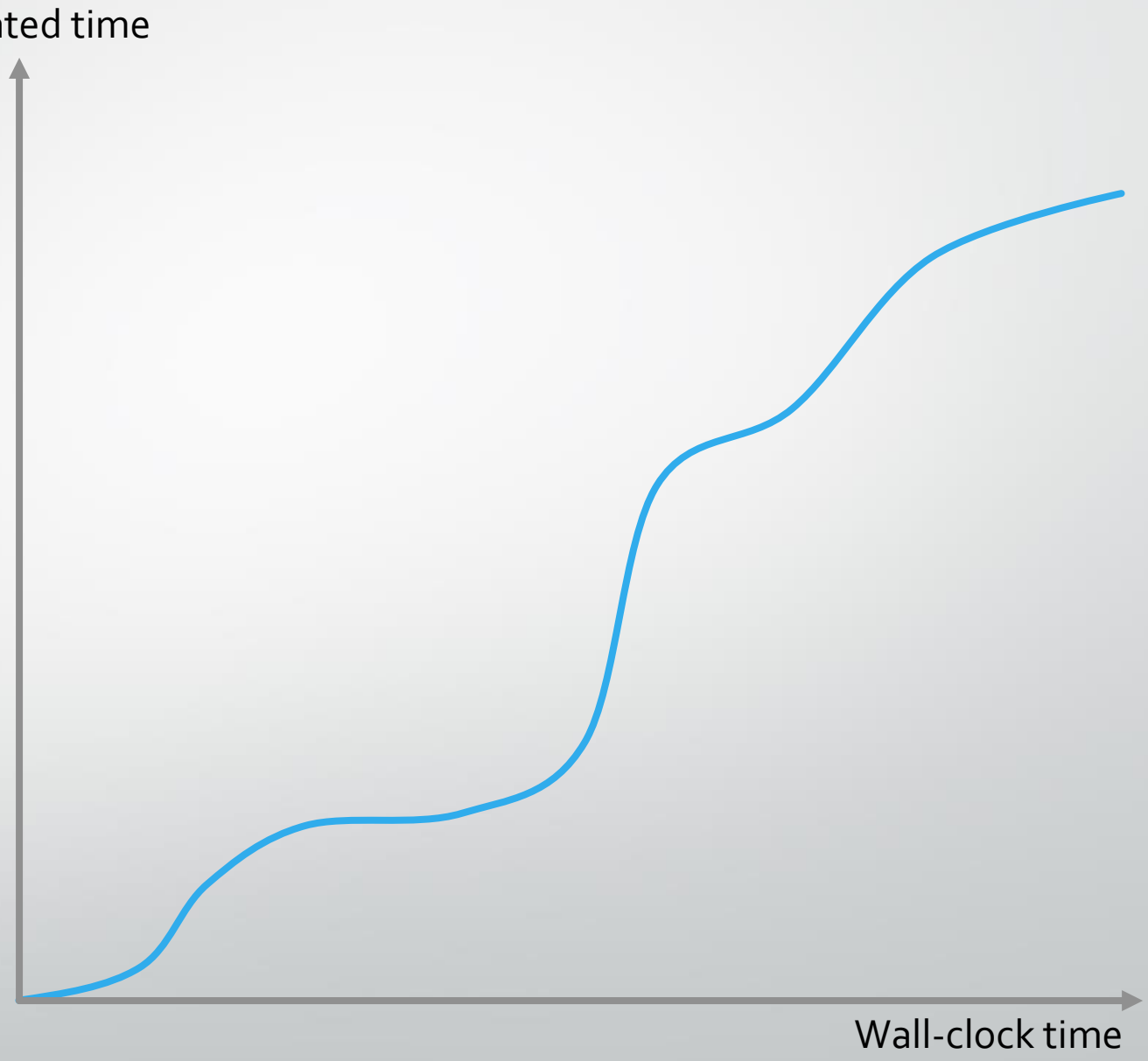
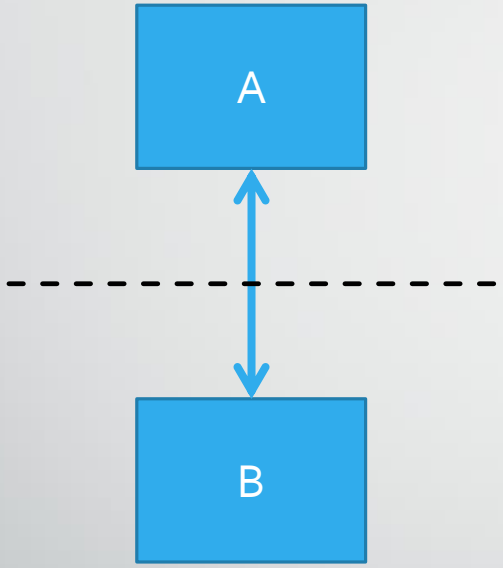
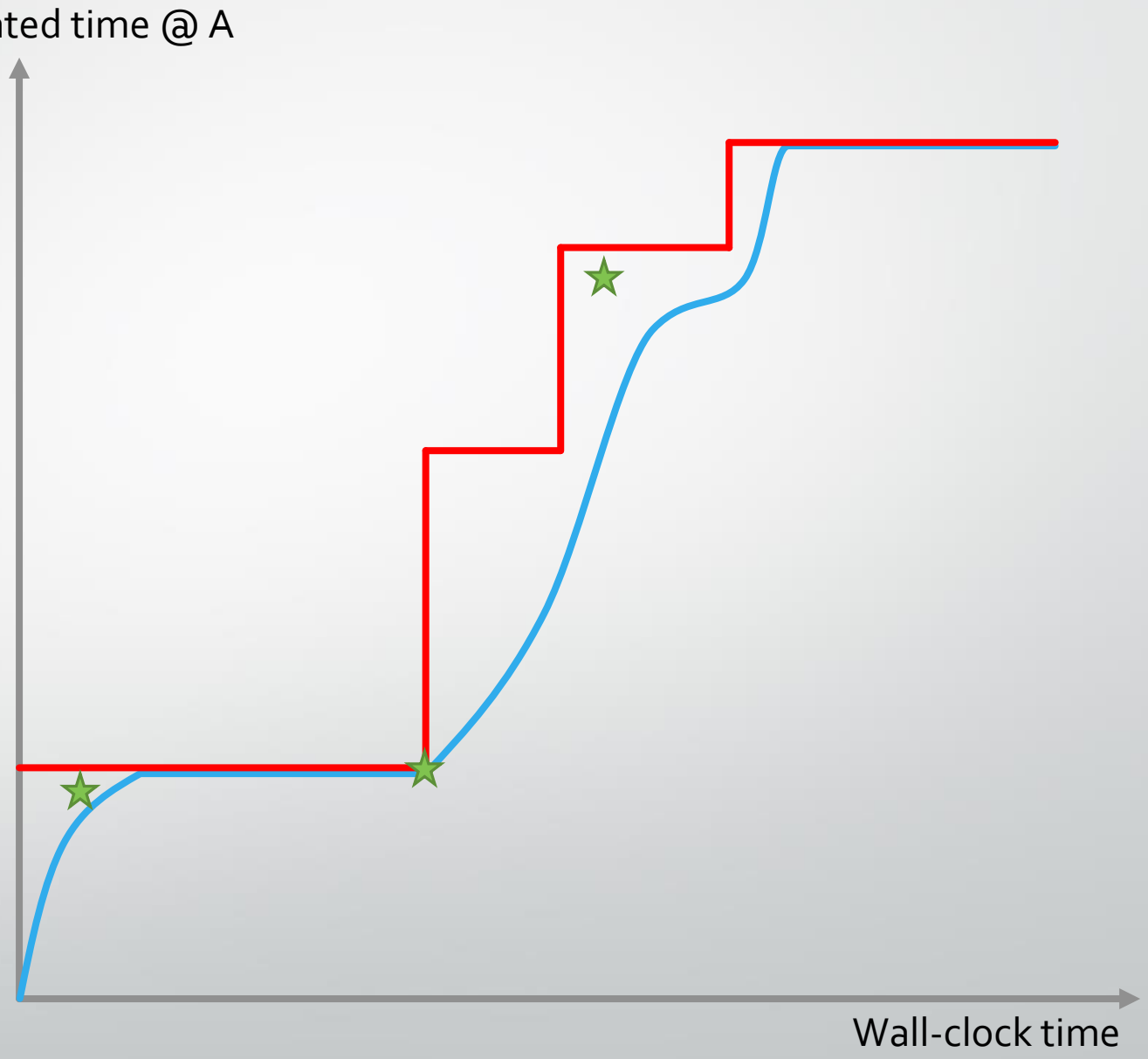
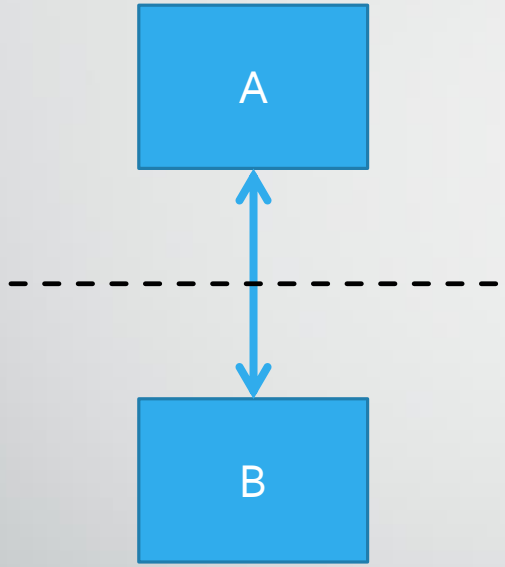
GEORGE BRAZIL
Plumbing · Heating
Air Conditioning
SERVING YOUR COMMUNITY
24 HRS. A DAY

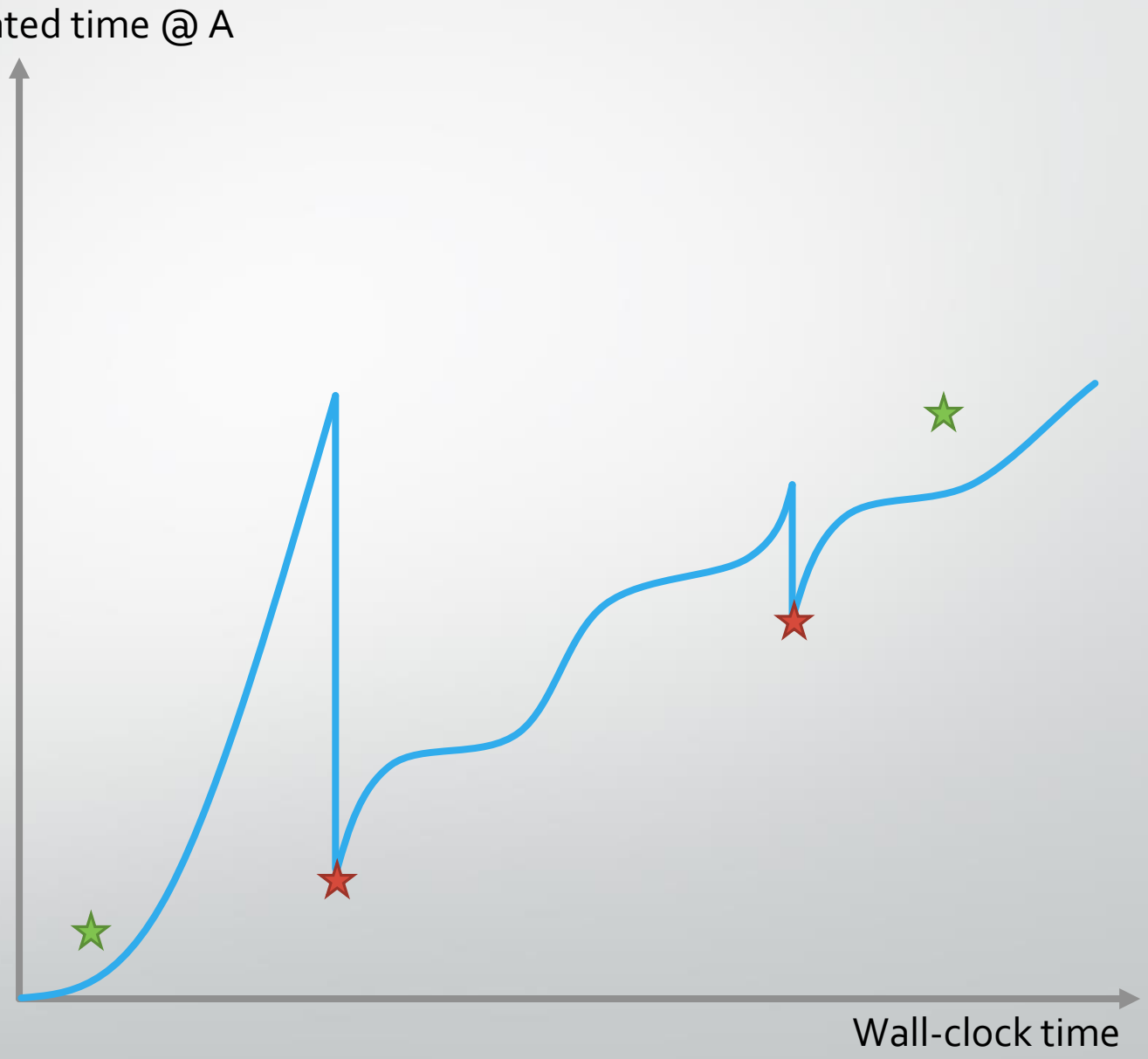

A
B

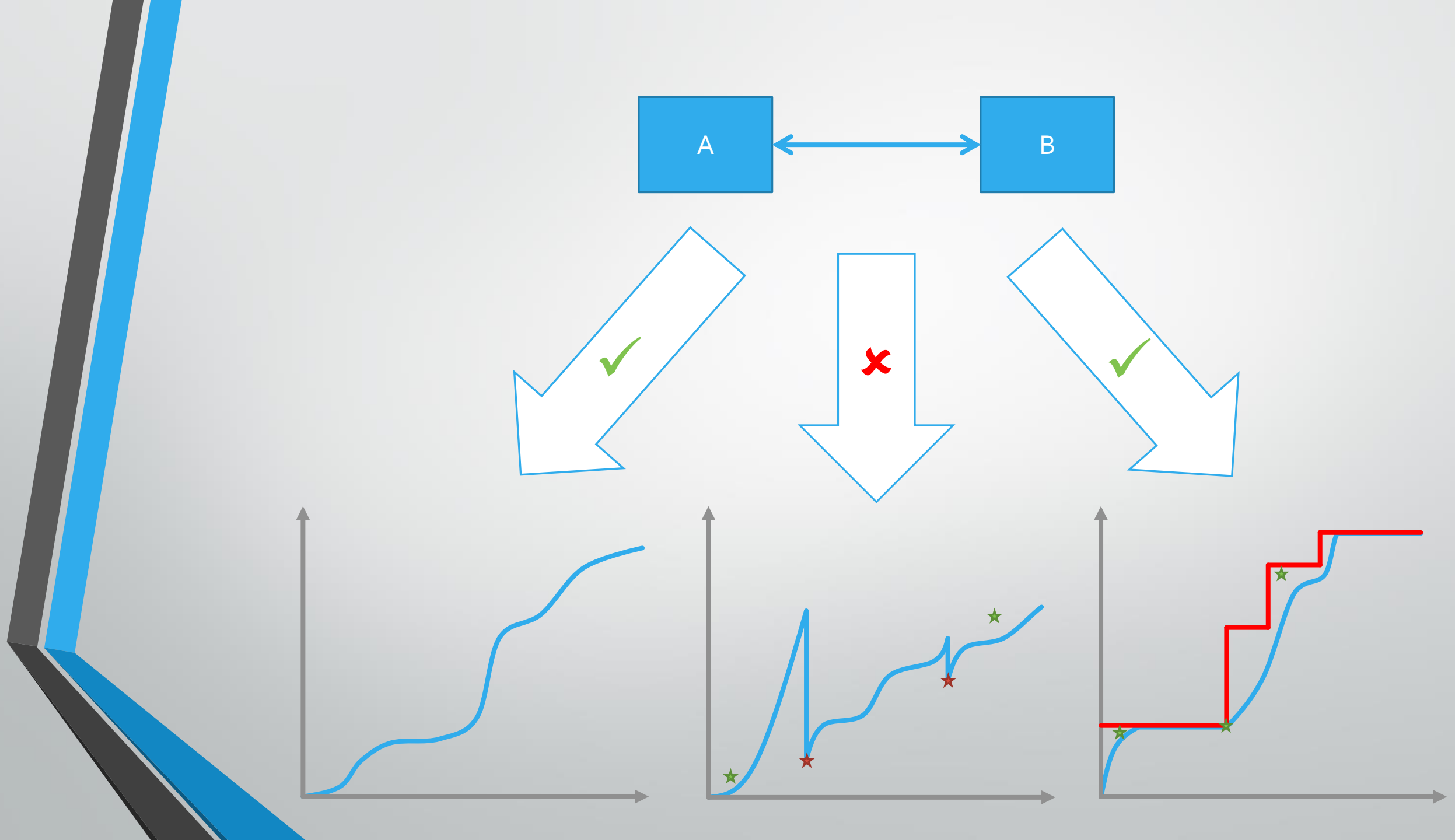

Simulated time
Wall-clock time

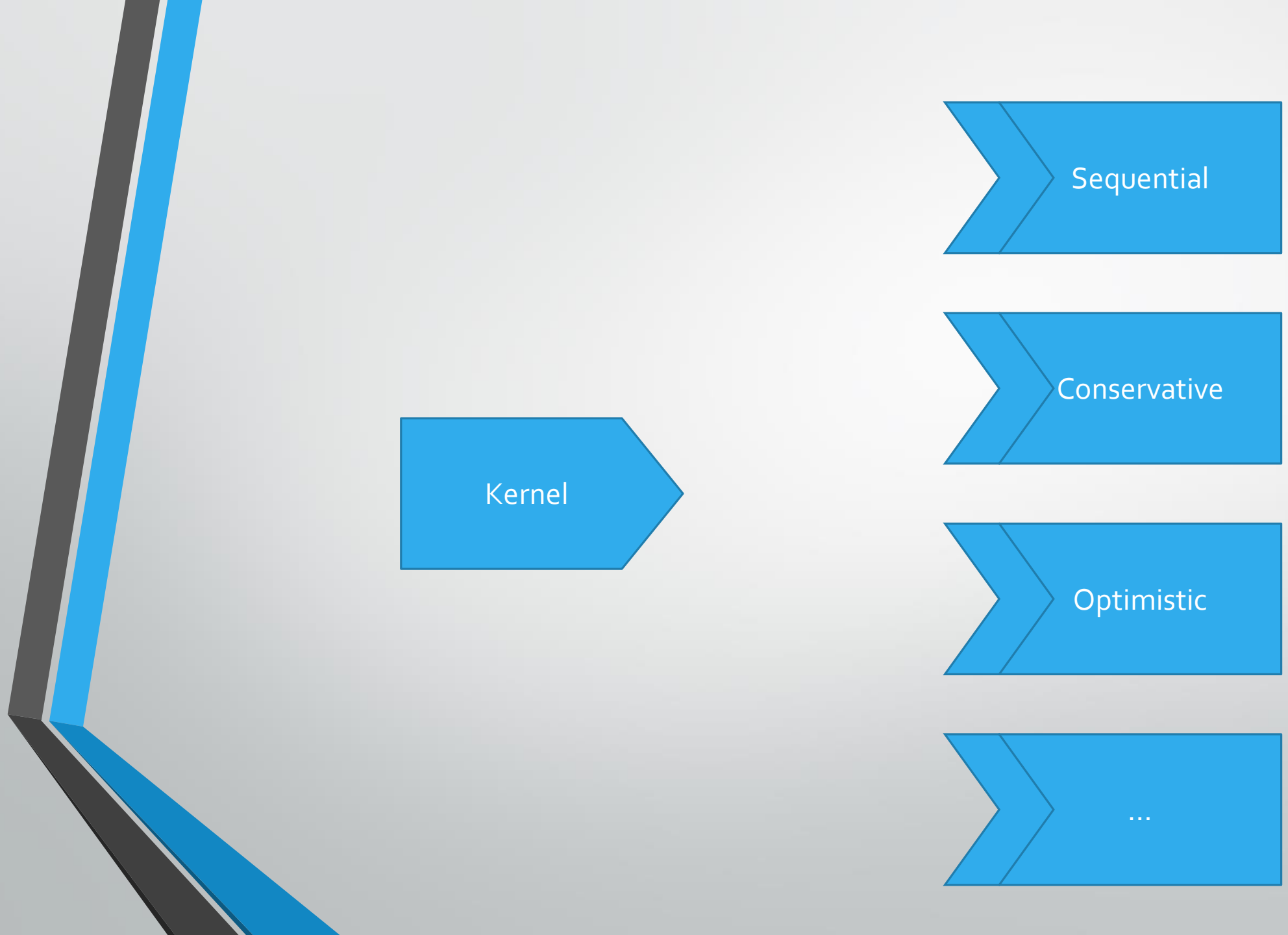

A
B


Simulated time @ A
Wall-clock time


A
B

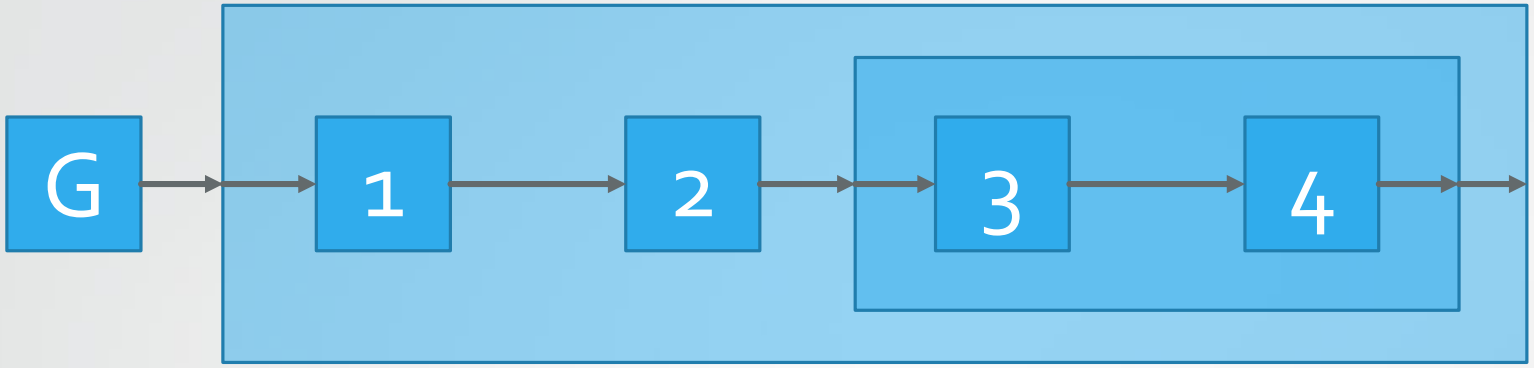

Simulated time @ A
Wall-clock time


A
B

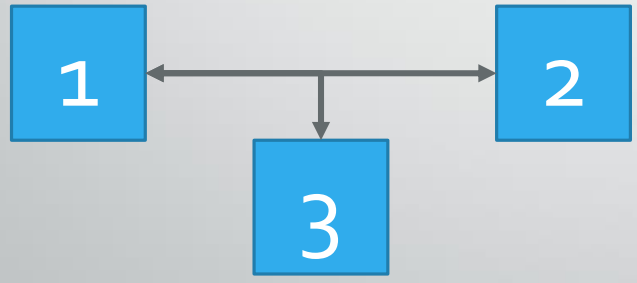

Kernel
Sequential
Conservative
Optimistic
...


40
60
80
100
120
140
km/h

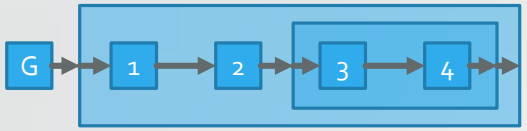
Queue

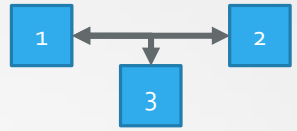


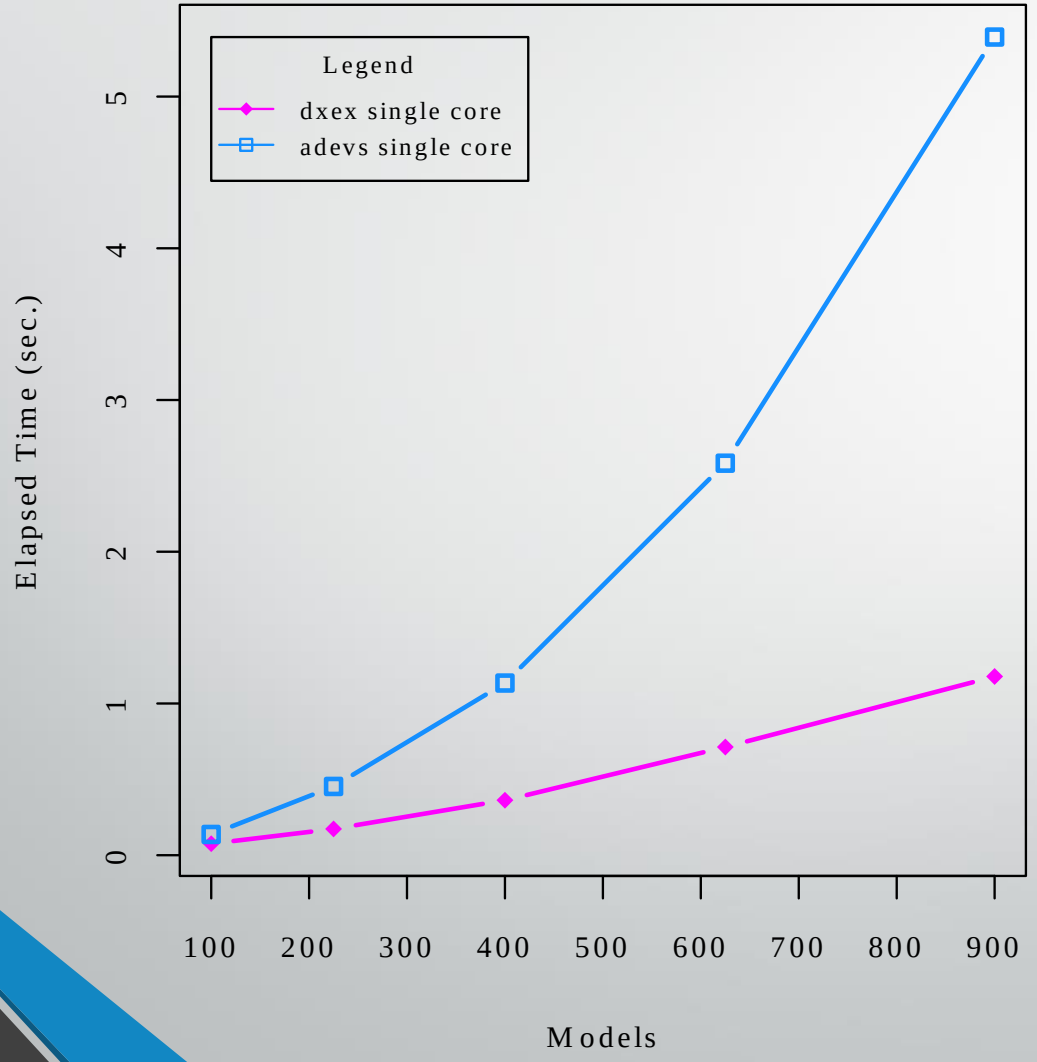
Interconnect

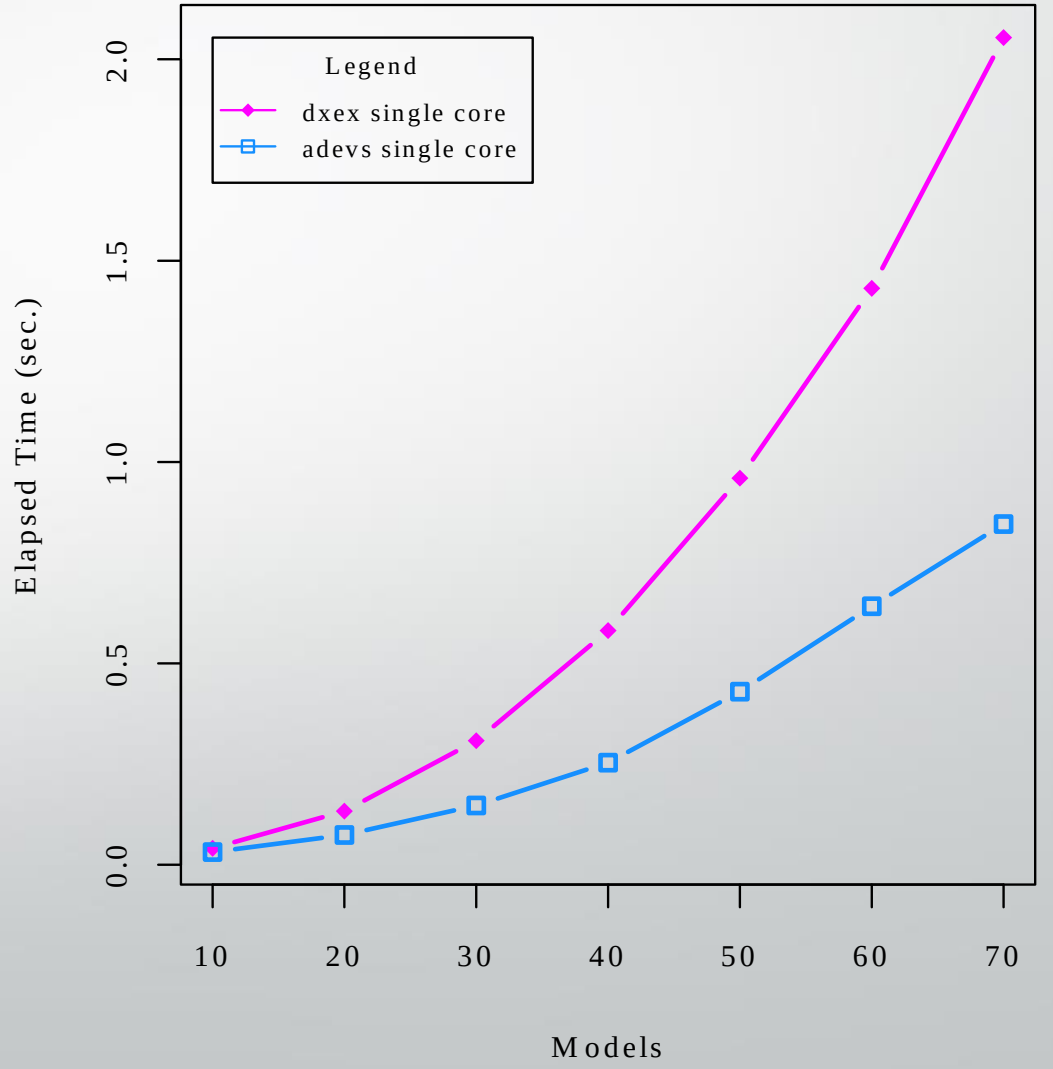


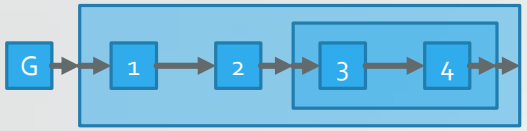
PHOLD

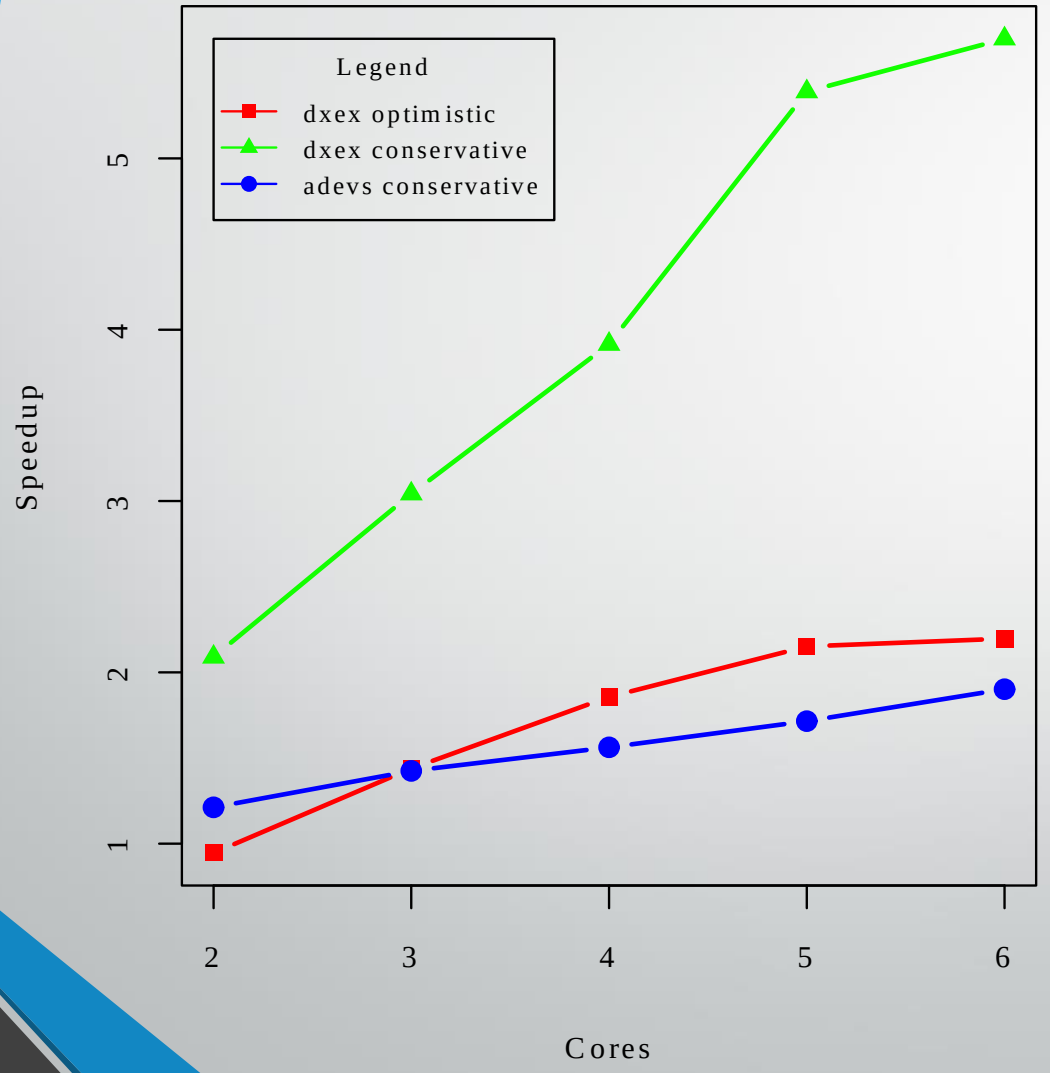

G
1
2
3
4

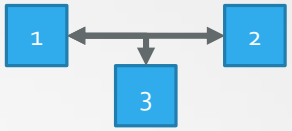

1
2
3

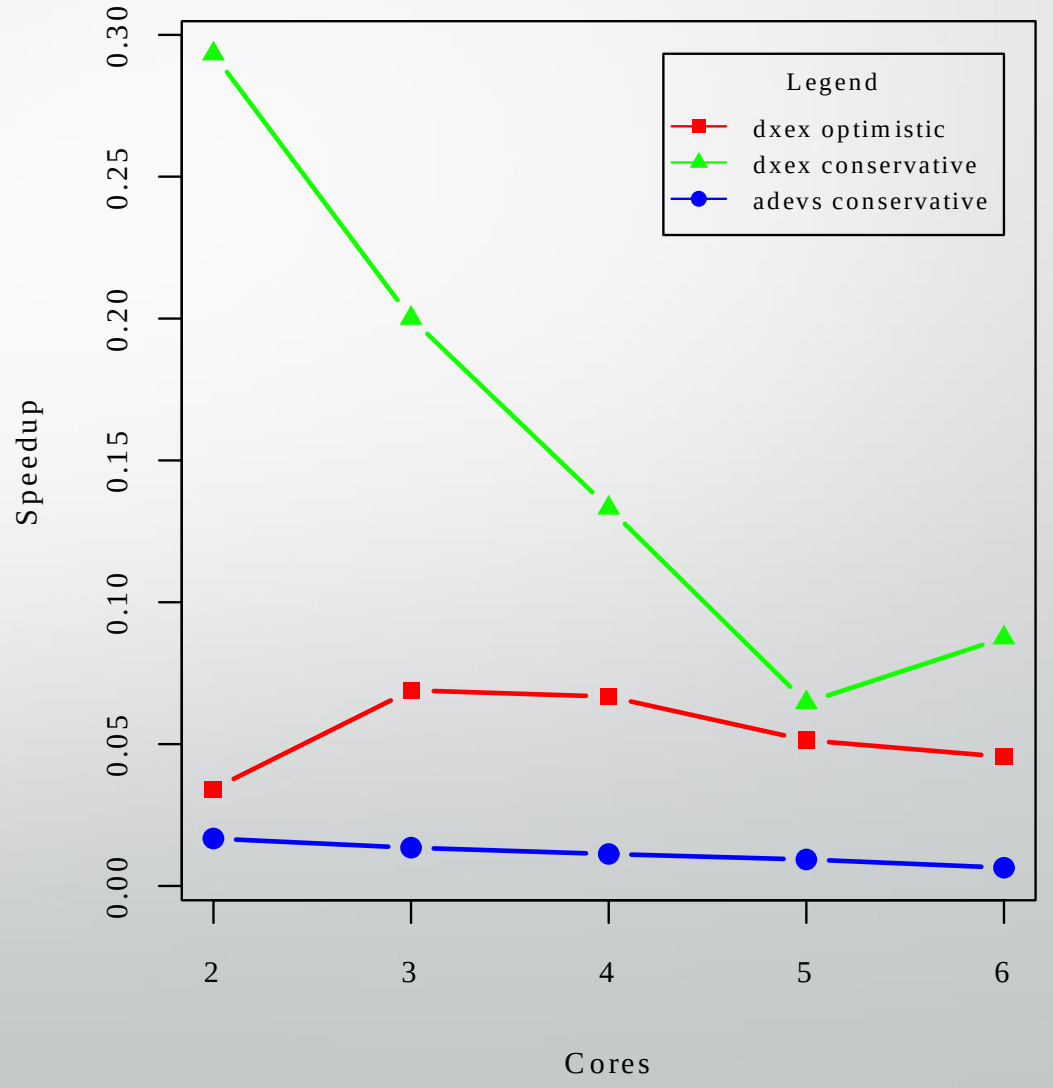

Legend
dxex single core
adevs single core
Elapsed Time (sec.)
0
1
2
3
4
5
100
200
300
400
500
600
700
800
900
Models

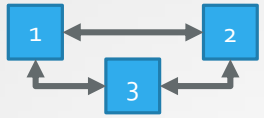

Legend
dxex single core
adevs single core
Elapsed Time (sec.)
0.0
0.5
1.0
1.5
2.0
10
20
30
40
50
60
70
Models

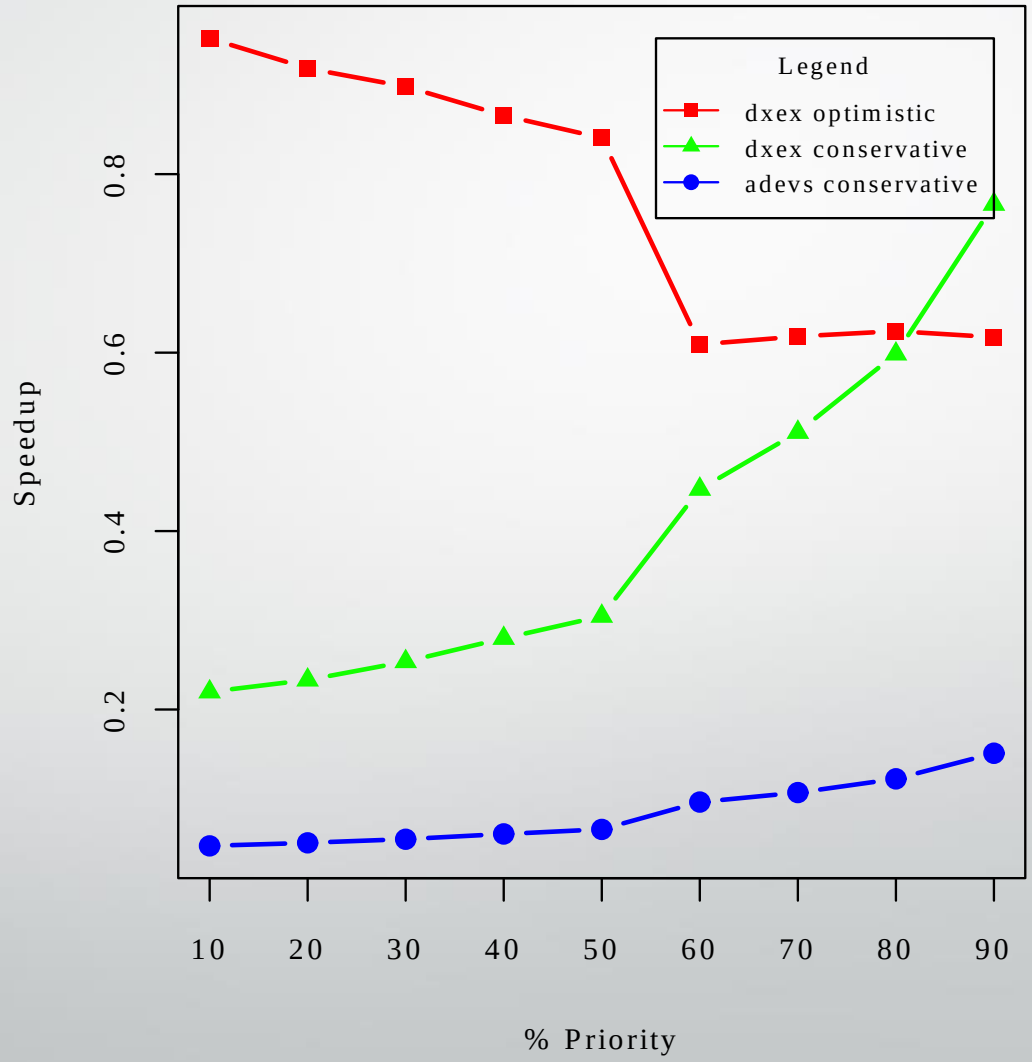

G
1
2
3
4

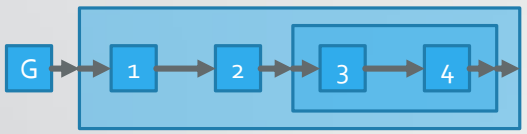

Legend
dxex optimistic
dxex conservative
adevs conservative
Speedup
1
2
3
4
5
2
3
4
5
6
Cores


1
2
3


Legend
dxex optimistic
dxex conservative
adevs conservative
Speedup
0.00
0.05
0.10
0.15
0.20
0.25
0.30
2
3
4
5
6
Cores

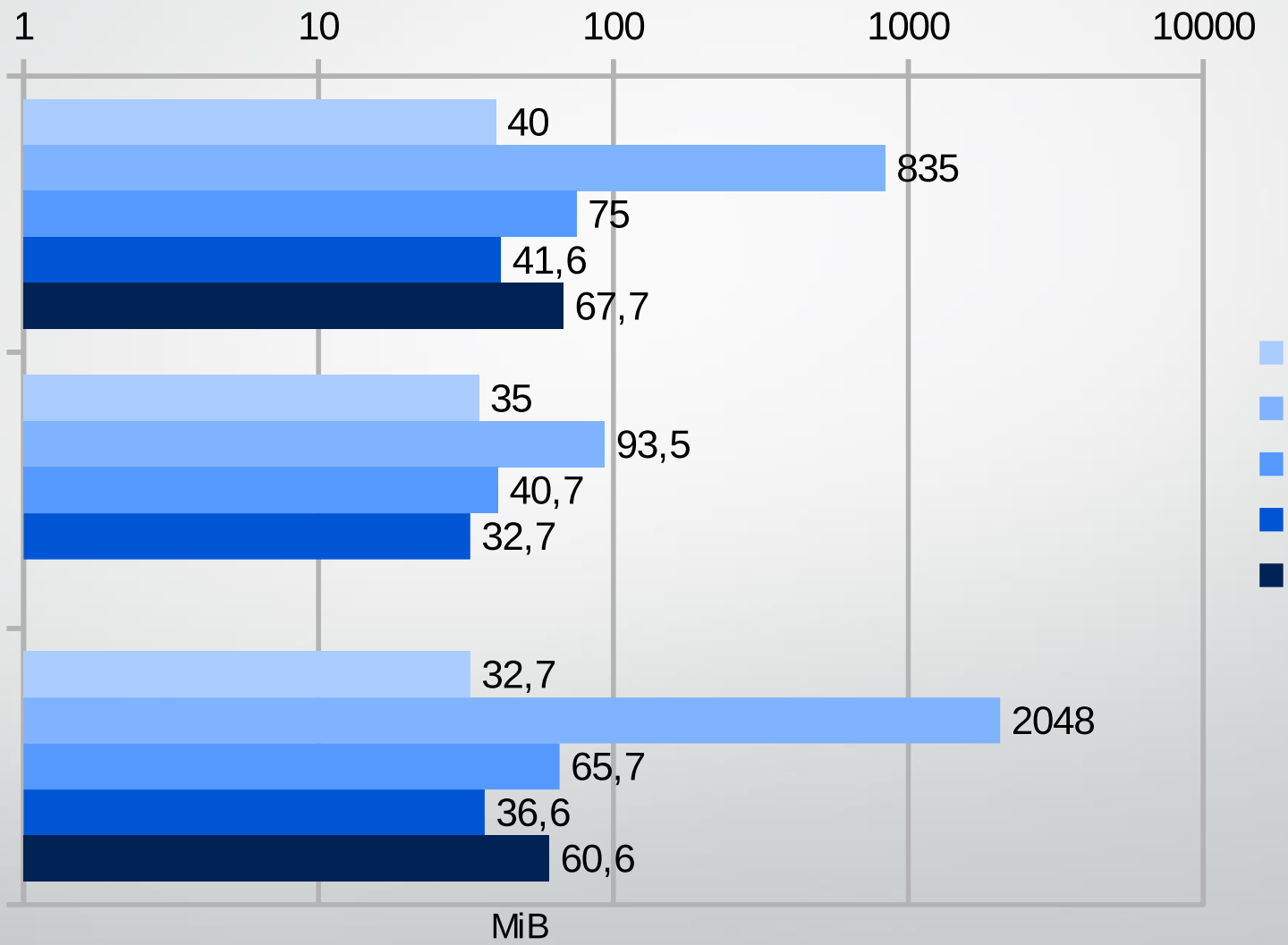

1
2
3


Legend
dxex optimistic
dxex conservative
adevs conservative
Speedup
0.2
0.4
0.6
0.8
10
20
30
40
50
60
70
80
90
% Priority


G
1
2
3
4


1
2
3


1
2
3


1
10
100
1000
10000
40
835
75
41,6
67,7
35
93,5
40,7
32,7
32,7
2048
65,7
36,6
60,6
MiB
dxex single
dxex opt
dxex cons
adevs single
adevs cons