Example: A grocery store

Model in SimQuick:

Entrances:

1	
Name →	Loading Dock
Time between arrivals →	24
Num. objects per arrival →	200
Output destination(s) ↓	
Storage	

Buffers:

1	
Name →	Storage
Capacity →	70
Initial # objects →	0
Output destination(s) ↓	Output group size ↓
Purchase Requests	1

Exit:

1	
Name →	Purchase Requests
Time between departures →	Exp(0.3)
Num. objects per departure →	1

Simulation controls:	
Time units per simulation →	360
Number of simulations →	30

Simulation Results

Return to Control Panel

Element types	Element names	Statistics	Overall means	Simulation Numbers 1	2	3	4	5
Entrance(s)	Loading Dock	Objects entering process	1043.53	1033	1043	1050	1043	1047
		Objects unable to enter	1956.47	1967	1957	1950	1957	1953
		Service level	0.35	0.34	0.35	0.35	0.35	0.35
Buffer(s)	Storage	Objects leaving	1043.30	1033	1043	1050	1043	1046
		Final inventory	0.23	0	0	0	0	1
		Minimum inventory	0.00	0	0	0	0	0
		Maximum inventory	70.00	70	70	70	70	70
		Mean inventory	30.61	31.99	31.43	28.89	30.16	30.11
		Mean cycle time	10.56	11.15	10.85	9.90	10.41	10.36
Exit(s)	Purchase Requests	Objects leaving process	1043.30	1033	1043	1050	1043	1046
		Object departures missed	169.13	135	163	216	224	174
		Service level	0.86	0.88	0.86	0.83	0.82	0.86

Another important performance measure for processes:

Service level for exit = Objects leaving process / (Objects leaving process + Objects departures missed)

Questions:

- What's the current service level?

  .86

- How to achieve 99% service level?

  Increase storage: we want the smallest storage size to get 99% service level.