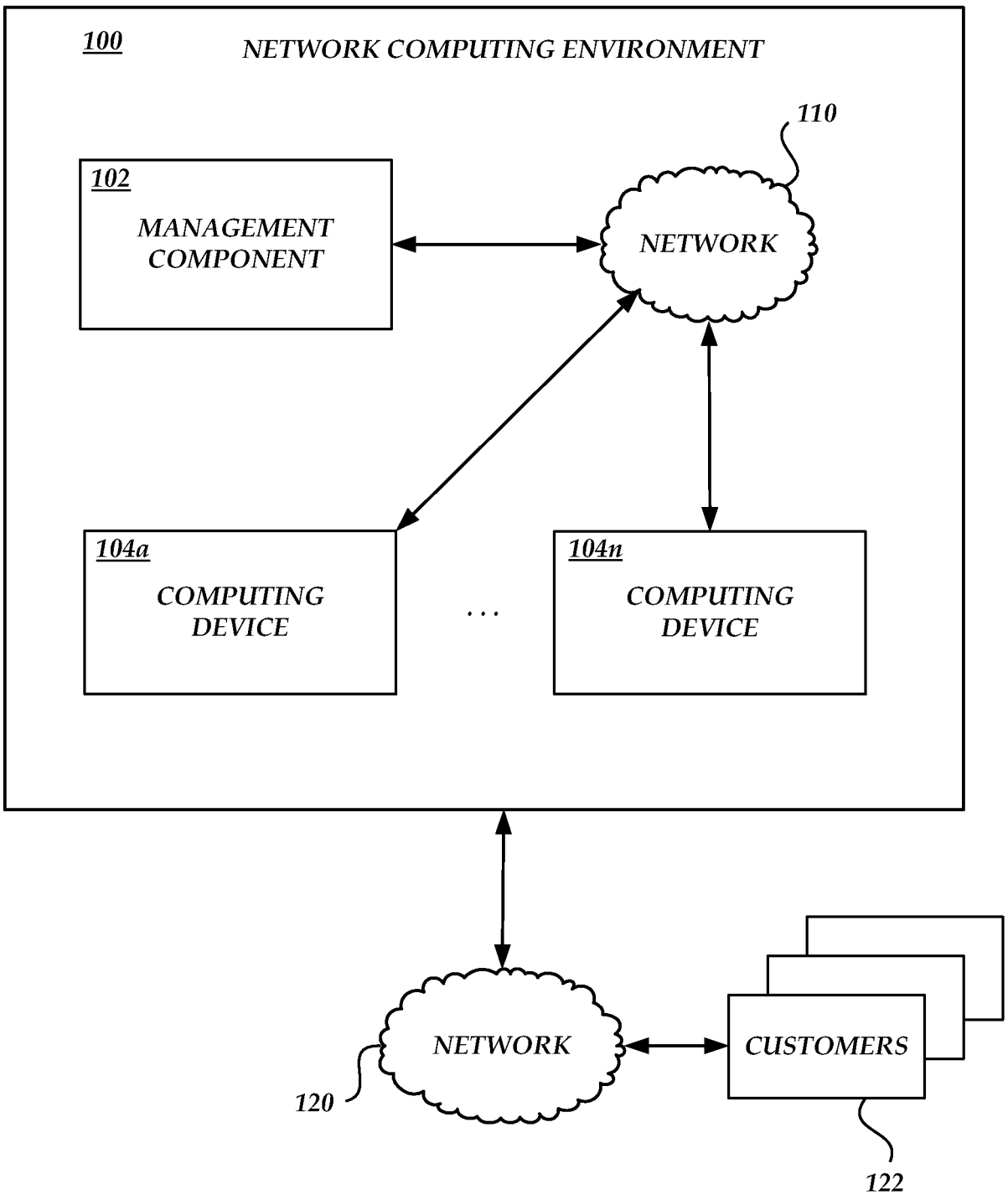
100
NETWORK COMPUTING ENVIRONMENT
110
102
MANAGEMENT COMPONENT
NETWORK
104a
COMPUTING DEVICE
. . .
104n
COMPUTING DEVICE
NETWORK
120
CUSTOMERS
122

Fig. 1

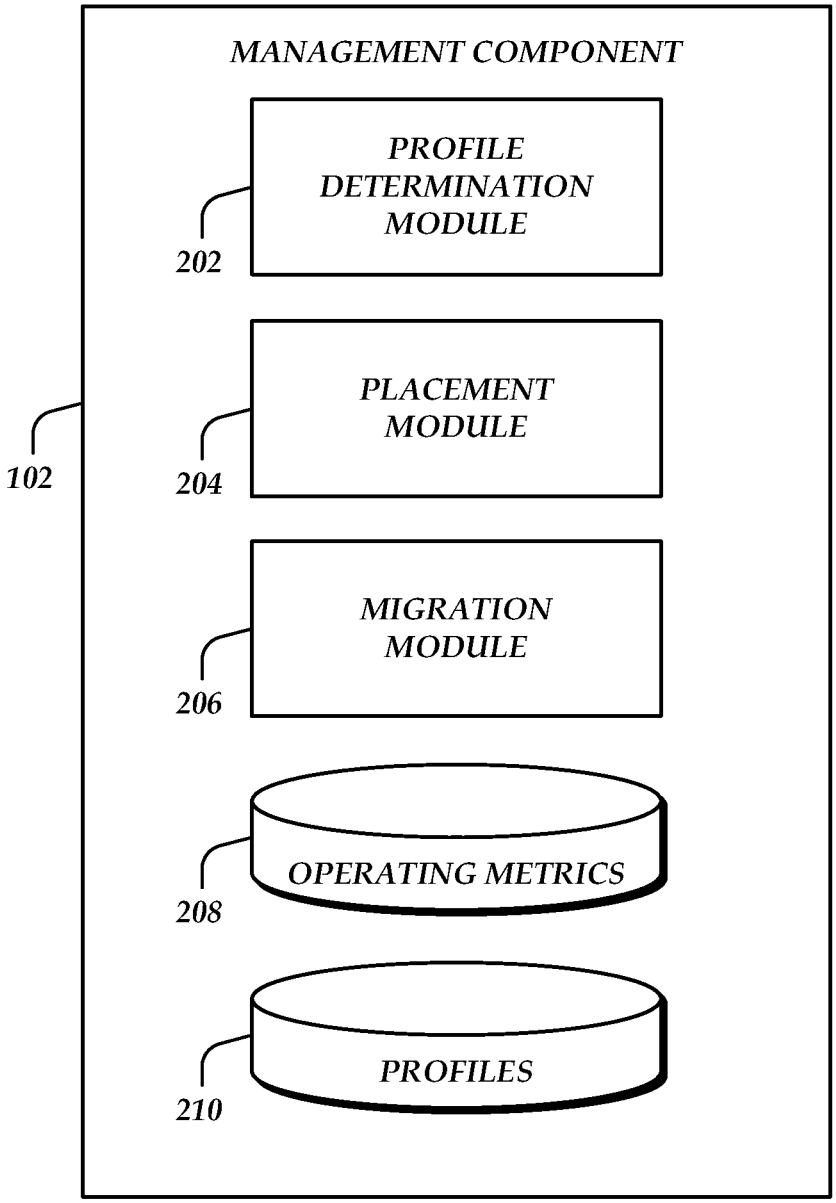
MANAGEMENT COMPONENT
PROFILE DETERMINATION MODULE
202
PLACEMENT MODULE
204
102
MIGRATION MODULE
206
OPERATING METRICS
208
PROFILES
210

Fig. 2

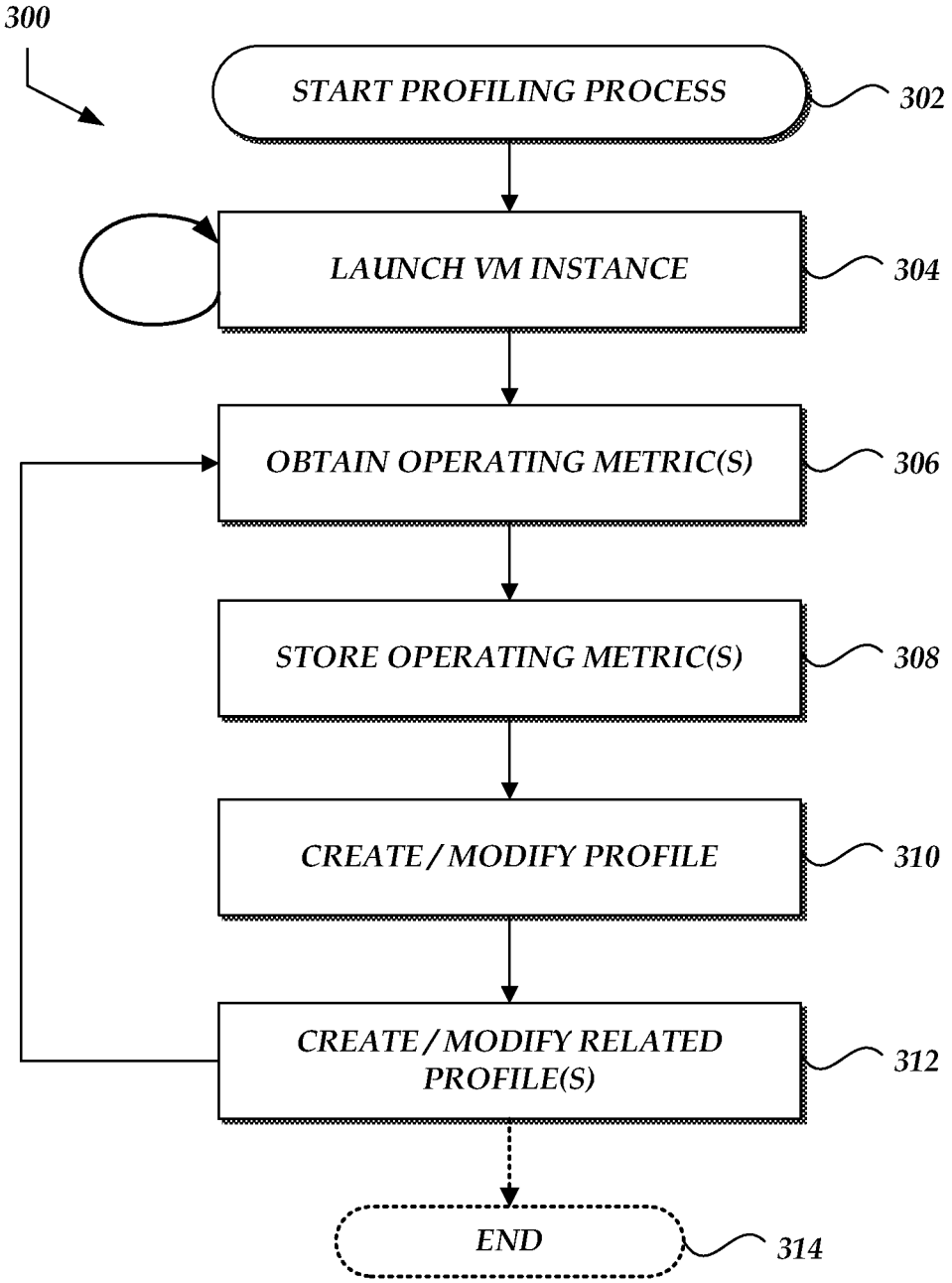
300
START PROFILING PROCESS
302
LAUNCH VM INSTANCE
304
OBTAIN OPERATING METRIC(S)
306
STORE OPERATING METRIC(S)
308
CREATE / MODIFY PROFILE
310
CREATE / MODIFY RELATED PROFILE(S)
312
END
314

Fig. 3

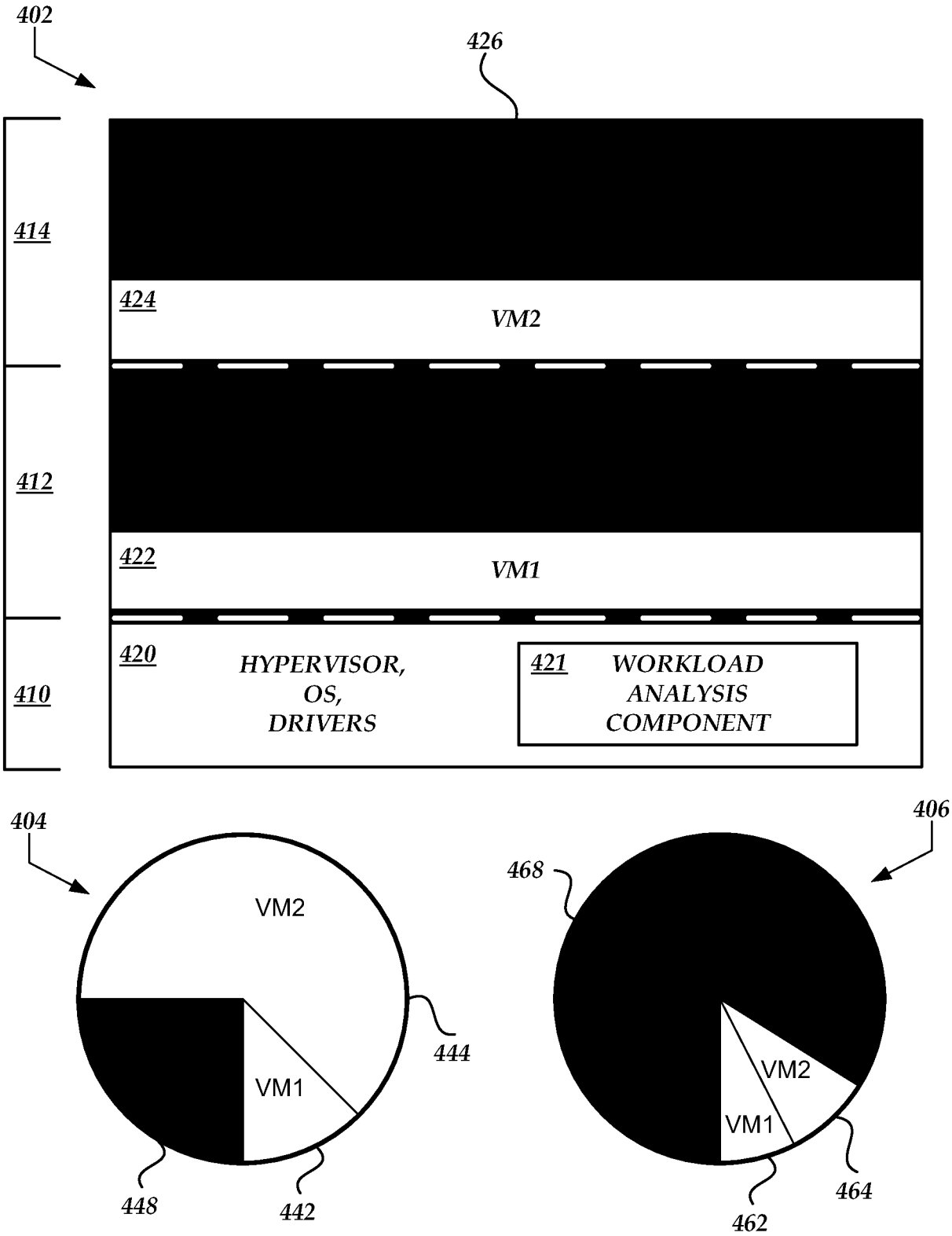
402
426
414
424
VM2
412
422
VM1
410
420
HYPERVISOR,
OS,
DRIVERS
421
WORKLOAD
ANALYSIS
COMPONENT
404
VM2
VM1
444
448
442
406
468
VM2
VM1
464
462

Fig. 4

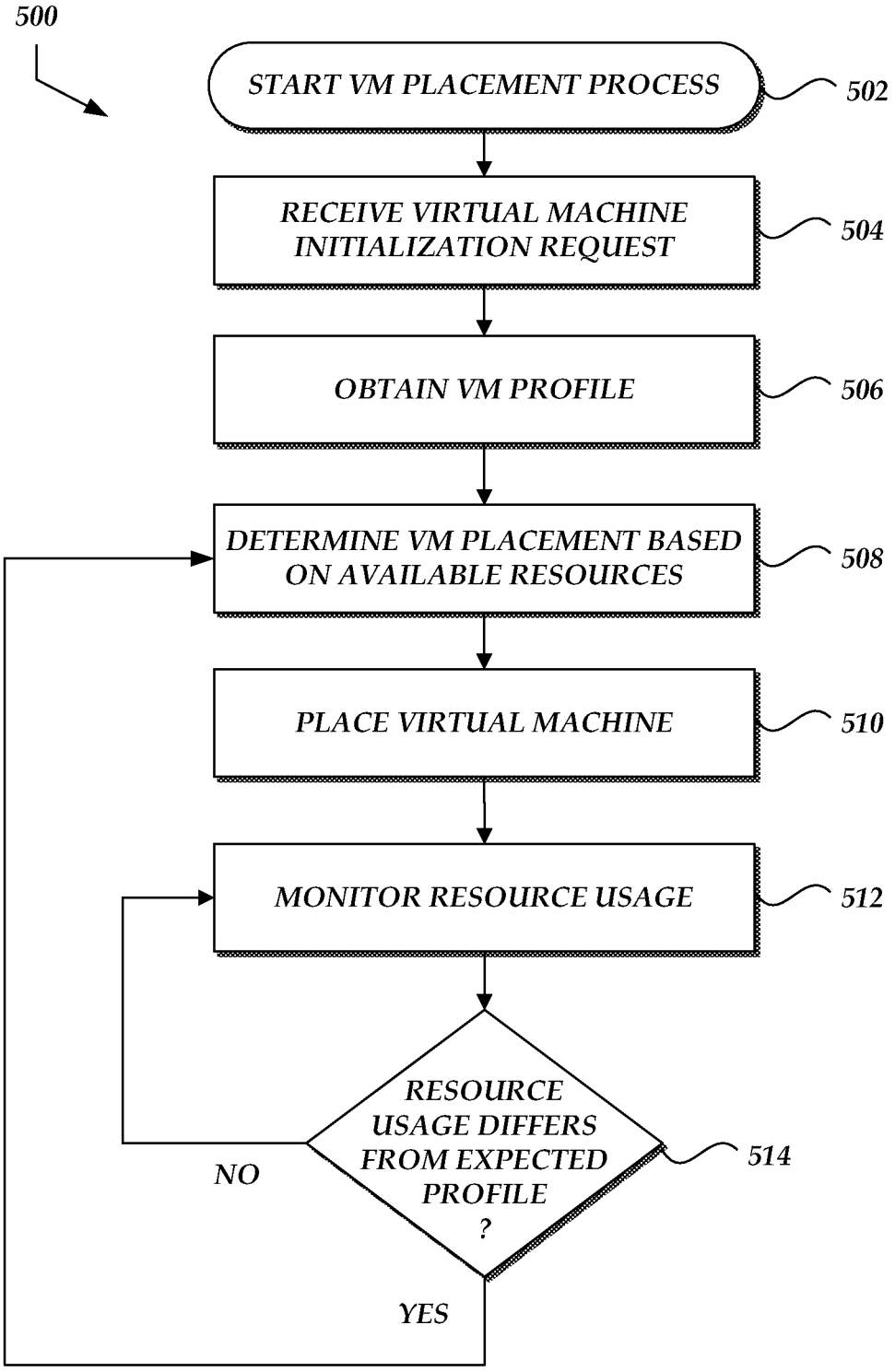
500
START VM PLACEMENT PROCESS
502
RECEIVE VIRTUAL MACHINE INITIALIZATION REQUEST
504
OBTAIN VM PROFILE
506
DETERMINE VM PLACEMENT BASED ON AVAILABLE RESOURCES
508
PLACE VIRTUAL MACHINE
510
MONITOR RESOURCE USAGE
512
RESOURCE USAGE DIFFERS FROM EXPECTED PROFILE ?
514
NO
YES

Fig. 5

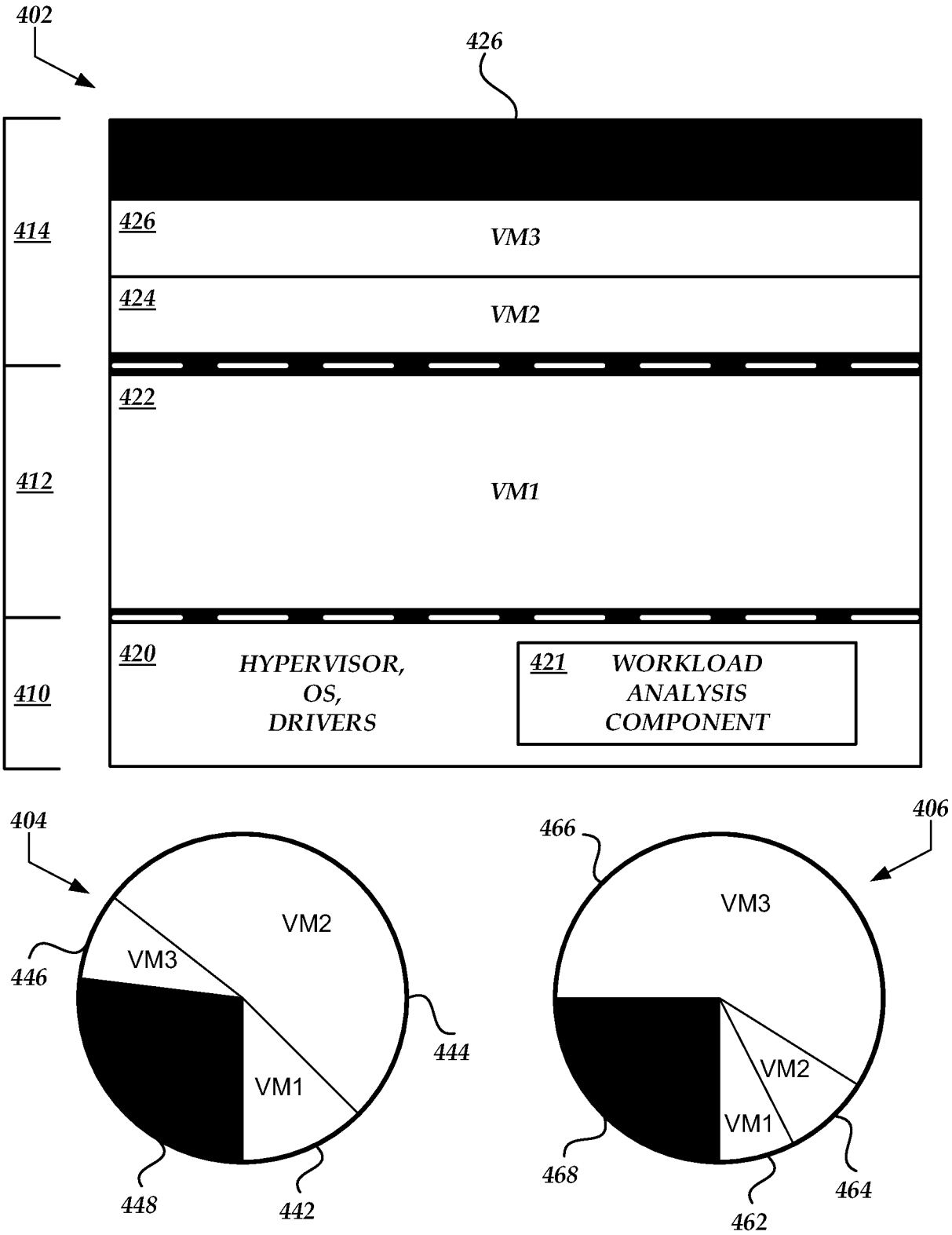
402
426
414
426
VM3
424
VM2
422
412
VM1
420
HYPERVISOR,
OS,
DRIVERS
421
WORKLOAD
ANALYSIS
COMPONENT
410
404
VM2
VM3
446
444
VM1
448
442
406
466
VM3
VM2
VM1
468
464
462

Fig. 6

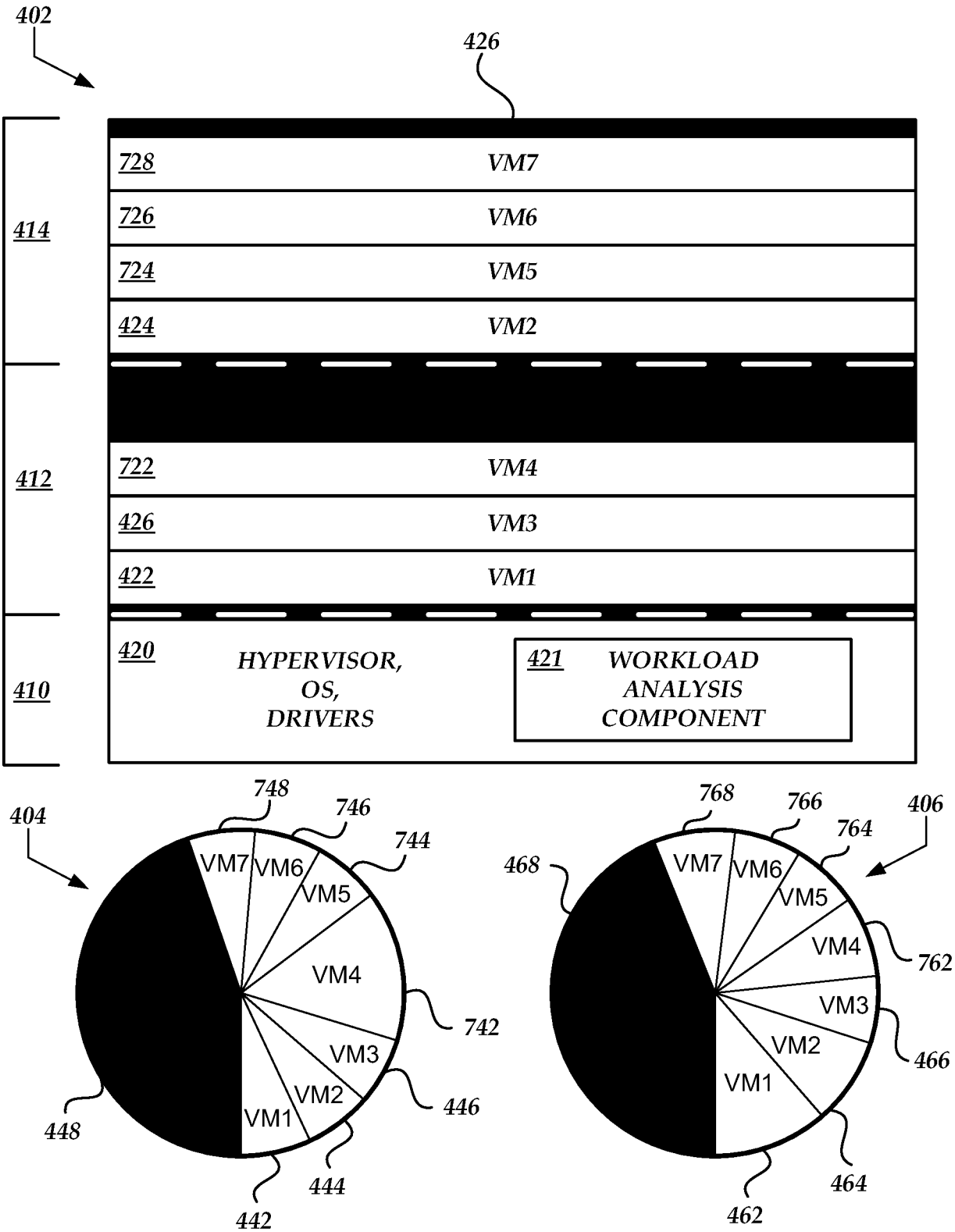
402
426
414
728
VM7
726
VM6
724
VM5
424
VM2
412
722
VM4
426
VM3
422
VM1
410
420
HYPERVISOR, OS, DRIVERS
421
WORKLOAD ANALYSIS COMPONENT
404
748
746
744
VM7
VM6
VM5
VM4
742
VM3
446
VM2
VM1
448
444
442
768
766
764
406
468
VM7
VM6
VM5
VM4
762
VM3
466
VM2
VM1
464
462

Fig. 7

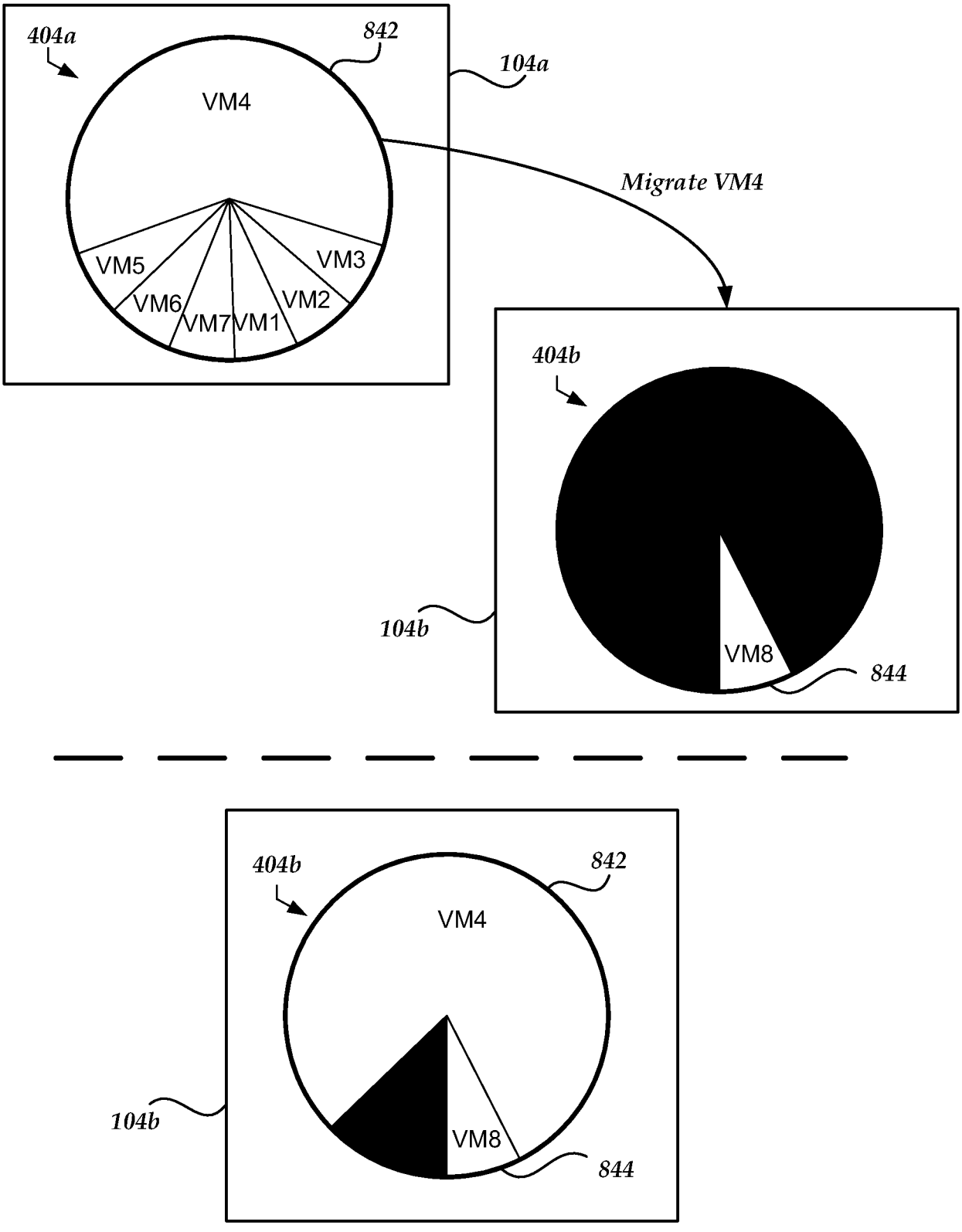
404a
842
104a
VM4
VM5
VM6
VM7
VM1
VM2
VM3
Migrate VM4
404b
104b
VM8
844
404b
842
VM4
104b
VM8
844

Fig. 8