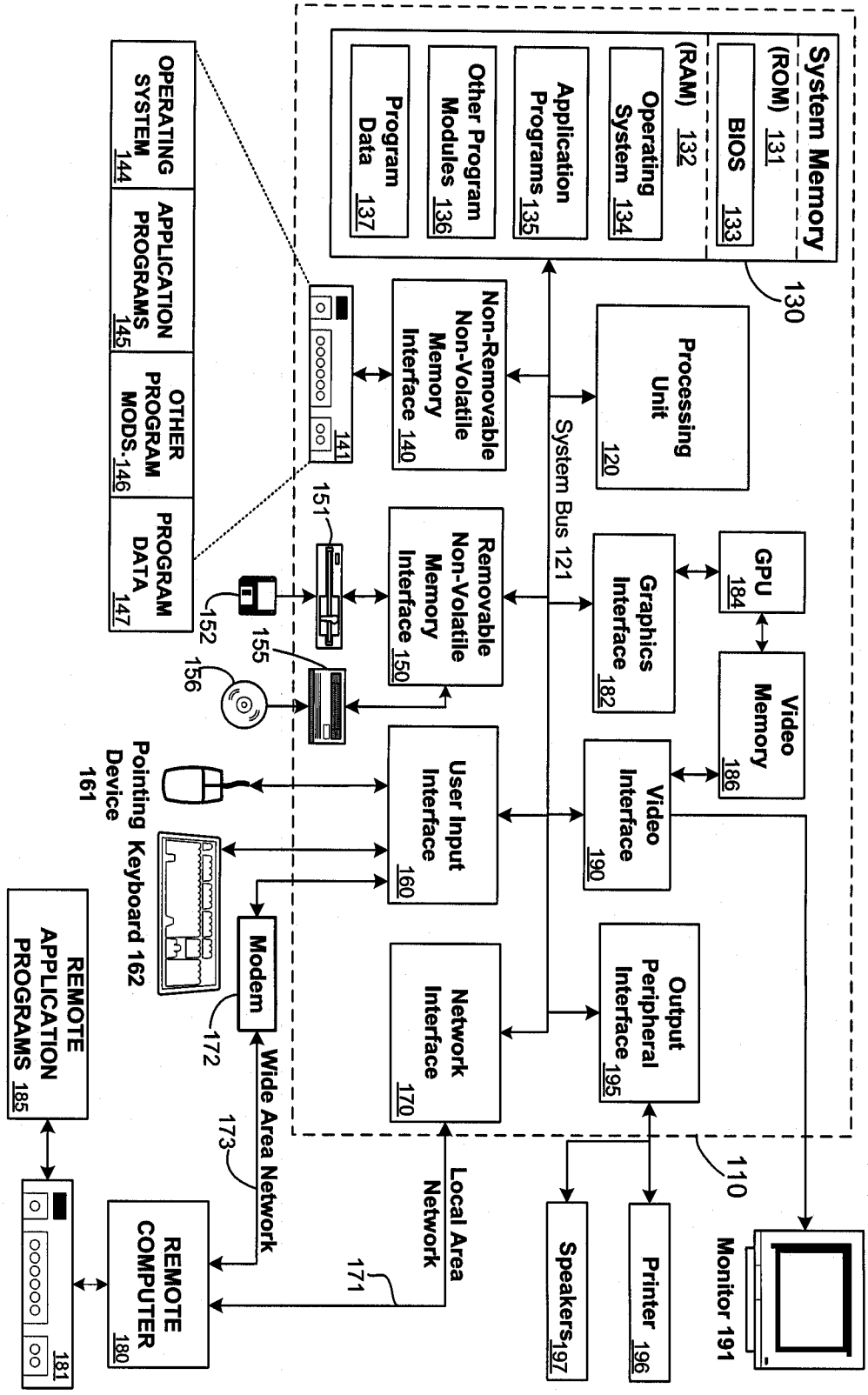

System Memory
(ROM) 131
BIOS 133
(RAM) 132
Operating System 134
Application Programs 135
Other Program Modules 136
Program Data 137
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System Bus 121
GPU 184
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Monitor 191
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Fig. 1

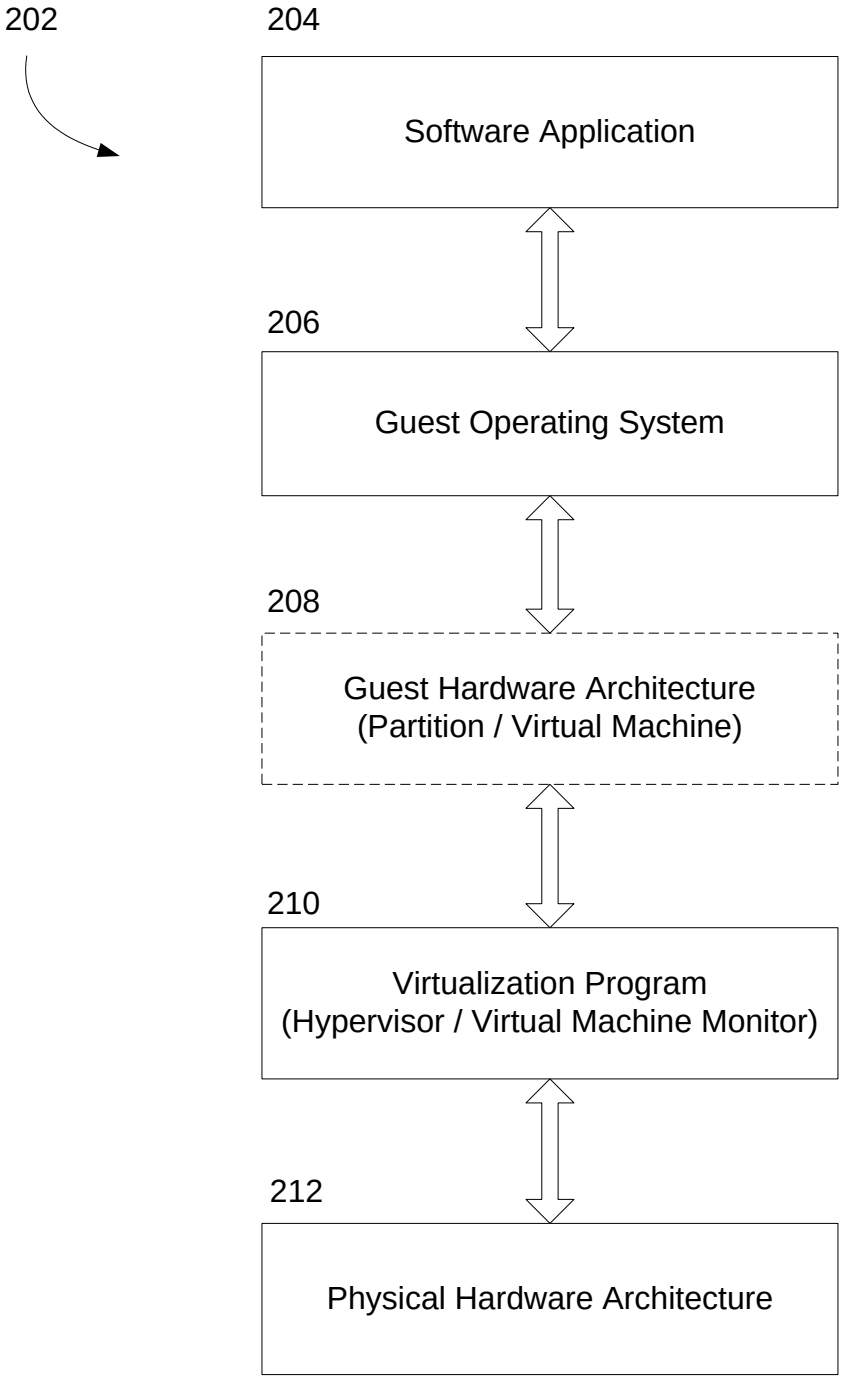

202
204
Software Application
206
Guest Operating System
208
Guest Hardware Architecture
(Partition / Virtual Machine)
210
Virtualization Program
(Hypervisor / Virtual Machine Monitor)
212
Physical Hardware Architecture

Fig. 2

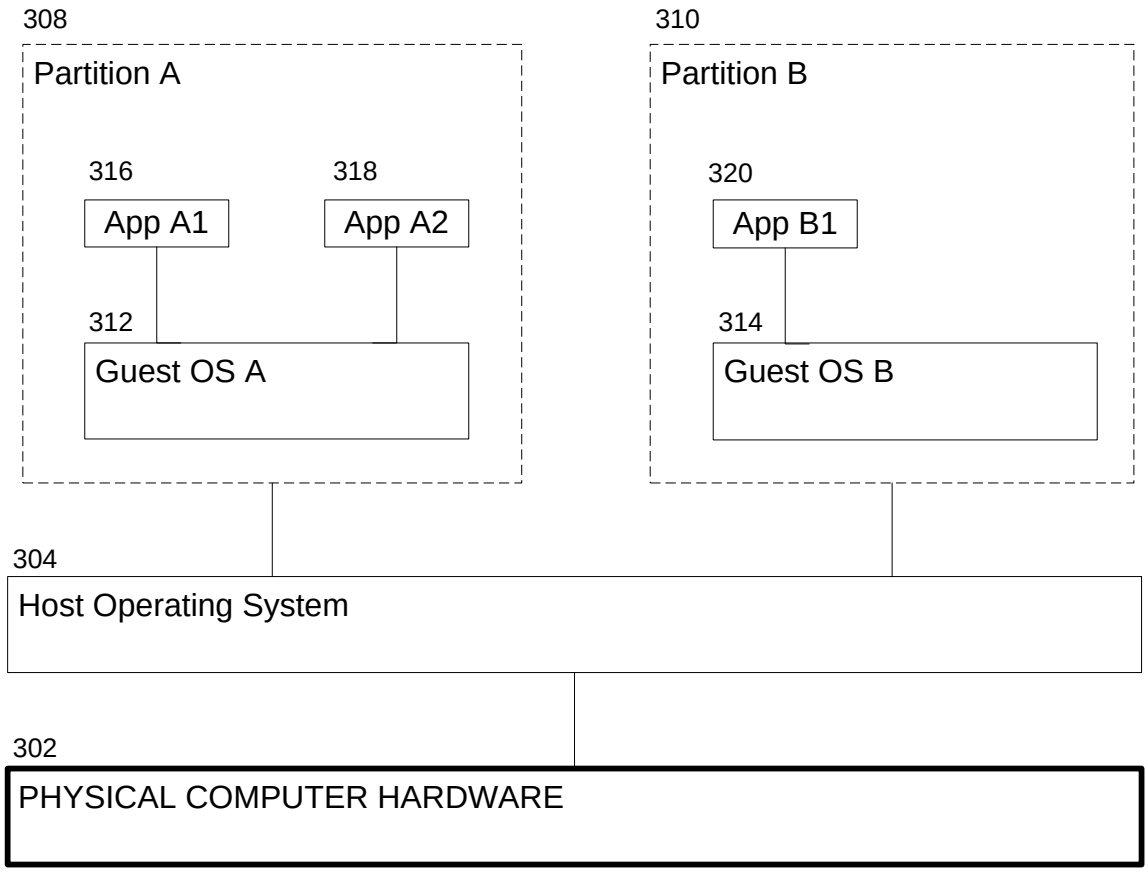

308
Partition A
316
App A1
318
App A2
312
Guest OS A
310
Partition B
320
App B1
314
Guest OS B
304
Host Operating System
302
PHYSICAL COMPUTER HARDWARE

Fig. 3A

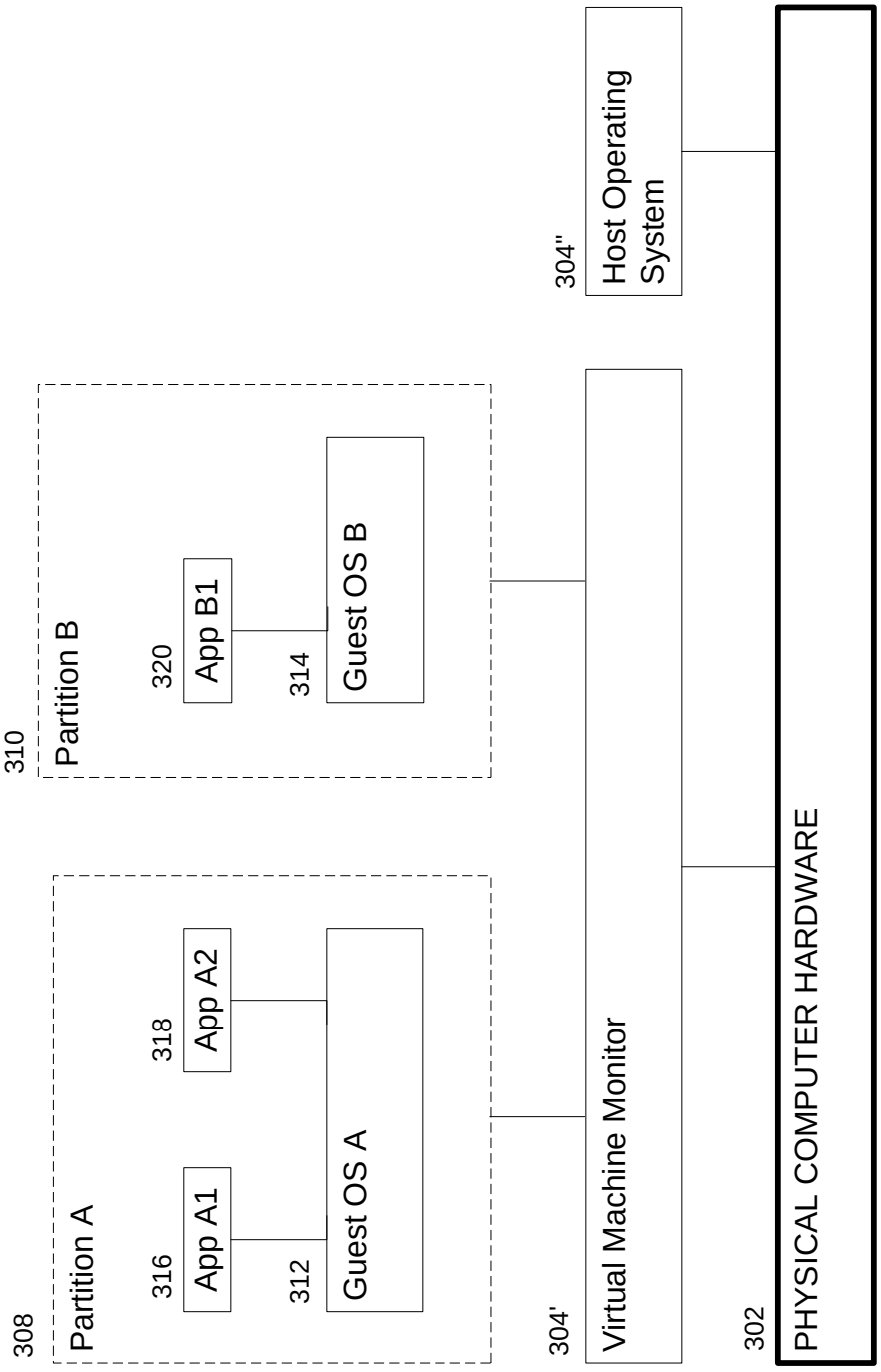

308
Partition A
316
App A1
318
App A2
312
Guest OS A
310
Partition B
320
App B1
314
Guest OS B
304'
Virtual Machine Monitor
304"
Host Operating System
302
PHYSICAL COMPUTER HARDWARE

Fig. 3B

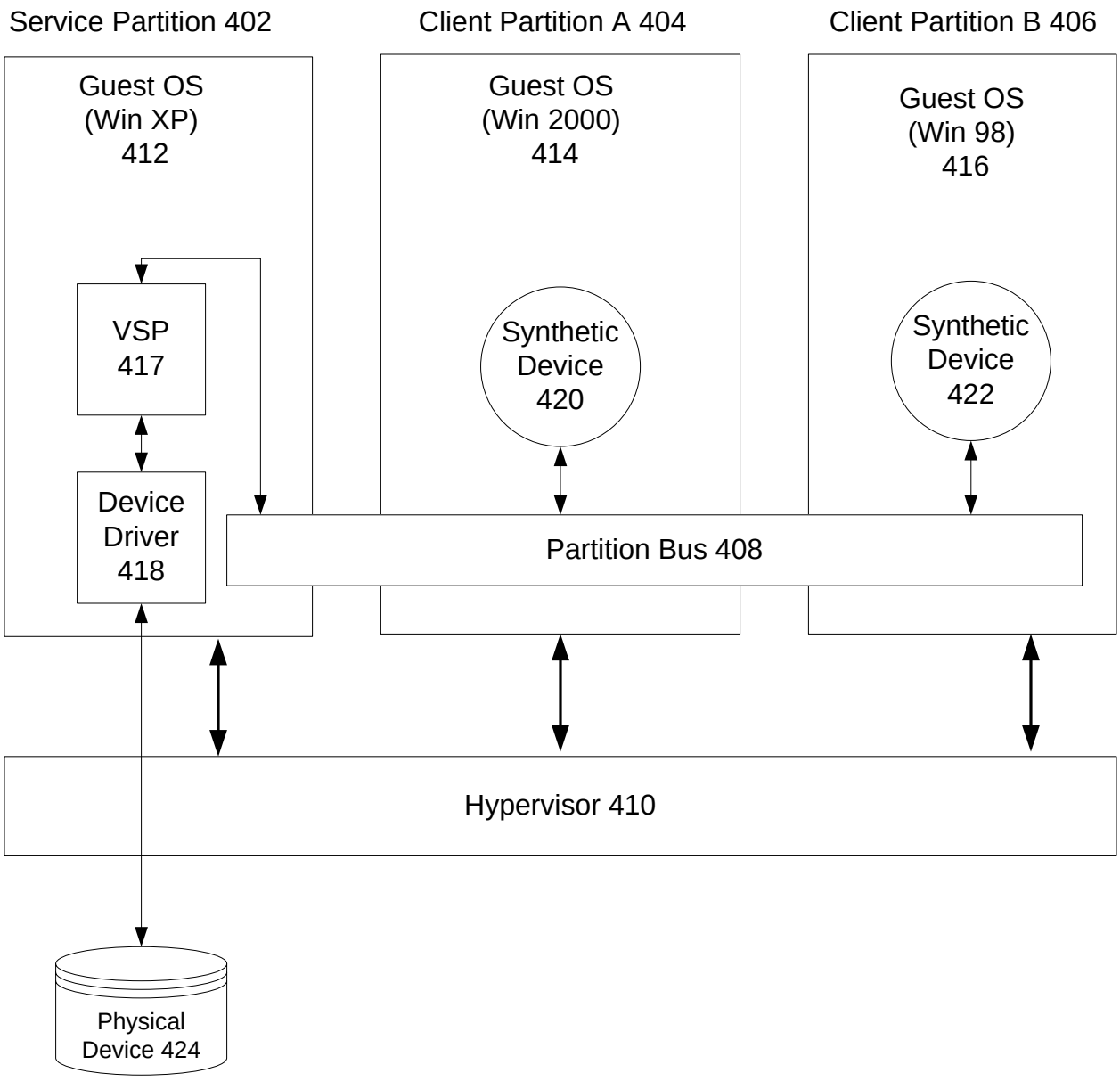

Service Partition 402
Client Partition A 404
Client Partition B 406
Guest OS
(Win XP)
412
Guest OS
(Win 2000)
414
Guest OS
(Win 98)
416
VSP
417
Synthetic
Device
420
Synthetic
Device
422
Device
Driver
418
Partition Bus 408
Hypervisor 410
Physical
Device 424

Fig. 4

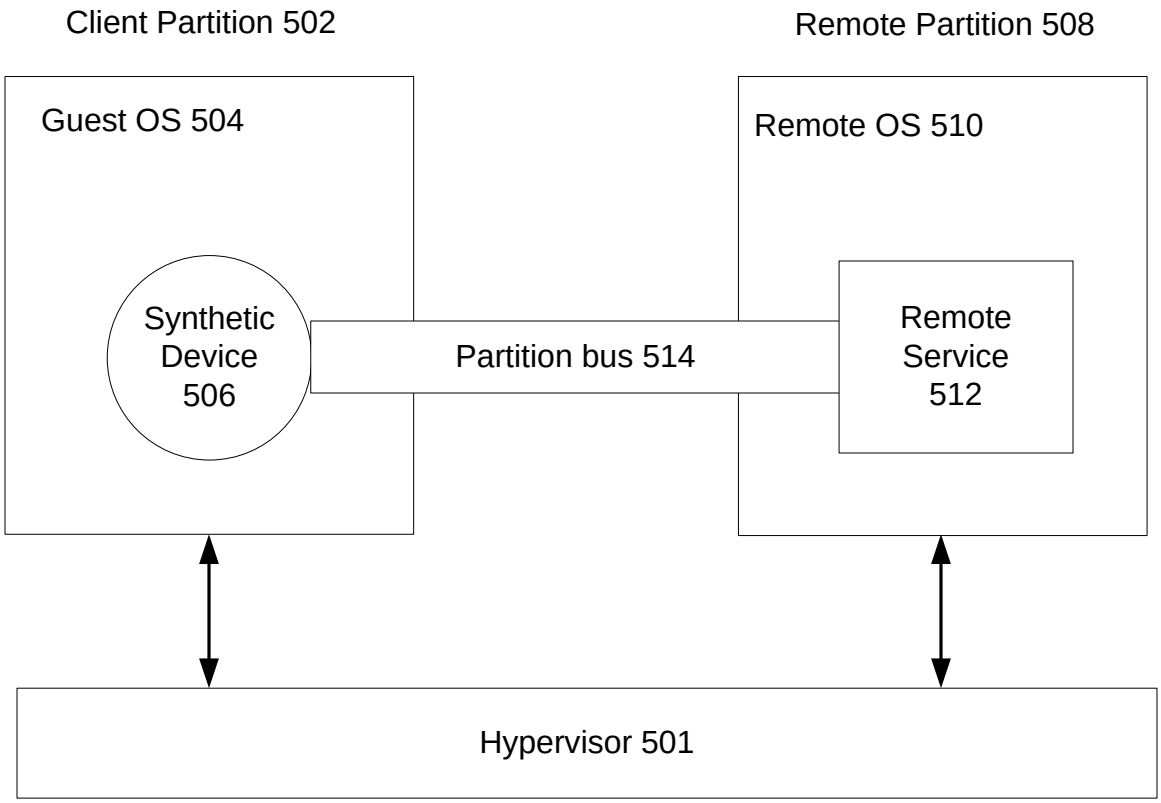
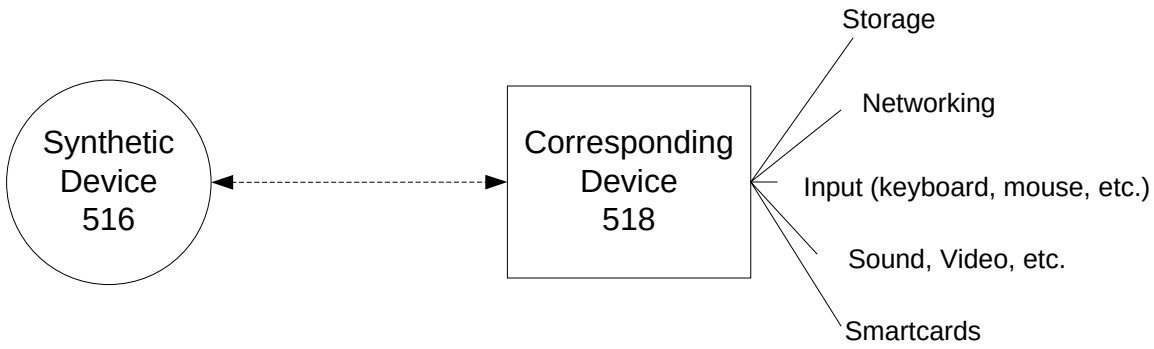

Client Partition 502
Remote Partition 508
Guest OS 504
Remote OS 510
Synthetic Device 506
Partition bus 514
Remote Service 512
Hypervisor 501

Fig. 5A


Synthetic Device 516
Corresponding Device 518
Storage
Networking
Input (keyboard, mouse, etc.)
Sound, Video, etc.
Smartcards

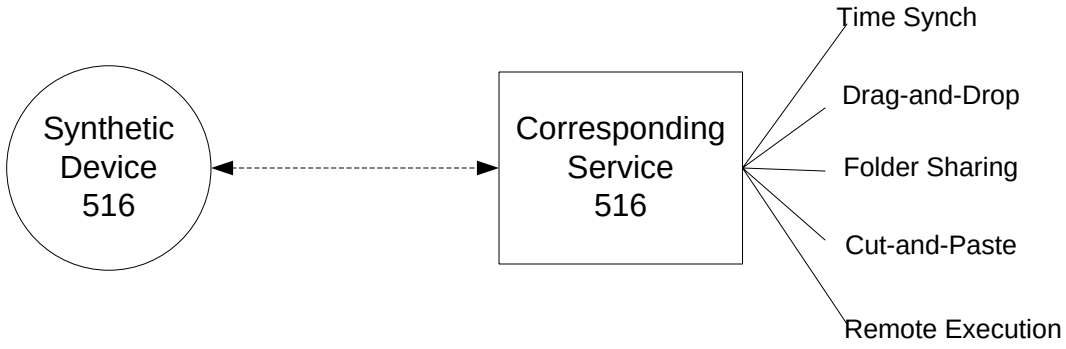

Synthetic Device 516
Corresponding Service 516
Time Synch
Drag-and-Drop
Folder Sharing
Cut-and-Paste
Remote Execution

Fig. 5B

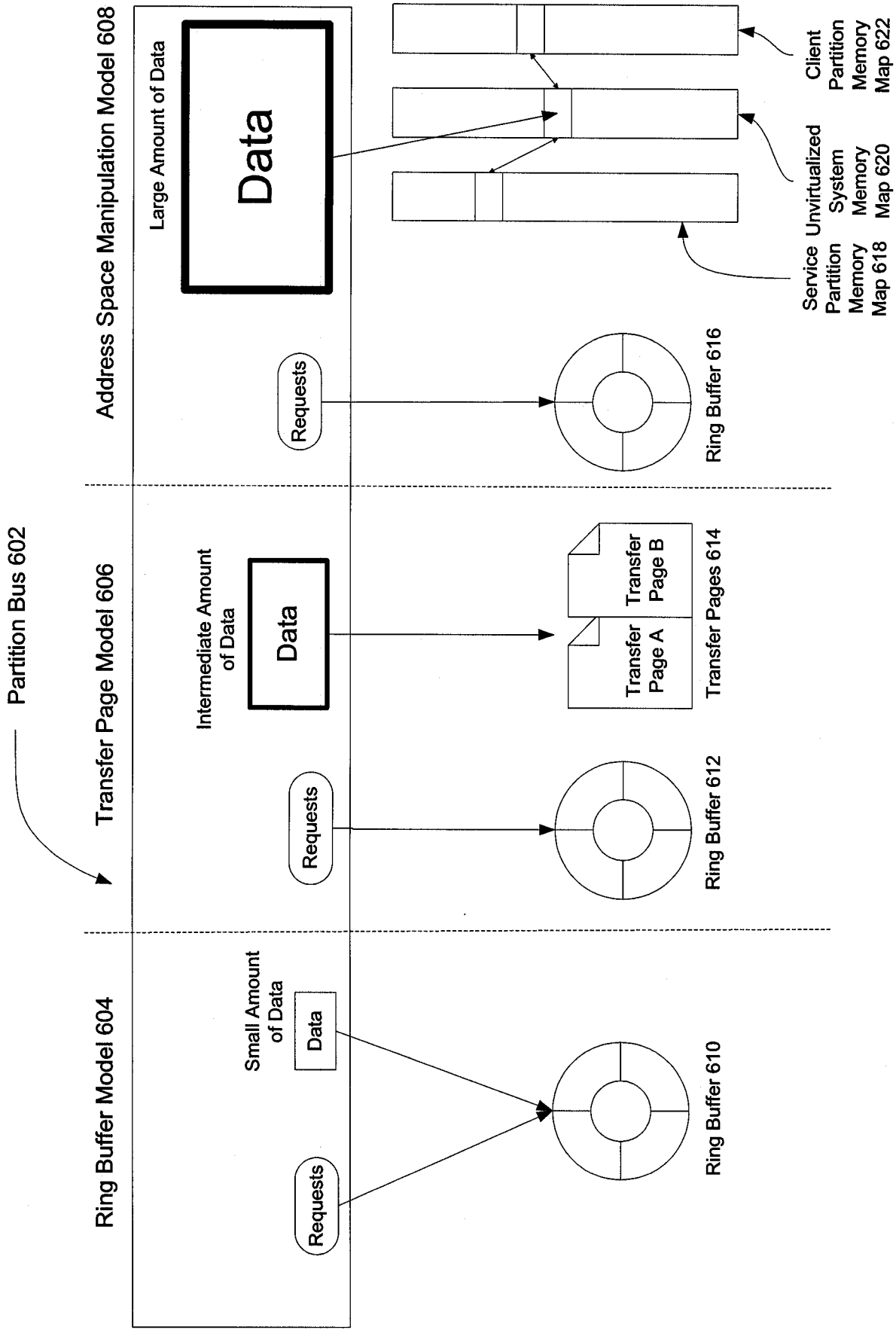

Partition Bus 602
Ring Buffer Model 604
Transfer Page Model 606
Address Space Manipulation Model 608
Small Amount of Data
Data
Requests
Ring Buffer 610
Intermediate Amount of Data
Data
Requests
Ring Buffer 612
Transfer Page A
Transfer Page B
Transfer Pages 614
Large Amount of Data
Data
Requests
Ring Buffer 616
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Unvirtualized System Memory Map 620
Client Partition Memory Map 622

Fig. 6

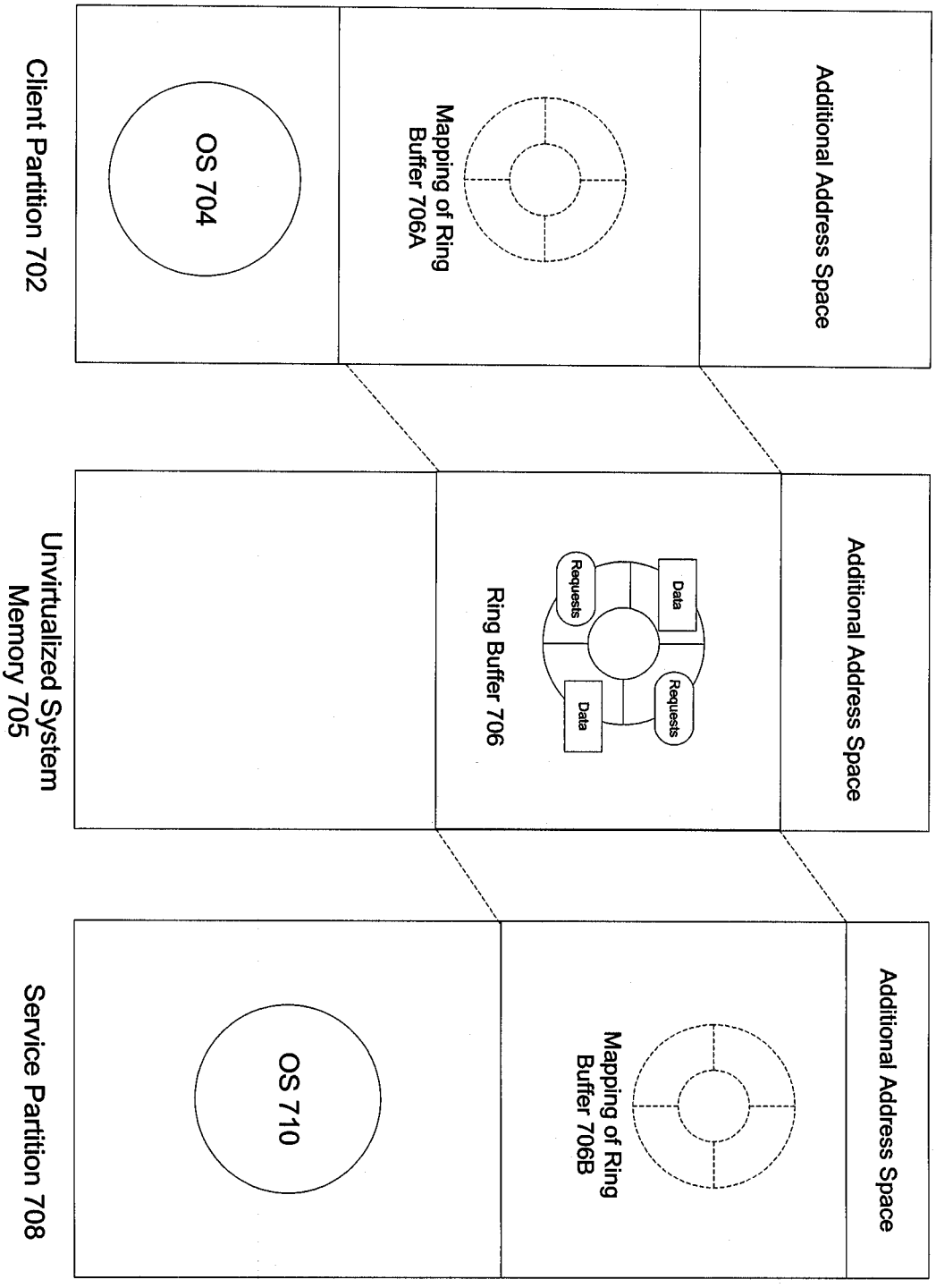

Additional Address Space
Mapping of Ring Buffer 706A
OS 704
Client Partition 702
Additional Address Space
Data
Requests
Requests
Data
Ring Buffer 706
Unvirtualized System Memory 705
Additional Address Space
Mapping of Ring Buffer 706B
OS 710
Service Partition 708

Fig. 7

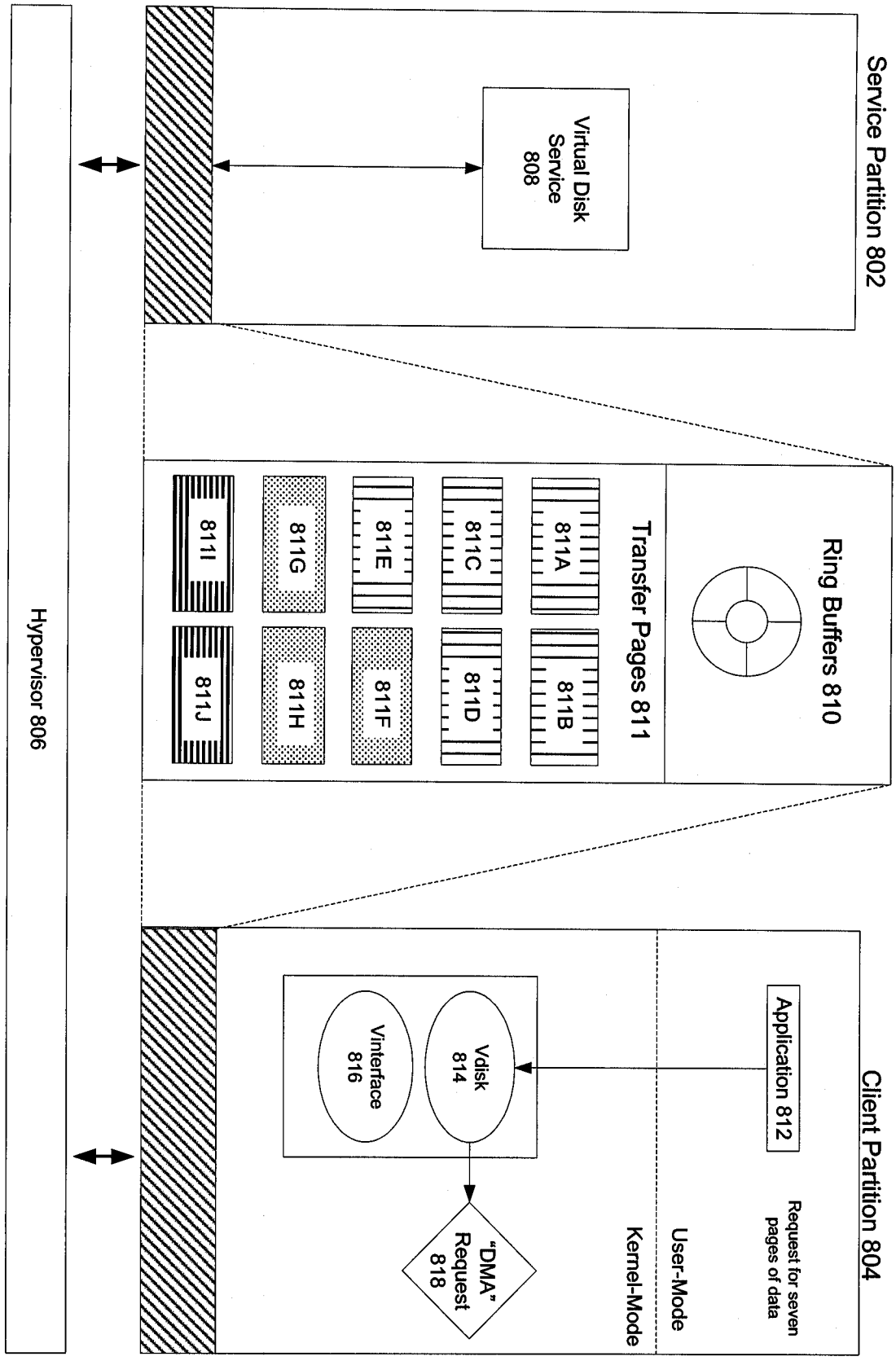

Service Partition 802
Virtual Disk Service 808
Ring Buffers 810
Transfer Pages 811
811A
811B
811C
811D
811E
811F
811G
811H
811I
811J
Client Partition 804
Application 812
Request for seven pages of data
User-Mode
Kernel-Mode
Vdisk 814
Vinterface 816
"DMA" Request 818
Hypervisor 806

Fig. 8

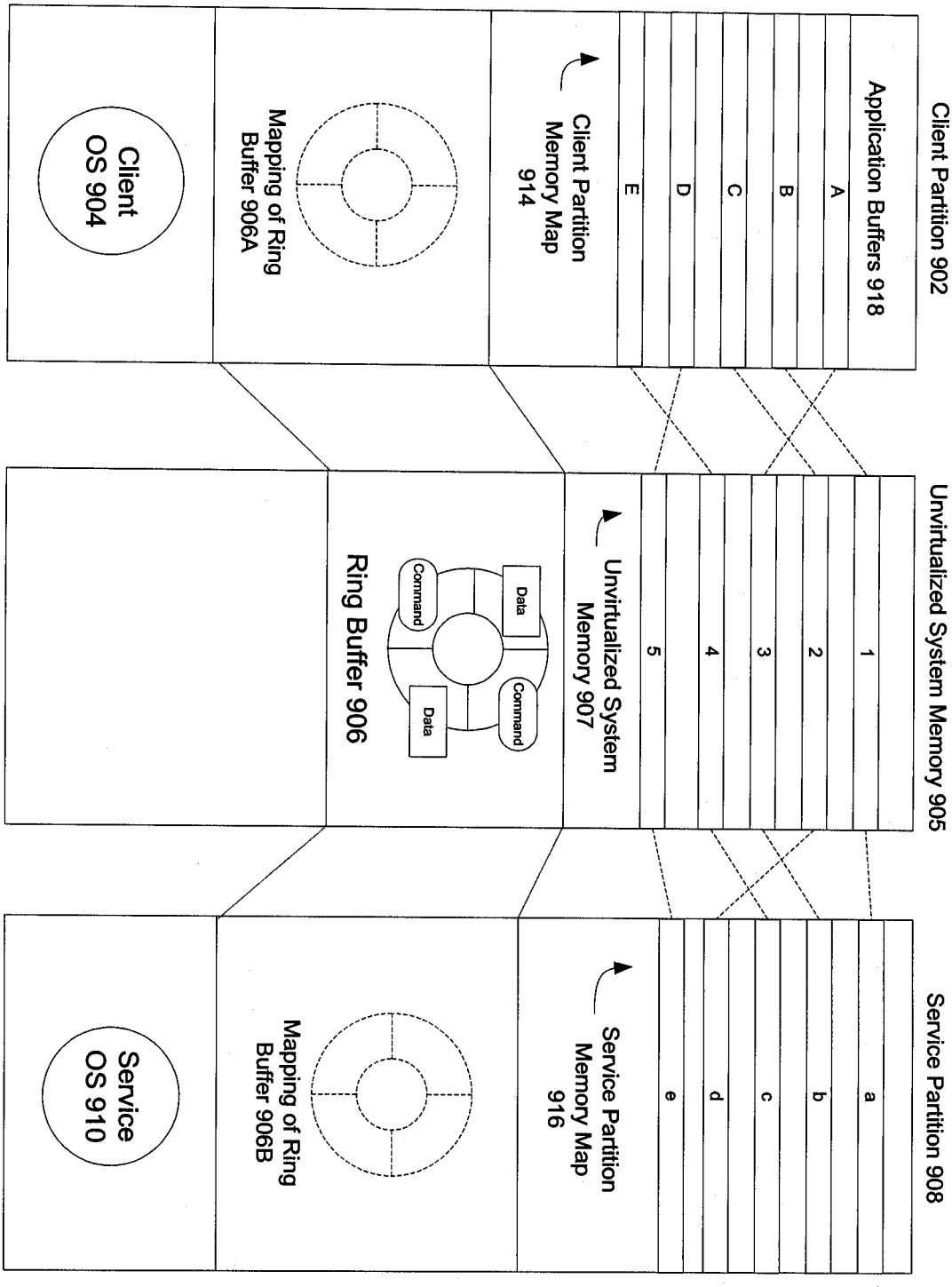

Client Partition 902
Application Buffers 918
A
B
C
D
E
Client Partition Memory Map 914
Mapping of Ring Buffer 906A
Client OS 904
Unvirtualized System Memory 905
1
2
3
4
5
Unvirtualized System Memory 907
Data
Command
Command
Data
Ring Buffer 906
Service Partition 908
a
b
c
d
e
Service Partition Memory Map 916
Mapping of Ring Buffer 906B
Service OS 910

Fig. 9

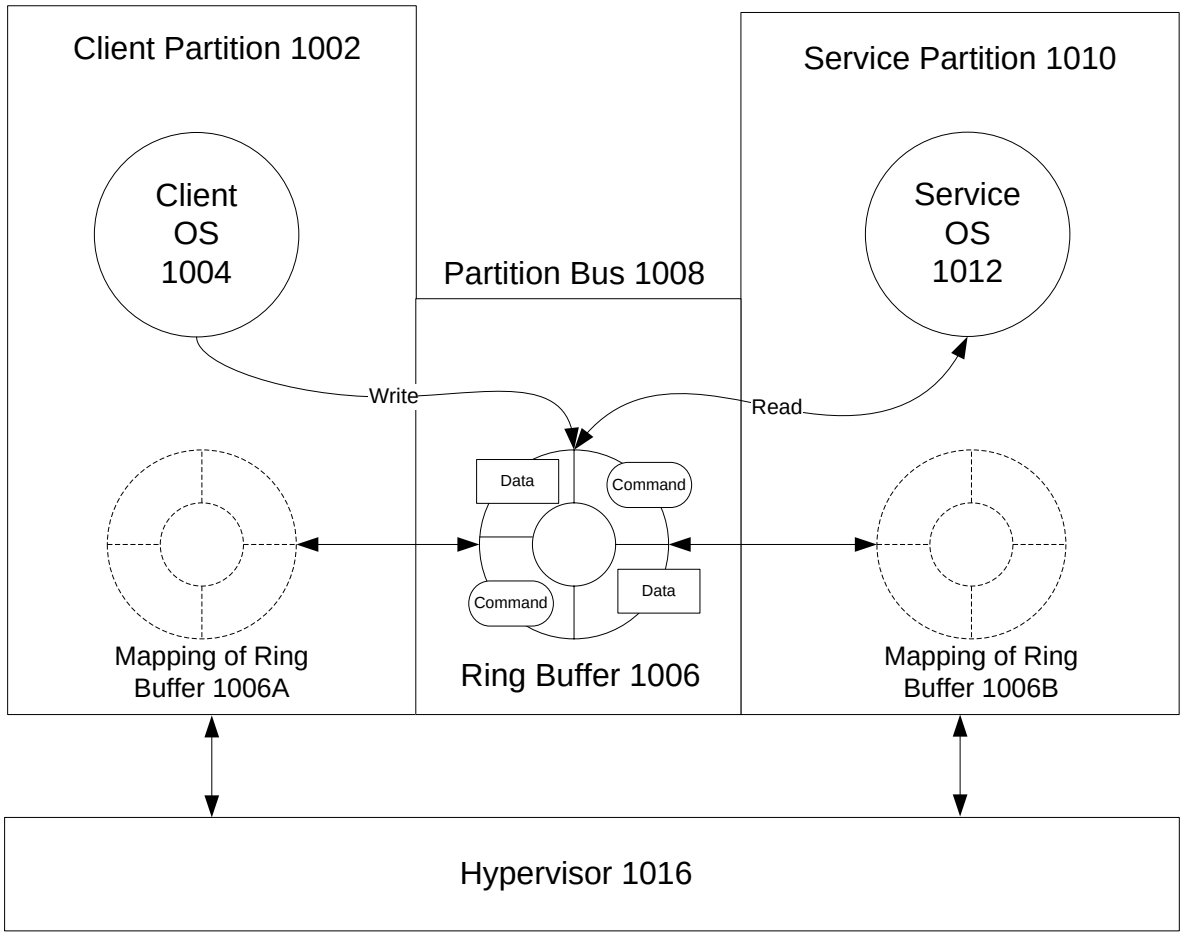

Client Partition 1002
Service Partition 1010
Client OS 1004
Service OS 1012
Partition Bus 1008
Write
Read
Data
Command
Command
Data
Mapping of Ring Buffer 1006A
Ring Buffer 1006
Mapping of Ring Buffer 1006B
Hypervisor 1016

Fig. 10

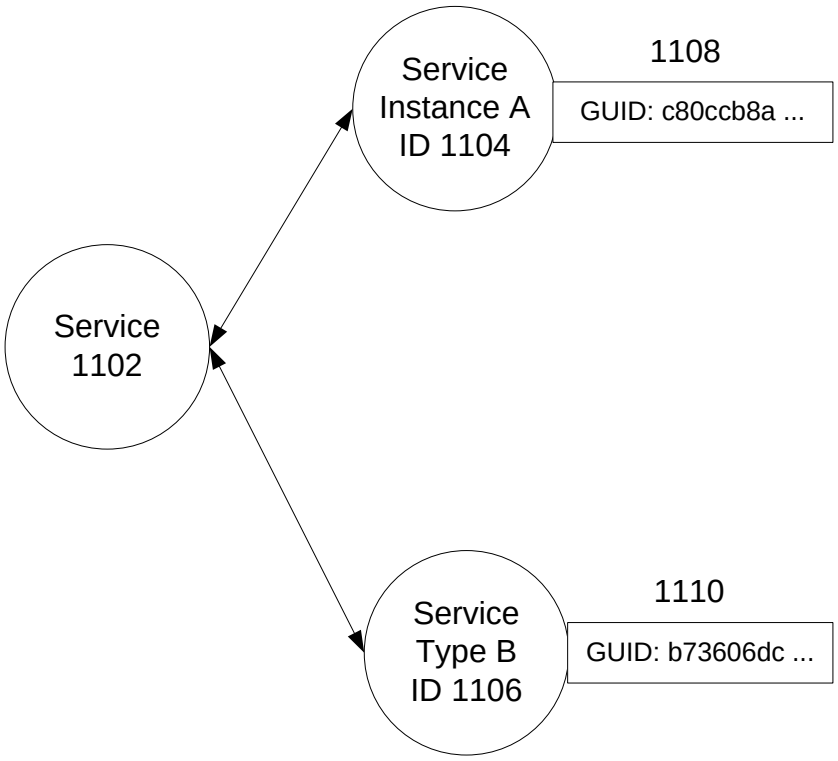

Service
1102
Service
Instance A
ID 1104
1108
GUID: c80ccb8a ...
Service
Type B
ID 1106
1110
GUID: b73606dc ...

Fig. 11

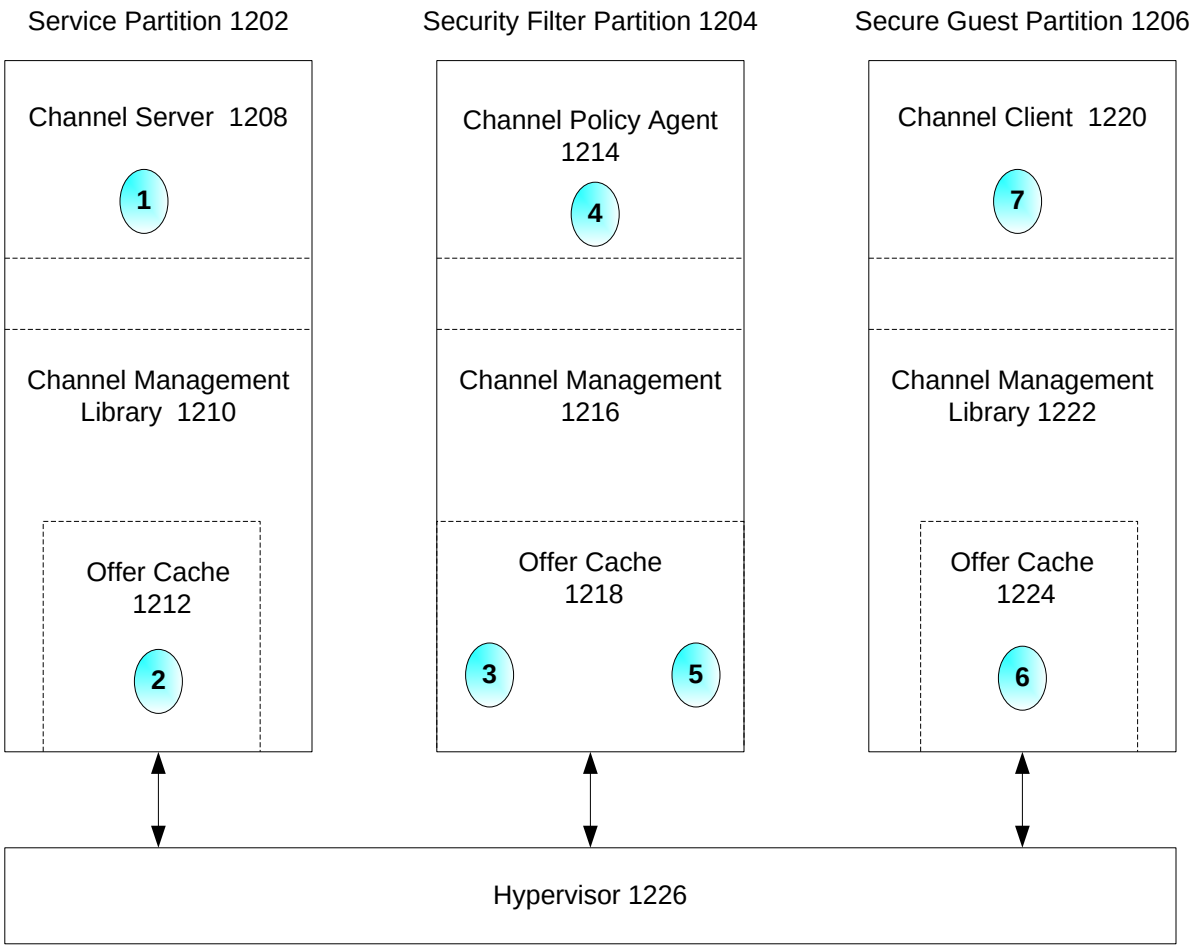

Service Partition 1202
Security Filter Partition 1204
Secure Guest Partition 1206
Channel Server 1208
1
Channel Policy Agent 1214
4
Channel Client 1220
7
Channel Management Library 1210
Channel Management 1216
Channel Management Library 1222
Offer Cache 1212
2
Offer Cache 1218
3
5
Offer Cache 1224
6
Hypervisor 1226

Fig. 12

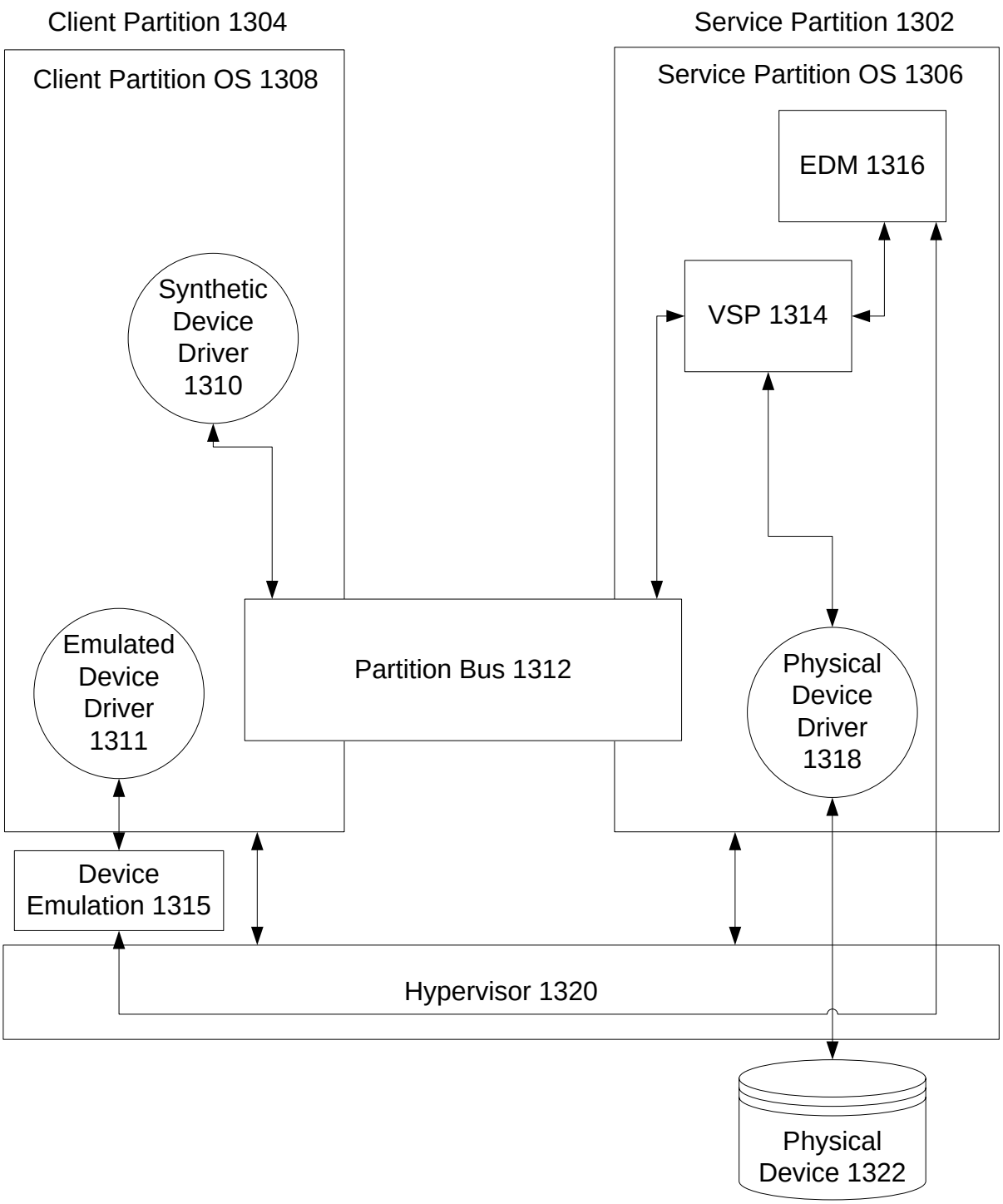

Client Partition 1304
Client Partition OS 1308
Service Partition 1302
Service Partition OS 1306
EDM 1316
Synthetic Device Driver 1310
VSP 1314
Emulated Device Driver 1311
Partition Bus 1312
Physical Device Driver 1318
Device Emulation 1315
Hypervisor 1320
Physical Device 1322

Fig. 13

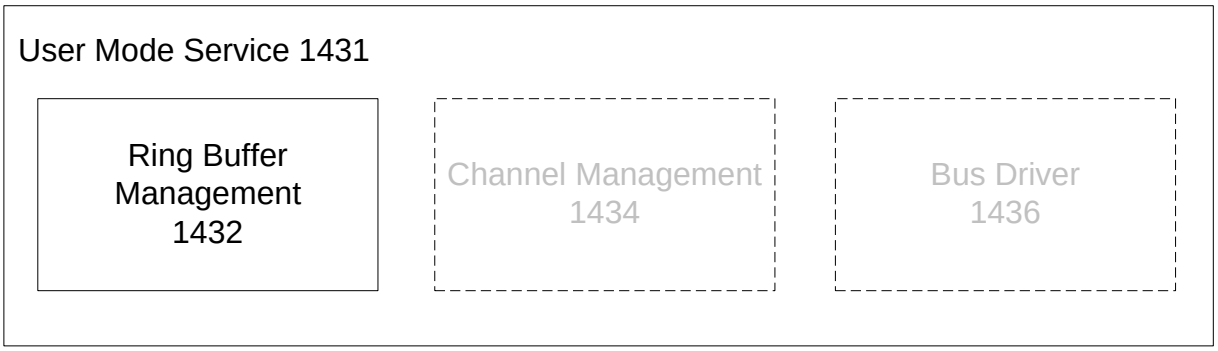


Fig. 14A

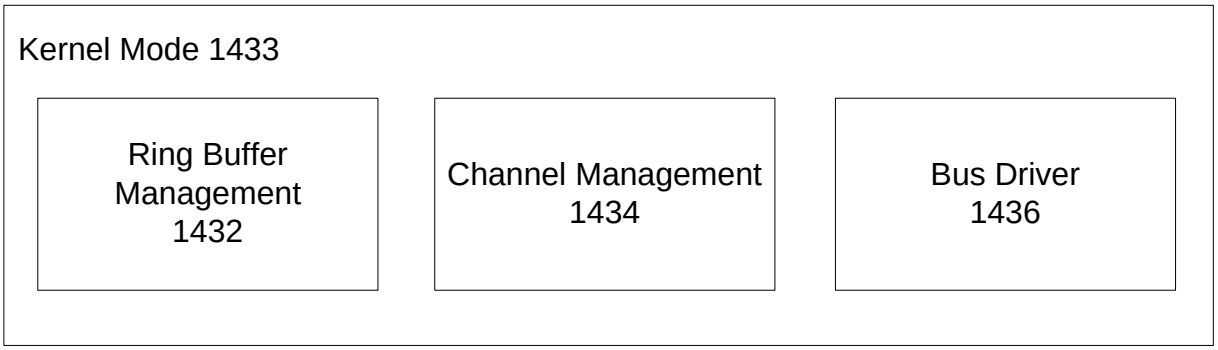


Fig. 14B

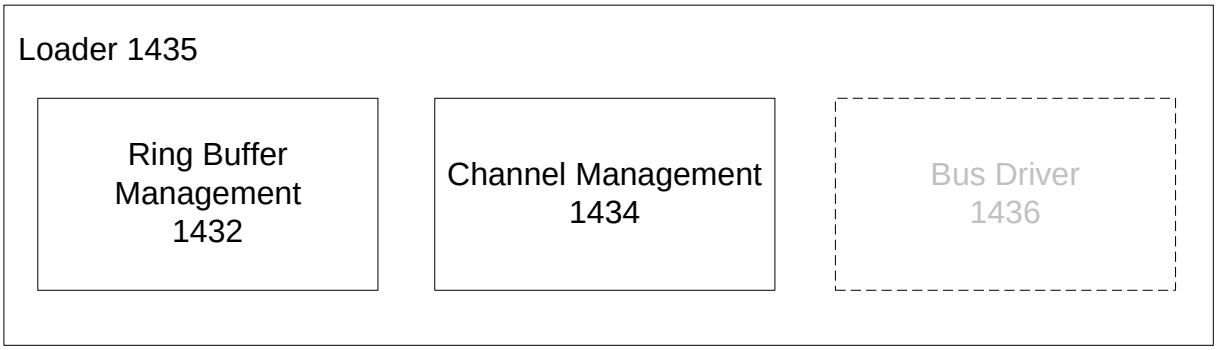


Fig. 14C