**OS Term Project 2: Virtual Memory**

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1. **가상 메모리 관리 순서**
2. fork()를 통한 10개의 자식 프로세스 생성
3. msgq를 통해 부모가 자식에게 순서 왔다고 보냄
4. msgq를 통해 자식이 쓸 주소 랜덤으로 10개 부모에게 보냄
5. 부모가 받으면 page\_table을 보고 해당 페이지 있는지 확인

* Page\_table이 값이 -1 이면 invalid로 간주하고 빈 프레임 찾아서 추가
* Page\_table이 값이 -1이 아니면 해당 값이 frame 번호
* Page\_table 값이 -1인데 현재 free\_address 값이 PASIZE-1 보다 큰 경우 메모리가 꽉 찼다고 보고 제일 pt\_counter에서 제일 낮은 값(Least Recently used) 찾아서 swap-out하고 새로운 페이지 swap-in.

1. CPU\_burst\_time이 모두 끝날 때까지 반복 및 Result.txt에 출력
2. **코드 설명**

개발 환경: Oracle VM VirtualBox – Ubuntu (64-bit)

사용언어: C 언어

1. 스케줄링 전 준비 – 1차 텀프로젝트와 마찬가지로 준비. 10개의 message queue를 생성하고 각 자식은 자식의 번호+2의 msgtype을 받고, 부모는 각 메시지 큐에서 1의 msgtype을 받음. 각 자식은 page\_table[자기 번호][20]의 페이지 테이블을 할당받음. 부모는 physical\_address[PASIZE]의 배열을 가지고 있어 최대 180개의 페이지를 저장하고 있을 수 있음. 부모는 free\_address를 통해 메모리에 몇 번째까지 차있는지 저장.

*int virtual\_address[200];//ProcessNum 10 X each PageNum 20*

*int page\_table[10][20];//ProcessNum 10 X each PageNum 20*

*int pt\_counter[10][20];*

*int MMU[10];*

*int physical\_address[PASIZE];*

*int free\_address;*

1. 부모가 다음 스케줄 될 자식에게 차례가 왔다고 메시지를 보냄. 자식은 메시지를 받으면 자신이 쓸 페이지 번호를 랜덤으로 10개 골라서 보냄. 부모는 자식이 보내는 메시지 기다림.

**부모:**

*if(msgsnd(key\_id[sndbuf.data], &sndbuf, sizeof(struct msgbuf)-sizeof(long), IPC\_NOWAIT) == -1)*

*if(msgrcv(key\_id[sndbuf.data], &rcvbufC, sizeof(struct msgbuf\_child)-sizeof(long), 1,* MSG\_NOERROR)==-1)

**자식:**

*if(msgrcv( key\_idt, &rcvbufT, sizeof(struct msgbuf)-sizeof(long), i+2, MSG\_NOERROR) == -1)*

*//sndbufC data random set*

*for(k=0;k<10;k++)*

*{*

*sndbufC.data\_child[k] = rand()%20 + i\*20;*

*}*

*//message\_sendChild(key\_id[i], &sndbufC);*

*if(msgsnd(key\_idt, &sndbufC, sizeof(struct msgbuf\_child)-sizeof(long), IPC\_NOWAIT) == -1)*

1. 부모가 메시지를 받으면
2. 페이지가 invalid 한 경우: Page\_table의 값이 -1인 경우는 invalid로 간주하고 physical\_address[free\_address]에 해당 페이지 저장 후 page\_table에도 해당 frame 번호 저장. 그 후 페이지가 언제 쓰였는지 카운트하는 pt\_counter 배열에 현재 tick\_num 저장.  *//get memory from PA, set pagetable physical\_address[free\_address]= rcvbufC.data\_child[i]; page\_table[sndbuf.data][rcvbufC.data\_child[i]-20\*(sndbuf.data)]=free\_address; free\_address++; pt\_counter[sndbuf.data][rcvbufC.data\_child[i]-20\*(sndbuf.data)] = tick\_num;*
3. 페이지가 valid 한 경우: Page\_table의 값이 -1이 아닌 경우로 해당 페이지 테이블의 값이 프레임 번호.
4. 페이지가 invalid 하지만 physical\_address가 꽉찬 경우: free\_address가 PASIZE인 180보다 커지는 경우로 최근에 쓰이지 않은 페이지를 swap out 하고 페이지 테이블 수정 후 새로운 페이지 swap in.

*//Swap out LRU and swap in new temp=minFind(pt\_counter); page\_table[(int)(temp/20)][temp-((int)(temp/20))\*20]= -1; physical\_address[temp]= rcvbufC.data\_child[i]; page\_table[sndbuf.data][rcvbufC.data\_child[i]-20\*(sndbuf.data)]=temp pt\_counter[sndbuf.data][rcvbufC.data\_child[i]-20\*(sndbuf.data)]=tick\_num;*

**minFind 함수:**

*int minFind(int arr[][20])*

*{*

*int i=0;*

*int k=0;*

*int minimum =300;*

*int minindex =0;*

*for(i=0;i<10;i++)*

*{*

*for(k=0;k<20;k++)*

*{*

*if(arr[i][k]<minimum && page\_table[i][k]!=-1)*

*{*

*minimum = arr[i][k];*

*minindex = i\*20+k;*

*}*

*}*

*}*

*return minindex;*

*}*

1. 스케줄이 끝날 때까지 반복
2. **Result.txt 예시**

실제 파일은 Blackboard에 코드와 함께 제출.

처음에 Fork()시 자식 번호, CPU\_burst\_time, I/O\_burst time 출력.

예시:

Child No.0, CPU Time:63, IO Time:6

Child No.1, CPU Time:77, IO Time:5

Child No.2, CPU Time:73, IO Time:5

그 후 time tick(0.1초) 2번마다 1번씩 스케줄링 및 프린트. Time, 요청한 VA, Page fault, Page table change, Swap-in&Swap-out, Access한 physical\_address를 Result.txt에 출력.

Result.txt 200개 예시:

Time: 1, Child No.0, Requests: VA[1] Page fault change page\_table[0][1] to PA[0], Requests: VA[19] Page fault change page\_table[0][19] to PA[1], Requests: VA[9] Page fault change page\_table[0][9] to PA[2], Requests: VA[6] Page fault change page\_table[0][6] to PA[3], Requests: VA[12] Page fault change page\_table[0][12] to PA[4], Requests: VA[5] Page fault change page\_table[0][5] to PA[5], Requests: VA[9]page\_table[0][9] accessed PA[2], Requests: VA[0] Page fault change page\_table[0][0] to PA[6], Requests: VA[14] Page fault change page\_table[0][14] to PA[7], Requests: VA[13] Page fault change page\_table[0][13] to PA[8],

Time: 2, Child No.1, Requests: VA[21] Page fault change page\_table[1][1] to PA[9], Requests: VA[39] Page fault change page\_table[1][19] to PA[10], Requests: VA[29] Page fault change page\_table[1][9] to PA[11], Requests: VA[26] Page fault change page\_table[1][6] to PA[12], Requests: VA[32] Page fault change page\_table[1][12] to PA[13], Requests: VA[25] Page fault change page\_table[1][5] to PA[14], Requests: VA[29]page\_table[1][9] accessed PA[11], Requests: VA[20] Page fault change page\_table[1][0] to PA[15], Requests: VA[34] Page fault change page\_table[1][14] to PA[16], Requests: VA[33] Page fault change page\_table[1][13] to PA[17],

Time: 3, Child No.2, Requests: VA[41] Page fault change page\_table[2][1] to PA[18], Requests: VA[59] Page fault change page\_table[2][19] to PA[19], Requests: VA[49] Page fault change page\_table[2][9] to PA[20], Requests: VA[46] Page fault change page\_table[2][6] to PA[21], Requests: VA[52] Page fault change page\_table[2][12] to PA[22], Requests: VA[45] Page fault change page\_table[2][5] to PA[23], Requests: VA[49]page\_table[2][9] accessed PA[20], Requests: VA[40] Page fault change page\_table[2][0] to PA[24], Requests: VA[54] Page fault change page\_table[2][14] to PA[25], Requests: VA[53] Page fault change page\_table[2][13] to PA[26],

Time: 4, Child No.3, Requests: VA[61] Page fault change page\_table[3][1] to PA[27], Requests: VA[79] Page fault change page\_table[3][19] to PA[28], Requests: VA[69] Page fault change page\_table[3][9] to PA[29], Requests: VA[66] Page fault change page\_table[3][6] to PA[30], Requests: VA[72] Page fault change page\_table[3][12] to PA[31], Requests: VA[65] Page fault change page\_table[3][5] to PA[32], Requests: VA[69]page\_table[3][9] accessed PA[29], Requests: VA[60] Page fault change page\_table[3][0] to PA[33], Requests: VA[74] Page fault change page\_table[3][14] to PA[34], Requests: VA[73] Page fault change page\_table[3][13] to PA[35],

Time: 5, Child No.4, Requests: VA[81] Page fault change page\_table[4][1] to PA[36], Requests: VA[99] Page fault change page\_table[4][19] to PA[37], Requests: VA[89] Page fault change page\_table[4][9] to PA[38], Requests: VA[86] Page fault change page\_table[4][6] to PA[39], Requests: VA[92] Page fault change page\_table[4][12] to PA[40], Requests: VA[85] Page fault change page\_table[4][5] to PA[41], Requests: VA[89]page\_table[4][9] accessed PA[38], Requests: VA[80] Page fault change page\_table[4][0] to PA[42], Requests: VA[94] Page fault change page\_table[4][14] to PA[43], Requests: VA[93] Page fault change page\_table[4][13] to PA[44],

Time: 6, Child No.5, Requests: VA[101] Page fault change page\_table[5][1] to PA[45], Requests: VA[119] Page fault change page\_table[5][19] to PA[46], Requests: VA[109] Page fault change page\_table[5][9] to PA[47], Requests: VA[106] Page fault change page\_table[5][6] to PA[48], Requests: VA[112] Page fault change page\_table[5][12] to PA[49], Requests: VA[105] Page fault change page\_table[5][5] to PA[50], Requests: VA[109]page\_table[5][9] accessed PA[47], Requests: VA[100] Page fault change page\_table[5][0] to PA[51], Requests: VA[114] Page fault change page\_table[5][14] to PA[52], Requests: VA[113] Page fault change page\_table[5][13] to PA[53],

Time: 7, Child No.6, Requests: VA[121] Page fault change page\_table[6][1] to PA[54], Requests: VA[139] Page fault change page\_table[6][19] to PA[55], Requests: VA[129] Page fault change page\_table[6][9] to PA[56], Requests: VA[126] Page fault change page\_table[6][6] to PA[57], Requests: VA[132] Page fault change page\_table[6][12] to PA[58], Requests: VA[125] Page fault change page\_table[6][5] to PA[59], Requests: VA[129]page\_table[6][9] accessed PA[56], Requests: VA[120] Page fault change page\_table[6][0] to PA[60], Requests: VA[134] Page fault change page\_table[6][14] to PA[61], Requests: VA[133] Page fault change page\_table[6][13] to PA[62],

Time: 8, Child No.7, Requests: VA[141] Page fault change page\_table[7][1] to PA[63], Requests: VA[159] Page fault change page\_table[7][19] to PA[64], Requests: VA[149] Page fault change page\_table[7][9] to PA[65], Requests: VA[146] Page fault change page\_table[7][6] to PA[66], Requests: VA[152] Page fault change page\_table[7][12] to PA[67], Requests: VA[145] Page fault change page\_table[7][5] to PA[68], Requests: VA[149]page\_table[7][9] accessed PA[65], Requests: VA[140] Page fault change page\_table[7][0] to PA[69], Requests: VA[154] Page fault change page\_table[7][14] to PA[70], Requests: VA[153] Page fault change page\_table[7][13] to PA[71],

Time: 9, Child No.8, Requests: VA[161] Page fault change page\_table[8][1] to PA[72], Requests: VA[179] Page fault change page\_table[8][19] to PA[73], Requests: VA[169] Page fault change page\_table[8][9] to PA[74], Requests: VA[166] Page fault change page\_table[8][6] to PA[75], Requests: VA[172] Page fault change page\_table[8][12] to PA[76], Requests: VA[165] Page fault change page\_table[8][5] to PA[77], Requests: VA[169]page\_table[8][9] accessed PA[74], Requests: VA[160] Page fault change page\_table[8][0] to PA[78], Requests: VA[174] Page fault change page\_table[8][14] to PA[79], Requests: VA[173] Page fault change page\_table[8][13] to PA[80],

Time: 10, Child No.9, Requests: VA[181] Page fault change page\_table[9][1] to PA[81], Requests: VA[199] Page fault change page\_table[9][19] to PA[82], Requests: VA[189] Page fault change page\_table[9][9] to PA[83], Requests: VA[186] Page fault change page\_table[9][6] to PA[84], Requests: VA[192] Page fault change page\_table[9][12] to PA[85], Requests: VA[185] Page fault change page\_table[9][5] to PA[86], Requests: VA[189]page\_table[9][9] accessed PA[83], Requests: VA[180] Page fault change page\_table[9][0] to PA[87], Requests: VA[194] Page fault change page\_table[9][14] to PA[88], Requests: VA[193] Page fault change page\_table[9][13] to PA[89],

Time: 11, Child No.0, Requests: VA[17] Page fault change page\_table[0][17] to PA[90], Requests: VA[5]page\_table[0][5] accessed PA[5], Requests: VA[17]page\_table[0][17] accessed PA[90], Requests: VA[19]page\_table[0][19] accessed PA[1], Requests: VA[6]page\_table[0][6] accessed PA[3], Requests: VA[5]page\_table[0][5] accessed PA[5], Requests: VA[19]page\_table[0][19] accessed PA[1], Requests: VA[19]page\_table[0][19] accessed PA[1], Requests: VA[17]page\_table[0][17] accessed PA[90], Requests: VA[13]page\_table[0][13] accessed PA[8],

Time: 12, Child No.1, Requests: VA[37] Page fault change page\_table[1][17] to PA[91], Requests: VA[25]page\_table[1][5] accessed PA[14], Requests: VA[37]page\_table[1][17] accessed PA[91], Requests: VA[39]page\_table[1][19] accessed PA[10], Requests: VA[26]page\_table[1][6] accessed PA[12], Requests: VA[25]page\_table[1][5] accessed PA[14], Requests: VA[39]page\_table[1][19] accessed PA[10], Requests: VA[39]page\_table[1][19] accessed PA[10], Requests: VA[37]page\_table[1][17] accessed PA[91], Requests: VA[33]page\_table[1][13] accessed PA[17],

Time: 13, Child No.2, Requests: VA[57] Page fault change page\_table[2][17] to PA[92], Requests: VA[45]page\_table[2][5] accessed PA[23], Requests: VA[57]page\_table[2][17] accessed PA[92], Requests: VA[59]page\_table[2][19] accessed PA[19], Requests: VA[46]page\_table[2][6] accessed PA[21], Requests: VA[45]page\_table[2][5] accessed PA[23], Requests: VA[59]page\_table[2][19] accessed PA[19], Requests: VA[59]page\_table[2][19] accessed PA[19], Requests: VA[57]page\_table[2][17] accessed PA[92], Requests: VA[53]page\_table[2][13] accessed PA[26],

Time: 14, Child No.3, Requests: VA[77] Page fault change page\_table[3][17] to PA[93], Requests: VA[65]page\_table[3][5] accessed PA[32], Requests: VA[77]page\_table[3][17] accessed PA[93], Requests: VA[79]page\_table[3][19] accessed PA[28], Requests: VA[66]page\_table[3][6] accessed PA[30], Requests: VA[65]page\_table[3][5] accessed PA[32], Requests: VA[79]page\_table[3][19] accessed PA[28], Requests: VA[79]page\_table[3][19] accessed PA[28], Requests: VA[77]page\_table[3][17] accessed PA[93], Requests: VA[73]page\_table[3][13] accessed PA[35],

Time: 15, Child No.4, Requests: VA[97] Page fault change page\_table[4][17] to PA[94], Requests: VA[85]page\_table[4][5] accessed PA[41], Requests: VA[97]page\_table[4][17] accessed PA[94], Requests: VA[99]page\_table[4][19] accessed PA[37], Requests: VA[86]page\_table[4][6] accessed PA[39], Requests: VA[85]page\_table[4][5] accessed PA[41], Requests: VA[99]page\_table[4][19] accessed PA[37], Requests: VA[99]page\_table[4][19] accessed PA[37], Requests: VA[97]page\_table[4][17] accessed PA[94], Requests: VA[93]page\_table[4][13] accessed PA[44],

Time: 16, Child No.5, Requests: VA[117] Page fault change page\_table[5][17] to PA[95], Requests: VA[105]page\_table[5][5] accessed PA[50], Requests: VA[117]page\_table[5][17] accessed PA[95], Requests: VA[119]page\_table[5][19] accessed PA[46], Requests: VA[106]page\_table[5][6] accessed PA[48], Requests: VA[105]page\_table[5][5] accessed PA[50], Requests: VA[119]page\_table[5][19] accessed PA[46], Requests: VA[119]page\_table[5][19] accessed PA[46], Requests: VA[117]page\_table[5][17] accessed PA[95], Requests: VA[113]page\_table[5][13] accessed PA[53],

Time: 17, Child No.6, Requests: VA[137] Page fault change page\_table[6][17] to PA[96], Requests: VA[125]page\_table[6][5] accessed PA[59], Requests: VA[137]page\_table[6][17] accessed PA[96], Requests: VA[139]page\_table[6][19] accessed PA[55], Requests: VA[126]page\_table[6][6] accessed PA[57], Requests: VA[125]page\_table[6][5] accessed PA[59], Requests: VA[139]page\_table[6][19] accessed PA[55], Requests: VA[139]page\_table[6][19] accessed PA[55], Requests: VA[137]page\_table[6][17] accessed PA[96], Requests: VA[133]page\_table[6][13] accessed PA[62],

Time: 18, Child No.7, Requests: VA[157] Page fault change page\_table[7][17] to PA[97], Requests: VA[145]page\_table[7][5] accessed PA[68], Requests: VA[157]page\_table[7][17] accessed PA[97], Requests: VA[159]page\_table[7][19] accessed PA[64], Requests: VA[146]page\_table[7][6] accessed PA[66], Requests: VA[145]page\_table[7][5] accessed PA[68], Requests: VA[159]page\_table[7][19] accessed PA[64], Requests: VA[159]page\_table[7][19] accessed PA[64], Requests: VA[157]page\_table[7][17] accessed PA[97], Requests: VA[153]page\_table[7][13] accessed PA[71],

Time: 19, Child No.8, Requests: VA[177] Page fault change page\_table[8][17] to PA[98], Requests: VA[165]page\_table[8][5] accessed PA[77], Requests: VA[177]page\_table[8][17] accessed PA[98], Requests: VA[179]page\_table[8][19] accessed PA[73], Requests: VA[166]page\_table[8][6] accessed PA[75], Requests: VA[165]page\_table[8][5] accessed PA[77], Requests: VA[179]page\_table[8][19] accessed PA[73], Requests: VA[179]page\_table[8][19] accessed PA[73], Requests: VA[177]page\_table[8][17] accessed PA[98], Requests: VA[173]page\_table[8][13] accessed PA[80],

Time: 20, Child No.9, Requests: VA[197] Page fault change page\_table[9][17] to PA[99], Requests: VA[185]page\_table[9][5] accessed PA[86], Requests: VA[197]page\_table[9][17] accessed PA[99], Requests: VA[199]page\_table[9][19] accessed PA[82], Requests: VA[186]page\_table[9][6] accessed PA[84], Requests: VA[185]page\_table[9][5] accessed PA[86], Requests: VA[199]page\_table[9][19] accessed PA[82], Requests: VA[199]page\_table[9][19] accessed PA[82], Requests: VA[197]page\_table[9][17] accessed PA[99], Requests: VA[193]page\_table[9][13] accessed PA[89],

Time: 21, Child No.0, Requests: VA[1]page\_table[0][1] accessed PA[0], Requests: VA[1]page\_table[0][1] accessed PA[0], Requests: VA[6]page\_table[0][6] accessed PA[3], Requests: VA[5]page\_table[0][5] accessed PA[5], Requests: VA[2] Page fault change page\_table[0][2] to PA[100], Requests: VA[3] Page fault change page\_table[0][3] to PA[101], Requests: VA[2]page\_table[0][2] accessed PA[100], Requests: VA[13]page\_table[0][13] accessed PA[8], Requests: VA[3]page\_table[0][3] accessed PA[101], Requests: VA[13]page\_table[0][13] accessed PA[8],

Time: 22, Child No.1, Requests: VA[21]page\_table[1][1] accessed PA[9], Requests: VA[21]page\_table[1][1] accessed PA[9], Requests: VA[26]page\_table[1][6] accessed PA[12], Requests: VA[25]page\_table[1][5] accessed PA[14], Requests: VA[22] Page fault change page\_table[1][2] to PA[102], Requests: VA[23] Page fault change page\_table[1][3] to PA[103], Requests: VA[22]page\_table[1][2] accessed PA[102], Requests: VA[33]page\_table[1][13] accessed PA[17], Requests: VA[23]page\_table[1][3] accessed PA[103], Requests: VA[33]page\_table[1][13] accessed PA[17],

Time: 23, Child No.2, Requests: VA[41]page\_table[2][1] accessed PA[18], Requests: VA[41]page\_table[2][1] accessed PA[18], Requests: VA[46]page\_table[2][6] accessed PA[21], Requests: VA[45]page\_table[2][5] accessed PA[23], Requests: VA[42] Page fault change page\_table[2][2] to PA[104], Requests: VA[43] Page fault change page\_table[2][3] to PA[105], Requests: VA[42]page\_table[2][2] accessed PA[104], Requests: VA[53]page\_table[2][13] accessed PA[26], Requests: VA[43]page\_table[2][3] accessed PA[105], Requests: VA[53]page\_table[2][13] accessed PA[26],

Time: 24, Child No.3, Requests: VA[61]page\_table[3][1] accessed PA[27], Requests: VA[61]page\_table[3][1] accessed PA[27], Requests: VA[66]page\_table[3][6] accessed PA[30], Requests: VA[65]page\_table[3][5] accessed PA[32], Requests: VA[62] Page fault change page\_table[3][2] to PA[106], Requests: VA[63] Page fault change page\_table[3][3] to PA[107], Requests: VA[62]page\_table[3][2] accessed PA[106], Requests: VA[73]page\_table[3][13] accessed PA[35], Requests: VA[63]page\_table[3][3] accessed PA[107], Requests: VA[73]page\_table[3][13] accessed PA[35],

Time: 25, Child No.4, Requests: VA[81]page\_table[4][1] accessed PA[36], Requests: VA[81]page\_table[4][1] accessed PA[36], Requests: VA[86]page\_table[4][6] accessed PA[39], Requests: VA[85]page\_table[4][5] accessed PA[41], Requests: VA[82] Page fault change page\_table[4][2] to PA[108], Requests: VA[83] Page fault change page\_table[4][3] to PA[109], Requests: VA[82]page\_table[4][2] accessed PA[108], Requests: VA[93]page\_table[4][13] accessed PA[44], Requests: VA[83]page\_table[4][3] accessed PA[109], Requests: VA[93]page\_table[4][13] accessed PA[44],

Time: 26, Child No.5, Requests: VA[101]page\_table[5][1] accessed PA[45], Requests: VA[101]page\_table[5][1] accessed PA[45], Requests: VA[106]page\_table[5][6] accessed PA[48], Requests: VA[105]page\_table[5][5] accessed PA[50], Requests: VA[102] Page fault change page\_table[5][2] to PA[110], Requests: VA[103] Page fault change page\_table[5][3] to PA[111], Requests: VA[102]page\_table[5][2] accessed PA[110], Requests: VA[113]page\_table[5][13] accessed PA[53], Requests: VA[103]page\_table[5][3] accessed PA[111], Requests: VA[113]page\_table[5][13] accessed PA[53],

Time: 27, Child No.6, Requests: VA[121]page\_table[6][1] accessed PA[54], Requests: VA[121]page\_table[6][1] accessed PA[54], Requests: VA[126]page\_table[6][6] accessed PA[57], Requests: VA[125]page\_table[6][5] accessed PA[59], Requests: VA[122] Page fault change page\_table[6][2] to PA[112], Requests: VA[123] Page fault change page\_table[6][3] to PA[113], Requests: VA[122]page\_table[6][2] accessed PA[112], Requests: VA[133]page\_table[6][13] accessed PA[62], Requests: VA[123]page\_table[6][3] accessed PA[113], Requests: VA[133]page\_table[6][13] accessed PA[62],

Time: 28, Child No.7, Requests: VA[141]page\_table[7][1] accessed PA[63], Requests: VA[141]page\_table[7][1] accessed PA[63], Requests: VA[146]page\_table[7][6] accessed PA[66], Requests: VA[145]page\_table[7][5] accessed PA[68], Requests: VA[142] Page fault change page\_table[7][2] to PA[114], Requests: VA[143] Page fault change page\_table[7][3] to PA[115], Requests: VA[142]page\_table[7][2] accessed PA[114], Requests: VA[153]page\_table[7][13] accessed PA[71], Requests: VA[143]page\_table[7][3] accessed PA[115], Requests: VA[153]page\_table[7][13] accessed PA[71],

Time: 29, Child No.8, Requests: VA[161]page\_table[8][1] accessed PA[72], Requests: VA[161]page\_table[8][1] accessed PA[72], Requests: VA[166]page\_table[8][6] accessed PA[75], Requests: VA[165]page\_table[8][5] accessed PA[77], Requests: VA[162] Page fault change page\_table[8][2] to PA[116], Requests: VA[163] Page fault change page\_table[8][3] to PA[117], Requests: VA[162]page\_table[8][2] accessed PA[116], Requests: VA[173]page\_table[8][13] accessed PA[80], Requests: VA[163]page\_table[8][3] accessed PA[117], Requests: VA[173]page\_table[8][13] accessed PA[80],

Time: 30, Child No.9, Requests: VA[181]page\_table[9][1] accessed PA[81], Requests: VA[181]page\_table[9][1] accessed PA[81], Requests: VA[186]page\_table[9][6] accessed PA[84], Requests: VA[185]page\_table[9][5] accessed PA[86], Requests: VA[182] Page fault change page\_table[9][2] to PA[118], Requests: VA[183] Page fault change page\_table[9][3] to PA[119], Requests: VA[182]page\_table[9][2] accessed PA[118], Requests: VA[193]page\_table[9][13] accessed PA[89], Requests: VA[183]page\_table[9][3] accessed PA[119], Requests: VA[193]page\_table[9][13] accessed PA[89],

Time: 31, Child No.0, Requests: VA[1]page\_table[0][1] accessed PA[0], Requests: VA[16] Page fault change page\_table[0][16] to PA[120], Requests: VA[5]page\_table[0][5] accessed PA[5], Requests: VA[2]page\_table[0][2] accessed PA[100], Requests: VA[14]page\_table[0][14] accessed PA[7], Requests: VA[17]page\_table[0][17] accessed PA[90], Requests: VA[8] Page fault change page\_table[0][8] to PA[121], Requests: VA[15] Page fault change page\_table[0][15] to PA[122], Requests: VA[9]page\_table[0][9] accessed PA[2], Requests: VA[2]page\_table[0][2] accessed PA[100],

Time: 32, Child No.1, Requests: VA[21]page\_table[1][1] accessed PA[9], Requests: VA[36] Page fault change page\_table[1][16] to PA[123], Requests: VA[25]page\_table[1][5] accessed PA[14], Requests: VA[22]page\_table[1][2] accessed PA[102], Requests: VA[34]page\_table[1][14] accessed PA[16], Requests: VA[37]page\_table[1][17] accessed PA[91], Requests: VA[28] Page fault change page\_table[1][8] to PA[124], Requests: VA[35] Page fault change page\_table[1][15] to PA[125], Requests: VA[29]page\_table[1][9] accessed PA[11], Requests: VA[22]page\_table[1][2] accessed PA[102],

Time: 33, Child No.2, Requests: VA[41]page\_table[2][1] accessed PA[18], Requests: VA[56] Page fault change page\_table[2][16] to PA[126], Requests: VA[45]page\_table[2][5] accessed PA[23], Requests: VA[42]page\_table[2][2] accessed PA[104], Requests: VA[54]page\_table[2][14] accessed PA[25], Requests: VA[57]page\_table[2][17] accessed PA[92], Requests: VA[48] Page fault change page\_table[2][8] to PA[127], Requests: VA[55] Page fault change page\_table[2][15] to PA[128], Requests: VA[49]page\_table[2][9] accessed PA[20], Requests: VA[42]page\_table[2][2] accessed PA[104],

Time: 34, Child No.3, Requests: VA[61]page\_table[3][1] accessed PA[27], Requests: VA[76] Page fault change page\_table[3][16] to PA[129], Requests: VA[65]page\_table[3][5] accessed PA[32], Requests: VA[62]page\_table[3][2] accessed PA[106], Requests: VA[74]page\_table[3][14] accessed PA[34], Requests: VA[77]page\_table[3][17] accessed PA[93], Requests: VA[68] Page fault change page\_table[3][8] to PA[130], Requests: VA[75] Page fault change page\_table[3][15] to PA[131], Requests: VA[69]page\_table[3][9] accessed PA[29], Requests: VA[62]page\_table[3][2] accessed PA[106],

Time: 35, Child No.4, Requests: VA[81]page\_table[4][1] accessed PA[36], Requests: VA[96] Page fault change page\_table[4][16] to PA[132], Requests: VA[85]page\_table[4][5] accessed PA[41], Requests: VA[82]page\_table[4][2] accessed PA[108], Requests: VA[94]page\_table[4][14] accessed PA[43], Requests: VA[97]page\_table[4][17] accessed PA[94], Requests: VA[88] Page fault change page\_table[4][8] to PA[133], Requests: VA[95] Page fault change page\_table[4][15] to PA[134], Requests: VA[89]page\_table[4][9] accessed PA[38], Requests: VA[82]page\_table[4][2] accessed PA[108],

Time: 36, Child No.5, Requests: VA[101]page\_table[5][1] accessed PA[45], Requests: VA[116] Page fault change page\_table[5][16] to PA[135], Requests: VA[105]page\_table[5][5] accessed PA[50], Requests: VA[102]page\_table[5][2] accessed PA[110], Requests: VA[114]page\_table[5][14] accessed PA[52], Requests: VA[117]page\_table[5][17] accessed PA[95], Requests: VA[108] Page fault change page\_table[5][8] to PA[136], Requests: VA[115] Page fault change page\_table[5][15] to PA[137], Requests: VA[109]page\_table[5][9] accessed PA[47], Requests: VA[102]page\_table[5][2] accessed PA[110],

Time: 37, Child No.6, Requests: VA[121]page\_table[6][1] accessed PA[54], Requests: VA[136] Page fault change page\_table[6][16] to PA[138], Requests: VA[125]page\_table[6][5] accessed PA[59], Requests: VA[122]page\_table[6][2] accessed PA[112], Requests: VA[134]page\_table[6][14] accessed PA[61], Requests: VA[137]page\_table[6][17] accessed PA[96], Requests: VA[128] Page fault change page\_table[6][8] to PA[139], Requests: VA[135] Page fault change page\_table[6][15] to PA[140], Requests: VA[129]page\_table[6][9] accessed PA[56], Requests: VA[122]page\_table[6][2] accessed PA[112],

Time: 38, Child No.7, Requests: VA[141]page\_table[7][1] accessed PA[63], Requests: VA[156] Page fault change page\_table[7][16] to PA[141], Requests: VA[145]page\_table[7][5] accessed PA[68], Requests: VA[142]page\_table[7][2] accessed PA[114], Requests: VA[154]page\_table[7][14] accessed PA[70], Requests: VA[157]page\_table[7][17] accessed PA[97], Requests: VA[148] Page fault change page\_table[7][8] to PA[142], Requests: VA[155] Page fault change page\_table[7][15] to PA[143], Requests: VA[149]page\_table[7][9] accessed PA[65], Requests: VA[142]page\_table[7][2] accessed PA[114],

Time: 39, Child No.8, Requests: VA[161]page\_table[8][1] accessed PA[72], Requests: VA[176] Page fault change page\_table[8][16] to PA[144], Requests: VA[165]page\_table[8][5] accessed PA[77], Requests: VA[162]page\_table[8][2] accessed PA[116], Requests: VA[174]page\_table[8][14] accessed PA[79], Requests: VA[177]page\_table[8][17] accessed PA[98], Requests: VA[168] Page fault change page\_table[8][8] to PA[145], Requests: VA[175] Page fault change page\_table[8][15] to PA[146], Requests: VA[169]page\_table[8][9] accessed PA[74], Requests: VA[162]page\_table[8][2] accessed PA[116],

Time: 40, Child No.9, Requests: VA[181]page\_table[9][1] accessed PA[81], Requests: VA[196] Page fault change page\_table[9][16] to PA[147], Requests: VA[185]page\_table[9][5] accessed PA[86], Requests: VA[182]page\_table[9][2] accessed PA[118], Requests: VA[194]page\_table[9][14] accessed PA[88], Requests: VA[197]page\_table[9][17] accessed PA[99], Requests: VA[188] Page fault change page\_table[9][8] to PA[148], Requests: VA[195] Page fault change page\_table[9][15] to PA[149], Requests: VA[189]page\_table[9][9] accessed PA[83], Requests: VA[182]page\_table[9][2] accessed PA[118],

Time: 41, Child No.0, Requests: VA[9]page\_table[0][9] accessed PA[2], Requests: VA[19]page\_table[0][19] accessed PA[1], Requests: VA[7] Page fault change page\_table[0][7] to PA[150], Requests: VA[18] Page fault change page\_table[0][18] to PA[151], Requests: VA[18]page\_table[0][18] accessed PA[151], Requests: VA[13]page\_table[0][13] accessed PA[8], Requests: VA[15]page\_table[0][15] accessed PA[122], Requests: VA[18]page\_table[0][18] accessed PA[151], Requests: VA[4] Page fault change page\_table[0][4] to PA[152], Requests: VA[4]page\_table[0][4] accessed PA[152],

Time: 42, Child No.1, Requests: VA[29]page\_table[1][9] accessed PA[11], Requests: VA[39]page\_table[1][19] accessed PA[10], Requests: VA[27] Page fault change page\_table[1][7] to PA[153], Requests: VA[38] Page fault change page\_table[1][18] to PA[154], Requests: VA[38]page\_table[1][18] accessed PA[154], Requests: VA[33]page\_table[1][13] accessed PA[17], Requests: VA[35]page\_table[1][15] accessed PA[125], Requests: VA[38]page\_table[1][18] accessed PA[154], Requests: VA[24] Page fault change page\_table[1][4] to PA[155], Requests: VA[24]page\_table[1][4] accessed PA[155],

Time: 43, Child No.2, Requests: VA[49]page\_table[2][9] accessed PA[20], Requests: VA[59]page\_table[2][19] accessed PA[19], Requests: VA[47] Page fault change page\_table[2][7] to PA[156], Requests: VA[58] Page fault change page\_table[2][18] to PA[157], Requests: VA[58]page\_table[2][18] accessed PA[157], Requests: VA[53]page\_table[2][13] accessed PA[26], Requests: VA[55]page\_table[2][15] accessed PA[128], Requests: VA[58]page\_table[2][18] accessed PA[157], Requests: VA[44] Page fault change page\_table[2][4] to PA[158], Requests: VA[44]page\_table[2][4] accessed PA[158],

Time: 44, Child No.3, Requests: VA[69]page\_table[3][9] accessed PA[29], Requests: VA[79]page\_table[3][19] accessed PA[28], Requests: VA[67] Page fault change page\_table[3][7] to PA[159], Requests: VA[78] Page fault change page\_table[3][18] to PA[160], Requests: VA[78]page\_table[3][18] accessed PA[160], Requests: VA[73]page\_table[3][13] accessed PA[35], Requests: VA[75]page\_table[3][15] accessed PA[131], Requests: VA[78]page\_table[3][18] accessed PA[160], Requests: VA[64] Page fault change page\_table[3][4] to PA[161], Requests: VA[64]page\_table[3][4] accessed PA[161],

Time: 45, Child No.4, Requests: VA[89]page\_table[4][9] accessed PA[38], Requests: VA[99]page\_table[4][19] accessed PA[37], Requests: VA[87] Page fault change page\_table[4][7] to PA[162], Requests: VA[98] Page fault change page\_table[4][18] to PA[163], Requests: VA[98]page\_table[4][18] accessed PA[163], Requests: VA[93]page\_table[4][13] accessed PA[44], Requests: VA[95]page\_table[4][15] accessed PA[134], Requests: VA[98]page\_table[4][18] accessed PA[163], Requests: VA[84] Page fault change page\_table[4][4] to PA[164], Requests: VA[84]page\_table[4][4] accessed PA[164],

Time: 46, Child No.5, Requests: VA[109]page\_table[5][9] accessed PA[47], Requests: VA[119]page\_table[5][19] accessed PA[46], Requests: VA[107] Page fault change page\_table[5][7] to PA[165], Requests: VA[118] Page fault change page\_table[5][18] to PA[166], Requests: VA[118]page\_table[5][18] accessed PA[166], Requests: VA[113]page\_table[5][13] accessed PA[53], Requests: VA[115]page\_table[5][15] accessed PA[137], Requests: VA[118]page\_table[5][18] accessed PA[166], Requests: VA[104] Page fault change page\_table[5][4] to PA[167], Requests: VA[104]page\_table[5][4] accessed PA[167],

Time: 47, Child No.6, Requests: VA[129]page\_table[6][9] accessed PA[56], Requests: VA[139]page\_table[6][19] accessed PA[55], Requests: VA[127] Page fault change page\_table[6][7] to PA[168], Requests: VA[138] Page fault change page\_table[6][18] to PA[169], Requests: VA[138]page\_table[6][18] accessed PA[169], Requests: VA[133]page\_table[6][13] accessed PA[62], Requests: VA[135]page\_table[6][15] accessed PA[140], Requests: VA[138]page\_table[6][18] accessed PA[169], Requests: VA[124] Page fault change page\_table[6][4] to PA[170], Requests: VA[124]page\_table[6][4] accessed PA[170],

Time: 48, Child No.7, Requests: VA[149]page\_table[7][9] accessed PA[65], Requests: VA[159]page\_table[7][19] accessed PA[64], Requests: VA[147] Page fault change page\_table[7][7] to PA[171], Requests: VA[158] Page fault change page\_table[7][18] to PA[172], Requests: VA[158]page\_table[7][18] accessed PA[172], Requests: VA[153]page\_table[7][13] accessed PA[71], Requests: VA[155]page\_table[7][15] accessed PA[143], Requests: VA[158]page\_table[7][18] accessed PA[172], Requests: VA[144] Page fault change page\_table[7][4] to PA[173], Requests: VA[144]page\_table[7][4] accessed PA[173],

Time: 49, Child No.8, Requests: VA[169]page\_table[8][9] accessed PA[74], Requests: VA[179]page\_table[8][19] accessed PA[73], Requests: VA[167] Page fault change page\_table[8][7] to PA[174], Requests: VA[178] Page fault change page\_table[8][18] to PA[175], Requests: VA[178]page\_table[8][18] accessed PA[175], Requests: VA[173]page\_table[8][13] accessed PA[80], Requests: VA[175]page\_table[8][15] accessed PA[146], Requests: VA[178]page\_table[8][18] accessed PA[175], Requests: VA[164] Page fault change page\_table[8][4] to PA[176], Requests: VA[164]page\_table[8][4] accessed PA[176],

Time: 50, Child No.9, Requests: VA[189]page\_table[9][9] accessed PA[83], Requests: VA[199]page\_table[9][19] accessed PA[82], Requests: VA[187] Page fault change page\_table[9][7] to PA[177], Requests: VA[198] Page fault change page\_table[9][18] to PA[178], Requests: VA[198]page\_table[9][18] accessed PA[178], Requests: VA[193]page\_table[9][13] accessed PA[89], Requests: VA[195]page\_table[9][15] accessed PA[149], Requests: VA[198]page\_table[9][18] accessed PA[178], Requests: VA[184] Page fault change page\_table[9][4] to PA[179], Requests: VA[184]page\_table[9][4] accessed PA[179],

Time: 51, Child No.0, Requests: VA[3]page\_table[0][3] accessed PA[101], Requests: VA[17]page\_table[0][17] accessed PA[90], Requests: VA[18]page\_table[0][18] accessed PA[151], Requests: VA[1]page\_table[0][1] accessed PA[0], Requests: VA[3]page\_table[0][3] accessed PA[101], Requests: VA[0]page\_table[0][0] accessed PA[6], Requests: VA[4]page\_table[0][4] accessed PA[152], Requests: VA[17]page\_table[0][17] accessed PA[90], Requests: VA[6]page\_table[0][6] accessed PA[3], Requests: VA[19]page\_table[0][19] accessed PA[1],

Time: 52, Child No.1, Requests: VA[23]page\_table[1][3] accessed PA[103], Requests: VA[37]page\_table[1][17] accessed PA[91], Requests: VA[38]page\_table[1][18] accessed PA[154], Requests: VA[21]page\_table[1][1] accessed PA[9], Requests: VA[23]page\_table[1][3] accessed PA[103], Requests: VA[20]page\_table[1][0] accessed PA[15], Requests: VA[24]page\_table[1][4] accessed PA[155], Requests: VA[37]page\_table[1][17] accessed PA[91], Requests: VA[26]page\_table[1][6] accessed PA[12], Requests: VA[39]page\_table[1][19] accessed PA[10],

Time: 53, Child No.2, Requests: VA[43]page\_table[2][3] accessed PA[105], Requests: VA[57]page\_table[2][17] accessed PA[92], Requests: VA[58]page\_table[2][18] accessed PA[157], Requests: VA[41]page\_table[2][1] accessed PA[18], Requests: VA[43]page\_table[2][3] accessed PA[105], Requests: VA[40]page\_table[2][0] accessed PA[24], Requests: VA[44]page\_table[2][4] accessed PA[158], Requests: VA[57]page\_table[2][17] accessed PA[92], Requests: VA[46]page\_table[2][6] accessed PA[21], Requests: VA[59]page\_table[2][19] accessed PA[19],

Time: 54, Child No.3, Requests: VA[63]page\_table[3][3] accessed PA[107], Requests: VA[77]page\_table[3][17] accessed PA[93], Requests: VA[78]page\_table[3][18] accessed PA[160], Requests: VA[61]page\_table[3][1] accessed PA[27], Requests: VA[63]page\_table[3][3] accessed PA[107], Requests: VA[60]page\_table[3][0] accessed PA[33], Requests: VA[64]page\_table[3][4] accessed PA[161], Requests: VA[77]page\_table[3][17] accessed PA[93], Requests: VA[66]page\_table[3][6] accessed PA[30], Requests: VA[79]page\_table[3][19] accessed PA[28],

Time: 55, Child No.4, Requests: VA[83]page\_table[4][3] accessed PA[109], Requests: VA[97]page\_table[4][17] accessed PA[94], Requests: VA[98]page\_table[4][18] accessed PA[163], Requests: VA[81]page\_table[4][1] accessed PA[36], Requests: VA[83]page\_table[4][3] accessed PA[109], Requests: VA[80]page\_table[4][0] accessed PA[42], Requests: VA[84]page\_table[4][4] accessed PA[164], Requests: VA[97]page\_table[4][17] accessed PA[94], Requests: VA[86]page\_table[4][6] accessed PA[39], Requests: VA[99]page\_table[4][19] accessed PA[37],

Time: 56, Child No.5, Requests: VA[103]page\_table[5][3] accessed PA[111], Requests: VA[117]page\_table[5][17] accessed PA[95], Requests: VA[118]page\_table[5][18] accessed PA[166], Requests: VA[101]page\_table[5][1] accessed PA[45], Requests: VA[103]page\_table[5][3] accessed PA[111], Requests: VA[100]page\_table[5][0] accessed PA[51], Requests: VA[104]page\_table[5][4] accessed PA[167], Requests: VA[117]page\_table[5][17] accessed PA[95], Requests: VA[106]page\_table[5][6] accessed PA[48], Requests: VA[119]page\_table[5][19] accessed PA[46],

Time: 57, Child No.6, Requests: VA[123]page\_table[6][3] accessed PA[113], Requests: VA[137]page\_table[6][17] accessed PA[96], Requests: VA[138]page\_table[6][18] accessed PA[169], Requests: VA[121]page\_table[6][1] accessed PA[54], Requests: VA[123]page\_table[6][3] accessed PA[113], Requests: VA[120]page\_table[6][0] accessed PA[60], Requests: VA[124]page\_table[6][4] accessed PA[170], Requests: VA[137]page\_table[6][17] accessed PA[96], Requests: VA[126]page\_table[6][6] accessed PA[57], Requests: VA[139]page\_table[6][19] accessed PA[55],

Time: 58, Child No.7, Requests: VA[143]page\_table[7][3] accessed PA[115], Requests: VA[157]page\_table[7][17] accessed PA[97], Requests: VA[158]page\_table[7][18] accessed PA[172], Requests: VA[141]page\_table[7][1] accessed PA[63], Requests: VA[143]page\_table[7][3] accessed PA[115], Requests: VA[140]page\_table[7][0] accessed PA[69], Requests: VA[144]page\_table[7][4] accessed PA[173], Requests: VA[157]page\_table[7][17] accessed PA[97], Requests: VA[146]page\_table[7][6] accessed PA[66], Requests: VA[159]page\_table[7][19] accessed PA[64],

Time: 59, Child No.8, Requests: VA[163]page\_table[8][3] accessed PA[117], Requests: VA[177]page\_table[8][17] accessed PA[98], Requests: VA[178]page\_table[8][18] accessed PA[175], Requests: VA[161]page\_table[8][1] accessed PA[72], Requests: VA[163]page\_table[8][3] accessed PA[117], Requests: VA[160]page\_table[8][0] accessed PA[78], Requests: VA[164]page\_table[8][4] accessed PA[176], Requests: VA[177]page\_table[8][17] accessed PA[98], Requests: VA[166]page\_table[8][6] accessed PA[75], Requests: VA[179]page\_table[8][19] accessed PA[73],

Time: 60, Child No.9, Requests: VA[183]page\_table[9][3] accessed PA[119], Requests: VA[197]page\_table[9][17] accessed PA[99], Requests: VA[198]page\_table[9][18] accessed PA[178], Requests: VA[181]page\_table[9][1] accessed PA[81], Requests: VA[183]page\_table[9][3] accessed PA[119], Requests: VA[180]page\_table[9][0] accessed PA[87], Requests: VA[184]page\_table[9][4] accessed PA[179], Requests: VA[197]page\_table[9][17] accessed PA[99], Requests: VA[186]page\_table[9][6] accessed PA[84], Requests: VA[199]page\_table[9][19] accessed PA[82],

Time: 61, Child No.0, Requests: VA[11]PA[0] swapped out page\_table[0][0] changed, Requests: VA[19]page\_table[0][19] accessed PA[1], Requests: VA[7]page\_table[0][7] accessed PA[150], Requests: VA[16]page\_table[0][16] accessed PA[120], Requests: VA[1]page\_table[0][1] accessed PA[0], Requests: VA[2]page\_table[0][2] accessed PA[100], Requests: VA[5]page\_table[0][5] accessed PA[5], Requests: VA[9]page\_table[0][9] accessed PA[2], Requests: VA[17]page\_table[0][17] accessed PA[90], Requests: VA[14]page\_table[0][14] accessed PA[7],

Time: 62, Child No.1, Requests: VA[31]PA[1] swapped out page\_table[0][1] changed, Requests: VA[39]page\_table[1][19] accessed PA[10], Requests: VA[27]page\_table[1][7] accessed PA[153], Requests: VA[36]page\_table[1][16] accessed PA[123], Requests: VA[21]page\_table[1][1] accessed PA[9], Requests: VA[22]page\_table[1][2] accessed PA[102], Requests: VA[25]page\_table[1][5] accessed PA[14], Requests: VA[29]page\_table[1][9] accessed PA[11], Requests: VA[37]page\_table[1][17] accessed PA[91], Requests: VA[34]page\_table[1][14] accessed PA[16],

Time: 63, Child No.2, Requests: VA[51]PA[5] swapped out page\_table[0][5] changed, Requests: VA[59]page\_table[2][19] accessed PA[19], Requests: VA[47]page\_table[2][7] accessed PA[156], Requests: VA[56]page\_table[2][16] accessed PA[126], Requests: VA[41]page\_table[2][1] accessed PA[18], Requests: VA[42]page\_table[2][2] accessed PA[104], Requests: VA[45]page\_table[2][5] accessed PA[23], Requests: VA[49]page\_table[2][9] accessed PA[20], Requests: VA[57]page\_table[2][17] accessed PA[92], Requests: VA[54]page\_table[2][14] accessed PA[25],

Time: 64, Child No.3, Requests: VA[71]PA[6] swapped out page\_table[0][6] changed, Requests: VA[79]page\_table[3][19] accessed PA[28], Requests: VA[67]page\_table[3][7] accessed PA[159], Requests: VA[76]page\_table[3][16] accessed PA[129], Requests: VA[61]page\_table[3][1] accessed PA[27], Requests: VA[62]page\_table[3][2] accessed PA[106], Requests: VA[65]page\_table[3][5] accessed PA[32], Requests: VA[69]page\_table[3][9] accessed PA[29], Requests: VA[77]page\_table[3][17] accessed PA[93], Requests: VA[74]page\_table[3][14] accessed PA[34],

Time: 65, Child No.4, Requests: VA[91]PA[9] swapped out page\_table[0][9] changed, Requests: VA[99]page\_table[4][19] accessed PA[37], Requests: VA[87]page\_table[4][7] accessed PA[162], Requests: VA[96]page\_table[4][16] accessed PA[132], Requests: VA[81]page\_table[4][1] accessed PA[36], Requests: VA[82]page\_table[4][2] accessed PA[108], Requests: VA[85]page\_table[4][5] accessed PA[41], Requests: VA[89]page\_table[4][9] accessed PA[38], Requests: VA[97]page\_table[4][17] accessed PA[94], Requests: VA[94]page\_table[4][14] accessed PA[43],

Time: 66, Child No.5, Requests: VA[111]PA[12] swapped out page\_table[0][12] changed, Requests: VA[119]page\_table[5][19] accessed PA[46], Requests: VA[107]page\_table[5][7] accessed PA[165], Requests: VA[116]page\_table[5][16] accessed PA[135], Requests: VA[101]page\_table[5][1] accessed PA[45], Requests: VA[102]page\_table[5][2] accessed PA[110], Requests: VA[105]page\_table[5][5] accessed PA[50], Requests: VA[109]page\_table[5][9] accessed PA[47], Requests: VA[117]page\_table[5][17] accessed PA[95], Requests: VA[114]page\_table[5][14] accessed PA[52],

Time: 67, Child No.6, Requests: VA[131]PA[13] swapped out page\_table[0][13] changed, Requests: VA[139]page\_table[6][19] accessed PA[55], Requests: VA[127]page\_table[6][7] accessed PA[168], Requests: VA[136]page\_table[6][16] accessed PA[138], Requests: VA[121]page\_table[6][1] accessed PA[54], Requests: VA[122]page\_table[6][2] accessed PA[112], Requests: VA[125]page\_table[6][5] accessed PA[59], Requests: VA[129]page\_table[6][9] accessed PA[56], Requests: VA[137]page\_table[6][17] accessed PA[96], Requests: VA[134]page\_table[6][14] accessed PA[61],

Time: 68, Child No.7, Requests: VA[151]PA[14] swapped out page\_table[0][14] changed, Requests: VA[159]page\_table[7][19] accessed PA[64], Requests: VA[147]page\_table[7][7] accessed PA[171], Requests: VA[156]page\_table[7][16] accessed PA[141], Requests: VA[141]page\_table[7][1] accessed PA[63], Requests: VA[142]page\_table[7][2] accessed PA[114], Requests: VA[145]page\_table[7][5] accessed PA[68], Requests: VA[149]page\_table[7][9] accessed PA[65], Requests: VA[157]page\_table[7][17] accessed PA[97], Requests: VA[154]page\_table[7][14] accessed PA[70],

Time: 69, Child No.8, Requests: VA[171]PA[19] swapped out page\_table[0][19] changed, Requests: VA[179]page\_table[8][19] accessed PA[73], Requests: VA[167]page\_table[8][7] accessed PA[174], Requests: VA[176]page\_table[8][16] accessed PA[144], Requests: VA[161]page\_table[8][1] accessed PA[72], Requests: VA[162]page\_table[8][2] accessed PA[116], Requests: VA[165]page\_table[8][5] accessed PA[77], Requests: VA[169]page\_table[8][9] accessed PA[74], Requests: VA[177]page\_table[8][17] accessed PA[98], Requests: VA[174]page\_table[8][14] accessed PA[79],

Time: 70, Child No.9, Requests: VA[191]PA[20] swapped out page\_table[1][0] changed, Requests: VA[199]page\_table[9][19] accessed PA[82], Requests: VA[187]page\_table[9][7] accessed PA[177], Requests: VA[196]page\_table[9][16] accessed PA[147], Requests: VA[181]page\_table[9][1] accessed PA[81], Requests: VA[182]page\_table[9][2] accessed PA[118], Requests: VA[185]page\_table[9][5] accessed PA[86], Requests: VA[189]page\_table[9][9] accessed PA[83], Requests: VA[197]page\_table[9][17] accessed PA[99], Requests: VA[194]page\_table[9][14] accessed PA[88],

Time: 71, Child No.0, Requests: VA[11]page\_table[0][11] accessed PA[0], Requests: VA[18]page\_table[0][18] accessed PA[151], Requests: VA[13]PA[21] swapped out page\_table[1][1] changed, Requests: VA[11]page\_table[0][11] accessed PA[0], Requests: VA[8]page\_table[0][8] accessed PA[121], Requests: VA[4]page\_table[0][4] accessed PA[152], Requests: VA[16]page\_table[0][16] accessed PA[120], Requests: VA[4]page\_table[0][4] accessed PA[152], Requests: VA[14]PA[25] swapped out page\_table[1][5] changed, Requests: VA[13]page\_table[0][13] accessed PA[21],

Time: 72, Child No.1, Requests: VA[31]page\_table[1][11] accessed PA[1], Requests: VA[38]page\_table[1][18] accessed PA[154], Requests: VA[33]page\_table[1][13] accessed PA[17], Requests: VA[31]page\_table[1][11] accessed PA[1], Requests: VA[28]page\_table[1][8] accessed PA[124], Requests: VA[24]page\_table[1][4] accessed PA[155], Requests: VA[36]page\_table[1][16] accessed PA[123], Requests: VA[24]page\_table[1][4] accessed PA[155], Requests: VA[34]page\_table[1][14] accessed PA[16], Requests: VA[33]page\_table[1][13] accessed PA[17],

Time: 73, Child No.2, Requests: VA[51]page\_table[2][11] accessed PA[5], Requests: VA[58]page\_table[2][18] accessed PA[157], Requests: VA[53]page\_table[2][13] accessed PA[26], Requests: VA[51]page\_table[2][11] accessed PA[5], Requests: VA[48]page\_table[2][8] accessed PA[127], Requests: VA[44]page\_table[2][4] accessed PA[158], Requests: VA[56]page\_table[2][16] accessed PA[126], Requests: VA[44]page\_table[2][4] accessed PA[158], Requests: VA[54]page\_table[2][14] accessed PA[25], Requests: VA[53]page\_table[2][13] accessed PA[26],

Time: 74, Child No.3, Requests: VA[71]page\_table[3][11] accessed PA[6], Requests: VA[78]page\_table[3][18] accessed PA[160], Requests: VA[73]page\_table[3][13] accessed PA[35], Requests: VA[71]page\_table[3][11] accessed PA[6], Requests: VA[68]page\_table[3][8] accessed PA[130], Requests: VA[64]page\_table[3][4] accessed PA[161], Requests: VA[76]page\_table[3][16] accessed PA[129], Requests: VA[64]page\_table[3][4] accessed PA[161], Requests: VA[74]page\_table[3][14] accessed PA[34], Requests: VA[73]page\_table[3][13] accessed PA[35],

Time: 75, Child No.4, Requests: VA[91]page\_table[4][11] accessed PA[9], Requests: VA[98]page\_table[4][18] accessed PA[163], Requests: VA[93]page\_table[4][13] accessed PA[44], Requests: VA[91]page\_table[4][11] accessed PA[9], Requests: VA[88]page\_table[4][8] accessed PA[133], Requests: VA[84]page\_table[4][4] accessed PA[164], Requests: VA[96]page\_table[4][16] accessed PA[132], Requests: VA[84]page\_table[4][4] accessed PA[164], Requests: VA[94]page\_table[4][14] accessed PA[43], Requests: VA[93]page\_table[4][13] accessed PA[44],

Time: 76, Child No.5, Requests: VA[111]page\_table[5][11] accessed PA[12], Requests: VA[118]page\_table[5][18] accessed PA[166], Requests: VA[113]page\_table[5][13] accessed PA[53], Requests: VA[111]page\_table[5][11] accessed PA[12], Requests: VA[108]page\_table[5][8] accessed PA[136], Requests: VA[104]page\_table[5][4] accessed PA[167], Requests: VA[116]page\_table[5][16] accessed PA[135], Requests: VA[104]page\_table[5][4] accessed PA[167], Requests: VA[114]page\_table[5][14] accessed PA[52], Requests: VA[113]page\_table[5][13] accessed PA[53],

Time: 77, Child No.6, Requests: VA[131]page\_table[6][11] accessed PA[13], Requests: VA[138]page\_table[6][18] accessed PA[169], Requests: VA[133]page\_table[6][13] accessed PA[62], Requests: VA[131]page\_table[6][11] accessed PA[13], Requests: VA[128]page\_table[6][8] accessed PA[139], Requests: VA[124]page\_table[6][4] accessed PA[170], Requests: VA[136]page\_table[6][16] accessed PA[138], Requests: VA[124]page\_table[6][4] accessed PA[170], Requests: VA[134]page\_table[6][14] accessed PA[61], Requests: VA[133]page\_table[6][13] accessed PA[62],

Time: 78, Child No.7, Requests: VA[151]page\_table[7][11] accessed PA[14], Requests: VA[158]page\_table[7][18] accessed PA[172], Requests: VA[153]page\_table[7][13] accessed PA[71], Requests: VA[151]page\_table[7][11] accessed PA[14], Requests: VA[148]page\_table[7][8] accessed PA[142], Requests: VA[144]page\_table[7][4] accessed PA[173], Requests: VA[156]page\_table[7][16] accessed PA[141], Requests: VA[144]page\_table[7][4] accessed PA[173], Requests: VA[154]page\_table[7][14] accessed PA[70], Requests: VA[153]page\_table[7][13] accessed PA[71],

Time: 79, Child No.8, Requests: VA[171]page\_table[8][11] accessed PA[19], Requests: VA[178]page\_table[8][18] accessed PA[175], Requests: VA[173]page\_table[8][13] accessed PA[80], Requests: VA[171]page\_table[8][11] accessed PA[19], Requests: VA[168]page\_table[8][8] accessed PA[145], Requests: VA[164]page\_table[8][4] accessed PA[176], Requests: VA[176]page\_table[8][16] accessed PA[144], Requests: VA[164]page\_table[8][4] accessed PA[176], Requests: VA[174]page\_table[8][14] accessed PA[79], Requests: VA[173]page\_table[8][13] accessed PA[80],

Time: 80, Child No.9, Requests: VA[191]page\_table[9][11] accessed PA[20], Requests: VA[198]page\_table[9][18] accessed PA[178], Requests: VA[193]page\_table[9][13] accessed PA[89], Requests: VA[191]page\_table[9][11] accessed PA[20], Requests: VA[188]page\_table[9][8] accessed PA[148], Requests: VA[184]page\_table[9][4] accessed PA[179], Requests: VA[196]page\_table[9][16] accessed PA[147], Requests: VA[184]page\_table[9][4] accessed PA[179], Requests: VA[194]page\_table[9][14] accessed PA[88], Requests: VA[193]page\_table[9][13] accessed PA[89],

Time: 81, Child No.0, Requests: VA[0]PA[26] swapped out page\_table[1][6] changed, Requests: VA[17]page\_table[0][17] accessed PA[90], Requests: VA[10]PA[29] swapped out page\_table[1][9] changed, Requests: VA[18]page\_table[0][18] accessed PA[151], Requests: VA[19]PA[32] swapped out page\_table[1][12] changed, Requests: VA[5]PA[33] swapped out page\_table[1][13] changed, Requests: VA[19]page\_table[0][19] accessed PA[32], Requests: VA[15]page\_table[0][15] accessed PA[122], Requests: VA[3]page\_table[0][3] accessed PA[101], Requests: VA[17]page\_table[0][17] accessed PA[90],

Time: 82, Child No.1, Requests: VA[20]PA[34] swapped out page\_table[1][14] changed, Requests: VA[37]page\_table[1][17] accessed PA[91], Requests: VA[30]PA[39] swapped out page\_table[1][19] changed, Requests: VA[38]page\_table[1][18] accessed PA[154], Requests: VA[39]PA[40] swapped out page\_table[2][0] changed, Requests: VA[25]PA[41] swapped out page\_table[2][1] changed, Requests: VA[39]page\_table[1][19] accessed PA[40], Requests: VA[35]page\_table[1][15] accessed PA[125], Requests: VA[23]page\_table[1][3] accessed PA[103], Requests: VA[37]page\_table[1][17] accessed PA[91],

Time: 83, Child No.2, Requests: VA[40]PA[45] swapped out page\_table[2][5] changed, Requests: VA[57]page\_table[2][17] accessed PA[92], Requests: VA[50]PA[46] swapped out page\_table[2][6] changed, Requests: VA[58]page\_table[2][18] accessed PA[157], Requests: VA[59]page\_table[2][19] accessed PA[19], Requests: VA[45]PA[49] swapped out page\_table[2][9] changed, Requests: VA[59]page\_table[2][19] accessed PA[19], Requests: VA[55]page\_table[2][15] accessed PA[128], Requests: VA[43]page\_table[2][3] accessed PA[105], Requests: VA[57]page\_table[2][17] accessed PA[92],

Time: 84, Child No.3, Requests: VA[60]page\_table[3][0] accessed PA[33], Requests: VA[77]page\_table[3][17] accessed PA[93], Requests: VA[70]PA[52] swapped out page\_table[2][12] changed, Requests: VA[78]page\_table[3][18] accessed PA[160], Requests: VA[79]page\_table[3][19] accessed PA[28], Requests: VA[65]page\_table[3][5] accessed PA[32], Requests: VA[79]page\_table[3][19] accessed PA[28], Requests: VA[75]page\_table[3][15] accessed PA[131], Requests: VA[63]page\_table[3][3] accessed PA[107], Requests: VA[77]page\_table[3][17] accessed PA[93],

Time: 85, Child No.4, Requests: VA[80]page\_table[4][0] accessed PA[42], Requests: VA[97]page\_table[4][17] accessed PA[94], Requests: VA[90]PA[53] swapped out page\_table[2][13] changed, Requests: VA[98]page\_table[4][18] accessed PA[163], Requests: VA[99]page\_table[4][19] accessed PA[37], Requests: VA[85]page\_table[4][5] accessed PA[41], Requests: VA[99]page\_table[4][19] accessed PA[37], Requests: VA[95]page\_table[4][15] accessed PA[134], Requests: VA[83]page\_table[4][3] accessed PA[109], Requests: VA[97]page\_table[4][17] accessed PA[94],

Time: 86, Child No.5, Requests: VA[100]page\_table[5][0] accessed PA[51], Requests: VA[117]page\_table[5][17] accessed PA[95], Requests: VA[110]PA[54] swapped out page\_table[2][14] changed, Requests: VA[118]page\_table[5][18] accessed PA[166], Requests: VA[119]page\_table[5][19] accessed PA[46], Requests: VA[105]page\_table[5][5] accessed PA[50], Requests: VA[119]page\_table[5][19] accessed PA[46], Requests: VA[115]page\_table[5][15] accessed PA[137], Requests: VA[103]page\_table[5][3] accessed PA[111], Requests: VA[117]page\_table[5][17] accessed PA[95],

Time: 87, Child No.6, Requests: VA[120]page\_table[6][0] accessed PA[60], Requests: VA[137]page\_table[6][17] accessed PA[96], Requests: VA[130]PA[59] swapped out page\_table[2][19] changed, Requests: VA[138]page\_table[6][18] accessed PA[169], Requests: VA[139]page\_table[6][19] accessed PA[55], Requests: VA[125]page\_table[6][5] accessed PA[59], Requests: VA[139]page\_table[6][19] accessed PA[55], Requests: VA[135]page\_table[6][15] accessed PA[140], Requests: VA[123]page\_table[6][3] accessed PA[113], Requests: VA[137]page\_table[6][17] accessed PA[96],

Time: 88, Child No.7, Requests: VA[140]page\_table[7][0] accessed PA[69], Requests: VA[157]page\_table[7][17] accessed PA[97], Requests: VA[150]PA[60] swapped out page\_table[3][0] changed, Requests: VA[158]page\_table[7][18] accessed PA[172], Requests: VA[159]page\_table[7][19] accessed PA[64], Requests: VA[145]page\_table[7][5] accessed PA[68], Requests: VA[159]page\_table[7][19] accessed PA[64], Requests: VA[155]page\_table[7][15] accessed PA[143], Requests: VA[143]page\_table[7][3] accessed PA[115], Requests: VA[157]page\_table[7][17] accessed PA[97],

Time: 89, Child No.8, Requests: VA[160]page\_table[8][0] accessed PA[78], Requests: VA[177]page\_table[8][17] accessed PA[98], Requests: VA[170]PA[61] swapped out page\_table[3][1] changed, Requests: VA[178]page\_table[8][18] accessed PA[175], Requests: VA[179]page\_table[8][19] accessed PA[73], Requests: VA[165]page\_table[8][5] accessed PA[77], Requests: VA[179]page\_table[8][19] accessed PA[73], Requests: VA[175]page\_table[8][15] accessed PA[146], Requests: VA[163]page\_table[8][3] accessed PA[117], Requests: VA[177]page\_table[8][17] accessed PA[98],

Time: 90, Child No.9, Requests: VA[180]page\_table[9][0] accessed PA[87], Requests: VA[197]page\_table[9][17] accessed PA[99], Requests: VA[190]PA[65] swapped out page\_table[3][5] changed, Requests: VA[198]page\_table[9][18] accessed PA[178], Requests: VA[199]page\_table[9][19] accessed PA[82], Requests: VA[185]page\_table[9][5] accessed PA[86], Requests: VA[199]page\_table[9][19] accessed PA[82], Requests: VA[195]page\_table[9][15] accessed PA[149], Requests: VA[183]page\_table[9][3] accessed PA[119], Requests: VA[197]page\_table[9][17] accessed PA[99],

Time: 91, Child No.0, Requests: VA[15]page\_table[0][15] accessed PA[122], Requests: VA[14]page\_table[0][14] accessed PA[25], Requests: VA[16]page\_table[0][16] accessed PA[120], Requests: VA[2]page\_table[0][2] accessed PA[100], Requests: VA[2]page\_table[0][2] accessed PA[100], Requests: VA[17]page\_table[0][17] accessed PA[90], Requests: VA[16]page\_table[0][16] accessed PA[120], Requests: VA[7]page\_table[0][7] accessed PA[150], Requests: VA[7]page\_table[0][7] accessed PA[150], Requests: VA[6]PA[66] swapped out page\_table[3][6] changed,

Time: 92, Child No.1, Requests: VA[35]page\_table[1][15] accessed PA[125], Requests: VA[34]PA[69] swapped out page\_table[3][9] changed, Requests: VA[36]page\_table[1][16] accessed PA[123], Requests: VA[22]page\_table[1][2] accessed PA[102], Requests: VA[22]page\_table[1][2] accessed PA[102], Requests: VA[37]page\_table[1][17] accessed PA[91], Requests: VA[36]page\_table[1][16] accessed PA[123], Requests: VA[27]page\_table[1][7] accessed PA[153], Requests: VA[27]page\_table[1][7] accessed PA[153], Requests: VA[26]PA[72] swapped out page\_table[3][12] changed,

Time: 93, Child No.2, Requests: VA[55]page\_table[2][15] accessed PA[128], Requests: VA[54]PA[73] swapped out page\_table[3][13] changed, Requests: VA[56]page\_table[2][16] accessed PA[126], Requests: VA[42]page\_table[2][2] accessed PA[104], Requests: VA[42]page\_table[2][2] accessed PA[104], Requests: VA[57]page\_table[2][17] accessed PA[92], Requests: VA[56]page\_table[2][16] accessed PA[126], Requests: VA[47]page\_table[2][7] accessed PA[156], Requests: VA[47]page\_table[2][7] accessed PA[156], Requests: VA[46]PA[74] swapped out page\_table[3][14] changed,

Time: 94, Child No.3, Requests: VA[75]page\_table[3][15] accessed PA[131], Requests: VA[74]PA[79] swapped out page\_table[3][19] changed, Requests: VA[76]page\_table[3][16] accessed PA[129], Requests: VA[62]page\_table[3][2] accessed PA[106], Requests: VA[62]page\_table[3][2] accessed PA[106], Requests: VA[77]page\_table[3][17] accessed PA[93], Requests: VA[76]page\_table[3][16] accessed PA[129], Requests: VA[67]page\_table[3][7] accessed PA[159], Requests: VA[67]page\_table[3][7] accessed PA[159], Requests: VA[66]PA[80] swapped out page\_table[4][0] changed,

Time: 95, Child No.4, Requests: VA[95]page\_table[4][15] accessed PA[134], Requests: VA[94]page\_table[4][14] accessed PA[43], Requests: VA[96]page\_table[4][16] accessed PA[132], Requests: VA[82]page\_table[4][2] accessed PA[108], Requests: VA[82]page\_table[4][2] accessed PA[108], Requests: VA[97]page\_table[4][17] accessed PA[94], Requests: VA[96]page\_table[4][16] accessed PA[132], Requests: VA[87]page\_table[4][7] accessed PA[162], Requests: VA[87]page\_table[4][7] accessed PA[162], Requests: VA[86]page\_table[4][6] accessed PA[39],

Time: 96, Child No.5, Requests: VA[115]page\_table[5][15] accessed PA[137], Requests: VA[114]page\_table[5][14] accessed PA[52], Requests: VA[116]page\_table[5][16] accessed PA[135], Requests: VA[102]page\_table[5][2] accessed PA[110], Requests: VA[102]page\_table[5][2] accessed PA[110], Requests: VA[117]page\_table[5][17] accessed PA[95], Requests: VA[116]page\_table[5][16] accessed PA[135], Requests: VA[107]page\_table[5][7] accessed PA[165], Requests: VA[107]page\_table[5][7] accessed PA[165], Requests: VA[106]page\_table[5][6] accessed PA[48],

Time: 97, Child No.6, Requests: VA[135]page\_table[6][15] accessed PA[140], Requests: VA[134]page\_table[6][14] accessed PA[61], Requests: VA[136]page\_table[6][16] accessed PA[138], Requests: VA[122]page\_table[6][2] accessed PA[112], Requests: VA[122]page\_table[6][2] accessed PA[112], Requests: VA[137]page\_table[6][17] accessed PA[96], Requests: VA[136]page\_table[6][16] accessed PA[138], Requests: VA[127]page\_table[6][7] accessed PA[168], Requests: VA[127]page\_table[6][7] accessed PA[168], Requests: VA[126]page\_table[6][6] accessed PA[57],

Time: 98, Child No.7, Requests: VA[155]page\_table[7][15] accessed PA[143], Requests: VA[154]page\_table[7][14] accessed PA[70], Requests: VA[156]page\_table[7][16] accessed PA[141], Requests: VA[142]page\_table[7][2] accessed PA[114], Requests: VA[142]page\_table[7][2] accessed PA[114], Requests: VA[157]page\_table[7][17] accessed PA[97], Requests: VA[156]page\_table[7][16] accessed PA[141], Requests: VA[147]page\_table[7][7] accessed PA[171], Requests: VA[147]page\_table[7][7] accessed PA[171], Requests: VA[146]page\_table[7][6] accessed PA[66],

Time: 99, Child No.8, Requests: VA[175]page\_table[8][15] accessed PA[146], Requests: VA[174]page\_table[8][14] accessed PA[79], Requests: VA[176]page\_table[8][16] accessed PA[144], Requests: VA[162]page\_table[8][2] accessed PA[116], Requests: VA[162]page\_table[8][2] accessed PA[116], Requests: VA[177]page\_table[8][17] accessed PA[98], Requests: VA[176]page\_table[8][16] accessed PA[144], Requests: VA[167]page\_table[8][7] accessed PA[174], Requests: VA[167]page\_table[8][7] accessed PA[174], Requests: VA[166]page\_table[8][6] accessed PA[75],

Time: 100, Child No.9, Requests: VA[195]page\_table[9][15] accessed PA[149], Requests: VA[194]page\_table[9][14] accessed PA[88], Requests: VA[196]page\_table[9][16] accessed PA[147], Requests: VA[182]page\_table[9][2] accessed PA[118], Requests: VA[182]page\_table[9][2] accessed PA[118], Requests: VA[197]page\_table[9][17] accessed PA[99], Requests: VA[196]page\_table[9][16] accessed PA[147], Requests: VA[187]page\_table[9][7] accessed PA[177], Requests: VA[187]page\_table[9][7] accessed PA[177], Requests: VA[186]page\_table[9][6] accessed PA[84],

Time: 101, Child No.0, Requests: VA[13]page\_table[0][13] accessed PA[21], Requests: VA[10]page\_table[0][10] accessed PA[29], Requests: VA[16]page\_table[0][16] accessed PA[120], Requests: VA[19]page\_table[0][19] accessed PA[32], Requests: VA[1]PA[81] swapped out page\_table[4][1] changed, Requests: VA[17]page\_table[0][17] accessed PA[90], Requests: VA[3]page\_table[0][3] accessed PA[101], Requests: VA[18]page\_table[0][18] accessed PA[151], Requests: VA[13]page\_table[0][13] accessed PA[21], Requests: VA[17]page\_table[0][17] accessed PA[90],

Time: 102, Child No.1, Requests: VA[33]PA[85] swapped out page\_table[4][5] changed, Requests: VA[30]page\_table[1][10] accessed PA[39], Requests: VA[36]page\_table[1][16] accessed PA[123], Requests: VA[39]page\_table[1][19] accessed PA[40], Requests: VA[21]PA[86] swapped out page\_table[4][6] changed, Requests: VA[37]page\_table[1][17] accessed PA[91], Requests: VA[23]page\_table[1][3] accessed PA[103], Requests: VA[38]page\_table[1][18] accessed PA[154], Requests: VA[33]page\_table[1][13] accessed PA[85], Requests: VA[37]page\_table[1][17] accessed PA[91],

Time: 103, Child No.2, Requests: VA[53]PA[89] swapped out page\_table[4][9] changed, Requests: VA[50]page\_table[2][10] accessed PA[46], Requests: VA[56]page\_table[2][16] accessed PA[126], Requests: VA[59]PA[92] swapped out page\_table[4][12] changed, Requests: VA[41]PA[93] swapped out page\_table[4][13] changed, Requests: VA[57]page\_table[2][17] accessed PA[92], Requests: VA[43]page\_table[2][3] accessed PA[105], Requests: VA[58]page\_table[2][18] accessed PA[157], Requests: VA[53]page\_table[2][13] accessed PA[89], Requests: VA[57]page\_table[2][17] accessed PA[92],

Time: 104, Child No.3, Requests: VA[73]PA[94] swapped out page\_table[4][14] changed, Requests: VA[70]page\_table[3][10] accessed PA[52], Requests: VA[76]page\_table[3][16] accessed PA[129], Requests: VA[79]PA[99] swapped out page\_table[4][19] changed, Requests: VA[61]PA[100] swapped out page\_table[5][0] changed, Requests: VA[77]page\_table[3][17] accessed PA[93], Requests: VA[63]page\_table[3][3] accessed PA[107], Requests: VA[78]page\_table[3][18] accessed PA[160], Requests: VA[73]page\_table[3][13] accessed PA[94], Requests: VA[77]page\_table[3][17] accessed PA[93],

Time: 105, Child No.4, Requests: VA[93]PA[101] swapped out page\_table[5][1] changed, Requests: VA[90]page\_table[4][10] accessed PA[53], Requests: VA[96]page\_table[4][16] accessed PA[132], Requests: VA[99]PA[105] swapped out page\_table[5][5] changed, Requests: VA[81]PA[106] swapped out page\_table[5][6] changed, Requests: VA[97]page\_table[4][17] accessed PA[94], Requests: VA[83]page\_table[4][3] accessed PA[109], Requests: VA[98]page\_table[4][18] accessed PA[163], Requests: VA[93]page\_table[4][13] accessed PA[101], Requests: VA[97]page\_table[4][17] accessed PA[94],

Time: 106, Child No.5, Requests: VA[113]page\_table[5][13] accessed PA[53], Requests: VA[110]page\_table[5][10] accessed PA[54], Requests: VA[116]page\_table[5][16] accessed PA[135], Requests: VA[119]page\_table[5][19] accessed PA[46], Requests: VA[101]PA[109] swapped out page\_table[5][9] changed, Requests: VA[117]page\_table[5][17] accessed PA[95], Requests: VA[103]page\_table[5][3] accessed PA[111], Requests: VA[118]page\_table[5][18] accessed PA[166], Requests: VA[113]page\_table[5][13] accessed PA[53], Requests: VA[117]page\_table[5][17] accessed PA[95],

Time: 107, Child No.6, Requests: VA[133]page\_table[6][13] accessed PA[62], Requests: VA[130]page\_table[6][10] accessed PA[59], Requests: VA[136]page\_table[6][16] accessed PA[138], Requests: VA[139]page\_table[6][19] accessed PA[55], Requests: VA[121]page\_table[6][1] accessed PA[54], Requests: VA[137]page\_table[6][17] accessed PA[96], Requests: VA[123]page\_table[6][3] accessed PA[113], Requests: VA[138]page\_table[6][18] accessed PA[169], Requests: VA[133]page\_table[6][13] accessed PA[62], Requests: VA[137]page\_table[6][17] accessed PA[96],

Time: 108, Child No.7, Requests: VA[153]page\_table[7][13] accessed PA[71], Requests: VA[150]page\_table[7][10] accessed PA[60], Requests: VA[156]page\_table[7][16] accessed PA[141], Requests: VA[159]page\_table[7][19] accessed PA[64], Requests: VA[141]page\_table[7][1] accessed PA[63], Requests: VA[157]page\_table[7][17] accessed PA[97], Requests: VA[143]page\_table[7][3] accessed PA[115], Requests: VA[158]page\_table[7][18] accessed PA[172], Requests: VA[153]page\_table[7][13] accessed PA[71], Requests: VA[157]page\_table[7][17] accessed PA[97],

Time: 109, Child No.8, Requests: VA[173]page\_table[8][13] accessed PA[80], Requests: VA[170]page\_table[8][10] accessed PA[61], Requests: VA[176]page\_table[8][16] accessed PA[144], Requests: VA[179]page\_table[8][19] accessed PA[73], Requests: VA[161]page\_table[8][1] accessed PA[72], Requests: VA[177]page\_table[8][17] accessed PA[98], Requests: VA[163]page\_table[8][3] accessed PA[117], Requests: VA[178]page\_table[8][18] accessed PA[175], Requests: VA[173]page\_table[8][13] accessed PA[80], Requests: VA[177]page\_table[8][17] accessed PA[98],

Time: 110, Child No.9, Requests: VA[193]page\_table[9][13] accessed PA[89], Requests: VA[190]page\_table[9][10] accessed PA[65], Requests: VA[196]page\_table[9][16] accessed PA[147], Requests: VA[199]page\_table[9][19] accessed PA[82], Requests: VA[181]page\_table[9][1] accessed PA[81], Requests: VA[197]page\_table[9][17] accessed PA[99], Requests: VA[183]page\_table[9][3] accessed PA[119], Requests: VA[198]page\_table[9][18] accessed PA[178], Requests: VA[193]page\_table[9][13] accessed PA[89], Requests: VA[197]page\_table[9][17] accessed PA[99],

Time: 111, Child No.0, Requests: VA[11]page\_table[0][11] accessed PA[0], Requests: VA[13]page\_table[0][13] accessed PA[21], Requests: VA[6]page\_table[0][6] accessed PA[66], Requests: VA[13]page\_table[0][13] accessed PA[21], Requests: VA[12]PA[112] swapped out page\_table[5][12] changed, Requests: VA[5]page\_table[0][5] accessed PA[33], Requests: VA[19]page\_table[0][19] accessed PA[32], Requests: VA[3]page\_table[0][3] accessed PA[101], Requests: VA[13]page\_table[0][13] accessed PA[21], Requests: VA[14]page\_table[0][14] accessed PA[25],

Time: 112, Child No.1, Requests: VA[31]page\_table[1][11] accessed PA[1], Requests: VA[33]page\_table[1][13] accessed PA[85], Requests: VA[26]page\_table[1][6] accessed PA[72], Requests: VA[33]page\_table[1][13] accessed PA[85], Requests: VA[32]PA[113] swapped out page\_table[5][13] changed, Requests: VA[25]page\_table[1][5] accessed PA[41], Requests: VA[39]page\_table[1][19] accessed PA[40], Requests: VA[23]page\_table[1][3] accessed PA[103], Requests: VA[33]page\_table[1][13] accessed PA[85], Requests: VA[34]page\_table[1][14] accessed PA[69],

Time: 113, Child No.2, Requests: VA[51]page\_table[2][11] accessed PA[5], Requests: VA[53]page\_table[2][13] accessed PA[89], Requests: VA[46]page\_table[2][6] accessed PA[74], Requests: VA[53]page\_table[2][13] accessed PA[89], Requests: VA[52]PA[114] swapped out page\_table[5][14] changed, Requests: VA[45]page\_table[2][5] accessed PA[49], Requests: VA[59]page\_table[2][19] accessed PA[92], Requests: VA[43]page\_table[2][3] accessed PA[105], Requests: VA[53]page\_table[2][13] accessed PA[89], Requests: VA[54]page\_table[2][14] accessed PA[73],

Time: 114, Child No.3, Requests: VA[71]page\_table[3][11] accessed PA[6], Requests: VA[73]page\_table[3][13] accessed PA[94], Requests: VA[66]page\_table[3][6] accessed PA[80], Requests: VA[73]page\_table[3][13] accessed PA[94], Requests: VA[72]PA[119] swapped out page\_table[5][19] changed, Requests: VA[65]PA[120] swapped out page\_table[6][0] changed, Requests: VA[79]page\_table[3][19] accessed PA[99], Requests: VA[63]page\_table[3][3] accessed PA[107], Requests: VA[73]page\_table[3][13] accessed PA[94], Requests: VA[74]page\_table[3][14] accessed PA[79],

Time: 115, Child No.4, Requests: VA[91]page\_table[4][11] accessed PA[9], Requests: VA[93]page\_table[4][13] accessed PA[101], Requests: VA[86]PA[121] swapped out page\_table[6][1] changed, Requests: VA[93]page\_table[4][13] accessed PA[101], Requests: VA[92]PA[125] swapped out page\_table[6][5] changed, Requests: VA[85]PA[126] swapped out page\_table[6][6] changed, Requests: VA[99]page\_table[4][19] accessed PA[105], Requests: VA[83]page\_table[4][3] accessed PA[109], Requests: VA[93]page\_table[4][13] accessed PA[101], Requests: VA[94]PA[129] swapped out page\_table[6][9] changed,

Time: 116, Child No.5, Requests: VA[111]page\_table[5][11] accessed PA[12], Requests: VA[113]PA[132] swapped out page\_table[6][12] changed, Requests: VA[106]PA[133] swapped out page\_table[6][13] changed, Requests: VA[113]page\_table[5][13] accessed PA[132], Requests: VA[112]PA[134] swapped out page\_table[6][14] changed, Requests: VA[105]PA[139] swapped out page\_table[6][19] changed, Requests: VA[119]PA[140] swapped out page\_table[7][0] changed, Requests: VA[103]page\_table[5][3] accessed PA[111], Requests: VA[113]page\_table[5][13] accessed PA[132], Requests: VA[114]PA[141] swapped out page\_table[7][1] changed,

Time: 117, Child No.6, Requests: VA[131]page\_table[6][11] accessed PA[13], Requests: VA[133]PA[145] swapped out page\_table[7][5] changed, Requests: VA[126]PA[146] swapped out page\_table[7][6] changed, Requests: VA[133]page\_table[6][13] accessed PA[145], Requests: VA[132]PA[149] swapped out page\_table[7][9] changed, Requests: VA[125]PA[152] swapped out page\_table[7][12] changed, Requests: VA[139]PA[153] swapped out page\_table[7][13] changed, Requests: VA[123]page\_table[6][3] accessed PA[113], Requests: VA[133]page\_table[6][13] accessed PA[145], Requests: VA[134]PA[154] swapped out page\_table[7][14] changed,

Time: 118, Child No.7, Requests: VA[151]page\_table[7][11] accessed PA[14], Requests: VA[153]PA[159] swapped out page\_table[7][19] changed, Requests: VA[146]PA[160] swapped out page\_table[8][0] changed, Requests: VA[153]page\_table[7][13] accessed PA[159], Requests: VA[152]PA[161] swapped out page\_table[8][1] changed, Requests: VA[145]PA[165] swapped out page\_table[8][5] changed, Requests: VA[159]PA[166] swapped out page\_table[8][6] changed, Requests: VA[143]page\_table[7][3] accessed PA[115], Requests: VA[153]page\_table[7][13] accessed PA[159], Requests: VA[154]PA[169] swapped out page\_table[8][9] changed,

Time: 119, Child No.8, Requests: VA[171]page\_table[8][11] accessed PA[19], Requests: VA[173]page\_table[8][13] accessed PA[80], Requests: VA[166]PA[172] swapped out page\_table[8][12] changed, Requests: VA[173]page\_table[8][13] accessed PA[80], Requests: VA[172]PA[173] swapped out page\_table[8][13] changed, Requests: VA[165]PA[174] swapped out page\_table[8][14] changed, Requests: VA[179]page\_table[8][19] accessed PA[73], Requests: VA[163]page\_table[8][3] accessed PA[117], Requests: VA[173]PA[179] swapped out page\_table[8][19] changed, Requests: VA[174]PA[180] swapped out page\_table[9][0] changed,

Time: 120, Child No.9, Requests: VA[191]page\_table[9][11] accessed PA[20], Requests: VA[193]page\_table[9][13] accessed PA[89], Requests: VA[186]page\_table[9][6] accessed PA[84], Requests: VA[193]page\_table[9][13] accessed PA[89], Requests: VA[192]page\_table[9][12] accessed PA[85], Requests: VA[185]page\_table[9][5] accessed PA[86], Requests: VA[199]page\_table[9][19] accessed PA[82], Requests: VA[183]page\_table[9][3] accessed PA[119], Requests: VA[193]page\_table[9][13] accessed PA[89], Requests: VA[194]page\_table[9][14] accessed PA[88],

Time: 121, Child No.0, Requests: VA[0]page\_table[0][0] accessed PA[26], Requests: VA[0]page\_table[0][0] accessed PA[26], Requests: VA[8]page\_table[0][8] accessed PA[121], Requests: VA[16]page\_table[0][16] accessed PA[120], Requests: VA[14]page\_table[0][14] accessed PA[25], Requests: VA[2]page\_table[0][2] accessed PA[100], Requests: VA[13]page\_table[0][13] accessed PA[21], Requests: VA[11]page\_table[0][11] accessed PA[0], Requests: VA[9]PA[181] swapped out page\_table[9][1] changed, Requests: VA[12]page\_table[0][12] accessed PA[112],

Time: 122, Child No.1, Requests: VA[20]page\_table[1][0] accessed PA[34], Requests: VA[20]page\_table[1][0] accessed PA[34], Requests: VA[28]page\_table[1][8] accessed PA[124], Requests: VA[36]page\_table[1][16] accessed PA[123], Requests: VA[34]page\_table[1][14] accessed PA[69], Requests: VA[22]page\_table[1][2] accessed PA[102], Requests: VA[33]page\_table[1][13] accessed PA[85], Requests: VA[31]page\_table[1][11] accessed PA[1], Requests: VA[29]PA[185] swapped out page\_table[9][5] changed, Requests: VA[32]page\_table[1][12] accessed PA[113],

Time: 123, Child No.2, Requests: VA[40]page\_table[2][0] accessed PA[45], Requests: VA[40]page\_table[2][0] accessed PA[45], Requests: VA[48]page\_table[2][8] accessed PA[127], Requests: VA[56]page\_table[2][16] accessed PA[126], Requests: VA[54]page\_table[2][14] accessed PA[73], Requests: VA[42]page\_table[2][2] accessed PA[104], Requests: VA[53]page\_table[2][13] accessed PA[89], Requests: VA[51]page\_table[2][11] accessed PA[5], Requests: VA[49]PA[186] swapped out page\_table[9][6] changed, Requests: VA[52]page\_table[2][12] accessed PA[114],

Time: 124, Child No.3, Requests: VA[60]PA[189] swapped out page\_table[9][9] changed, Requests: VA[60]page\_table[3][0] accessed PA[189], Requests: VA[68]page\_table[3][8] accessed PA[130], Requests: VA[76]page\_table[3][16] accessed PA[129], Requests: VA[74]page\_table[3][14] accessed PA[79], Requests: VA[62]page\_table[3][2] accessed PA[106], Requests: VA[73]page\_table[3][13] accessed PA[94], Requests: VA[71]page\_table[3][11] accessed PA[6], Requests: VA[69]PA[192] swapped out page\_table[9][12] changed, Requests: VA[72]page\_table[3][12] accessed PA[119],

Time: 125, Child No.4, Requests: VA[80]PA[193] swapped out page\_table[9][13] changed, Requests: VA[80]page\_table[4][0] accessed PA[193], Requests: VA[88]page\_table[4][8] accessed PA[133], Requests: VA[96]page\_table[4][16] accessed PA[132], Requests: VA[94]page\_table[4][14] accessed PA[129], Requests: VA[82]page\_table[4][2] accessed PA[108], Requests: VA[93]page\_table[4][13] accessed PA[101], Requests: VA[91]page\_table[4][11] accessed PA[9], Requests: VA[89]PA[194] swapped out page\_table[9][14] changed, Requests: VA[92]page\_table[4][12] accessed PA[125],

Time: 126, Child No.5, Requests: VA[100]PA[199] swapped out page\_table[9][19] changed, Requests: VA[100]page\_table[5][0] accessed PA[199], Requests: VA[108]page\_table[5][8] accessed PA[136], Requests: VA[116]page\_table[5][16] accessed PA[135], Requests: VA[114]page\_table[5][14] accessed PA[141], Requests: VA[102]page\_table[5][2] accessed PA[110], Requests: VA[113]page\_table[5][13] accessed PA[132], Requests: VA[111]page\_table[5][11] accessed PA[12], Requests: VA[109]PA[17] swapped out page\_table[0][17] changed, Requests: VA[112]page\_table[5][12] accessed PA[134],

Time: 127, Child No.6, Requests: VA[120]PA[37] swapped out page\_table[1][17] changed, Requests: VA[120]page\_table[6][0] accessed PA[37], Requests: VA[128]page\_table[6][8] accessed PA[139], Requests: VA[136]page\_table[6][16] accessed PA[138], Requests: VA[134]page\_table[6][14] accessed PA[154], Requests: VA[122]page\_table[6][2] accessed PA[112], Requests: VA[133]page\_table[6][13] accessed PA[145], Requests: VA[131]page\_table[6][11] accessed PA[13], Requests: VA[129]PA[57] swapped out page\_table[2][17] changed, Requests: VA[132]page\_table[6][12] accessed PA[149],

Time: 128, Child No.7, Requests: VA[140]PA[77] swapped out page\_table[3][17] changed, Requests: VA[140]page\_table[7][0] accessed PA[77], Requests: VA[148]page\_table[7][8] accessed PA[142], Requests: VA[156]page\_table[7][16] accessed PA[141], Requests: VA[154]page\_table[7][14] accessed PA[169], Requests: VA[142]page\_table[7][2] accessed PA[114], Requests: VA[153]page\_table[7][13] accessed PA[159], Requests: VA[151]page\_table[7][11] accessed PA[14], Requests: VA[149]PA[97] swapped out page\_table[4][17] changed, Requests: VA[152]page\_table[7][12] accessed PA[161],

Time: 129, Child No.8, Requests: VA[160]PA[117] swapped out page\_table[5][17] changed, Requests: VA[160]page\_table[8][0] accessed PA[117], Requests: VA[168]page\_table[8][8] accessed PA[145], Requests: VA[176]page\_table[8][16] accessed PA[144], Requests: VA[174]page\_table[8][14] accessed PA[180], Requests: VA[162]page\_table[8][2] accessed PA[116], Requests: VA[173]page\_table[8][13] accessed PA[179], Requests: VA[171]page\_table[8][11] accessed PA[19], Requests: VA[169]PA[137] swapped out page\_table[6][17] changed, Requests: VA[172]page\_table[8][12] accessed PA[173],

Time: 130, Child No.9, Requests: VA[180]PA[157] swapped out page\_table[7][17] changed, Requests: VA[180]page\_table[9][0] accessed PA[157], Requests: VA[188]page\_table[9][8] accessed PA[148], Requests: VA[196]page\_table[9][16] accessed PA[147], Requests: VA[194]PA[177] swapped out page\_table[8][17] changed, Requests: VA[182]page\_table[9][2] accessed PA[118], Requests: VA[193]PA[197] swapped out page\_table[9][17] changed, Requests: VA[191]page\_table[9][11] accessed PA[20], Requests: VA[189]PA[2] swapped out page\_table[0][2] changed, Requests: VA[192]PA[3] swapped out page\_table[0][3] changed,

Time: 131, Child No.0, Requests: VA[9]page\_table[0][9] accessed PA[181], Requests: VA[2]PA[22] swapped out page\_table[1][2] changed, Requests: VA[15]page\_table[0][15] accessed PA[122], Requests: VA[17]PA[23] swapped out page\_table[1][3] changed, Requests: VA[1]page\_table[0][1] accessed PA[81], Requests: VA[16]page\_table[0][16] accessed PA[120], Requests: VA[14]page\_table[0][14] accessed PA[25], Requests: VA[16]page\_table[0][16] accessed PA[120], Requests: VA[6]page\_table[0][6] accessed PA[66], Requests: VA[7]page\_table[0][7] accessed PA[150],

Time: 132, Child No.1, Requests: VA[29]page\_table[1][9] accessed PA[185], Requests: VA[22]PA[42] swapped out page\_table[2][2] changed, Requests: VA[35]page\_table[1][15] accessed PA[125], Requests: VA[37]PA[43] swapped out page\_table[2][3] changed, Requests: VA[21]page\_table[1][1] accessed PA[86], Requests: VA[36]page\_table[1][16] accessed PA[123], Requests: VA[34]page\_table[1][14] accessed PA[69], Requests: VA[36]page\_table[1][16] accessed PA[123], Requests: VA[26]page\_table[1][6] accessed PA[72], Requests: VA[27]page\_table[1][7] accessed PA[153],

Time: 133, Child No.2, Requests: VA[49]page\_table[2][9] accessed PA[186], Requests: VA[42]PA[62] swapped out page\_table[3][2] changed, Requests: VA[55]page\_table[2][15] accessed PA[128], Requests: VA[57]PA[63] swapped out page\_table[3][3] changed, Requests: VA[41]page\_table[2][1] accessed PA[93], Requests: VA[56]page\_table[2][16] accessed PA[126], Requests: VA[54]page\_table[2][14] accessed PA[73], Requests: VA[56]page\_table[2][16] accessed PA[126], Requests: VA[46]page\_table[2][6] accessed PA[74], Requests: VA[47]page\_table[2][7] accessed PA[156],

Time: 134, Child No.3, Requests: VA[69]page\_table[3][9] accessed PA[192], Requests: VA[62]PA[82] swapped out page\_table[4][2] changed, Requests: VA[75]page\_table[3][15] accessed PA[131], Requests: VA[77]PA[83] swapped out page\_table[4][3] changed, Requests: VA[61]page\_table[3][1] accessed PA[100], Requests: VA[76]page\_table[3][16] accessed PA[129], Requests: VA[74]page\_table[3][14] accessed PA[79], Requests: VA[76]page\_table[3][16] accessed PA[129], Requests: VA[66]page\_table[3][6] accessed PA[80], Requests: VA[67]page\_table[3][7] accessed PA[159],

Time: 135, Child No.4, Requests: VA[89]page\_table[4][9] accessed PA[194], Requests: VA[82]PA[102] swapped out page\_table[5][2] changed, Requests: VA[95]page\_table[4][15] accessed PA[134], Requests: VA[97]PA[103] swapped out page\_table[5][3] changed, Requests: VA[81]page\_table[4][1] accessed PA[106], Requests: VA[96]page\_table[4][16] accessed PA[132], Requests: VA[94]page\_table[4][14] accessed PA[129], Requests: VA[96]page\_table[4][16] accessed PA[132], Requests: VA[86]page\_table[4][6] accessed PA[121], Requests: VA[87]page\_table[4][7] accessed PA[162],

Time: 136, Child No.5, Requests: VA[109]page\_table[5][9] accessed PA[17], Requests: VA[102]PA[122] swapped out page\_table[6][2] changed, Requests: VA[115]page\_table[5][15] accessed PA[137], Requests: VA[117]PA[123] swapped out page\_table[6][3] changed, Requests: VA[101]page\_table[5][1] accessed PA[109], Requests: VA[116]page\_table[5][16] accessed PA[135], Requests: VA[114]page\_table[5][14] accessed PA[141], Requests: VA[116]page\_table[5][16] accessed PA[135], Requests: VA[106]page\_table[5][6] accessed PA[133], Requests: VA[107]page\_table[5][7] accessed PA[165],

Time: 137, Child No.6, Requests: VA[129]page\_table[6][9] accessed PA[57], Requests: VA[122]PA[142] swapped out page\_table[7][2] changed, Requests: VA[135]page\_table[6][15] accessed PA[140], Requests: VA[137]PA[143] swapped out page\_table[7][3] changed, Requests: VA[121]PA[162] swapped out page\_table[8][2] changed, Requests: VA[136]page\_table[6][16] accessed PA[138], Requests: VA[134]page\_table[6][14] accessed PA[154], Requests: VA[136]page\_table[6][16] accessed PA[138], Requests: VA[126]page\_table[6][6] accessed PA[146], Requests: VA[127]page\_table[6][7] accessed PA[168],

Time: 138, Child No.7, Requests: VA[149]page\_table[7][9] accessed PA[97], Requests: VA[142]PA[163] swapped out page\_table[8][3] changed, Requests: VA[155]page\_table[7][15] accessed PA[143], Requests: VA[157]PA[182] swapped out page\_table[9][2] changed, Requests: VA[141]PA[183] swapped out page\_table[9][3] changed, Requests: VA[156]page\_table[7][16] accessed PA[141], Requests: VA[154]page\_table[7][14] accessed PA[169], Requests: VA[156]page\_table[7][16] accessed PA[141], Requests: VA[146]page\_table[7][6] accessed PA[160], Requests: VA[147]page\_table[7][7] accessed PA[171],

Time: 139, Child No.8, Requests: VA[169]page\_table[8][9] accessed PA[137], Requests: VA[162]PA[8] swapped out page\_table[0][8] changed, Requests: VA[175]page\_table[8][15] accessed PA[146], Requests: VA[177]PA[15] swapped out page\_table[0][15] changed, Requests: VA[161]PA[16] swapped out page\_table[0][16] changed, Requests: VA[176]page\_table[8][16] accessed PA[144], Requests: VA[174]page\_table[8][14] accessed PA[180], Requests: VA[176]page\_table[8][16] accessed PA[144], Requests: VA[166]page\_table[8][6] accessed PA[172], Requests: VA[167]page\_table[8][7] accessed PA[174],

Time: 140, Child No.9, Requests: VA[189]page\_table[9][9] accessed PA[2], Requests: VA[182]PA[28] swapped out page\_table[1][8] changed, Requests: VA[195]page\_table[9][15] accessed PA[149], Requests: VA[197]PA[35] swapped out page\_table[1][15] changed, Requests: VA[181]PA[36] swapped out page\_table[1][16] changed, Requests: VA[196]page\_table[9][16] accessed PA[147], Requests: VA[194]page\_table[9][14] accessed PA[177], Requests: VA[196]page\_table[9][16] accessed PA[147], Requests: VA[186]PA[48] swapped out page\_table[2][8] changed, Requests: VA[187]page\_table[9][7] accessed PA[177],

Time: 141, Child No.0, Requests: VA[13]page\_table[0][13] accessed PA[21], Requests: VA[9]page\_table[0][9] accessed PA[181], Requests: VA[13]page\_table[0][13] accessed PA[21], Requests: VA[0]page\_table[0][0] accessed PA[26], Requests: VA[3]PA[55] swapped out page\_table[2][15] changed, Requests: VA[5]page\_table[0][5] accessed PA[33], Requests: VA[17]page\_table[0][17] accessed PA[23], Requests: VA[14]page\_table[0][14] accessed PA[25], Requests: VA[8]PA[56] swapped out page\_table[2][16] changed, Requests: VA[10]page\_table[0][10] accessed PA[29],

Time: 142, Child No.1, Requests: VA[33]page\_table[1][13] accessed PA[85], Requests: VA[29]page\_table[1][9] accessed PA[185], Requests: VA[33]page\_table[1][13] accessed PA[85], Requests: VA[20]page\_table[1][0] accessed PA[34], Requests: VA[23]PA[68] swapped out page\_table[3][8] changed, Requests: VA[25]page\_table[1][5] accessed PA[41], Requests: VA[37]page\_table[1][17] accessed PA[43], Requests: VA[34]page\_table[1][14] accessed PA[69], Requests: VA[28]PA[75] swapped out page\_table[3][15] changed, Requests: VA[30]page\_table[1][10] accessed PA[39],

Time: 143, Child No.2, Requests: VA[53]page\_table[2][13] accessed PA[89], Requests: VA[49]page\_table[2][9] accessed PA[186], Requests: VA[53]page\_table[2][13] accessed PA[89], Requests: VA[40]page\_table[2][0] accessed PA[45], Requests: VA[43]PA[76] swapped out page\_table[3][16] changed, Requests: VA[45]page\_table[2][5] accessed PA[49], Requests: VA[57]page\_table[2][17] accessed PA[63], Requests: VA[54]page\_table[2][14] accessed PA[73], Requests: VA[48]PA[88] swapped out page\_table[4][8] changed, Requests: VA[50]page\_table[2][10] accessed PA[46],

Time: 144, Child No.3, Requests: VA[73]page\_table[3][13] accessed PA[94], Requests: VA[69]page\_table[3][9] accessed PA[192], Requests: VA[73]page\_table[3][13] accessed PA[94], Requests: VA[60]page\_table[3][0] accessed PA[189], Requests: VA[63]PA[95] swapped out page\_table[4][15] changed, Requests: VA[65]page\_table[3][5] accessed PA[120], Requests: VA[77]page\_table[3][17] accessed PA[83], Requests: VA[74]page\_table[3][14] accessed PA[79], Requests: VA[68]PA[96] swapped out page\_table[4][16] changed, Requests: VA[70]page\_table[3][10] accessed PA[52],

Time: 145, Child No.4, Requests: VA[93]page\_table[4][13] accessed PA[101], Requests: VA[89]page\_table[4][9] accessed PA[194], Requests: VA[93]page\_table[4][13] accessed PA[101], Requests: VA[80]page\_table[4][0] accessed PA[193], Requests: VA[83]PA[108] swapped out page\_table[5][8] changed, Requests: VA[85]page\_table[4][5] accessed PA[126], Requests: VA[97]page\_table[4][17] accessed PA[103], Requests: VA[94]page\_table[4][14] accessed PA[129], Requests: VA[88]PA[115] swapped out page\_table[5][15] changed, Requests: VA[90]page\_table[4][10] accessed PA[53],

Time: 146, Child No.5, Requests: VA[113]page\_table[5][13] accessed PA[132], Requests: VA[109]page\_table[5][9] accessed PA[17], Requests: VA[113]page\_table[5][13] accessed PA[132], Requests: VA[100]page\_table[5][0] accessed PA[199], Requests: VA[103]PA[116] swapped out page\_table[5][16] changed, Requests: VA[105]page\_table[5][5] accessed PA[139], Requests: VA[117]page\_table[5][17] accessed PA[123], Requests: VA[114]page\_table[5][14] accessed PA[141], Requests: VA[108]PA[128] swapped out page\_table[6][8] changed, Requests: VA[110]page\_table[5][10] accessed PA[54],

Time: 147, Child No.6, Requests: VA[133]page\_table[6][13] accessed PA[145], Requests: VA[129]page\_table[6][9] accessed PA[57], Requests: VA[133]page\_table[6][13] accessed PA[145], Requests: VA[120]page\_table[6][0] accessed PA[37], Requests: VA[123]PA[135] swapped out page\_table[6][15] changed, Requests: VA[125]page\_table[6][5] accessed PA[152], Requests: VA[137]page\_table[6][17] accessed PA[143], Requests: VA[134]page\_table[6][14] accessed PA[154], Requests: VA[128]PA[136] swapped out page\_table[6][16] changed, Requests: VA[130]page\_table[6][10] accessed PA[59],

Time: 148, Child No.7, Requests: VA[153]page\_table[7][13] accessed PA[159], Requests: VA[149]page\_table[7][9] accessed PA[97], Requests: VA[153]page\_table[7][13] accessed PA[159], Requests: VA[140]page\_table[7][0] accessed PA[77], Requests: VA[143]PA[148] swapped out page\_table[7][8] changed, Requests: VA[145]page\_table[7][5] accessed PA[165], Requests: VA[157]page\_table[7][17] accessed PA[182], Requests: VA[154]page\_table[7][14] accessed PA[169], Requests: VA[148]PA[155] swapped out page\_table[7][15] changed, Requests: VA[150]page\_table[7][10] accessed PA[60],

Time: 149, Child No.8, Requests: VA[173]page\_table[8][13] accessed PA[179], Requests: VA[169]page\_table[8][9] accessed PA[137], Requests: VA[173]page\_table[8][13] accessed PA[179], Requests: VA[160]page\_table[8][0] accessed PA[117], Requests: VA[163]PA[156] swapped out page\_table[7][16] changed, Requests: VA[165]page\_table[8][5] accessed PA[174], Requests: VA[177]page\_table[8][17] accessed PA[15], Requests: VA[174]page\_table[8][14] accessed PA[180], Requests: VA[168]page\_table[8][8] accessed PA[145], Requests: VA[170]page\_table[8][10] accessed PA[61],

Time: 150, Child No.9, Requests: VA[193]page\_table[9][13] accessed PA[197], Requests: VA[189]page\_table[9][9] accessed PA[2], Requests: VA[193]page\_table[9][13] accessed PA[197], Requests: VA[180]page\_table[9][0] accessed PA[157], Requests: VA[183]PA[168] swapped out page\_table[8][8] changed, Requests: VA[185]PA[175] swapped out page\_table[8][15] changed, Requests: VA[197]page\_table[9][17] accessed PA[35], Requests: VA[194]page\_table[9][14] accessed PA[177], Requests: VA[188]page\_table[9][8] accessed PA[148], Requests: VA[190]page\_table[9][10] accessed PA[65],

Time: 151, Child No.0, Requests: VA[8]page\_table[0][8] accessed PA[56], Requests: VA[8]page\_table[0][8] accessed PA[56], Requests: VA[10]page\_table[0][10] accessed PA[29], Requests: VA[8]page\_table[0][8] accessed PA[56], Requests: VA[16]PA[176] swapped out page\_table[8][16] changed, Requests: VA[5]page\_table[0][5] accessed PA[33], Requests: VA[10]page\_table[0][10] accessed PA[29], Requests: VA[9]page\_table[0][9] accessed PA[181], Requests: VA[8]page\_table[0][8] accessed PA[56], Requests: VA[19]page\_table[0][19] accessed PA[32],

Time: 152, Child No.1, Requests: VA[28]page\_table[1][8] accessed PA[75], Requests: VA[28]page\_table[1][8] accessed PA[75], Requests: VA[30]page\_table[1][10] accessed PA[39], Requests: VA[28]page\_table[1][8] accessed PA[75], Requests: VA[36]PA[188] swapped out page\_table[9][8] changed, Requests: VA[25]page\_table[1][5] accessed PA[41], Requests: VA[30]page\_table[1][10] accessed PA[39], Requests: VA[29]page\_table[1][9] accessed PA[185], Requests: VA[28]page\_table[1][8] accessed PA[75], Requests: VA[39]page\_table[1][19] accessed PA[40],

Time: 153, Child No.2, Requests: VA[48]page\_table[2][8] accessed PA[88], Requests: VA[48]page\_table[2][8] accessed PA[88], Requests: VA[50]page\_table[2][10] accessed PA[46], Requests: VA[48]page\_table[2][8] accessed PA[88], Requests: VA[56]PA[195] swapped out page\_table[9][15] changed, Requests: VA[45]page\_table[2][5] accessed PA[49], Requests: VA[50]page\_table[2][10] accessed PA[46], Requests: VA[49]page\_table[2][9] accessed PA[186], Requests: VA[48]page\_table[2][8] accessed PA[88], Requests: VA[59]page\_table[2][19] accessed PA[92],

Time: 154, Child No.3, Requests: VA[68]page\_table[3][8] accessed PA[96], Requests: VA[68]page\_table[3][8] accessed PA[96], Requests: VA[70]page\_table[3][10] accessed PA[52], Requests: VA[68]page\_table[3][8] accessed PA[96], Requests: VA[76]PA[196] swapped out page\_table[9][16] changed, Requests: VA[65]page\_table[3][5] accessed PA[120], Requests: VA[70]page\_table[3][10] accessed PA[52], Requests: VA[69]page\_table[3][9] accessed PA[192], Requests: VA[68]page\_table[3][8] accessed PA[96], Requests: VA[79]page\_table[3][19] accessed PA[99],

Time: 155, Child No.4, Requests: VA[88]page\_table[4][8] accessed PA[115], Requests: VA[88]page\_table[4][8] accessed PA[115], Requests: VA[90]page\_table[4][10] accessed PA[53], Requests: VA[88]page\_table[4][8] accessed PA[115], Requests: VA[96]PA[4] swapped out page\_table[0][4] changed, Requests: VA[85]page\_table[4][5] accessed PA[126], Requests: VA[90]page\_table[4][10] accessed PA[53], Requests: VA[89]page\_table[4][9] accessed PA[194], Requests: VA[88]page\_table[4][8] accessed PA[115], Requests: VA[99]page\_table[4][19] accessed PA[105],

Time: 156, Child No.5, Requests: VA[108]page\_table[5][8] accessed PA[128], Requests: VA[108]page\_table[5][8] accessed PA[128], Requests: VA[110]page\_table[5][10] accessed PA[54], Requests: VA[108]page\_table[5][8] accessed PA[128], Requests: VA[116]PA[7] swapped out page\_table[0][7] changed, Requests: VA[105]page\_table[5][5] accessed PA[139], Requests: VA[110]page\_table[5][10] accessed PA[54], Requests: VA[109]page\_table[5][9] accessed PA[17], Requests: VA[108]page\_table[5][8] accessed PA[128], Requests: VA[119]page\_table[5][19] accessed PA[140],

Time: 157, Child No.6, Requests: VA[128]page\_table[6][8] accessed PA[136], Requests: VA[128]page\_table[6][8] accessed PA[136], Requests: VA[130]page\_table[6][10] accessed PA[59], Requests: VA[128]page\_table[6][8] accessed PA[136], Requests: VA[136]PA[18] swapped out page\_table[0][18] changed, Requests: VA[125]page\_table[6][5] accessed PA[152], Requests: VA[130]page\_table[6][10] accessed PA[59], Requests: VA[129]page\_table[6][9] accessed PA[57], Requests: VA[128]page\_table[6][8] accessed PA[136], Requests: VA[139]page\_table[6][19] accessed PA[153],

Time: 158, Child No.7, Requests: VA[148]page\_table[7][8] accessed PA[155], Requests: VA[148]page\_table[7][8] accessed PA[155], Requests: VA[150]page\_table[7][10] accessed PA[60], Requests: VA[148]page\_table[7][8] accessed PA[155], Requests: VA[156]PA[24] swapped out page\_table[1][4] changed, Requests: VA[145]page\_table[7][5] accessed PA[165], Requests: VA[150]page\_table[7][10] accessed PA[60], Requests: VA[149]page\_table[7][9] accessed PA[97], Requests: VA[148]page\_table[7][8] accessed PA[155], Requests: VA[159]page\_table[7][19] accessed PA[166],

Time: 159, Child No.8, Requests: VA[168]PA[27] swapped out page\_table[1][7] changed, Requests: VA[168]page\_table[8][8] accessed PA[27], Requests: VA[170]page\_table[8][10] accessed PA[61], Requests: VA[168]page\_table[8][8] accessed PA[27], Requests: VA[176]PA[38] swapped out page\_table[1][18] changed, Requests: VA[165]page\_table[8][5] accessed PA[174], Requests: VA[170]page\_table[8][10] accessed PA[61], Requests: VA[169]page\_table[8][9] accessed PA[137], Requests: VA[168]page\_table[8][8] accessed PA[27], Requests: VA[179]PA[44] swapped out page\_table[2][4] changed,

Time: 160, Child No.9, Requests: VA[188]PA[47] swapped out page\_table[2][7] changed, Requests: VA[188]page\_table[9][8] accessed PA[47], Requests: VA[190]page\_table[9][10] accessed PA[65], Requests: VA[188]page\_table[9][8] accessed PA[47], Requests: VA[196]PA[58] swapped out page\_table[2][18] changed, Requests: VA[185]page\_table[9][5] accessed PA[175], Requests: VA[190]page\_table[9][10] accessed PA[65], Requests: VA[189]page\_table[9][9] accessed PA[2], Requests: VA[188]page\_table[9][8] accessed PA[47], Requests: VA[199]PA[64] swapped out page\_table[3][4] changed,

Time: 161, Child No.0, Requests: VA[14]page\_table[0][14] accessed PA[25], Requests: VA[9]page\_table[0][9] accessed PA[181], Requests: VA[13]page\_table[0][13] accessed PA[21], Requests: VA[9]page\_table[0][9] accessed PA[181], Requests: VA[6]page\_table[0][6] accessed PA[66], Requests: VA[7]PA[67] swapped out page\_table[3][7] changed, Requests: VA[17]page\_table[0][17] accessed PA[23], Requests: VA[1]page\_table[0][1] accessed PA[81], Requests: VA[3]page\_table[0][3] accessed PA[55], Requests: VA[16]page\_table[0][16] accessed PA[176],

Time: 162, Child No.1, Requests: VA[34]page\_table[1][14] accessed PA[69], Requests: VA[29]page\_table[1][9] accessed PA[185], Requests: VA[33]page\_table[1][13] accessed PA[85], Requests: VA[29]page\_table[1][9] accessed PA[185], Requests: VA[26]page\_table[1][6] accessed PA[72], Requests: VA[27]PA[78] swapped out page\_table[3][18] changed, Requests: VA[37]page\_table[1][17] accessed PA[43], Requests: VA[21]page\_table[1][1] accessed PA[86], Requests: VA[23]page\_table[1][3] accessed PA[68], Requests: VA[36]page\_table[1][16] accessed PA[188],

Time: 163, Child No.2, Requests: VA[54]page\_table[2][14] accessed PA[73], Requests: VA[49]page\_table[2][9] accessed PA[186], Requests: VA[53]page\_table[2][13] accessed PA[89], Requests: VA[49]page\_table[2][9] accessed PA[186], Requests: VA[46]page\_table[2][6] accessed PA[74], Requests: VA[47]PA[84] swapped out page\_table[4][4] changed, Requests: VA[57]page\_table[2][17] accessed PA[63], Requests: VA[41]page\_table[2][1] accessed PA[93], Requests: VA[43]page\_table[2][3] accessed PA[76], Requests: VA[56]page\_table[2][16] accessed PA[195],

Time: 164, Child No.3, Requests: VA[74]page\_table[3][14] accessed PA[79], Requests: VA[69]page\_table[3][9] accessed PA[192], Requests: VA[73]page\_table[3][13] accessed PA[94], Requests: VA[69]page\_table[3][9] accessed PA[192], Requests: VA[66]page\_table[3][6] accessed PA[80], Requests: VA[67]PA[87] swapped out page\_table[4][7] changed, Requests: VA[77]page\_table[3][17] accessed PA[83], Requests: VA[61]page\_table[3][1] accessed PA[100], Requests: VA[63]page\_table[3][3] accessed PA[95], Requests: VA[76]page\_table[3][16] accessed PA[196],

Time: 165, Child No.4, Requests: VA[94]page\_table[4][14] accessed PA[129], Requests: VA[89]page\_table[4][9] accessed PA[194], Requests: VA[93]page\_table[4][13] accessed PA[101], Requests: VA[89]page\_table[4][9] accessed PA[194], Requests: VA[86]page\_table[4][6] accessed PA[121], Requests: VA[87]PA[98] swapped out page\_table[4][18] changed, Requests: VA[97]page\_table[4][17] accessed PA[103], Requests: VA[81]page\_table[4][1] accessed PA[106], Requests: VA[83]page\_table[4][3] accessed PA[108], Requests: VA[96]page\_table[4][16] accessed PA[4],

Time: 166, Child No.5, Requests: VA[114]page\_table[5][14] accessed PA[141], Requests: VA[109]page\_table[5][9] accessed PA[17], Requests: VA[113]page\_table[5][13] accessed PA[132], Requests: VA[109]page\_table[5][9] accessed PA[17], Requests: VA[106]page\_table[5][6] accessed PA[133], Requests: VA[107]page\_table[5][7] accessed PA[165], Requests: VA[117]page\_table[5][17] accessed PA[123], Requests: VA[101]page\_table[5][1] accessed PA[109], Requests: VA[103]page\_table[5][3] accessed PA[116], Requests: VA[116]page\_table[5][16] accessed PA[7],

Time: 167, Child No.6, Requests: VA[134]page\_table[6][14] accessed PA[154], Requests: VA[129]page\_table[6][9] accessed PA[57], Requests: VA[133]page\_table[6][13] accessed PA[145], Requests: VA[129]page\_table[6][9] accessed PA[57], Requests: VA[126]page\_table[6][6] accessed PA[146], Requests: VA[127]page\_table[6][7] accessed PA[168], Requests: VA[137]page\_table[6][17] accessed PA[143], Requests: VA[121]page\_table[6][1] accessed PA[162], Requests: VA[123]page\_table[6][3] accessed PA[135], Requests: VA[136]page\_table[6][16] accessed PA[18],

Time: 168, Child No.7, Requests: VA[154]page\_table[7][14] accessed PA[169], Requests: VA[149]page\_table[7][9] accessed PA[97], Requests: VA[153]page\_table[7][13] accessed PA[159], Requests: VA[149]page\_table[7][9] accessed PA[97], Requests: VA[146]page\_table[7][6] accessed PA[160], Requests: VA[147]page\_table[7][7] accessed PA[171], Requests: VA[157]page\_table[7][17] accessed PA[182], Requests: VA[141]page\_table[7][1] accessed PA[183], Requests: VA[143]page\_table[7][3] accessed PA[148], Requests: VA[156]page\_table[7][16] accessed PA[24],

Time: 169, Child No.8, Requests: VA[174]page\_table[8][14] accessed PA[180], Requests: VA[169]page\_table[8][9] accessed PA[137], Requests: VA[173]page\_table[8][13] accessed PA[179], Requests: VA[169]page\_table[8][9] accessed PA[137], Requests: VA[166]page\_table[8][6] accessed PA[172], Requests: VA[167]page\_table[8][7] accessed PA[174], Requests: VA[177]page\_table[8][17] accessed PA[15], Requests: VA[161]page\_table[8][1] accessed PA[16], Requests: VA[163]page\_table[8][3] accessed PA[156], Requests: VA[176]page\_table[8][16] accessed PA[38],

Time: 170, Child No.9, Requests: VA[194]page\_table[9][14] accessed PA[177], Requests: VA[189]page\_table[9][9] accessed PA[2], Requests: VA[193]page\_table[9][13] accessed PA[197], Requests: VA[189]page\_table[9][9] accessed PA[2], Requests: VA[186]page\_table[9][6] accessed PA[48], Requests: VA[187]page\_table[9][7] accessed PA[177], Requests: VA[197]page\_table[9][17] accessed PA[35], Requests: VA[181]page\_table[9][1] accessed PA[36], Requests: VA[183]page\_table[9][3] accessed PA[168], Requests: VA[196]page\_table[9][16] accessed PA[58],

Time: 171, Child No.0, Requests: VA[0]page\_table[0][0] accessed PA[26], Requests: VA[17]page\_table[0][17] accessed PA[23], Requests: VA[5]page\_table[0][5] accessed PA[33], Requests: VA[13]page\_table[0][13] accessed PA[21], Requests: VA[9]page\_table[0][9] accessed PA[181], Requests: VA[0]page\_table[0][0] accessed PA[26], Requests: VA[18]PA[104] swapped out page\_table[5][4] changed, Requests: VA[6]page\_table[0][6] accessed PA[66], Requests: VA[14]page\_table[0][14] accessed PA[25], Requests: VA[18]page\_table[0][18] accessed PA[104],

Time: 172, Child No.1, Requests: VA[20]page\_table[1][0] accessed PA[34], Requests: VA[37]page\_table[1][17] accessed PA[43], Requests: VA[25]page\_table[1][5] accessed PA[41], Requests: VA[33]page\_table[1][13] accessed PA[85], Requests: VA[29]page\_table[1][9] accessed PA[185], Requests: VA[20]page\_table[1][0] accessed PA[34], Requests: VA[38]PA[107] swapped out page\_table[5][7] changed, Requests: VA[26]page\_table[1][6] accessed PA[72], Requests: VA[34]page\_table[1][14] accessed PA[69], Requests: VA[38]page\_table[1][18] accessed PA[107],

Time: 173, Child No.2, Requests: VA[40]page\_table[2][0] accessed PA[45], Requests: VA[57]page\_table[2][17] accessed PA[63], Requests: VA[45]page\_table[2][5] accessed PA[49], Requests: VA[53]page\_table[2][13] accessed PA[89], Requests: VA[49]page\_table[2][9] accessed PA[186], Requests: VA[40]page\_table[2][0] accessed PA[45], Requests: VA[58]PA[118] swapped out page\_table[5][18] changed, Requests: VA[46]page\_table[2][6] accessed PA[74], Requests: VA[54]page\_table[2][14] accessed PA[73], Requests: VA[58]page\_table[2][18] accessed PA[118],

Time: 174, Child No.3, Requests: VA[60]page\_table[3][0] accessed PA[189], Requests: VA[77]page\_table[3][17] accessed PA[83], Requests: VA[65]page\_table[3][5] accessed PA[120], Requests: VA[73]page\_table[3][13] accessed PA[94], Requests: VA[69]page\_table[3][9] accessed PA[192], Requests: VA[60]page\_table[3][0] accessed PA[189], Requests: VA[78]PA[124] swapped out page\_table[6][4] changed, Requests: VA[66]page\_table[3][6] accessed PA[80], Requests: VA[74]page\_table[3][14] accessed PA[79], Requests: VA[78]page\_table[3][18] accessed PA[124],

Time: 175, Child No.4, Requests: VA[80]page\_table[4][0] accessed PA[193], Requests: VA[97]page\_table[4][17] accessed PA[103], Requests: VA[85]page\_table[4][5] accessed PA[126], Requests: VA[93]page\_table[4][13] accessed PA[101], Requests: VA[89]page\_table[4][9] accessed PA[194], Requests: VA[80]page\_table[4][0] accessed PA[193], Requests: VA[98]PA[127] swapped out page\_table[6][7] changed, Requests: VA[86]page\_table[4][6] accessed PA[121], Requests: VA[94]page\_table[4][14] accessed PA[129], Requests: VA[98]page\_table[4][18] accessed PA[127],

Time: 176, Child No.5, Requests: VA[100]page\_table[5][0] accessed PA[199], Requests: VA[117]page\_table[5][17] accessed PA[123], Requests: VA[105]page\_table[5][5] accessed PA[139], Requests: VA[113]page\_table[5][13] accessed PA[132], Requests: VA[109]page\_table[5][9] accessed PA[17], Requests: VA[100]page\_table[5][0] accessed PA[199], Requests: VA[118]PA[138] swapped out page\_table[6][18] changed, Requests: VA[106]page\_table[5][6] accessed PA[133], Requests: VA[114]page\_table[5][14] accessed PA[141], Requests: VA[118]page\_table[5][18] accessed PA[138],

Time: 177, Child No.6, Requests: VA[120]page\_table[6][0] accessed PA[37], Requests: VA[137]page\_table[6][17] accessed PA[143], Requests: VA[125]page\_table[6][5] accessed PA[152], Requests: VA[133]page\_table[6][13] accessed PA[145], Requests: VA[129]page\_table[6][9] accessed PA[57], Requests: VA[120]page\_table[6][0] accessed PA[37], Requests: VA[138]PA[144] swapped out page\_table[7][4] changed, Requests: VA[126]page\_table[6][6] accessed PA[146], Requests: VA[134]page\_table[6][14] accessed PA[154], Requests: VA[138]page\_table[6][18] accessed PA[144],

Time: 178, Child No.7, Requests: VA[140]page\_table[7][0] accessed PA[77], Requests: VA[157]page\_table[7][17] accessed PA[182], Requests: VA[145]page\_table[7][5] accessed PA[165], Requests: VA[153]page\_table[7][13] accessed PA[159], Requests: VA[149]page\_table[7][9] accessed PA[97], Requests: VA[140]page\_table[7][0] accessed PA[77], Requests: VA[158]page\_table[7][18] accessed PA[172], Requests: VA[146]page\_table[7][6] accessed PA[160], Requests: VA[154]page\_table[7][14] accessed PA[169], Requests: VA[158]page\_table[7][18] accessed PA[172],

Time: 179, Child No.8, Requests: VA[160]page\_table[8][0] accessed PA[117], Requests: VA[177]page\_table[8][17] accessed PA[15], Requests: VA[165]page\_table[8][5] accessed PA[174], Requests: VA[173]page\_table[8][13] accessed PA[179], Requests: VA[169]page\_table[8][9] accessed PA[137], Requests: VA[160]page\_table[8][0] accessed PA[117], Requests: VA[178]page\_table[8][18] accessed PA[175], Requests: VA[166]page\_table[8][6] accessed PA[172], Requests: VA[174]page\_table[8][14] accessed PA[180], Requests: VA[178]page\_table[8][18] accessed PA[175],

Time: 180, Child No.9, Requests: VA[180]page\_table[9][0] accessed PA[157], Requests: VA[197]page\_table[9][17] accessed PA[35], Requests: VA[185]page\_table[9][5] accessed PA[175], Requests: VA[193]page\_table[9][13] accessed PA[197], Requests: VA[189]page\_table[9][9] accessed PA[2], Requests: VA[180]page\_table[9][0] accessed PA[157], Requests: VA[198]page\_table[9][18] accessed PA[178], Requests: VA[186]page\_table[9][6] accessed PA[48], Requests: VA[194]page\_table[9][14] accessed PA[177], Requests: VA[198]page\_table[9][18] accessed PA[178],

Time: 181, Child No.0, Requests: VA[9]page\_table[0][9] accessed PA[181], Requests: VA[2]page\_table[0][2] accessed PA[22], Requests: VA[18]page\_table[0][18] accessed PA[104], Requests: VA[11]page\_table[0][11] accessed PA[0], Requests: VA[10]page\_table[0][10] accessed PA[29], Requests: VA[14]page\_table[0][14] accessed PA[25], Requests: VA[16]page\_table[0][16] accessed PA[176], Requests: VA[12]page\_table[0][12] accessed PA[112], Requests: VA[16]page\_table[0][16] accessed PA[176], Requests: VA[16]page\_table[0][16] accessed PA[176],

Time: 182, Child No.1, Requests: VA[29]page\_table[1][9] accessed PA[185], Requests: VA[22]page\_table[1][2] accessed PA[42], Requests: VA[38]page\_table[1][18] accessed PA[107], Requests: VA[31]page\_table[1][11] accessed PA[1], Requests: VA[30]page\_table[1][10] accessed PA[39], Requests: VA[34]page\_table[1][14] accessed PA[69], Requests: VA[36]page\_table[1][16] accessed PA[188], Requests: VA[32]page\_table[1][12] accessed PA[113], Requests: VA[36]page\_table[1][16] accessed PA[188], Requests: VA[36]page\_table[1][16] accessed PA[188],

Time: 183, Child No.2, Requests: VA[49]page\_table[2][9] accessed PA[186], Requests: VA[42]page\_table[2][2] accessed PA[62], Requests: VA[58]page\_table[2][18] accessed PA[118], Requests: VA[51]page\_table[2][11] accessed PA[5], Requests: VA[50]page\_table[2][10] accessed PA[46], Requests: VA[54]page\_table[2][14] accessed PA[73], Requests: VA[56]page\_table[2][16] accessed PA[195], Requests: VA[52]page\_table[2][12] accessed PA[114], Requests: VA[56]page\_table[2][16] accessed PA[195], Requests: VA[56]page\_table[2][16] accessed PA[195],

Time: 184, Child No.3, Requests: VA[69]page\_table[3][9] accessed PA[192], Requests: VA[62]page\_table[3][2] accessed PA[82], Requests: VA[78]page\_table[3][18] accessed PA[124], Requests: VA[71]page\_table[3][11] accessed PA[6], Requests: VA[70]page\_table[3][10] accessed PA[52], Requests: VA[74]page\_table[3][14] accessed PA[79], Requests: VA[76]page\_table[3][16] accessed PA[196], Requests: VA[72]page\_table[3][12] accessed PA[119], Requests: VA[76]page\_table[3][16] accessed PA[196], Requests: VA[76]page\_table[3][16] accessed PA[196],

Time: 185, Child No.4, Requests: VA[89]page\_table[4][9] accessed PA[194], Requests: VA[82]page\_table[4][2] accessed PA[102], Requests: VA[98]page\_table[4][18] accessed PA[127], Requests: VA[91]page\_table[4][11] accessed PA[9], Requests: VA[90]page\_table[4][10] accessed PA[53], Requests: VA[94]page\_table[4][14] accessed PA[129], Requests: VA[96]page\_table[4][16] accessed PA[4], Requests: VA[92]page\_table[4][12] accessed PA[125], Requests: VA[96]page\_table[4][16] accessed PA[4], Requests: VA[96]page\_table[4][16] accessed PA[4],

Time: 186, Child No.5, Requests: VA[109]page\_table[5][9] accessed PA[17], Requests: VA[102]page\_table[5][2] accessed PA[122], Requests: VA[118]page\_table[5][18] accessed PA[138], Requests: VA[111]page\_table[5][11] accessed PA[12], Requests: VA[110]page\_table[5][10] accessed PA[54], Requests: VA[114]page\_table[5][14] accessed PA[141], Requests: VA[116]page\_table[5][16] accessed PA[7], Requests: VA[112]page\_table[5][12] accessed PA[134], Requests: VA[116]page\_table[5][16] accessed PA[7], Requests: VA[116]page\_table[5][16] accessed PA[7],

Time: 187, Child No.6, Requests: VA[129]page\_table[6][9] accessed PA[57], Requests: VA[122]page\_table[6][2] accessed PA[142], Requests: VA[138]page\_table[6][18] accessed PA[144], Requests: VA[131]page\_table[6][11] accessed PA[13], Requests: VA[130]page\_table[6][10] accessed PA[59], Requests: VA[134]page\_table[6][14] accessed PA[154], Requests: VA[136]page\_table[6][16] accessed PA[18], Requests: VA[132]page\_table[6][12] accessed PA[149], Requests: VA[136]page\_table[6][16] accessed PA[18], Requests: VA[136]page\_table[6][16] accessed PA[18],

Time: 188, Child No.7, Requests: VA[149]page\_table[7][9] accessed PA[97], Requests: VA[142]page\_table[7][2] accessed PA[163], Requests: VA[158]page\_table[7][18] accessed PA[172], Requests: VA[151]page\_table[7][11] accessed PA[14], Requests: VA[150]page\_table[7][10] accessed PA[60], Requests: VA[154]page\_table[7][14] accessed PA[169], Requests: VA[156]page\_table[7][16] accessed PA[24], Requests: VA[152]page\_table[7][12] accessed PA[161], Requests: VA[156]page\_table[7][16] accessed PA[24], Requests: VA[156]page\_table[7][16] accessed PA[24],

Time: 189, Child No.8, Requests: VA[169]page\_table[8][9] accessed PA[137], Requests: VA[162]page\_table[8][2] accessed PA[8], Requests: VA[178]page\_table[8][18] accessed PA[175], Requests: VA[171]page\_table[8][11] accessed PA[19], Requests: VA[170]page\_table[8][10] accessed PA[61], Requests: VA[174]page\_table[8][14] accessed PA[180], Requests: VA[176]page\_table[8][16] accessed PA[38], Requests: VA[172]page\_table[8][12] accessed PA[173], Requests: VA[176]page\_table[8][16] accessed PA[38], Requests: VA[176]page\_table[8][16] accessed PA[38],

Time: 190, Child No.9, Requests: VA[189]page\_table[9][9] accessed PA[2], Requests: VA[182]page\_table[9][2] accessed PA[28], Requests: VA[198]page\_table[9][18] accessed PA[178], Requests: VA[191]page\_table[9][11] accessed PA[20], Requests: VA[190]page\_table[9][10] accessed PA[65], Requests: VA[194]page\_table[9][14] accessed PA[177], Requests: VA[196]page\_table[9][16] accessed PA[58], Requests: VA[192]page\_table[9][12] accessed PA[3], Requests: VA[196]page\_table[9][16] accessed PA[58], Requests: VA[196]page\_table[9][16] accessed PA[58],

Time: 191, Child No.0, Requests: VA[3]page\_table[0][3] accessed PA[55], Requests: VA[10]page\_table[0][10] accessed PA[29], Requests: VA[5]page\_table[0][5] accessed PA[33], Requests: VA[17]page\_table[0][17] accessed PA[23], Requests: VA[11]page\_table[0][11] accessed PA[0], Requests: VA[4]PA[147] swapped out page\_table[7][7] changed, Requests: VA[16]page\_table[0][16] accessed PA[176], Requests: VA[0]page\_table[0][0] accessed PA[26], Requests: VA[5]page\_table[0][5] accessed PA[33], Requests: VA[19]page\_table[0][19] accessed PA[32],

Time: 192, Child No.1, Requests: VA[23]page\_table[1][3] accessed PA[68], Requests: VA[30]page\_table[1][10] accessed PA[39], Requests: VA[25]page\_table[1][5] accessed PA[41], Requests: VA[37]page\_table[1][17] accessed PA[43], Requests: VA[31]page\_table[1][11] accessed PA[1], Requests: VA[24]PA[158] swapped out page\_table[7][18] changed, Requests: VA[36]page\_table[1][16] accessed PA[188], Requests: VA[20]page\_table[1][0] accessed PA[34], Requests: VA[25]page\_table[1][5] accessed PA[41], Requests: VA[39]page\_table[1][19] accessed PA[40],

Time: 193, Child No.2, Requests: VA[43]page\_table[2][3] accessed PA[76], Requests: VA[50]page\_table[2][10] accessed PA[46], Requests: VA[45]page\_table[2][5] accessed PA[49], Requests: VA[57]page\_table[2][17] accessed PA[63], Requests: VA[51]page\_table[2][11] accessed PA[5], Requests: VA[44]PA[164] swapped out page\_table[8][4] changed, Requests: VA[56]page\_table[2][16] accessed PA[195], Requests: VA[40]page\_table[2][0] accessed PA[45], Requests: VA[45]page\_table[2][5] accessed PA[49], Requests: VA[59]page\_table[2][19] accessed PA[92],

Time: 194, Child No.3, Requests: VA[63]page\_table[3][3] accessed PA[95], Requests: VA[70]page\_table[3][10] accessed PA[52], Requests: VA[65]page\_table[3][5] accessed PA[120], Requests: VA[77]page\_table[3][17] accessed PA[83], Requests: VA[71]page\_table[3][11] accessed PA[6], Requests: VA[64]PA[167] swapped out page\_table[8][7] changed, Requests: VA[76]page\_table[3][16] accessed PA[196], Requests: VA[60]page\_table[3][0] accessed PA[189], Requests: VA[65]page\_table[3][5] accessed PA[120], Requests: VA[79]page\_table[3][19] accessed PA[99],

Time: 195, Child No.4, Requests: VA[83]page\_table[4][3] accessed PA[108], Requests: VA[90]page\_table[4][10] accessed PA[53], Requests: VA[85]page\_table[4][5] accessed PA[126], Requests: VA[97]page\_table[4][17] accessed PA[103], Requests: VA[91]page\_table[4][11] accessed PA[9], Requests: VA[84]PA[178] swapped out page\_table[8][18] changed, Requests: VA[96]page\_table[4][16] accessed PA[4], Requests: VA[80]page\_table[4][0] accessed PA[193], Requests: VA[85]page\_table[4][5] accessed PA[126], Requests: VA[99]page\_table[4][19] accessed PA[105],

Time: 196, Child No.5, Requests: VA[103]page\_table[5][3] accessed PA[116], Requests: VA[110]page\_table[5][10] accessed PA[54], Requests: VA[105]page\_table[5][5] accessed PA[139], Requests: VA[117]page\_table[5][17] accessed PA[123], Requests: VA[111]page\_table[5][11] accessed PA[12], Requests: VA[104]PA[184] swapped out page\_table[9][4] changed, Requests: VA[116]page\_table[5][16] accessed PA[7], Requests: VA[100]page\_table[5][0] accessed PA[199], Requests: VA[105]page\_table[5][5] accessed PA[139], Requests: VA[119]page\_table[5][19] accessed PA[140],

Time: 197, Child No.6, Requests: VA[123]page\_table[6][3] accessed PA[135], Requests: VA[130]page\_table[6][10] accessed PA[59], Requests: VA[125]page\_table[6][5] accessed PA[152], Requests: VA[137]page\_table[6][17] accessed PA[143], Requests: VA[131]page\_table[6][11] accessed PA[13], Requests: VA[124]PA[187] swapped out page\_table[9][7] changed, Requests: VA[136]page\_table[6][16] accessed PA[18], Requests: VA[120]page\_table[6][0] accessed PA[37], Requests: VA[125]page\_table[6][5] accessed PA[152], Requests: VA[139]page\_table[6][19] accessed PA[153],

Time: 198, Child No.7, Requests: VA[143]page\_table[7][3] accessed PA[148], Requests: VA[150]page\_table[7][10] accessed PA[60], Requests: VA[145]page\_table[7][5] accessed PA[165], Requests: VA[157]page\_table[7][17] accessed PA[182], Requests: VA[151]page\_table[7][11] accessed PA[14], Requests: VA[144]PA[198] swapped out page\_table[9][18] changed, Requests: VA[156]page\_table[7][16] accessed PA[24], Requests: VA[140]page\_table[7][0] accessed PA[77], Requests: VA[145]page\_table[7][5] accessed PA[165], Requests: VA[159]page\_table[7][19] accessed PA[166],

Time: 199, Child No.8, Requests: VA[163]page\_table[8][3] accessed PA[156], Requests: VA[170]page\_table[8][10] accessed PA[61], Requests: VA[165]page\_table[8][5] accessed PA[174], Requests: VA[177]page\_table[8][17] accessed PA[15], Requests: VA[171]page\_table[8][11] accessed PA[19], Requests: VA[164]PA[11] swapped out page\_table[0][11] changed, Requests: VA[176]page\_table[8][16] accessed PA[38], Requests: VA[160]page\_table[8][0] accessed PA[117], Requests: VA[165]page\_table[8][5] accessed PA[174], Requests: VA[179]page\_table[8][19] accessed PA[44],

Time: 200, Child No.9, Requests: VA[183]page\_table[9][3] accessed PA[168], Requests: VA[190]page\_table[9][10] accessed PA[65], Requests: VA[185]page\_table[9][5] accessed PA[175], Requests: VA[197]page\_table[9][17] accessed PA[35], Requests: VA[191]page\_table[9][11] accessed PA[20], Requests: VA[184]PA[31] swapped out page\_table[1][11] changed, Requests: VA[196]page\_table[9][16] accessed PA[58], Requests: VA[180]page\_table[9][0] accessed PA[157], Requests: VA[185]page\_table[9][5] accessed PA[175], Requests: VA[199]page\_table[9][19] accessed PA[64],

1. **1차 이후로 개선한점**

1차 텀 때 msgtyp을 통한 여러 프로세스들의 통신을 고쳐 메시지 큐는 여전히 10개를 뒀지만, 부모와 자식이 통신을 할 때 자식은 msgtyp을 1로 메시지를 보내고 부모는 msgtyp을 자신의 번호+2로 메시지를 보내도록 하였다.