## Университет ИТМО

Мегафакультет компьютерных технологий и управления	
Факультет программной инженерии и компьютерной техник	ίИ

Лабораторная работа 1 по Операционным системам

Группа:Р33211

Выполнили:

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Преподаватель:

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Санкт-Петербург 2020 год Вариант

A=223;B=0xDD6A8120;C=mmap;D=20;E=84;F=block;G=106;H=seq;I=88;J=sum;K=cv

Разработать программу на языке С, которая осуществляет следующие действия

 Создает область памяти размером А мегабайт, начинающихся с адреса В (если возможно) при помощи С=(malloc, mmap) заполненную случайными числами /dev/urandom в D потоков. Используя системные средства мониторинга определите

адрес начала в адресном пространстве процесса и характеристики выделенных

участков памяти. Замеры виртуальной/физической памяти необходимо снять:

1. До аллокации

2. После аллокации

3. После заполнения участка данными

4. После деаллокации

 Записывает область памяти в файлы одинакового размера Е мегабайт с использованием F=(блочного, некешируемого) обращения к диску. Размер блока ввода-вывода G байт. Преподаватель выдает в качестве задания последовательность

записи/чтения блоков Н=(последовательный, заданный или случайный)

• Генерацию данных и запись осуществлять в бесконечном цикле.

• В отдельных I потоках осуществлять чтение данных из файлов и подсчитывать агрегированные характеристики данных - J=(сумму, среднее значение, максимальное,

минимальное значение).

• Чтение и запись данных в/из файла должна быть защищена примитивами

синхронизации K=(futex, cv, sem, flock).

• По заданию преподавателя изменить приоритеты потоков и описать изменения в

характеристиках программы.

Для запуска программы возможно использовать операционную систему Windows 10 или

Debian/Ubuntu в виртуальном окружении.

Измерить значения затраченного процессорного времени на выполнение программы и на

операции ввода-вывода используя системные утилиты.

Отследить трассу системных вызовов.

Используя stap построить графики системных характеристик.

Операционная система: WSL Ubuntu 20

# Замеры:

###	Before	allocation	###

### Belore al	.IOCALION ###							
free -h								
	total	used		free	shared	buff/cache	available	
Mem:	9.2Gi	66Mi	9	.1Gi	0.0Ki	82Mi	9.0Gi	
Swap:	3.0Gi	0B	3	.0Gi				
maps:								
55e6a9503000-	55e6a9504000	rp	00000000	00:2d	4053239664	6368482	/mnt/c/Users/Ad	dmin/os-
laba/main								
55e6a9504000- laba/main	55e6a9506000	r-xp	00001000	00:2d	4053239664	6368482	/mnt/c/Users/Ad	min/os-
55e6a9506000-	550629507000	rn	00003000	00.24	4053239664	6368482	/mnt/c/Users/Ad	dmin/os-
laba/main	330003307000	т Р	00003000	00.20	1033233001	0300402	/ 111110/ 0/ 03013/110	ANIETTI OS
55e6a9507000-	55e6a9508000	rp	00003000	00:2d	4053239664	6368482	/mnt/c/Users/Ad	dmin/os-
laba/main								
55e6a9508000-	55e6a9509000	rw-p	00004000	00:2d	4053239664	6368482	/mnt/c/Users/Ad	dmin/os-
laba/main	FF 6 0 10000		00000000	00 00	0			
55e6a9aaf000- 7ff7845fb000-		_					[heap]	
7ff7845fe000-		-					/ a /1 - h / 0 C C	1 1
gnu/libc-2.31		rp	00000000	08:10	40242		/usr/lib/x86_64	i-TTHUX-
7ff784623000-		r-xp	00025000	08:10	40242		/usr/lib/x86 64	1-linux-
gnu/libc-2.31							,,,,	
7ff78479b000-	7ff7847e5000	rp	0019d000	08:10	40242		/usr/lib/x86_64	1-linux-
gnu/libc-2.31								
7ff7847e5000-		p	001e7000	08:10	40242		/usr/lib/x86_64	ł-linux-
gnu/libc-2.31 7ff7847e6000-			001-7000	00.10	40242		//1 i h /0 C C	1 7
gnu/libc-2.31		rp	0016/000	08:10	40242		/usr/lib/x86_64	i-TTHUX-
7ff7847e9000-		rw-p	001ea000	08:10	40242		/usr/lib/x86 64	1-linux-
gnu/libc-2.31		-					· · · · · -	
7ff7847ec000-	7ff7847f0000	rw-p	00000000	00:00	0			
7ff7847f0000-		rp	00000000	08:10	40255		/usr/lib/x86_64	1-linux-
gnu/libpthrea							/ //	
7ff7847f7000- gnu/libpthrea		r-xp	00007000	08:10	40255		/usr/lib/x86_64	l-linux-
7ff784808000-		rn	00018000	08.10	40255		/usr/lib/x86 64	1-linuv-
gnu/libpthrea		т Р	00010000	00.10	40233		/ 431/110/ 200_0-	I IIIIUX
7ff78480d000-	7ff78480e000	rp	0001c000	08:10	40255		/usr/lib/x86 64	1-linux-
gnu/libpthrea	d-2.31.so						_	
7ff78480e000-		rw-p	0001d000	08:10	40255		/usr/lib/x86_64	l-linux-
gnu/libpthrea			0000000	00.00	0			
7ff78480f000- 7ff78481e000-		-					//1 i h /0 C C	1 7
gnu/ld-2.31.s		rp	00000000	08:10	40229		/usr/lib/x86_64	i-iinux-
7ff78481f000-		r-xp	00001000	08:10	40229		/usr/lib/x86 64	1-linux-
gnu/ld-2.31.s		-					· · · · · -	
7ff784842000-		rp	00024000	08:10	40229		/usr/lib/x86_64	1-linux-
gnu/ld-2.31.s								
7ff78484b000- qnu/ld-2.31.s		rp	0002c000	08:10	40229		/usr/lib/x86_64	l-linux-
7ff78484c000-		rw-n	00024000	08.10	10229		/usr/lib/x86 64	1_1inuv_
gnu/ld-2.31.s		ıw p	00020000	00.10	40223		/ 431/1111/200_0-	1 IIIIUA
7ff78484d000-		rw-p	00000000	00:00	0			
7ffe3a431000-	7ffe3a452000	rw-p	00000000	00:00	0		[stack]	
7ffe3a49c000-	7ffe3a49f000	rp	00000000	00:00	0		[vvar]	
7ffe3a49f000-	7ffe3a4a1000	r-xp	00000000	00:00	0		[vdso]	
### After al	location ###							
free -h				-	_	1 667		
.,	total	used		free		buff/cache	available	
Mem:	9.2Gi	65Mi		.1Gi	0.0Ki	82Mi	9.0Gi	
Swap:	3.0Gi	0B	3	.0Gi				

maps:					
dd6a8000-eb5a8000 rw-p 00					
55e6a9503000-55e6a9504000 laba/main	rp	00000000	00:2d	40532396646368482	/mnt/c/Users/Admin/os-
55e6a9504000-55e6a9506000 laba/main	r-xp	00001000	00:2d	40532396646368482	/mnt/c/Users/Admin/os-
55e6a9506000-55e6a9507000 laba/main	rp	00003000	00:2d	40532396646368482	/mnt/c/Users/Admin/os-
55e6a9507000-55e6a9508000	rp	00003000	00:2d	40532396646368482	/mnt/c/Users/Admin/os-
55e6a9508000-55e6a9509000	rw-p	00004000	00:2d	40532396646368482	/mnt/c/Users/Admin/os-
55e6a9aaf000-55e6a9ad0000	-				[heap]
7ff7845fb000-7ff7845fe000	_				//1-b/06 64 1
7ff7845fe000-7ff784623000 gnu/libc-2.31.so	rp	00000000	08:10	40242	/usr/lib/x86_64-linux-
7ff784623000-7ff78479b000 gnu/libc-2.31.so	r-xp	00025000	08:10	40242	/usr/lib/x86_64-linux-
7ff78479b000-7ff7847e5000 gnu/libc-2.31.so	rp	0019d000	08:10	40242	/usr/lib/x86_64-linux-
7ff7847e5000-7ff7847e6000 gnu/libc-2.31.so	p	001e7000	08:10	40242	/usr/lib/x86_64-linux-
7ff7847e6000-7ff7847e9000 gnu/libc-2.31.so	rp	001e7000	08:10	40242	/usr/lib/x86_64-linux-
7ff7847e9000-7ff7847ec000 gnu/libc-2.31.so	rw-p	001ea000	08:10	40242	/usr/lib/x86_64-linux-
7ff7847ec000-7ff7847f0000					
7ff7847f0000-7ff7847f7000 gnu/libpthread-2.31.so	rp	00000000	08:10	40255	/usr/lib/x86_64-linux-
7ff7847f7000-7ff784808000 gnu/libpthread-2.31.so	r-xp	00007000	08:10	40255	/usr/lib/x86_64-linux-
7ff784808000-7ff78480d000 qnu/libpthread-2.31.so	rp	00018000	08:10	40255	/usr/lib/x86_64-linux-
7ff78480d000-7ff78480e000 gnu/libpthread-2.31.so	rp	0001c000	08:10	40255	/usr/lib/x86_64-linux-
7ff78480e000-7ff78480f000 gnu/libpthread-2.31.so	rw-p	0001d000	08:10	40255	/usr/lib/x86_64-linux-
7ff78480f000-7ff784815000	-				
7ff78481e000-7ff78481f000 gnu/ld-2.31.so	rp	00000000	08:10	40229	/usr/lib/x86_64-linux-
7ff78481f000-7ff784842000 gnu/ld-2.31.so	r-xp	00001000	08:10	40229	/usr/lib/x86_64-linux-
7ff784842000-7ff78484a000 gnu/ld-2.31.so	rp	00024000	08:10	40229	/usr/lib/x86_64-linux-
7ff78484b000-7ff78484c000 gnu/ld-2.31.so	rp	0002c000	08:10	40229	/usr/lib/x86_64-linux-
7ff78484c000-7ff78484d000 gnu/ld-2.31.so	rw-p	0002d000	08:10	40229	/usr/lib/x86_64-linux-
7ff78484d000-7ff78484e000	_				
7ffe3a431000-7ffe3a452000 7ffe3a49c000-7ffe3a49f000	_				[stack] [vvar]
7ffe3a49f000-7ffe3a4a1000	-				[vdso]
### After filling area #	##				
free -h					
total	used	d :	free	shared buff/cache	available
Mem: 9.2Gi	288Mi	8	.9Gi	0.0Ki 82Mi	8.8Gi
Swap: 3.0Gi	0E	3 3	.0Gi		
maps: dd6a8000-eb5a8000 rw-p 00	000000	0 00.00 0			
55e6a9503000-55e6a9504000			00:2d	40532396646368482	/mnt/c/Users/Admin/os-
laba/main	_				
55e6a9504000-55e6a9506000 laba/main	r-xp	00001000	υυ:2d	4UD3Z396646368482	/mnt/c/Users/Admin/os-
55e6a9506000-55e6a9507000 laba/main	rp	00003000	00:2d	40532396646368482	/mnt/c/Users/Admin/os-
55e6a9507000-55e6a9508000 laba/main	rp	00003000	00:2d	40532396646368482	/mnt/c/Users/Admin/os-

55e6a9508000-55e6a9509000 laba/main	rw-p	00004000	00:2d	40532396646368482	/mnt/c/Users/Admin/os-
55e6a9aaf000-55e6a9ad0000	rw-p	00000000	00:00	0	[heap]
7ff77a5e7000-7ff77a5e8000	p	00000000	00:00	0	
7ff77a5e8000-7ff77ade8000	rw-p	00000000	00:00	0	
7ff77ade8000-7ff77ade9000	р	00000000	00:00	0	
7ff77ade9000-7ff77b5e9000	rw-p	00000000	00:00	0	
7ff77b5e9000-7ff77b5ea000	_				
7ff77b5ea000-7ff77bdea000	-				
7ff77bdea000-7ff77bdeb000	_				
7ff77bdeb000-7ff77c5eb000	-				
7ff77c5eb000-7ff77c5ec000	_				
7ff77c5ec000-7ff77cdec000	-				
7ff77cdec000-7ff77cded000 7ff77cded000-7ff77d5ed000					
7ff77d5ed000-7ff77d5ee000	-				
7ff77d5ee000-7ff77ddee000	-				
7ff77ddee000-7ff77ddef000	-				
7ff77ddef000-7ff77e5ef000	-				
7ff77e5ef000-7ff77e5f0000	p	00000000	00:00	0	
7ff77e5f0000-7ff77edf0000	rw-p	00000000	00:00	0	
7ff77edf0000-7ff77edf1000	p	00000000	00:00	0	
7ff77edf1000-7ff77f5f1000	rw-p	00000000	00:00	0	
7ff77f5f1000-7ff77f5f2000	-				
7ff77f5f2000-7ff77fdf2000					
7ff77fdf2000-7ff77fdf3000	_				
7ff77fdf3000-7ff7805f3000					
7ff7805f3000-7ff7805f4000	-				
7ff7805f4000-7ff780df4000	-				
7ff780df4000-7ff780df5000 7ff780df5000-7ff7815f5000	-				
7ff7815f5000-7ff7815f6000	-				
7ff7815f6000-7ff781df6000	_				
7ff781df6000-7ff781df7000	-				
7ff781df7000-7ff7825f7000	-				
7ff7825f7000-7ff7825f8000	p	00000000	00:00	0	
7ff7825f8000-7ff782df8000	rw-p	00000000	00:00	0	
7ff782df8000-7ff782df9000	_				
7ff782df9000-7ff7835f9000					
7ff7835f9000-7ff7835fa000	_				
7ff7835fa000-7ff783dfa000					
7ff783dfa000-7ff783dfb000	_				
7ff783dfb000-7ff7845fe000	_				/ /3:1 / 06 64 3:
7ff7845fe000-7ff784623000 qnu/libc-2.31.so	rp	00000000	08:10	40242	/usr/lib/x86_64-linux-
7ff784623000-7ff78479b000	r-xn	00025000	08:10	40242	/usr/lib/x86 64-linux-
gnu/libc-2.31.so					,,,
7ff78479b000-7ff7847e5000	rp	0019d000	08:10	40242	/usr/lib/x86_64-linux-
gnu/libc-2.31.so					, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,
7ff7847e5000-7ff7847e6000 qnu/libc-2.31.so	p	001e7000	08:10	40242	/usr/lib/x86_64-linux-
7ff7847e6000-7ff7847e9000	rn	001e7000	08.10	40242	/usr/lib/x86 64-linux-
gnu/libc-2.31.so	- P	00107000	00.10	10212	/ d31/ 11B/ X00_04 11HdX
7ff7847e9000-7ff7847ec000	rw-p	001ea000	08:10	40242	/usr/lib/x86_64-linux-
gnu/libc-2.31.so					
7ff7847ec000-7ff7847f0000	-				
7ff7847f0000-7ff7847f7000	rp	00000000	08:10	40255	/usr/lib/x86_64-linux-
gnu/libpthread-2.31.so 7ff7847f7000-7ff784808000	r===	00007000	08.10	40255	/usr/lib/x86 64-linux-
gnu/libpthread-2.31.so	r-xb	50007000	00.10	10200	, usi, iin/ xoo_04-11110X-
7ff784808000-7ff78480d000	rp	00018000	08:10	40255	/usr/lib/x86 64-linux-
<pre>gnu/libpthread-2.31.so</pre>	_				<del>_</del>
7ff78480d000-7ff78480e000	rp	0001c000	08:10	40255	/usr/lib/x86_64-linux-
gnu/libpthread-2.31.so		0001 1000	00 10	40055	//1:h/-06 64 3!
7ff78480e000-7ff78480f000 gnu/libpthread-2.31.so	r.m-b	υυυταυυ0	0Ω:ΙΟ	40200	/usr/lib/x86_64-linux-
7ff78480f000-7ff784815000	rw-p	00000000	00:00	0	
	-				

7ff78481e000-7ff78481f000 qnu/ld-2.31.so	rp 00000000	08:10	40229	/usr/lib/x86_64-linux-
7ff78481f000-7ff784842000 qnu/ld-2.31.so	r-xp 00001000	08:10	40229	/usr/lib/x86_64-linux-
7ff784842000-7ff78484a000 gnu/ld-2.31.so	rp 00024000	08:10	40229	/usr/lib/x86_64-linux-
7ff78484b000-7ff78484c000 gnu/ld-2.31.so	rp 0002c000	08:10	40229	/usr/lib/x86_64-linux-
7ff78484c000-7ff78484d000 qnu/ld-2.31.so	rw-p 0002d000	08:10	40229	/usr/lib/x86_64-linux-
7ff78484d000-7ff78484e000	rw-p 00000000	00:00	0	
7ffe3a431000-7ffe3a452000	rw-p 00000000	00:00	0	[stack]
7ffe3a49c000-7ffe3a49f000	rp 00000000	00:00	0	[vvar]
7ffe3a49f000-7ffe3a4a1000	r-xp 00000000	00:00	0	[vdso]
### After deallocation #	##			
free -h				
total	used	free	shared buff/cache	available
Mem: 9.2Gi	66Mi 9	.1Gi	0.0Ki 82Mi	9.0Gi
Swap: 3.0Gi	0B 3	.0Gi		
maps: 55e6a9503000-55e6a9504000 laba/main	rp 00000000	00:2d	40532396646368482	/mnt/c/Users/Admin/os-
55e6a9504000-55e6a9506000	r-xp 00001000	00:2d	40532396646368482	/mnt/c/Users/Admin/os-
55e6a9506000-55e6a9507000 laba/main	rp 00003000	00:2d	40532396646368482	/mnt/c/Users/Admin/os-
55e6a9507000-55e6a9508000 laba/main	rp 00003000	00:2d	40532396646368482	/mnt/c/Users/Admin/os-
55e6a9508000-55e6a9509000 laba/main	rw-p 00004000	00:2d	40532396646368482	/mnt/c/Users/Admin/os-
55e6a9aaf000-55e6a9ad0000	=			[heap]
7ff74e58f000-7ff74e590000	-			
7ff74e590000-7ff74ed90000	-			
7ff74ed90000-7ff74ed91000	-			
7ff74ed91000-7ff74f591000 7ff74f591000-7ff74f592000	-			
7ff74f592000-7ff74fd92000	•			
7ff74fd92000-7ff74fd93000	-			
7ff74fd93000-7ff750593000	•			
7ff7845fb000-7ff7845fe000	=			
7ff7845fe000-7ff784623000				/usr/lib/x86 64-linux-
gnu/libc-2.31.so	1			, ,
7ff784623000-7ff78479b000	r-xp 00025000	08:10	40242	/usr/lib/x86_64-linux-
gnu/libc-2.31.so	0010100		10010	/ /3/3 / 06 64 3
7ff78479b000-7ff7847e5000 gnu/libc-2.31.so	rp 0019d000	08:10	40242	/usr/lib/x86_64-linux-
7ff7847e5000-7ff7847e6000 gnu/libc-2.31.so	p 001e7000	08:10	40242	/usr/lib/x86_64-linux-
7ff7847e6000-7ff7847e9000 gnu/libc-2.31.so	rp 001e7000	08:10	40242	/usr/lib/x86_64-linux-
7ff7847e9000-7ff7847ec000 gnu/libc-2.31.so	rw-p 001ea000	08:10	40242	/usr/lib/x86_64-linux-
7ff7847ec000-7ff7847f0000	-			
7ff7847f0000-7ff7847f7000	rp 00000000	08:10	40255	/usr/lib/x86_64-linux-
gnu/libpthread-2.31.so 7ff7847f7000-7ff784808000	x-wn 00007000	00.10	40255	/ucr/lib/v86 64_linuv_
gnu/libpthread-2.31.so	T-XP 0000\000	08:10	40200	/usr/lib/x86_64-linux-
7ff784808000-7ff78480d000 gnu/libpthread-2.31.so	rp 00018000	08:10	40255	/usr/lib/x86_64-linux-
7ff78480d000-7ff78480e000 gnu/libpthread-2.31.so	rp 0001c000	08:10	40255	/usr/lib/x86_64-linux-
7ff78480e000-7ff78480f000 gnu/libpthread-2.31.so				/usr/lib/x86_64-linux-
7ff78480f000-7ff784815000	-			
7ff78481e000-7ff78481f000 gnu/ld-2.31.so	rp 00000000	08:10	40229	/usr/lib/x86_64-linux-

7ff78481f000-7ff784842000 r-xp 00000 gnu/ld-2.31.so	1000 08:10 40229	/usr/lib/x86_64-linux-
7ff784842000-7ff78484a000 rp 0002-gnu/ld-2.31.so	4000 08:10 40229	/usr/lib/x86_64-linux-
7ff78484b000-7ff78484c000 rp 0002cgnu/ld-2.31.so	2000 08:10 40229	/usr/lib/x86_64-linux-
7ff78484c000-7ff78484d000 rw-p 0002cgnu/ld-2.31.so	d000 08:10 40229	/usr/lib/x86_64-linux-
7ff78484d000-7ff78484e000 rw-p 00000	0000 00:00 0	
7ffe3a431000-7ffe3a452000 rw-p 00000	0000 00:00 0	[stack]
7ffe3a49c000-7ffe3a49f000 rp 0000	0000 00:00 0	[vvar]
7ffe3a49f000-7ffe3a4a1000 r-xp 0000	0000 00:00 0	[vdso]

# 

pro	ocs	memory	swap	)	iosystemcpu
r	b	swpd free buff cache	si	so	bi bo in cs us sy id wa st
1	0	0 1204368 790248 4364792	0	0	0 24 1138 1720 5 3 92 1 0
74	0	0 1191204 790268 4360176	0	0	0 52 1712 2754 5 57 37 1 0
74	0	0 1160264 790276 4360744	0	0	0 16 1692 2071 2 98 0 0 0
8	0	0 910784 790336 4363076	0	0	0 520 4371 13327 23 77 0 0 0
9	0	0 911404 790340 4362880	0	0	0 36 3328 5554 35 65 0 0 0
10	0	0 911984 790348 4361024	0	0	0 148 2008 4309 36 64 0 0 0
17	0	0 912420 790352 4361028	0	0	0 32 2314 5349 27 73 0 0 0
8	3	0 912244 790352 4361032	0	0	0 40980 2032 4359 29 70 0 0 0
3	10	0 914304 790368 4361144	0	0	0 43640 5930 12037 26 52 1 22 0
9	3	0 930740 790372 4361224	0	0	0 63088 8842 31278 41 55 0 3 0
11	2	0 936500 790396 4361020	0	0	0 71108 2440 10108 31 67 0 2 0
11	1	0 935076 790476 4361364	0	0	0 51364 10121 34832 34 65 0 1 0
9	0	0 935432 790508 4361744	0	0	0 28 12201 41229 30 70 0 0 0
8	0	0 935432 790516 4361232	0	0	0 28 7307 17219 35 65 0 0 0
9	0	0 935012 790524 4361332	0	0	0 344 7414 20200 36 64 1 0 0
9	0	0 934592 790532 4361368	0	0	0 72 18924 44900 30 70 0 0
8	2	0 934816 790540 4361244	0	0	0 57440 20308 50508 36 63 0 0 0
9	1	0 935208 790560 4361376	0	0	0 60084 15915 56528 34 65 0 1 0
7	2	0 939180 790624 4361276	0	0	0 49808 1976 3231 43 57 0 0 0
7	1	0 939180 790656 4361276	0	0	0 27748 3401 4309 41 58 0 0 0
7	0	0 939180 790664 4361272	0	0	0 64 1921 3483 45 55 0 0 0
1	0	0 942088 790788 4361296	0	0	0 84 1691 2152 13 16 67 4 0
0	0	0 1236544 790796 4363192	0	0	0 16 1426 2090 6 7 87 1 0

#### Трасса системных вызовов

```
execve("./main", ["./main"], 0x7ffcdcb757d0 /* 21 vars */) = 0
                                   = 0x55a266be4000
arch prctl(0x3001 /* ARCH ??? */, 0x7fffff7b5b890) = -1 EINVAL (Invalid argument)
access("/etc/ld.so.preload", R OK)
                                 = -1 ENOENT (No such file or directory)
openat(AT FDCWD, "/etc/ld.so.cache", O RDONLY|O CLOEXEC) = 3
fstat(3, {st mode=S IFREG|0644, st size=33622, \ldots}) = 0
mmap(NULL, 33622, PROT_READ, MAP_PRIVATE, 3, 0) = 0x7f0724d9d000
openat(AT_FDCWD, "/lib/x86_64-linux-gnu/libpthread.so.0", O_RDONLY|O_CLOEXEC) = 3
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0GNU\00\305\3743\364B\2216\24\224\306@\261\23\327o"..., 68,
824) = 68
fstat(3, {st mode=S IFREG|0755, st size=157224, ...}) = 0
mmap(NULL, 8192, PROT READ|PROT WRITE, MAP PRIVATE|MAP ANONYMOUS, -1, 0) = 0x7f0724d9b000
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0SNU\00\305\3743\364B\2216\244\224\306@\261\23\327o"..., 68,
824) = 68
mmap(NULL, 140408, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0) = 0x7f0724d78000
mmap(0x7f0724d7f000, 69632, PROT READ|PROT EXEC, MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x7000)
= 0x7f0724d7f000
mmap(0x7f0724d90000, 20480, PROT_READ, MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x18000) =
0x7f0724d90000
mmap(0x7f0724d95000, 8192, PROT READ|PROT WRITE, MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x1c000)
= 0x7f0724d95000
mmap(0x7f0724d97000, 13432, PROT READ|PROT WRITE, MAP PRIVATE|MAP FIXED|MAP ANONYMOUS, -1, 0) =
0x7f0724d97000
close(3)
openat(AT FDCWD, "/lib/x86 64-linux-gnu/libc.so.6", O RDONLY|O CLOEXEC) = 3
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0SNU\0\363\377?\332\200\270\27\304d\245n\355Y\377\t\334"...,
68, 880) = 68
fstat(3, {st mode=S IFREG|0755, st size=2029224, ...}) = 0
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0GNU\0\363\377?\332\200\270\27\304d\245n\355Y\377\t\334"...,
68, 880) = 68
mmap(NULL, 2036952, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0) = 0x7f0724b86000
mprotect(0x7f0724bab000, 1847296, PROT NONE) = 0
mmap(0x7f0724bab000, 1540096, PROT READ|PROT EXEC, MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3,
0x25000) = 0x7f0724bab000
mmap(0x7f0724d23000, 303104, PROT READ, MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x19d000) =
0x7f0724d23000
mmap(0x7f0724d6e000, 24576, PROT READ|PROT WRITE, MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3,
0x1e7000) = 0x7f0724d6e000
mmap(0x7f0724d74000, 13528, PROT READ|PROT WRITE, MAP PRIVATE|MAP FIXED|MAP ANONYMOUS, -1, 0) =
0x7f0724d74000
close(3)
                                   = 0
mmap(NULL, 12288, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS, -1, 0) = 0x7f0724b83000
arch_prctl(ARCH_SET_FS, 0x7f0724b83740) = 0
mprotect(0x7f0724d6e000, 12288, PROT READ) = 0
mprotect(0x7f0724d95000, 4096, PROT READ) = 0
mprotect(0x55a265661000, 4096, PROT READ) = 0
mprotect(0x7f0724dd3000, 4096, PROT READ) = 0
munmap(0x7f0724d9d000, 33622)
set tid address(0x7f0724b83a10)
                                  = 411
set robust list(0x7f0724b83a20, 24)
                                  = 0
rt sigaction(SIGRTMIN, {sa handler=0x7f0724d7fbf0, sa mask=[], sa flags=SA RESTORER|SA SIGINFO,
sa_restorer=0x7f0724d8d3c0, NULL, 8) = 0
rt sigaction(SIGRT 1, {sa handler=0x7f0724d7fc90, sa mask=[],
 \texttt{sa\_flags} = \texttt{SA\_RESTORER} \mid \texttt{SA\_RESTART} \mid \texttt{SA\_SIGINFO}, \ \ \texttt{sa\_restorer} = \texttt{0x7f0724d8d3c0}, \ \ \texttt{NULL}, \ \ \texttt{8}) \ = \ \texttt{0} 
rt_sigprocmask(SIG_UNBLOCK, [RTMIN RT_1], NULL, 8) = 0
prlimit64(0, RLIMIT STACK, NULL, {rlim cur=8192*1024, rlim max=RLIM64 INFINITY}) = 0
unlink("/mnt/c/Users/Admin/os-laba/log memory.txt") = 0
openat(AT FDCWD, "/mnt/c/Users/Admin/os-laba/os-1", O RDWR|O CREAT, 0700) = 3
```

```
ftruncate(3, 88080384)
fstat(1, {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...}) = 0
brk(NULL)
                                        = 0x55a266be4000
                                        = 0x55a266c05000
brk(0x55a266c05000)
write(1, "Create file /mnt/c/Users/Admin/o"..., 44Create file /mnt/c/Users/Admin/os-laba/os-1
) = 44
openat(AT FDCWD, "/mnt/c/Users/Admin/os-laba/os-2", O RDWR|O CREAT, 0700) = 4
ftruncate(4, 88080384)
write(1, "Create file /mnt/c/Users/Admin/o"..., 44Create file /mnt/c/Users/Admin/os-laba/os-2
) = 44
openat (AT FDCWD, "/mnt/c/Users/Admin/os-laba/os-3", O RDWR|O CREAT, 0700) = 5
ftruncate(5, 88080384)
write(1, "Create file /mnt/c/Users/Admin/o"..., 44Create file /mnt/c/Users/Admin/os-laba/os-3
) = 44
                                        = 411
getpid()
write(1, "Hi, PID: 411\nEnter anything to a"..., 47Hi, PID: 411
Enter anything to allocate memory
) = 47
openat(AT FDCWD, "/mnt/c/Users/Admin/os-laba/log memory.txt", O WRONLY|O CREAT|O APPEND, 0666) =
lseek(6, 0, SEEK END)
fstat(6, {st_mode=S_IFREG|0777, st size=0, ...}) = 0
write(6, " ### Before allocation ###", 26) = 26
openat(AT FDCWD, "/mnt/c/Users/Admin/os-laba/log memory.txt", O WRONLY|O CREAT|O APPEND, 0666) =
lseek(6, 0, SEEK END)
                                        = 26
fstat(6, {st_mode=S_IFREG|0777, st_size=26, ...}) = 0
write(6, "\n nfree -\n 10)
rt sigaction(SIGINT, {sa_handler=SIG_IGN, sa_mask=[], sa_flags=SA_RESTORER,
sa_restorer=0x7f0724bcc210), {sa_handler=SIG_DFL, sa_mask=[], sa_flags=0}, 8) = 0
rt_sigaction(SIGQUIT, {sa_handler=SIG_IGN, sa_mask=[], sa_flags=SA_RESTORER,
sa restorer=0x7f0724bcc210}, {sa handler=SIG DFL, sa mask=[], sa flags=0}, 8) = 0
rt sigprocmask(SIG BLOCK, [CHLD], [], 8) = 0
mmap(NULL, 36864, PROT READ|PROT WRITE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) =
0x7f0724d9d000
rt sigprocmask(SIG BLOCK, \sim[], [CHLD], 8) = 0
clone(child stack=0x7f0724da5ff0, flags=CLONE VM|CLONE VFORK|SIGCHLD) = 412
munmap(0x7f0724d9d000, 36864)
                                       = 0
rt sigprocmask(SIG SETMASK, [CHLD], NULL, 8) = 0
wait4(412, [\{WIFEXITED(s) \&\& WEXITSTATUS(s) == 0\}], 0, NULL) = 412
rt sigaction(SIGINT, {sa handler=SIG DFL, sa mask=[], sa flags=SA RESTORER,
sa restorer=0x7f0724bcc210}, NULL, 8) = 0
rt sigaction(SIGQUIT, {sa handler=SIG DFL, sa mask=[], sa flags=SA RESTORER,
sa restorer=0x7f0724bcc210}, NULL, 8) = 0
rt sigprocmask(SIG SETMASK, [], NULL, 8) = 0
--- SIGCHLD {si signo=SIGCHLD, si code=CLD EXITED, si pid=412, si uid=1000, si status=0,
si utime=0, si stime=0} ---
getpid()
                                        = 411
openat(AT FDCWD, "/mnt/c/Users/Admin/os-laba/log memory.txt", O WRONLY|O CREAT|O APPEND, 0666) =
lseek(6, 0, SEEK_END)
                                        = 240
fstat(6, {st mode=S IFREG|0777, st size=240, \ldots}) = 0
write(6, "\nmaps:\n", 7)
close(6)
rt sigaction(SIGINT, {sa handler=SIG IGN, sa mask=[], sa flags=SA RESTORER,
sa_restorer=0x7f0724bcc210}, {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa\_restorer=0x7f0724bcc210, 8) = 0
rt_sigaction(SIGQUIT, {sa_handler=SIG_IGN, sa_mask=[], sa_flags=SA_RESTORER,
sa_restorer=0x7f0724bcc210}, {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa restorer=0x7f0724bcc210}, 8) = 0
rt sigprocmask(SIG BLOCK, [CHLD], [], 8) = 0
mmap(NULL, 36864, PROT READ|PROT WRITE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) =
0x7f0724d9d000
rt sigprocmask(SIG BLOCK, \sim[], [CHLD], 8) = 0
clone(child stack=0x7f0724da5ff0, flags=CLONE VM|CLONE VFORK|SIGCHLD) = 414
munmap(0x7f0724d9d000, 36864)
```

```
rt sigprocmask(SIG SETMASK, [CHLD], NULL, 8) = 0
wait4(414, [\{WIFEXITED(s) \&\& WEXITSTATUS(s) == 0\}], 0, NULL) = 414
rt sigaction(SIGINT, {sa handler=SIG DFL, sa mask=[], sa flags=SA RESTORER,
sa\_restorer=0x7f0724bcc210, NULL, 8) = 0
rt_sigaction(SIGQUIT, {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa restorer=0x7f0724bcc210}, NULL, 8) = 0
rt sigprocmask(SIG SETMASK, [], NULL, 8) = 0
--- SIGCHLD {si signo=SIGCHLD, si code=CLD EXITED, si pid=414, si uid=1000, si status=0,
si_utime=0, si_stime=0} ---
openat(AT FDCWD, "/mnt/c/Users/Admin/os-laba/log memory.txt", O WRONLY|O CREAT|O APPEND, 0666) =
lseek(6, 0, SEEK END)
                                    = 3101
fstat(6, {st_mode=S_IFREG|0777, st size=3101, ...}) = 0
write(6, "\n", 1)
                                    = 1
close(6)
fstat(0, {st mode=S IFCHR|0620, st rdev=makedev(0x88, 0), \dots}) = 0
read(0, ^Cstrace: Process 411 detached
<detached ...>
marycia624@DESKTOP-HGN42EM:/mnt/c/Users/Admin/os-laba$ strace ./main
execve("./main", ["./main"], 0x7ffe8089a730 /* 21 vars */) = 0
                                   = 0x56244ba3e000
arch prctl(0x3001 /* ARCH ??? */, 0x7ffd7194a4f0) = -1 EINVAL (Invalid argument)
                                  = -1 ENOENT (No such file or directory)
access("/etc/ld.so.preload", R OK)
openat(AT_FDCWD, "/etc/ld.so.cache", O_RDONLY|O_CLOEXEC) = 3
fstat(3, {st_mode=S_IFREG|0644, st_size=33622, ...}) = 0
mmap(NULL, 33622, PROT READ, MAP PRIVATE, 3, 0) = 0x7f5ba54c2000
                                    = 0
openat(AT FDCWD, "/lib/x86 64-linux-gnu/libpthread.so.0", O RDONLY|O CLOEXEC) = 3
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0\305\3743\364B\2216\244\224\306@\261\23\327o"..., 68,
824) = 68
fstat(3, {st_mode=S_IFREG|0755, st_size=157224, ...}) = 0
mmap(NULL, 8192, PROT READ|PROT WRITE, MAP PRIVATE|MAP ANONYMOUS, -1, 0) = 0x7f5ba54c0000
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0\0SNU\00\305\3743\364B\2216\244\224\306@\261\23\3270"..., 68,
824) = 68
\texttt{mmap}(\texttt{NULL}, 140408, \texttt{PROT}_\texttt{READ}, \texttt{MAP}_\texttt{PRIVATE}|\texttt{MAP}_\texttt{DENYWRITE}, 3, 0) = 0 \times 7 \text{f5ba549d000}
mmap(0x7f5ba54a4000, 69632, PROT READ|PROT EXEC, MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x7000)
= 0x7f5ba54a4000
mmap(0x7f5ba54b5000, 20480, PROT READ, MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x18000) =
0x7f5ba54b5000
mmap(0x7f5ba54ba000, 8192, PROT READ|PROT WRITE, MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, 0x1c000)
= 0x7f5ba54ba000
mmap(0x7f5ba54bc000, 13432, PROT READ|PROT WRITE, MAP PRIVATE|MAP FIXED|MAP ANONYMOUS, -1, 0) =
0x7f5ba54bc000
close(3)
openat(AT FDCWD, "/lib/x86 64-linux-gnu/libc.so.6", O RDONLY|O CLOEXEC) = 3
read(3, "\177ELF\2\1\1\3\0\0\0\0\0\0\0\1\0\0\360q\2\0\0\0\0\0\0..., 832) = 832
pread64(3, "\4\0\0\0\24\0\0\0\3\0\0GNU\0\363\377?\332\200\27\\27\304d\245n\355Y\377\t\334"...,
68, 880) = 68
fstat(3, {st mode=S IFREG|0755, st size=2029224, ...}) = 0
pread64(3, "\4\0\0\0\24\0\0\0\3\0\\0GNU\0\363\377?\332\200\27\\304d\245n\355Y\377\t\334"...,
68, 880) = 68
mmap(NULL, 2036952, PROT READ, MAP PRIVATE|MAP DENYWRITE, 3, 0) = 0x7f5ba52ab000
mprotect(0x7f5ba52d0000, 1847296, PROT NONE) = 0
mmap(0x7f5ba52d0000, 1540096, PROT READ|PROT EXEC, MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3,
0x25000) = 0x7f5ba52d0000
mmap(0x7f5ba5448000, 303104, PROT READ, MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3, <math>0x19d000) = 0
0x7f5ba5448000
mmap(0x7f5ba5493000, 24576, PROT READ|PROT WRITE, MAP PRIVATE|MAP FIXED|MAP DENYWRITE, 3,
0x1e7000) = 0x7f5ba5493000
mmap(0x7f5ba5499000, 13528, PROT READ|PROT WRITE, MAP PRIVATE|MAP FIXED|MAP ANONYMOUS, -1, 0) =
0x7f5ba5499000
close(3)
                                    = 0
```

```
mmap(NULL, 12288, PROT READ|PROT WRITE, MAP PRIVATE|MAP ANONYMOUS, -1, 0) = 0 \times 765 \text{ba} 52 \text{a} 8000
arch prctl(ARCH SET FS, 0x7f5ba52a8740) = 0
mprotect (0x7f5ba5493000, 12288, PROT READ) = 0
mprotect(0x7f5ba54ba000, 4096, PROT READ) = 0
mprotect(0x56244b6ff000, 4096, PROT READ) = 0
mprotect(0x7f5ba54f8000, 4096, PROT READ) = 0
munmap(0x7f5ba54c2000, 33622)
set tid address(0x7f5ba52a8a10)
                                         = 419
set robust list(0x7f5ba52a8a20, 24) = 0
rt sigaction(SIGRTMIN, {sa handler=0x7f5ba54a4bf0, sa mask=[], sa flags=SA RESTORER|SA SIGINFO,
sa\_restorer=0x7f5ba54b23c0, NULL, 8) = 0
rt sigaction(SIGRT 1, {sa handler=0x7f5ba54a4c90, sa mask=[],
 \texttt{sa\_flags} = \texttt{SA\_RESTORER} \mid \texttt{SA\_RESTART} \mid \texttt{SA\_SIGINFO}, \quad \texttt{sa\_restorer} = \texttt{0x7f5ba54b23c0}, \quad \texttt{NULL}, \quad \texttt{8}) \; = \; \texttt{0} 
rt_sigprocmask(SIG_UNBLOCK, [RTMIN RT_1], NULL, 8) = 0
prlimit64(0, RLIMIT_STACK, NULL, {rlim_cur=8192*1024, rlim_max=RLIM64_INFINITY}) = 0
unlink("/mnt/c/Users/Admin/os-laba/log_memory.txt") = 0
openat(AT FDCWD, "/mnt/c/Users/Admin/os-laba/os-1", O_RDWR|O_CREAT, 0700) = 3
                                         = 0
ftruncate(3, 88080384)
fstat(1, {st_mode=S_IFCHR|0620, st_rdev=makedev(0x88, 0), ...}) = 0
                                         = 0x56244ba3e000
brk(NULL)
brk(0x56244ba5f000)
                                          = 0x56244ba5f000
write(1, "Create file /mnt/c/Users/Admin/o"..., 44Create file /mnt/c/Users/Admin/os-laba/os-1
) = 44
openat(AT FDCWD, "/mnt/c/Users/Admin/os-laba/os-2", O RDWR|O CREAT, 0700) = 4
ftruncate(4, 88080384)
write(1, "Create file /mnt/c/Users/Admin/o"..., 44Create file /mnt/c/Users/Admin/os-laba/os-2
) = 44
openat(AT FDCWD, "/mnt/c/Users/Admin/os-laba/os-3", O RDWR|O CREAT, 0700) = 5
ftruncate(5, 88080384)
write(1, "Create file /mnt/c/Users/Admin/o"..., 44Create file /mnt/c/Users/Admin/os-laba/os-3
) = 44
getpid()
                                          = 419
write(1, "Hi, PID: 419\next{NnEnter} anything to a"..., 47Hi, PID: 419
Enter anything to allocate memory
) = 47
openat(AT FDCWD, "/mnt/c/Users/Admin/os-laba/log memory.txt", O WRONLY|O CREAT|O APPEND, 0666) =
6
lseek(6, 0, SEEK END)
fstat(6, {st_mode=S_IFREG|0777, st_size=0, ...}) = 0
write(6, " \#\#\# Before allocation \#\#\#", 26) = 26
close(6)
openat(AT_FDCWD, "/mnt/c/Users/Admin/os-laba/log_memory.txt", O_WRONLY|O_CREAT|O_APPEND, 0666) =
lseek(6, 0, SEEK END)
                                          = 2.6
fstat(6, {st_mode=S_IFREG|0777, st_size=26, ...}) = 0
write(6, "\n nfree -\n 10)
                                          = 10
close(6)
rt sigaction(SIGINT, {sa handler=SIG IGN, sa mask=[], sa flags=SA RESTORER,
sa_restorer=0x7f5ba52f1210\}, \ \{sa_handler=SIG_DFL, \ sa_mask=[], \ sa_flags=0\}, \ 8) \ = \ 0
rt_sigaction(SIGQUIT, {sa_handler=SIG_IGN, sa_mask=[], sa_flags=SA_RESTORER,
sa_restorer=0x7f5ba52f1210\}, \ \{sa_handler=SIG_DFL, \ sa_mask=[], \ sa_flags=0\}, \ 8) \ = \ 0
rt_sigprocmask(SIG_BLOCK, [CHLD], [], 8) = 0
mmap(NULL, 36864, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) =
0x7f5ba54c2000
rt sigprocmask(SIG BLOCK, \sim[], [CHLD], 8) = 0
\verb|clone| (\verb|child| stack=0x7f5ba54caff0, flags=CLONE VM| CLONE VFORK| SIGCHLD) = 420
munmap(0x7f5ba54c2000, 36864)
rt sigprocmask(SIG_SETMASK, [CHLD], NULL, 8) = 0
wait4(420, [\{WIFEXITED(s) \&\& WEXITSTATUS(s) == 0\}], 0, NULL) = 420
rt sigaction(SIGINT, {sa handler=SIG DFL, sa mask=[], sa flags=SA RESTORER,
sa restorer=0x7f5ba52f1210}, NULL, 8) = 0
rt sigaction(SIGQUIT, {sa handler=SIG DFL, sa mask=[], sa flags=SA RESTORER,
sa restorer=0x7f5ba52f1210}, NULL, 8) = 0
rt sigprocmask(SIG SETMASK, [], NULL, 8) = 0
--- SIGCHLD {si signo=SIGCHLD, si code=CLD EXITED, si pid=420, si uid=1000, si status=0,
si_utime=0, si_stime=1} ---
getpid()
                                          = 419
```

```
openat(AT FDCWD, "/mnt/c/Users/Admin/os-laba/log memory.txt", O WRONLY|O CREAT|O APPEND, 0666) =
lseek(6, 0, SEEK END)
                                         = 240
fstat(6, {st_mode=S_IFREG|0777, st_size=240, ...}) = 0
write(6, "\nmaps:\n", 7)
                                        = 7
rt_sigaction(SIGINT, {sa_handler=SIG_IGN, sa_mask=[], sa_flags=SA_RESTORER,
sa_restorer=0x7f5ba52f1210}, {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa restorer=0x7f5ba52f1210}, 8) = 0
rt sigaction(SIGQUIT, {sa handler=SIG IGN, sa mask=[], sa flags=SA RESTORER,
sa_restorer=0x7f5ba52f1210}, {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa_restorer=0x7f5ba52f1210}, 8) = 0
rt sigprocmask(SIG BLOCK, [CHLD], [], 8) = 0
mmap(NULL, 36864, PROT READ|PROT WRITE, MAP PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) =
0x7f5ba54c2000
rt sigprocmask(SIG BLOCK, \sim[], [CHLD], 8) = 0
\verb|clone(child_stack=0x7f5ba54caff0, flags=CLONE_VM|CLONE VFORK|SIGCHLD) = 422|
munmap(0x7f5ba54c2000, 36864)
rt sigprocmask(SIG SETMASK, [CHLD], NULL, 8) = 0
wait4(422, [{WIFEXITED(s) && WEXITSTATUS(s) == 0}], 0, NULL) = 422
rt sigaction(SIGINT, {sa handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa_restorer=0x7f5ba52f1210, NULL, 8) = 0
rt sigaction(SIGQUIT, {sa handler=SIG DFL, sa mask=[], sa flags=SA RESTORER,
sa\_restorer=0x7f5ba52f1210}, NULL, 8) = 0
rt sigprocmask(SIG SETMASK, [], NULL, 8) = 0
--- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=422, si_uid=1000, si_status=0,
si_utime=0, si_stime=0} ---
openat(AT FDCWD, "/mnt/c/Users/Admin/os-laba/log memory.txt", O WRONLY|O CREAT|O APPEND, 0666) =
lseek(6, 0, SEEK END)
                                         = 3101
fstat(6, {st mode=S IFREG|0777, st size=3101, \ldots}) = 0
write(6, "\n", 1)
                                         = 1
close(6)
                                         = 0
fstat(0, {st mode=S IFCHR|0620, st rdev=makedev(0x88, 0), ...}) = 0
"\n", 1024)
                                = 1
mmap(0xdd6a8120, 233832448, PROT READ|PROT WRITE, MAP PRIVATE|MAP ANONYMOUS, -1, 0) = 0xdd6a8000
write(1, "Memory successfully allocated\n", 30Memory successfully allocated
) = 30
openat(AT_FDCWD, "/mnt/c/Users/Admin/os-laba/log_memory.txt", O_WRONLY|O_CREAT|O_APPEND, 0666) =
lseek(6, 0, SEEK END)
                                         = 3102
fstat(6, {st_mode=S_IFREG|0777, st_size=3102, ...}) = 0
write(6, " ### After allocation ###", 25) = 25
close(6)
openat(AT_FDCWD, "/mnt/c/Users/Admin/os-laba/log_memory.txt", O_WRONLY|O_CREAT|O_APPEND, 0666) =
6
                                        = 3127
lseek(6, 0, SEEK END)
fstat(6, {st_mode=S_IFREG|0777, st_size=3127, ...}) = 0
write(6, "\n nfree -\n 10)
                                        = 10
close(6)
rt sigaction(SIGINT, {sa handler=SIG IGN, sa mask=[], sa flags=SA RESTORER,
sa_restorer=0x7f5ba52f1210}, {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa restorer=0x7f5ba52f1210}, 8) = 0
rt sigaction(SIGQUIT, {sa handler=SIG IGN, sa mask=[], sa flags=SA RESTORER,
sa_restorer=0x7f5ba52f1210}, {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa_restorer=0x7f5ba52f1210, 8) = 0
rt sigprocmask(SIG BLOCK, [CHLD], [], 8) = 0
mmap(NULL, 36864, PROT READ|PROT WRITE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) =
0x7f5ba54c2000
rt sigprocmask(SIG BLOCK, \sim[], [CHLD], 8) = 0
clone(child stack=0x7f5ba54caff0, flags=CLONE VM|CLONE VFORK|SIGCHLD) = 424
munmap(0x7f5ba54c2000, 36864)
rt sigprocmask(SIG SETMASK, [CHLD], NULL, 8) = 0
wait4(424, [\{WIFEXITED(s) \&\& WEXITSTATUS(s) == 0\}], 0, NULL) = 424
rt sigaction(SIGINT, {sa handler=SIG DFL, sa mask=[], sa flags=SA RESTORER,
sa restorer=0x7f5ba52f1210}, NULL, 8) = 0
rt sigaction(SIGQUIT, {sa handler=SIG DFL, sa mask=[], sa flags=SA RESTORER,
sa restorer=0x7f5ba52f1210}, NULL, 8) = 0
```

```
rt sigprocmask(SIG SETMASK, [], NULL, 8) = 0
--- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=424, si_uid=1000, si_status=0,
si utime=0, si stime=0} ---
                                         = 419
openat(AT_FDCWD, "/mnt/c/Users/Admin/os-laba/log_memory.txt", O_WRONLY|O_CREAT|O_APPEND, 0666) =
lseek(6, 0, SEEK END)
                                         = 3341
fstat(6, {st mode=S IFREG|0777, st size=3341, \ldots}) = 0
write(6, "\nmaps:\n", 7)
                                        = 7
rt_sigaction(SIGINT, {sa_handler=SIG_IGN, sa_mask=[], sa_flags=SA_RESTORER,
sa_restorer=0x7f5ba52f1210}, {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa_restorer=0x7f5ba52f1210}, 8) = 0
rt sigaction(SIGQUIT, {sa handler=SIG IGN, sa mask=[], sa flags=SA RESTORER,
sa_restorer=0x7f5ba52f1210}, {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa restorer=0x7f5ba52f1210}, 8) = 0
rt sigprocmask(SIG BLOCK, [CHLD], [], 8) = 0
mmap(NULL, 36864, PROT READ|PROT WRITE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) =
0x7f5ba54c2000
rt_sigprocmask(SIG_BLOCK, ~[], [CHLD], 8) = 0
clone(child_stack=0x7f5ba54caff0, flags=CLONE_VM|CLONE_VFORK|SIGCHLD) = 426
munmap(0x7f5ba54c2000, 36864)
rt sigprocmask(SIG SETMASK, [CHLD], NULL, 8) = 0
wait4(426, [\{WIFEXITED(s) \&\& WEXITSTATUS(s) == 0\}], 0, NULL) = 426
rt sigaction(SIGINT, {sa handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa_restorer=0x7f5ba52f1210, NULL, 8) = 0
rt_sigaction(SIGQUIT, {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa_restorer=0x7f5ba52f1210, NULL, 8) = 0
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
--- SIGCHLD {si signo=SIGCHLD, si code=CLD EXITED, si pid=426, si uid=1000, si status=0,
si_utime=0, si_stime=0} ---
openat(AT FDCWD, "/mnt/c/Users/Admin/os-laba/log memory.txt", O WRONLY|O CREAT|O APPEND, 0666) =
lseek(6, 0, SEEK END)
                                         = 6243
fstat(6, {st mode=S IFREG|0777, st size=6243, \ldots}) = 0
write(6, "\n", 1)
                                         = 1
close(6)
                                         = 0
read(0,
"\n", 1024)
                                 = 1
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5ba4aa7000
mprotect(0x7f5ba4aa8000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5ba52a6fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID | CLONE CHILD CLEARTIDCreated write thread for 0xdd6a8000
, parent tid=[428], tls=0x7f5ba52a7700, child tidptr=0x7f5ba52a79d0) = 428
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5ba42a6000
mprotect(0x7f5ba42a7000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5ba4aa5fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTIDCreated write thread for 0xde1ce666
, parent_tid=[429], tls=0x7f5ba4aa6700, child_tidptr=0x7f5ba4aa69d0) = 429
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5ba3aa5000
mprotect(0x7f5ba3aa6000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5ba42a4fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTIDCreated write thread for 0xdecf4ccc
, parent_tid=[430], tls=0x7f5ba42a5700, child_tidptr=0x7f5ba42a59d0) = 430
 \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5ba32a4000 } \\
mprotect(0x7f5ba32a5000, 8388608, PROT READ|PROT WRITE) = 0
clone (child stack=0x7f5ba3aa3fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[431], tls=0x7f5ba3aa4700,
child tidptr=0x7f5ba3aa49d0) = 431
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, OCreated write thread for
0xdf81b332
) = 0x7f5ba2aa3000
mprotect(0x7f5ba2aa4000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5ba32a2fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
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ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[432], tls=0x7f5ba32a3700,
child tidptr=0x7f5ba32a39d0) = 432
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, OCreated write thread for
0xe0341998
) = 0x7f5ba22a2000
mprotect(0x7f5ba22a3000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5ba2aa1fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE_CHILD_CLEARTID, parent_tid=[433], tls=0x7f5ba2aa2700,
child tidptr=0x7f5ba2aa29d0) = 433
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) = 0x7f5balaa1000
mprotect(0x7f5ba1aa2000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5ba22a0fb0,
flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_P
ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[434], tls=0x7f5ba22a1700,
child\_tidptr=0x7f5ba22a19d0) = 434
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5bal2a0000
mprotect(0x7f5ba12a1000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5bala9ffb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE_CHILD_CLEARTID, parent_tid=[435], tls=0x7f5balaa0700,
child tidptr=0x7f5ba1aa09d0) = 435
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5ba0a9f000
mprotect(0x7f5ba0aa0000, 8388608, PROT READ|PROT WRITE) = 0
clone(child_stack=0x7f5ba129efb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[436], tls=0x7f5ba129f700,
child tidptr=0x7f5\overline{ba129f9d0}) = 436
 \texttt{mmap}(\texttt{NULL}, 8392704, \texttt{PROT\_NONE}, \texttt{MAP\_PRIVATE}|\texttt{MAP\_ANONYMOUS}|\texttt{MAP\_STACK}, -1, 0) = 0 \times 7 \\ \texttt{f5ba} \\ 0 29 \\ \texttt{e} 000 \\ \texttt{0} 100 
mprotect(0x7f5ba029f000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5ba0a9dfb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[437], tls=0x7f5ba0a9e700,
child tidptr=0x7f5ba0a9e9d0) = 437
 \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9fa9d000 } \\
mprotect(0x7f5b9fa9e000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5ba029cfb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[438], tls=0x7f5ba029d700,
child\_tidptr=0x7f5\overline{b}a029d\overline{9}d0) = 438
 \texttt{mmap}(\texttt{NULL}, 8392704, \texttt{PROT} \texttt{NONE}, \texttt{MAP} \texttt{PRIVATE}|\texttt{MAP} \texttt{ANONYMOUS}|\texttt{MAP} \texttt{STACK}, -1, 0) = 0 \times 7 \text{f5b9f29c000} 
mprotect(0x7f5b9f29d000, 8388608, PROT READ|PROT WRITE) = 0
clone(child_stack=0x7f5b9fa9bfb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[439], tls=0x7f5b9fa9c700,
child tidptr=0x7f5b9fa9c9d0) = 439
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b9ea9b000
mprotect(0x7f5b9ea9c000, 8388608, PROT READ|PROT WRITE) = 0
clone(child_stack=0x7f5b9f29afb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[440], tls=0x7f5b9f29b700,
child tidptr=0x7f5b9f29b9d0) = 440
 \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9e29a000 } \\
mprotect(0x7f5b9e29b000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b9ea99fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[441], tls=0x7f5b9ea9a700,
child tidptr=0x7f5b9ea9a9d0) = 441
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) = 0x7f5b9da99000
mprotect(0x7f5b9da9a000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b9e298fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID | CLONE CHILD CLEARTID, parent tid=[442], tls=0x7f5b9e299700,
child tidptr=0x7f5b9e2999d0) = 442
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b9d298000
mprotect(0x7f5b9d299000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b9da97fb0,
flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[443], tls=0x7f5b9da98700,
child tidptr=0x7f5\overline{b}9da98\overline{9}d0) = 443
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) = 0x7f5b9ca97000
mprotect(0x7f5b9ca98000, 8388608, PROT READ|PROT WRITE) = 0
```

```
clone(child stack=0x7f5b9d296fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[444], tls=0x7f5b9d297700,
child tidptr=0x7f5b9d2979d0) = 444
 \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9c296000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9c296000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9c296000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9c296000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9c296000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9c296000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9c296000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9c296000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9c296000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9c296000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9c296000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9c296000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9c296000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9c296000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9c296000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9c296000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9c296000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9c296000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b9c296000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE, MAP\_P
mprotect(0x7f5b9c297000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b9ca95fb0,
flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_P
ARENT SETTID | CLONE CHILD CLEARTID, parent tid=[445], tls=0x7f5b9ca96700,
child tidptr=0x7f5b9ca969d0) = 445
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b9ba95000
mprotect(0x7f5b9ba96000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b9c294fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[446], tls=0x7f5b9c295700,
child_tidptr=0x7f5b9c2959d0) = 446
 \texttt{mmap}(\texttt{NULL}, 8392704, \texttt{PROT\_NONE}, \texttt{MAP\_PRIVATE}|\texttt{MAP\_ANONYMOUS}|\texttt{MAP\_STACK}, -1, 0) = 0 \\ \texttt{x} \\ \texttt{7} \\ \texttt{5} \\ \texttt{5} \\ \texttt{9} \\ \texttt{5} \\ \texttt{2} \\ \texttt{9} \\ \texttt{4} \\ \texttt{0} \\ \texttt{0} \\ \texttt{0} \\ \texttt{0} \\ \texttt{0} \\ \texttt{1} \\ \texttt{2} \\ \texttt{3} \\ \texttt{2} \\ \texttt{3} \\ \texttt{2} \\ \texttt{3} \\ \texttt{2} \\ \texttt{3} \\ \texttt{3} \\ \texttt{2} \\ \texttt{3} \\ \texttt{3} \\ \texttt{2} \\ \texttt{3} \\ \texttt{3} \\ \texttt{3} \\ \texttt{3} \\ \texttt{3} \\ \texttt{4} \\ \texttt{3} \\ \texttt{3} \\ \texttt{4} \\ \texttt{3} \\ \texttt{4} \\ \texttt{5} \\ \texttt{6} \\ \texttt{7} \\ \texttt{6} \\ \texttt{7} \\ \texttt{8} \\ \texttt{7} \\ \texttt{7} \\ \texttt{8} \\ \texttt{8} \\ \texttt{8} \\ \texttt{8} \\ \texttt{9} \\ \texttt{8} \\ \texttt{9} \\ \texttt{8} \\ \texttt{9} 
mprotect(0x7f5b9b295000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b9ba93fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[447], tls=0x7f5b9ba94700,
child tidptr=0x7f5b9ba949d0) = 447
read(0, Created write thread for 0xe198e664
Created write thread for 0xe7de7ffa
Created write thread for 0xe3b01996
Created write thread for 0xe24b4cca
Created write thread for 0xe5c74cc8
Created write thread for 0xe679b32e
Created write thread for 0xeaa81992
Created write thread for 0xe4627ffc
Created write thread for 0xe9f5b32c
Created write thread for 0xe72c1994
Created write thread for 0xe890e660
Created write thread for 0xe514e662
Created write thread for 0xe9434cc6
Created write thread for 0xe2fdb330
Created write thread for 0xe0e67ffe
thread 0xde1ce666 WRITE to file 2
thread 0xdecf4ccc WRITE to file 1
thread 0xdd6a8000 WRITE to file 3
"\n", 1024)
                                                                                            = 1
openat(AT FDCWD, "/mnt/c/Users/Admin/os-laba/log memory.txt", O WRONLY|O CREAT|O APPEND, 0666) =
lseek(6, 0, SEEK END)
fstat(6, {st mode=S IFREG|0777, st size=6244, ...}) = 0
write(6, " ### After filling area ###", 27) = 27
openat(AT FDCWD, "/mnt/c/Users/Admin/os-laba/log memory.txt", O WRONLY|O CREAT|O APPEND, 0666) =
lseek(6, 0, SEEK END)
                                                                                                                  = 6271
fstat(6, {st mode=S IFREG|0777, st size=6271, \ldots}) = 0
write(6, "\n nfree -\n 10)
                                                                                                                = 10
rt sigaction(SIGINT, {sa_handler=SIG_IGN, sa_mask=[], sa_flags=SA_RESTORER,
sa_restorer=0x7f5ba52f12\overline{10}, {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa restorer=0x7f5ba52f1210}, 8) = 0
rt sigaction(SIGQUIT, {sa handler=SIG IGN, sa mask=[], sa flags=SA RESTORER,
sa_restorer=0x7f5ba52f1210}, {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa restorer=0x7f5ba52f1210}, 8) = 0
rt\_sigprocmask(SIG\_BLOCK, [CHLD], [], 8) = 0
mmap(NULL, 36864, PROT READ|PROT WRITE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) =
0x7f5ba54c2000
rt sigprocmask(SIG BLOCK, \sim[], [CHLD], 8) = 0
\verb|clone(child_stack=0x7f5ba54caff0, flags=CLONE_VM|CLONE VFORK|SIGCHLD)| = 448
munmap(0x7f5ba54c2000, 36864)
rt sigprocmask(SIG SETMASK, [CHLD], NULL, 8) = 0
wait4(448, [{WIFEXITED(s) && WEXITSTATUS(s) == 0}], 0, NULL) = 448
```

```
rt sigaction(SIGINT, {sa handler=SIG DFL, sa mask=[], sa flags=SA RESTORER,
sa restorer=0x7f5ba52f12\overline{10}, NULL, 8) = 0
rt sigaction(SIGQUIT, {sa handler=SIG DFL, sa mask=[], sa flags=SA RESTORER,
sa restorer=0x7f5ba52f1210}, NULL, 8) = 0
rt sigprocmask(SIG SETMASK, [], NULL, 8) = 0
openat(AT FDCWD, "/mnt/c/Users/Admin/os-laba/log memory.txt", O WRONLY|O CREAT|O APPEND, 0666) =
lseek(6, 0, SEEK END)
                                         = 6485
fstat(6, {st_mode=S_IFREG|0777, st_size=6485, ...}) = 0
write(6, "\nmaps:\n", 7)
                                         = 0
rt sigaction(SIGINT, {sa handler=SIG IGN, sa mask=[], sa flags=SA RESTORER,
sa_restorer=0x7f5ba52f1210}, {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa_restorer=0x7f5ba52f1210}, 8) = 0
rt sigaction(SIGQUIT, {sa handler=SIG IGN, sa mask=[], sa flags=SA RESTORER,
sa_restorer=0x7f5ba52f1210), {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa_restorer=0x7f5ba52f1210, 8) = 0
rt sigprocmask(SIG BLOCK, [CHLD], [], 8) = 0
mmap(NULL, 36864, PROT_READ|PROT_WRITE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) =
0x7f5ba54c2000
rt_sigprocmask(SIG_BLOCK, ~[], [CHLD], 8) = 0
\verb|clone| (\verb|child_stack=0x7f5ba54caff0|, flags=CLONE_VM| | CLONE_VFORK| | SIGCHLD|) = 450
munmap(0x7f5ba54c2000, 36864)
rt sigprocmask(SIG SETMASK, [CHLD], NULL, 8) = 0
wait4(450, [{WIFEXITED(s) \&\& WEXITSTATUS(s) == 0}], 0, NULL) = 450
rt_sigaction(SIGINT, {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa_restorer=0x7f5ba52f1210, NULL, 8) = 0
rt_sigaction(SIGQUIT, {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa restorer=0x7f5ba52f1210}, NULL, 8) = 0
rt sigprocmask(SIG SETMASK, [], NULL, 8) = 0
openat(AT FDCWD, "/mnt/c/Users/Admin/os-laba/log memory.txt", O WRONLY|O CREAT|O APPEND, 0666) =
lseek(6, 0, SEEK END)
fstat(6, {st mode=S IFREG|0777, st size=11298, ...}) = 0
write(6, "\n", 1)
                                         = 1
close(6)
                                         = 0
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b9aa93000
mprotect(0x7f5b9aa94000, 8388608, PROT READ|PROT WRITE) = 0
clone(child_stack=0x7f5b9b292fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE_CHILD_CLEARTID, parent_tid=[452], tls=0x7f5b9b293700,
child tidptr=0x7f5\overline{b}9b293\overline{9}d0) = 452
write(1, "Created 1 read thread\n", 22Created 1 read thread
) = 22
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b9a292000
mprotect(0x7f5b9a293000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b9aa91fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[453], tls=0x7f5b9aa92700,
child tidptr=0x7f5b9aa929d0) = 453
write(1, "Created 2 read thread\n", 22Created 2 read thread
) = 22
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b99a91000
mprotect(0x7f5b99a92000, 8388608, PROT_READ|PROT_WRITE) = 0
clone(child_stack=0x7f5b9a290fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[454], tls=0x7f5b9a291700,
child tidptr=0x7f5\overline{b}9a291\overline{9}d0) = 454
write(1, "Created 3 read thread\n", 22Created 3 read thread
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b99290000
mprotect(0x7f5b99291000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b99a8ffb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[455], tls=0x7f5b99a90700,
child tidptr=0x7f5b99a909d0) = 455
write(1, "Created 4 read thread\n", 22Created 4 read thread
) = 22
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b98a8f000
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mprotect(0x7f5b98a90000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b9928efb0,
 flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[456], tls=0x7f5b9928f700,
child tidptr=0x7f5b9928f9d0) = 456
write(1, "Created 5 read thread\n", 22Created 5 read thread
) = 22
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b9828e000
mprotect(0x7f5b9828f000, 8388608, PROT READ|PROT WRITE) = 0
clone (child stack=0x7f5b98a8dfb0,
\verb|flags=CLONE_VM|| CLONE_FS|| CLONE_SIGHAND|| CLONE_THREAD|| CLONE_SYSVSEM|| CLONE_SETTLS|| CLONE_PROPERTY | CLONE_PROPERTY
ARENT SETTID|CLONE_CHILD_CLEARTID, parent_tid=[457], tls=0x7f5b98a8e700,
child tidptr=0x7f5\overline{b}98a8e9d0) = 457
write(1, "Created 6 read thread\n", 22Created 6 read thread
) = 22
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b97a8d000
mprotect(0x7f5b97a8e000, 8388608, PROT READ|PROT WRITE) = 0
clone(child_stack=0x7f5b9828cfb0,
 flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[458], tls=0x7f5b9828d700,
child tidptr=0x7f5\overline{b}9828d\overline{9}d0) = 458
write(1, "Created 7 read thread\n", 22Created 7 read thread
) = 22
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b9728c000
mprotect(0x7f5b9728d000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b97a8bfb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[459], tls=0x7f5b97a8c700,
child tidptr=0x7f5b97a8c9d0) = 459
write(1, "Created 8 read thread\n", 22Created 8 read thread
) = 22
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b96a8b000
mprotect(0x7f5b96a8c000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b9728afb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[460], tls=0x7f5b9728b700,
\frac{1}{1000} = \frac{1
write(1, "Created 9 read thread\n", 22Created 9 read thread
) = 22
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) = 0x7f5b9628a000
mprotect(0x7f5b9628b000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b96a89fb0,
 flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[461], tls=0x7f5b96a8a700,
child tidptr=0x7f5b96a8a9d0) = 461
write(1, "Created 10 read thread\n", 23Created 10 read thread
) = 2.3
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b95a89000
mprotect(0x7f5b95a8a000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b96288fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[462], tls=0x7f5b96289700,
child tidptr=0x7f5\overline{b}96289\overline{9}d0) = 462
write(1, "Created 11 read thread\n", 23Created 11 read thread
) = 23
 \texttt{mmap}(\texttt{NULL}, 8392704, \texttt{PROT\_NONE}, \texttt{MAP\_PRIVATE}|\texttt{MAP\_ANONYMOUS}|\texttt{MAP\_STACK}, -1, 0) = 0 \times 7 \\ \texttt{f5b} 95288000 \\ \texttt{0.00} + \texttt{
mprotect(0x7f5b95289000, 8388608, PROT_READ|PROT_WRITE) = 0
clone(child stack=0x7f5b95a87fb0,
 flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_P
ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[463], tls=0x7f5b95a88700,
\frac{1}{100} child tidptr=0x7f5b95a889d0) = 463
write(1, "Created 12 read thread\n", 23Created 12 read thread
) = 2.3
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b94a87000
mprotect(0x7f5b94a88000, 8388608, PROT READ|PROT WRITE) = 0
clone (child stack=0x7f5b95286fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[464], tls=0x7f5b95287700,
child_tidptr=0x7f5b952879d0) = 464
write(1, "Created 13 read thread\n", 23Created 13 read thread
```

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) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b94286000
mprotect(0x7f5b94287000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b94a85fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[465], tls=0x7f5b94a86700,
\frac{1}{100} child tidptr=0x7f5b94a869d0) = 465
write(1, "Created 14 read thread\n", 23Created 14 read thread
) = 2.3
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b93a85000
mprotect(0x7f5b93a86000, 8388608, PROT READ|PROT WRITE) = 0
clone(child_stack=0x7f5b94284fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[466], tls=0x7f5b94285700,
child tidptr=0x7f5b942859d0) = 466
write(1, "Created 15 read thread\n", 23Created 15 read thread
) = 23
 \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b93284000 } \\
mprotect(0x7f5b93285000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b93a83fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[467], tls=0x7f5b93a84700,
child tidptr=0x7f5b93a849d0) = 467
write(1, "Created 16 read thread\n", 23Created 16 read thread
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b92a83000
mprotect(0x7f5b92a84000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b93282fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[468], tls=0x7f5b93283700,
child tidptr=0x7f5b932839d0) = 468
write(1, "Created 17 read thread\n", 23Created 17 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b92282000
mprotect(0x7f5b92283000, 8388608, PROT READ|PROT WRITE) = 0
clone (child stack=0x7f5b92a81fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE CHILD CLEARTID, parent_tid=[469], tls=0x7f5b92a82700,
child tidptr=0x7f5\overline{b}92a829d0) = 469
write(1, "Created 18 read thread\n", 23Created 18 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b91a81000
mprotect(0x7f5b91a82000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b92280fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[470], tls=0x7f5b92281700,
child tidptr=0x7f5b922819d0) = 470
write(1, "Created 19 read thread\n", 23Created 19 read thread
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b91280000
mprotect(0x7f5b91281000, 8388608, PROT READ|PROT WRITE) = 0
clone (child stack=0x7f5b91a7ffb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[471], tls=0x7f5b91a80700,
child tidptr=0x7f5\overline{b}91a80\overline{9}d0) = 471
write(1, "Created 20 read thread\n", 23Created 20 read thread
) = 23
 \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b90a7f000} \\
mprotect(0x7f5b90a80000, 8388608, PROT_READ|PROT_WRITE) = 0
clone(child stack=0x7f5b9127efb0,
flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_P
ARENT SETTID | CLONE CHILD CLEARTID, parent tid=[472], tls=0x7f5b9127f700,
child tidptr=0x7f5\overline{b}9127f9d0) = 472
write(1, "Created 21 read thread\n", 23Created 21 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b9027e000
mprotect(0x7f5b9027f000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b90a7dfb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
```

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ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[473], tls=0x7f5b90a7e700,
child tidptr=0x7f5\overline{b}90a7\overline{e}9d0) = 473
write(1, "Created 22 read thread\n", 23Created 22 read thread
) = 23
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) = 0x7f5b8fa7d000
mprotect(0x7f5b8fa7e000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b9027cfb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[474], tls=0x7f5b9027d700,
child tidptr=0x7f5b9027d9d0) = 474
write(1, "Created 23 read thread\n", 23Created 23 read thread
) = 2.3
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b8f27c000
mprotect(0x7f5b8f27d000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b8fa7bfb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID | CLONE CHILD CLEARTID, parent tid=[475], tls=0x7f5b8fa7c700,
child tidptr=0x7f5b8fa7c9d0) = 475
write(1, "Created 24 read thread\n", 23Created 24 read thread
) = 2.3
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) = 0x7f5b8ea7b000
mprotect(0x7f5b8ea7c000, 8388608, PROT_READ|PROT_WRITE) = 0
clone(child stack=0x7f5b8f27afb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[476], tls=0x7f5b8f27b700,
\frac{1}{100} \frac{1}
write(1, "Created 25 read thread\n", 23Created 25 read thread
) = 2.3
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b8e27a000
mprotect(0x7f5b8e27b000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b8ea79fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[477], tls=0x7f5b8ea7a700,
child tidptr=0x7f5b8ea7a9d0) = 477
write(1, "Created 26 read thread\n", 23Created 26 read thread
) = 23
 \texttt{mmap}(\texttt{NULL}, 8392704, \texttt{PROT} \texttt{NONE}, \texttt{MAP} \texttt{PRIVATE} | \texttt{MAP} \texttt{ANONYMOUS} | \texttt{MAP} \texttt{STACK}, -1, 0) = 0 \times 7 \text{f5b8da} 79000 
mprotect(0x7f5b8da7a000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b8e278fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[478], tls=0x7f5b8e279700,
child tidptr=0x7f5b8e2799d0) = 478
write(1, "Created 27 read thread\n", 23Created 27 read thread
) = 23
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) = 0x7f5b8d278000
mprotect(0x7f5b8d279000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b8da77fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[479], tls=0x7f5b8da78700,
child tidptr=0x7f5\overline{b}8da789d0) = 479
write(1, "Created 28 read thread\n", 23Created 28 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b8ca77000
mprotect(0x7f5b8ca78000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b8d276fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE_CHILD_CLEARTID, parent_tid=[480], tls=0x7f5b8d277700,
child tidptr=0x7f5b8d2779d0) = 480
write(1, "Created 29 read thread\n", 23Created 29 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b8c276000
mprotect(0x7f5b8c277000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b8ca75fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[481], tls=0x7f5b8ca76700,
child tidptr=0x7f5\overline{b}8ca769d0) = 481
write(1, "Created 30 read thread\n", 23Created 30 read thread
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b8ba75000
mprotect(0x7f5b8ba76000, 8388608, PROT READ|PROT WRITE) = 0
```

```
clone(child stack=0x7f5b8c274fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[482], tls=0x7f5b8c275700,
child tidptr=0x7f5b8c2759d0) = 482
write(1, "Created 31 read thread\n", 23Created 31 read thread
) = 2.3
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b8b274000
mprotect(0x7f5b8b275000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b8ba73fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE_CHILD_CLEARTID, parent_tid=[483], tls=0x7f5b8ba74700,
child tidptr=0x7f5b8ba749d0) = 483
write(1, "Created 32 read thread\n", 23Created 32 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b8aa73000
mprotect(0x7f5b8aa74000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b8b272fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE_CHILD_CLEARTID, parent_tid=[484], tls=0x7f5b8b273700,
child tidptr=0x7f5\overline{b}8b273\overline{9}d0) = 484
write(1, "Created 33 read thread\n", 23Created 33 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b8a272000
mprotect(0x7f5b8a273000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b8aa71fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[485], tls=0x7f5b8aa72700, child_tidptr=0x7f5b8aa729d0) = 485
write(1, "Created 34 read thread\n", 23Created 34 read thread
 \texttt{mmap}(\texttt{NULL}, 8392704, \texttt{PROT} \texttt{NONE}, \texttt{MAP} \texttt{PRIVATE}|\texttt{MAP} \texttt{ANONYMOUS}|\texttt{MAP} \texttt{STACK}, -1, 0) = 0 \times 7 \text{f5b89a71000} 
mprotect(0x7f5b89a72000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b8a270fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[486], tls=0x7f5b8a271700,
child tidptr=0x7f5b8a2719d0) = 486
write(1, "Created 35 read thread\n", 23Created 35 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b89270000
mprotect(0x7f5b89271000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b89a6ffb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[487], tls=0x7f5b89a70700,
child\_tidptr=0x7f5b89a709d0) = 487
write(1, "Created 36 read thread\n", 23Created 36 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b88a6f000
mprotect(0x7f5b88a70000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b8926efb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[488], tls=0x7f5b8926f700,
child tidptr=0x7f5b8926f9d0) = 488
write(1, "Created 37 read thread\n", 23Created 37 read thread
) = 23
 \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b8826e000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b8826e000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b8826e000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b8826e000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b8826e000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b8826e000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b8826e000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b8826e000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b8826e000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b8826e000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b8826e000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b8826e000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b8826e000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b8826e000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b8826e000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b8826e000 } \\ \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAPANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMOUS|MAP\_ANONYMO
mprotect(0x7f5b8826f000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b88a6dfb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[489], tls=0x7f5b88a6e700,
child tidptr=0x7f5b88a6e9d0) = 489
write(1, "Created 38 read thread\n", 23Created 38 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b87a6d000
mprotect(0x7f5b87a6e000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b8826cfb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[490], tls=0x7f5b8826d700,
child tidptr=0x7f5b8826d9d0) = 490
write(1, "Created 39 read thread\n", 23Created 39 read thread
) = 23
```

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mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b8726c000
mprotect(0x7f5b8726d000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b87a6bfb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[491], tls=0x7f5b87a6c700,
child tidptr=0x7f5b87a6c9d0) = 491
write(1, "Created 40 read thread\n", 23Created 40 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = <math>0x7f5b86a6b000
mprotect(0x7f5b86a6c000, 8388608, PROT READ|PROT WRITE) = 0
clone(child_stack=0x7f5b8726afb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE CHILD CLEARTID, parent_tid=[492], tls=0x7f5b8726b700,
child tidptr=0x7f5b8726b9d0) = 492
write(1, "Created 41 read thread\n", 23Created 41 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b8626a000
mprotect(0x7f5b8626b000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b86a69fb0,
flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[493], tls=0x7f5b86a6a700,
child tidptr=0x7f5b86a6a9d0) = 493
write(1, "Created 42 read thread\n", 23Created 42 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b85a69000
mprotect(0x7f5b85a6a000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b86268fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[494], tls=0x7f5b86269700,
child tidptr=0x7f5b862699d0) = 494
write(1, "Created 43 read thread\n", 23Created 43 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b85268000
mprotect(0x7f5b85269000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b85a67fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[495], tls=0x7f5b85a68700,
child tidptr=0x7f5\overline{b}85a689d0) = 495
write(1, "Created 44 read thread\n", 23Created 44 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b84a67000
mprotect(0x7f5b84a68000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b85266fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[496], tls=0x7f5b85267700,
child tidptr=0x7f5b852679d0) = 496
write(1, "Created 45 read thread\n", 23Created 45 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b84266000
mprotect(0x7f5b84267000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b84a65fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[497], tls=0x7f5b84a66700,
child tidptr=0x7f5\overline{b}84a66\overline{9}d0) = 497
write(1, "Created 46 read thread\n", 23Created 46 read thread
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) = 0x7f5b83a65000
mprotect(0x7f5b83a66000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b84264fb0,
flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_P
ARENT SETTID | CLONE CHILD CLEARTID, parent tid=[498], tls=0x7f5b84265700,
child tidptr=0x7f5b842659d0) = 498
write(1, "Created 47 read thread\n", 23Created 47 read thread
) = 2.3
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b83264000
mprotect(0x7f5b83265000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b83a63fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[499], tls=0x7f5b83a64700,
child_tidptr=0x7f5b83a649d0) = 499
```

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write(1, "Created 48 read thread\n", 23Created 48 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b82a63000
mprotect(0x7f5b82a64000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b83262fb0,
flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|CLONE_THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[500], tls=0x7f5b83263700,
\frac{1}{100} child tidptr=0x7f5b832639d0) = 500
write(1, "Created 49 read thread\n", 23Created 49 read thread
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b82262000
mprotect(0x7f5b82263000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b82a61fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[501], tls=0x7f5b82a62700,
child tidptr=0x7f5b82a629d0) = 501
write(1, "Created 50 read thread\n", 23Created 50 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b81a61000
mprotect(0x7f5b81a62000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b82260fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[502], tls=0x7f5b82261700,
child tidptr=0x7f5b822619d0) = 502
write(1, "Created 51 read thread\n", 23Created 51 read thread
) = 23
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) = 0x7f5b81260000
mprotect(0x7f5b81261000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b81a5ffb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[503], tls=0x7f5b81a60700,
child tidptr=0x7f5b81a609d0) = 503
write(1, "Created 52 read thread\n", 23Created 52 read thread
) = 2.3
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b80a5f000
mprotect(0x7f5b80a60000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b8125efb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE_CHILD_CLEARTID, parent_tid=[504], tls=0x7f5b8125f700,
child tidptr=0x7f5b8125f9d0) = 504
write(1, "Created 53 read thread\n", 23Created 53 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b8025e000
mprotect(0x7f5b8025f000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b80a5dfb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[505], tls=0x7f5b80a5e700,
child tidptr=0x7f5b80a5e9d0) = 505
write(1, "Created 54 read thread\n", 23Created 54 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b7fa5d000
mprotect(0x7f5b7fa5e000, 8388608, PROT READ|PROT WRITE) = 0
clone (child stack=0x7f5b8025cfb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[506], tls=0x7f5b8025d700,
child tidptr=0x7f5b8025d9d0) = 506
write(1, "Created 55 read thread\n", 23Created 55 read thread
) = 23
 \texttt{mmap(NULL, 8392704, PROT\_NONE, MAP\_PRIVATE|MAP\_ANONYMOUS|MAP\_STACK, -1, 0) = 0x7f5b7f25c000 } \\
mprotect(0x7f5b7f25d000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b7fa5bfb0,
flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[507], tls=0x7f5b7fa5c700,
child tidptr=0x7f5b7fa5c9d0) = 507
write(1, "Created 56 read thread\n", 23Created 56 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b7ea5b000
mprotect(0x7f5b7ea5c000, 8388608, PROT READ|PROT WRITE) = 0
clone(child_stack=0x7f5b7f25afb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
```

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ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[508], tls=0x7f5b7f25b700,
child tidptr=0x7f5\overline{b}7f25b\overline{9}d0) = 508
write(1, "Created 57 read thread\n", 23Created 57 read thread
) = 23
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) = 0x7f5b7e25a000
mprotect(0x7f5b7e25b000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b7ea59fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[509], tls=0x7f5b7ea5a700,
child tidptr=0x7f5b7ea5a9d0) = 509
write(1, "Created 58 read thread\n", 23Created 58 read thread
) = 2.3
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b7da59000
mprotect(0x7f5b7da5a000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b7e258fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[510], tls=0x7f5b7e259700,
child tidptr=0x7f5b7e2599d0) = 510
write(1, "Created 59 read thread\n", 23Created 59 read thread
) = 2.3
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) = 0x7f5b7d258000
mprotect(0x7f5b7d259000, 8388608, PROT_READ|PROT_WRITE) = 0
clone(child stack=0x7f5b7da57fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[511], tls=0x7f5b7da58700,
child tidptr=0x7f5\overline{b}7da589d0) = 511
write(1, "Created 60 read thread\n", 23Created 60 read thread
) = 2.3
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b7ca57000
mprotect(0x7f5b7ca58000, 8388608, PROT READ|PROT WRITE) = 0
clone (child stack=0x7f5b7d256fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[512], tls=0x7f5b7d257700,
child tidptr=0x7f5b7d2579d0) = 512
write(1, "Created 61 read thread\n", 23Created 61 read thread
) = 23
 \texttt{mmap}(\texttt{NULL}, 8392704, \texttt{PROT} \texttt{NONE}, \texttt{MAP} \texttt{PRIVATE} | \texttt{MAP} \texttt{ANONYMOUS} | \texttt{MAP} \texttt{STACK}, -1, 0) = 0 \times 7 \text{f5b7c256000} 
mprotect(0x7f5b7c257000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b7ca55fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[513], tls=0x7f5b7ca56700,
child tidptr=0x7f5b7ca569d0) = 513
write(1, "Created 62 read thread\n", 23Created 62 read thread
) = 23
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) = 0x7f5b7ba55000
mprotect(0x7f5b7ba56000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b7c254fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[514], tls=0x7f5b7c255700,
child tidptr=0x7f5\overline{b}7c255\overline{9}d0) = 514
write(1, "Created 63 read thread\n", 23Created 63 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b7b254000
mprotect(0x7f5b7b255000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b7ba53fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[515], tls=0x7f5b7ba54700,
child tidptr=0x7f5b7ba549d0) = 515
write(1, "Created 64 read thread\n", 23Created 64 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b7aa53000
mprotect(0x7f5b7aa54000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b7b252fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[516], tls=0x7f5b7b253700,
\frac{1}{100} \frac{1}
write(1, "Created 65 read thread\n", 23Created 65 read thread
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b7a252000
mprotect(0x7f5b7a253000, 8388608, PROT READ|PROT WRITE) = 0
```

```
clone(child stack=0x7f5b7aa51fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[517], tls=0x7f5b7aa52700,
child tidptr=0x7f5b7aa529d0) = 517
write(1, "Created 66 read thread\n", 23Created 66 read thread
) = 2.3
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b79a51000
mprotect(0x7f5b79a52000, 8388608, PROT READ|PROT WRITE) = 0
clone (child stack=0x7f5b7a250fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE_CHILD_CLEARTID, parent_tid=[518], tls=0x7f5b7a251700,
child tidptr=0x7f5\overline{b}7a251\overline{9}d0) = 518
write(1, "Created 67 read thread\n", 23Created 67 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b79250000
mprotect(0x7f5b79251000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b79a4ffb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE_CHILD_CLEARTID, parent_tid=[519], tls=0x7f5b79a50700,
child tidptr=0x7f5\overline{b}79a50\overline{9}d0) = 519
write(1, "Created 68 read thread\n", 23Created 68 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b78a4f000
mprotect(0x7f5b78a50000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b7924efb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[520], tls=0x7f5b7924f700,
child tidptr=0x7f5b7924f9d0) = 520
write(1, "Created 69 read thread\n", 23Created 69 read thread
 \texttt{mmap}(\texttt{NULL}, 8392704, \texttt{PROT} \texttt{NONE}, \texttt{MAP} \texttt{PRIVATE} | \texttt{MAP} \texttt{ANONYMOUS} | \texttt{MAP} \texttt{STACK}, -1, 0) = 0 \times 7 \text{f5b} 7824 \text{e} 000 
mprotect(0x7f5b7824f000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b78a4dfb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[521], tls=0x7f5b78a4e700,
child tidptr=0x7f5\overline{b}78a4e\overline{9}d0) = 521
write(1, "Created 70 read thread\n", 23Created 70 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b77a4d000
mprotect(0x7f5b77a4e000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b7824cfb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[522], tls=0x7f5b7824d700,
child\_tidptr=0x7f5b7824d9d0) = 522
write(1, "Created 71 read thread\n", 23Created 71 read thread
) = 23
 \texttt{mmap}(\texttt{NULL}, 8392704, \texttt{PROT} \texttt{NONE}, \texttt{MAP} \texttt{PRIVATE}|\texttt{MAP} \texttt{ANONYMOUS}|\texttt{MAP} \texttt{STACK}, -1, 0) = 0 \times 7 \text{f5b} 7724 \text{c000} 
mprotect(0x7f5b7724d000, 8388608, PROT READ|PROT WRITE) = 0
clone (child stack=0x7f5b77a4bfb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[523], tls=0x7f5b77a4c700,
child tidptr=0x7f5\overline{b}77a4c\overline{9}d0) = 523
write(1, "Created 72 read thread\n", 23Created 72 read thread
) = 23
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) = 0x7f5b76a4b000
mprotect(0x7f5b76a4c000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b7724afb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[524], tls=0x7f5b7724b700,
child tidptr=0x7f5b7724b9d0) = 524
write(1, "Created 73 read thread\n", 23Created 73 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b7624a000
mprotect(0x7f5b7624b000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b76a49fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[525], tls=0x7f5b76a4a700,
child tidptr=0x7f5b76a4a9d0) = 525
write(1, "Created 74 read thread\n", 23Created 74 read thread
) = 23
```

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mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b75a49000
mprotect(0x7f5b75a4a000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b76248fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[526], tls=0x7f5b76249700,
child tidptr=0x7f5b762499d0) = 526
write(1, "Created 75 read thread\n", 23Created 75 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = <math>0x7f5b75248000
mprotect(0x7f5b75249000, 8388608, PROT READ|PROT WRITE) = 0
clone(child_stack=0x7f5b75a47fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE CHILD CLEARTID, parent_tid=[527], tls=0x7f5b75a48700,
child\ tidptr=0x7f5\overline{b75a489d0}) = 527
write(1, "Created 76 read thread\n", 23Created 76 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b74a47000
mprotect(0x7f5b74a48000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b75246fb0,
flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[528], tls=0x7f5b75247700,
child tidptr=0x7f5b752479d0) = 528
write(1, "Created 77 read thread\n", 23Created 77 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b74246000
mprotect(0x7f5b74247000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b74a45fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[529], tls=0x7f5b74a46700,
child tidptr=0x7f5\overline{b74a469d0}) = 529
write(1, "Created 78 read thread\n", 23Created 78 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b73a45000
mprotect(0x7f5b73a46000, 8388608, PROT READ|PROT WRITE) = 0
clone(child_stack=0x7f5b74244fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[530], tls=0x7f5b74245700,
child tidptr=0x7f5b742459d0) = 530
write(1, "Created 79 read thread\n", 23Created 79 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b73244000
mprotect(0x7f5b73245000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b73a43fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[531], tls=0x7f5b73a44700,
child tidptr=0x7f5\overline{b}73a449d0) = 531
write(1, "Created 80 read thread\n", 23Created 80 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b72a43000
mprotect(0x7f5b72a44000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b73242fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[532], tls=0x7f5b73243700,
child tidptr=0x7f5b732439d0) = 532
write(1, "Created 81 read thread\n", 23Created 81 read thread
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) = 0x7f5b72242000
mprotect(0x7f5b72243000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b72a41fb0,
flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_P
ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[533], tls=0x7f5b72a42700,
child tidptr=0x7f5b72a429d0) = 533
write(1, "Created 82 read thread\n", 23Created 82 read thread
) = 2.3
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b71a41000
mprotect(0x7f5b71a42000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b72240fb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[534], tls=0x7f5b72241700,
child_{tidptr=0x7f5b722419d0)} = 534
```

```
write(1, "Created 83 read thread\n", 23Created 83 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b71240000
mprotect(0x7f5b71241000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b71a3ffb0,
flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|CLONE_THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE CHILD CLEARTID, parent tid=[535], tls=0x7f5b71a40700,
\frac{1}{100} child tidptr=0x7f5\frac{1}{100}71a40\frac{1}{100}0) = 535
write(1, "Created 84 read thread\n", 23Created 84 read thread
) = 2.3
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b70a3f000
mprotect(0x7f5b70a40000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b7123efb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID CLONE CHILD CLEARTID, parent_tid=[536], tls=0x7f5b7123f700,
child tidptr=0x7f5b7123f9d0) = 536
write(1, "Created 85 read thread\n", 23Created 85 read thread
) = 23
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b7023e000
mprotect(0x7f5b7023f000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b70a3dfb0,
flags=CLONE_VM|CLONE_FS|CLONE_FILES|CLONE_SIGHAND|CLONE_THREAD|CLONE_SYSVSEM|CLONE_SETTLS|CLONE_P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[537], tls=0x7f5b70a3e700,
child tidptr=0x7f5b70a3e9d0) = 537
write(1, "Created 86 read thread\n", 23Created 86 read thread
) = 23
mmap(NULL, 8392704, PROT_NONE, MAP_PRIVATE|MAP_ANONYMOUS|MAP_STACK, -1, 0) = 0x7f5b6fa3d000
mprotect(0x7f5b6fa3e000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b7023cfb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT_SETTID|CLONE_CHILD_CLEARTID, parent_tid=[538], tls=0x7f5b7023d700,
\frac{1}{100} \frac{1}
write(1, "Created 87 read thread\n", 23Created 87 read thread
) = 2.3
mmap(NULL, 8392704, PROT NONE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) = 0x7f5b6f23c000
mprotect(0x7f5b6f23d000, 8388608, PROT READ|PROT WRITE) = 0
clone(child stack=0x7f5b6fa3bfb0,
flags=CLONE VM|CLONE FS|CLONE FILES|CLONE SIGHAND|CLONE THREAD|CLONE SYSVSEM|CLONE SETTLS|CLONE P
ARENT SETTID|CLONE_CHILD_CLEARTID, parent_tid=[539], tls=0x7f5b6fa3c700,
child tidptr=0x7f5b6fa3c9d0) = 539
write(1, "Created 88 read thread\n", 23Created 88 read thread
) = 23
read(0,
"\n", 1024)
                                                            = 1
futex(0x7f5ba52a79d0, FUTEX_WAIT, 428, NULLthread 0xde1ce666 RELEASE file 2
thread 0xdecf4ccc RELEASE file 1
thread 0xdd6a8000 RELEASE file 3
) = 0
munmap(0x7f5ba4aa7000, 8392704)
                                                                           = 0
munmap(0x7f5ba42a6000, 8392704)
                                                                           = 0
munmap(0x7f5ba3aa5000, 8392704)
                                                                           = 0
munmap(0x7f5ba32a4000, 8392704)
munmap(0x7f5ba2aa3000, 8392704)
                                                                           = 0
munmap(0x7f5ba22a2000, 8392704)
                                                                           = 0
munmap(0x7f5balaa1000, 8392704)
                                                                           = 0
munmap(0x7f5ba12a0000, 8392704)
                                                                           = 0
munmap(0x7f5ba0a9f000, 8392704)
                                                                           = 0
munmap(0x7f5ba029e000, 8392704)
                                                                           = 0
munmap(0x7f5b9fa9d000, 8392704)
                                                                          = 0
munmap(0x7f5b9f29c000, 8392704)
                                                                           = 0
munmap(0x7f5b9ea9b000, 8392704)
                                                                          = 0
munmap(0x7f5b9e29a000, 8392704)
                                                                          = 0
munmap(0x7f5b9da99000, 8392704)
                                                                          = 0
munmap(0x7f5b9d298000, 8392704)
                                                                          = 0
munmap(0x7f5b9ca97000, 8392704)
                                                                          = 0
munmap(0x7f5b9c296000, 8392704)
                                                                          = 0
munmap(0x7f5b9ba95000, 8392704)
                                                                          = 0
munmap(0x7f5b9b294000, 8392704)
                                                                          = 0
```

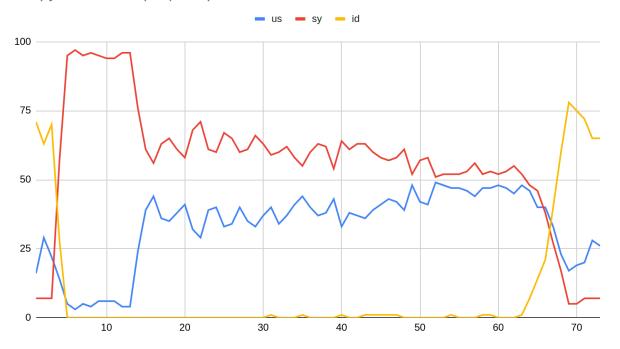
munmap(0x7f5b9aa93000,	8392704)	= 0
munmap(0x7f5b9a292000,	8392704)	= 0
munmap(0x7f5b99a91000,	8392704)	= 0
munmap(0x7f5b99290000,	8392704)	= 0
<del>-</del>		
munmap(0x7f5b98a8f000,	8392704)	= 0
munmap(0x7f5b9828e000,	8392704)	= 0
munmap(0x7f5b97a8d000,	8392704)	= 0
munmap(0x7f5b9728c000,	8392704)	= 0
munmap(0x7f5b96a8b000,	8392704)	= 0
± '		
munmap(0x7f5b9628a000,	8392704)	= 0
munmap(0x7f5b95a89000,	8392704)	= 0
munmap(0x7f5b95288000,	8392704)	= 0
munmap(0x7f5b94a87000,	8392704)	= 0
munmap(0x7f5b94286000,	8392704)	= 0
munmap(0x7f5b93a85000,	8392704)	= 0
munmap(0x7f5b93284000,	8392704)	= 0
munmap(0x7f5b92a83000,	8392704)	= 0
munmap(0x7f5b92282000,	8392704)	= 0
munmap(0x7f5b91a81000,	8392704)	= 0
	8392704)	= 0
munmap(0x7f5b91280000,	,	
munmap(0x7f5b90a7f000,	8392704)	= 0
munmap(0x7f5b9027e000,	8392704)	= 0
munmap(0x7f5b8fa7d000,	8392704)	= 0
munmap(0x7f5b8f27c000,	8392704)	= 0
munmap(0x7f5b8ea7b000,	8392704)	= 0
± ',		= 0
munmap(0x7f5b8e27a000,	8392704)	
munmap(0x7f5b8da79000,	8392704)	= 0
munmap(0x7f5b8d278000,	8392704)	= 0
munmap(0x7f5b8ca77000,	8392704)	= 0
munmap(0x7f5b8c276000,	8392704)	= 0
munmap(0x7f5b8ba75000,	8392704)	= 0
munmap(0x7f5b8b274000,	8392704)	= 0
<del>-</del>		
munmap(0x7f5b8aa73000,	8392704)	= 0
munmap(0x7f5b8a272000,	8392704)	= 0
munmap(0x7f5b89a71000,	8392704)	= 0
munmap(0x7f5b89270000,	8392704)	= 0
munmap(0x7f5b88a6f000,	8392704)	= 0
munmap(0x7f5b8826e000,	8392704)	= 0
munmap(0x7f5b87a6d000,	8392704)	= 0
munmap(0x7f5b8726c000,		= 0
* '	8392704)	
munmap(0x7f5b86a6b000,	8392704)	= 0
munmap(0x7f5b8626a000,	8392704)	= 0
munmap(0x7f5b85a69000,	8392704)	= 0
munmap(0x7f5b85268000,	8392704)	= 0
munmap(0x7f5b84a67000,	8392704)	= 0
munmap(0x7f5b84266000,	8392704)	= 0
munmap(0x7f5b83a65000,	8392704)	= 0
munmap(0x7f5b83264000,	8392704)	= 0
munmap(0x7f5b82a63000,	8392704)	= 0
munmap(0x7f5b82262000,	8392704)	= 0
munmap(0x7f5b81a61000,	8392704)	= 0
munmap(0x7f5b81260000,	8392704)	= 0
munmap(0x7f5b80a5f000,	8392704)	
munmap(0x7f5b8025e000,	8392704)	= 0
munmap(0x7f5b7fa5d000,	8392704)	= 0
munmap(0x7f5b7f25c000,	8392704)	= 0
munmap(0x7f5b7ea5b000,	8392704)	= 0
munmap(0x7f5b7e25a000,	8392704)	= 0
munmap(0x7f5b7da59000,	8392704)	= 0
munmap(0x7f5b7d258000,	8392704)	
munmap(0x7f5b7ca57000,	8392704)	= 0
munmap(0x7f5b7c256000,	8392704)	= 0
munmap(0x7f5b7ba55000,	8392704)	= 0
munmap(0x7f5b7b254000,	8392704)	= 0
munmap(0x7f5b7aa53000,	8392704)	= 0
munmap(0x7f5b7a252000,	8392704)	= 0
		-

```
munmap(0x7f5b79a51000, 8392704)
                                        = 0
munmap(0x7f5b79250000, 8392704)
                                        = 0
munmap(0x7f5b78a4f000, 8392704)
                                        = 0
munmap(0x7f5b7824e000, 8392704)
                                        = 0
munmap(0x7f5b77a4d000, 8392704)
                                        = 0
munmap(0x7f5b7724c000, 8392704)
                                        = 0
                                        = 0
munmap(0x7f5b76a4b000, 8392704)
munmap(0x7f5b7624a000, 8392704)
                                        = 0
munmap(0x7f5b75a49000, 8392704)
                                        = 0
munmap(0x7f5b75248000, 8392704)
                                        = 0
munmap(0x7f5b74a47000, 8392704)
                                        = 0
munmap(0x7f5b74246000, 8392704)
                                        = 0
munmap(0x7f5b73a45000, 8392704)
                                        = 0
munmap(0x7f5b73244000, 8392704)
munmap(0x7f5b72a43000, 8392704)
                                        = 0
munmap(0x7f5b72242000, 8392704)
                                        = 0
munmap(0x7f5b71a41000, 8392704)
                                        = 0
munmap(0x7f5b71240000, 8392704)
                                        = 0
munmap(0xdd6a8000, 233832448)
                                        = 0
write(1, "Memory deallocated\n", 19Memory deallocated
    = 19
openat(AT FDCWD, "/mnt/c/Users/Admin/os-laba/log memory.txt", O WRONLY|O CREAT|O APPEND, 0666) =
lseek(6, 0, SEEK END)
                                         = 11299
fstat(6, {st mode=S IFREG|0777, st size=11299, ...}) = 0
write(6, " \#\#\# After deallocation \#\#\#\#", 27) = 27
                                         = 0
close(6)
openat(AT FDCWD, "/mnt/c/Users/Admin/os-laba/log memory.txt", O WRONLY|O CREAT|O APPEND, 0666) =
lseek(6, 0, SEEK END)
                                        = 11326
fstat(6, {st_mode=S_IFREG|0777, st_size=11326, ...}) = 0
write(6, "\n\nfree -h\n", 10)
                                        = 10
close(6)
rt sigaction(SIGINT, {sa handler=SIG IGN, sa mask=[], sa_flags=SA_RESTORER,
sa_restorer=0x7f5ba52f1210}, {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa restorer=0x7f5ba52f1210}, 8) = 0
rt sigaction(SIGQUIT, {sa handler=SIG IGN, sa mask=[], sa flags=SA RESTORER,
sa restorer=0x7f5ba52f1210}, {sa handler=SIG_DFL, sa mask=[], sa flags=SA_RESTORER, sa_restorer=0x7f5ba52f1210}, 8) = 0
rt sigprocmask(SIG BLOCK, [CHLD], [], 8) = 0
mmap(NULL, 36864, PROT READ|PROT WRITE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) =
0x7f5ba54c2000
rt sigprocmask(SIG BLOCK, \sim[], [CHLD], 8) = 0
clone(child stack=0x7f5ba54caff0, flags=CLONE VM|CLONE VFORK|SIGCHLD) = 540
munmap(0x7f5ba54c2000, 36864)
rt sigprocmask(SIG SETMASK, [CHLD], NULL, 8) = 0
wait4(540, [{WIFEXITED(s) && WEXITSTATUS(s) == 0}], 0, NULL) = 540
rt sigaction(SIGINT, {sa handler=SIG DFL, sa mask=[], sa flags=SA RESTORER,
sa restorer=0x7f5ba52f1210}, NULL, 8) = 0
rt sigaction(SIGQUIT, {sa handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa_restorer=0x7f5ba52f1210}, NULL, 8) = 0
rt_sigprocmask(SIG_SETMASK, [], NULL, 8) = 0
--- SIGCHLD {si_signo=SIGCHLD, si_code=CLD_EXITED, si_pid=540, si_uid=1000, si_status=0,
si_utime=0, si_stime=0} ---
                                         = 419
getpid()
openat(AT_FDCWD, "/mnt/c/Users/Admin/os-laba/log_memory.txt", O_WRONLY|O_CREAT|O_APPEND, 0666) =
lseek(6, 0, SEEK END)
                                        = 11540
fstat(6, {st_mode=S_IFREG|0777, st_size=11540, ...}) = 0
write(6, "\nmaps:\n", 7)
close(6)
rt_sigaction(SIGINT, {sa_handler=SIG_IGN, sa_mask=[], sa_flags=SA_RESTORER,
sa_restorer=0x7f5ba52f1210}, {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa restorer = 0x7f5ba52f1210, 8) = 0
rt sigaction(SIGQUIT, {sa handler=SIG IGN, sa mask=[], sa flags=SA RESTORER,
sa_restorer=0x7f5ba52f1210}, {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER, sa_restorer=0x7f5ba52f1210}, 8) = 0
rt sigprocmask(SIG BLOCK, [CHLD], [], 8) = 0
```

```
mmap(NULL, 36864, PROT READ|PROT WRITE, MAP PRIVATE|MAP ANONYMOUS|MAP STACK, -1, 0) =
0x7f5ba54c2000
rt sigprocmask(SIG BLOCK, \sim[], [CHLD], 8) = 0
clone(child_stack=0x7f5ba54caff0, flags=CLONE_VM|CLONE_VFORK|SIGCHLD) = 542
munmap(0x7f5ba54c2000, 36864) = 0
rt_sigprocmask(SIG_SETMASK, [CHLD], NULL, 8) = 0
wait4(542, [{WIFEXITED(s) && WEXITSTATUS(s) == 0}], 0, NULL) = 542
rt_sigaction(SIGINT, {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa restorer=0x7f5ba52f1210}, NULL, 8) = 0
rt_sigaction(SIGQUIT, {sa_handler=SIG_DFL, sa_mask=[], sa_flags=SA_RESTORER,
sa restorer=0x7f5ba52f1210}, NULL, 8) = 0
rt sigprocmask(SIG SETMASK, [], NULL, 8) = 0
--- SIGCHLD {si signo=SIGCHLD, si code=CLD EXITED, si pid=542, si uid=1000, si status=0,
si_utime=0, si_stime=0} ---
openat(AT FDCWD, "/mnt/c/Users/Admin/os-laba/log memory.txt", O WRONLY|O CREAT|O APPEND, 0666) =
lseek(6, 0, SEEK END)
                                       = 14793
fstat(6, {st_mode=S_IFREG|0777, st_size=14793, ...}) = 0
write(6, "\n", 1)
                                        = 0
                                       = 0
close(3)
close(4)
                                       = 0
close(5)
                                       = 0
read(0,
"\n", 1024)
                              = 1
                                        = ?
exit_group(0)
+++ exited with 0 +++
```

# Графики

### Загруженность процессора



## bo и cs

