

After  
`p2 = malloc(0x30);`  
`& free(0xffa8);`  
 There is not room for 0x30 bytes, so the `malloc`  
 does nothing and `p2` is 0.

Address	Value	Address	Value
FF00	00 ... 00 39	FF00	00 ... 00 39
FF08	Allocated	FF08	Allocated
FF10	Allocated	FF10	Allocated
FF18	Allocated	FF18	Allocated
FF20	Allocated	FF20	Allocated
FF28	Allocated	FF28	Allocated
FF30	00 ... 00 39	FF30	00 ... 00 39
FF38	00 ... 00 69	FF38	00 ... 00 69
FF40	Allocated	FF40	Allocated
FF48	Allocated	FF48	Allocated
FF50	Allocated	FF50	Allocated
FF58	Allocated	FF58	Allocated
FF60	Allocated	FF60	Allocated
FF68	Allocated	FF68	Allocated
FF70	Allocated	FF70	Allocated
FF78	Allocated	FF78	Allocated
FF80	Allocated	FF80	Allocated
FF88	Allocated	FF88	Allocated
FF90	Allocated	FF90	Allocated
FF98	00 ... 00 69	FF98	00 ... 00 69
FFA0	00 ... 00 21	FFA0	00 ... 00 20
FFA8	Allocated	FFA8	Free
FFB0	Allocated	FFB0	Free
FFB8	00 ... 00 21	FFB8	00 ... 00 20
FFC0	00 ... 00 41	FFC0	00 ... 00 41
FFC8	Allocated	FFC8	Allocated
FFD0	Allocated	FFD0	Allocated
FFD8	Allocated	FFD8	Allocated
FFE0	Allocated	FFE0	Allocated
FFE8	Allocated	FFE8	Allocated
FFF0	Allocated	FFF0	Allocated
FFF8	00 ... 00 41	FFF8	00 ... 00 41

After  
`p1 = malloc(0x50);`  
 Note that the allocated block is eight-bytes bigger  
 than requested, as there wasn't enough extra room  
 to create a new free block in the remaining space.

Address	Value	Address	Value
FF00	00 ... 00 39	FF00	00 ... 00 39
FF08	Allocated	FF08	Allocated
FF10	Allocated	FF10	Allocated
FF18	Allocated	FF18	Allocated
FF20	Allocated	FF20	Allocated
FF28	Allocated	FF28	Allocated
FF30	00 ... 00 39	FF30	00 ... 00 39
FF38	00 ... 00 68	FF38	00 ... 00 69
FF40	Free	FF40	Allocated
FF48	Free	FF48	Allocated
FF50	Free	FF50	Allocated
FF58	Free	FF58	Allocated
FF60	Free	FF60	Allocated
FF68	Free	FF68	Allocated
FF70	Free	FF70	Allocated
FF78	Free	FF78	Allocated
FF80	Free	FF80	Allocated
FF88	Free	FF88	Allocated
FF90	Free	FF90	Allocated
FF98	00 ... 00 68	FF98	00 ... 00 69
FFA0	00 ... 00 21	FFA0	00 ... 00 21
FFA8	Allocated	FFA8	Allocated
FFB0	Allocated	FFB0	Allocated
FFB8	00 ... 00 21	FFB8	00 ... 00 21
FFC0	00 ... 00 41	FFC0	00 ... 00 41
FFC8	Allocated	FFC8	Allocated
FFD0	Allocated	FFD0	Allocated
FFD8	Allocated	FFD8	Allocated
FFE0	Allocated	FFE0	Allocated
FFE8	Allocated	FFE8	Allocated
FFF0	Allocated	FFF0	Allocated
FFF8	00 ... 00 41	FFF8	00 ... 00 41

After `free(0xff60);`  
 Both the block before and after this block are free,  
 so the allocator will "coalesce" (ie, merge) the  
 blocks in to a single free block.

Address	Value	Address	Value
FF00	00 ... 00 39	FF00	00 ... 00 39
FF08	Allocated	FF08	Allocated
FF10	Allocated	FF10	Allocated
FF18	Allocated	FF18	Allocated
FF20	Allocated	FF20	Allocated
FF28	Allocated	FF28	Allocated
FF30	00 ... 00 39	FF30	00 ... 00 39
FF38	00 ... 00 68	FF38	00 ... 00 20
FF40	Free	FF40	Free
FF48	Free	FF48	Free
FF50	Free	FF50	00 ... 00 20
FF58	Free	FF58	00 ... 00 29
FF60	Free	FF60	Allocated
FF68	Free	FF68	Allocated
FF70	Free	FF70	Allocated
FF78	Free	FF78	00 ... 00 29
FF80	Free	FF80	00 ... 00 20
FF88	Free	FF88	Free
FF90	Free	FF90	Free
FF98	00 ... 00 68	FF98	00 ... 00 20
FFA0	00 ... 00 21	FFA0	00 ... 00 21
FFA8	Allocated	FFA8	Allocated
FFB0	Allocated	FFB0	Allocated
FFB8	00 ... 00 21	FFB8	00 ... 00 21
FFC0	00 ... 00 41	FFC0	00 ... 00 41
FFC8	Allocated	FFC8	Allocated
FFD0	Allocated	FFD0	Allocated
FFD8	Allocated	FFD8	Allocated
FFE0	Allocated	FFE0	Allocated
FFE8	Allocated	FFE8	Allocated
FFF0	Allocated	FFF0	Allocated
FFF8	00 ... 00 41	FFF8	00 ... 00 41

Address	Value	Address	Value
FF00	00 ... 00 39	FF00	00 ... 00 39
FF08	Allocated	FF08	Allocated
FF10	Allocated	FF10	Allocated
FF18	Allocated	FF18	Allocated
FF20	Allocated	FF20	Allocated
FF28	Allocated	FF28	Allocated
FF30	00 ... 00 39	FF30	00 ... 00 39
FF38	00 ... 00 21	FF38	00 ... 00 20
FF40	Allocated	FF40	Free
FF48	Allocated	FF48	Free
FF50	00 ... 00 21	FF50	00 ... 00 20
FF58	00 ... 00 29	FF58	00 ... 00 29
FF60	Allocated	FF60	Allocated
FF68	Allocated	FF68	Allocated
FF70	Allocated	FF70	Allocated
FF78	00 ... 00 29	FF78	00 ... 00 29
FF80	00 ... 00 20	FF80	00 ... 00 20
FF88	Free	FF88	Free
FF90	Free	FF90	Free
FF98	00 ... 00 20	FF98	00 ... 00 20
FFA0	00 ... 00 21	FFA0	00 ... 00 21
FFA8	Allocated	FFA8	Allocated
FFB0	Allocated	FFB0	Allocated
FFB8	00 ... 00 21	FFB8	00 ... 00 21
FFC0	00 ... 00 41	FFC0	00 ... 00 41
FFC8	Allocated	FFC8	Allocated
FFD0	Allocated	FFD0	Allocated
FFD8	Allocated	FFD8	Allocated
FFE0	Allocated	FFE0	Allocated
FFE8	Allocated	FFE8	Allocated
FFF0	Allocated	FFF0	Allocated
FFF8	00 ... 00 41	FFF8	00 ... 00 41

Address	Value	Address	Value
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FF18	Allocated	FF18	Allocated
FF20	Allocated	FF20	Allocated
FF28	Allocated	FF28	Allocated
FF30	00 ... 00 39	FF30	00 ... 00 39
FF38	00 ... 00 21	FF38	00 ... 00 21
FF40	Allocated	FF40	Allocated
FF48	Allocated	FF48	Allocated
FF50	00 ... 00 21	FF50	00 ... 00 21
FF58	00 ... 00 29	FF58	00 ... 00 29
FF60	Allocated	FF60	Allocated
FF68	Allocated	FF68	Allocated
FF70	Allocated	FF70	Allocated
FF78	00 ... 00 29	FF78	00 ... 00 29
FF80	00 ... 00 20	FF80	00 ... 00 20
FF88	Free	FF88	Free
FF90	Free	FF90	Free
FF98	00 ... 00 20	FF98	00 ... 00 20
FFA0	00 ... 00 21	FFA0	00 ... 00 21
FFA8	Allocated	FFA8	Allocated
FFB0	Allocated	FFB0	Allocated
FFB8	00 ... 00 21	FFB8	00 ... 00 21
FFC0	00 ... 00 41	FFC0	00 ... 00 41
FFC8	Allocated	FFC8	Allocated
FFD0	Allocated	FFD0	Allocated
FFD8	Allocated	FFD8	Allocated
FFE0	Allocated	FFE0	Allocated
FFE8	Allocated	FFE8	Allocated
FFF0	Allocated	FFF0	Allocated
FFF8	00 ... 00 41	FFF8	00 ... 00 41