SC165

PROBLEM STATEMENT: Write X86/64 ALP to perform non-overlapped block transfer without string specific instructions. Blocks containing data can be defined in the data segment.

```
%macro print 2 ;macro for print
mov rax,1
mov rdi,1
mov rsi,%1
mov rdx,%2
syscall
%endmacro

section .data
src db 11h,22h,33h,44h,55h ; declaring array 1
arrcnt1 equ 05
dest db 00h,00h,00h,00h,00h ;declaring array 2
arrcnt2 equ 05
msg1 db "Sourse block contents are: ",10
len1 equ $-msg1
msg2 db "Destination block contains are: ",10
len2 equ $-msg2
msg3 db "",10
len3 equ $-msg3

section .bss
result resb 2

section .text
global _start
_start:
print msg1,len1
;printing the source array
mov rbp,05
mov rsi,src
l1:
mov bl,[rsi]
push rsi
call display
print msg3,len3
pop rsi
inc rsi
```

```asm
    dec rbp
    jnz l1

;shifting the elements from source to destination
    mov rsi,src
    mov rdi,dest
    mov rcx,05

up:
    mov al,[rsi]
    mov [rdi],al
    inc rsi
    inc rdi
    loop up

;printing the destination array
    print msg2,len2
    mov rbp,05h
    mov rsi,dest
l2:
    mov bl,[rsi]
    push rsi
    call display
    print msg3,len3
    pop rsi
    inc rsi
    dec rbp
    jnz l2

;exit procedure
    mov rax,60
    mov rdi,0
    syscall

;Display procedure
display:
    mov rcx,16
    mov rdi,result
up1:
    rol bl,4
    mov al,bl
    and al,0fh
    cmp al,09h
    jbe skip
```
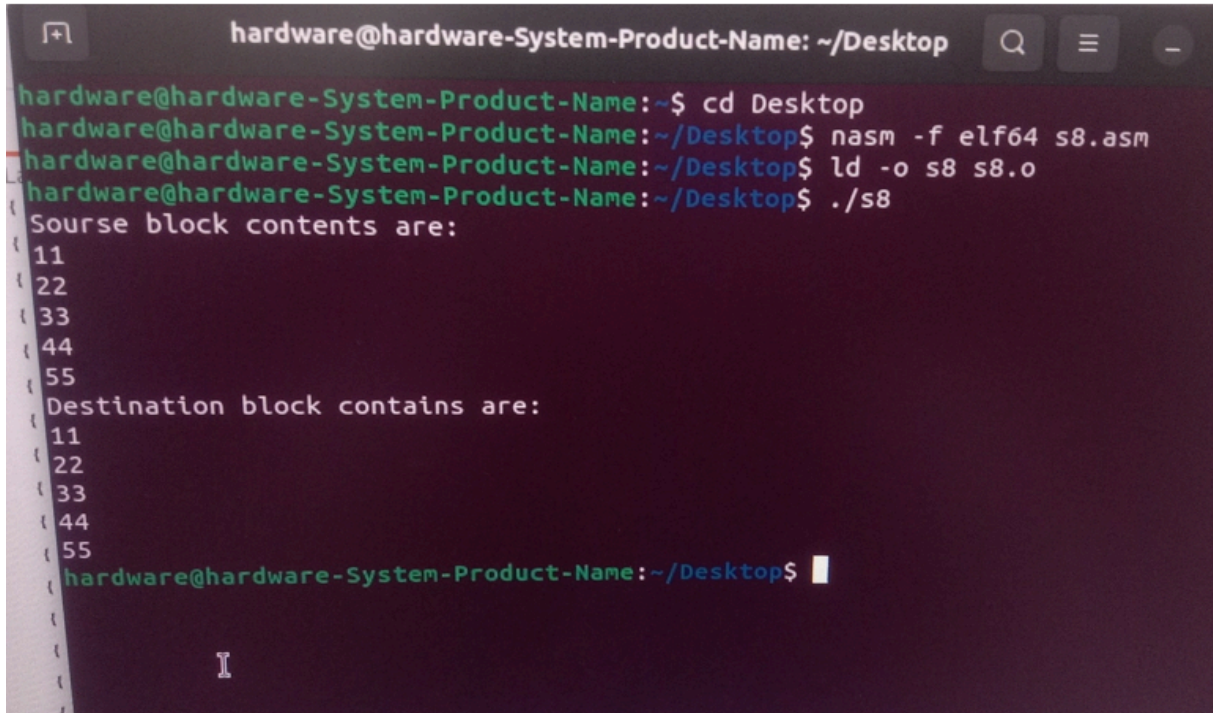
and al,07h
skip:
add al,30h
mov [rdi],al
inc rdi
loop up1
print result,2
re

```
hardware@hardware-System-Product-Name: ~/Desktop        Q   ≡   –

hardware@hardware-System-Product-Name:~$ cd Desktop
hardware@hardware-System-Product-Name:~/Desktop$ nasm -f elf64 s8.asm
hardware@hardware-System-Product-Name:~/Desktop$ ld -o s8 s8.o
hardware@hardware-System-Product-Name:~/Desktop$ ./s8
Sourse block contents are:
11
22
33
44
55
Destination block contains are:
11
22
33
44
55
hardware@hardware-System-Product-Name:~/Desktop$
```