

SC165

PROBLEM STATEMENT: Write X86/64 ALP to perform overlapped block transfer with string specific instructions Block 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 07
msg1 db "Source 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

;display of source block
mov rbp,05
mov rsi,src
l1:
mov bl,[rsi]
push rsi
call display
print msg3,len3
pop rsi
inc rsi
dec rbp
jnz l1
;shifting the element of source block to destination block
```

```
mov rsi,src
add rsi,5
dec rsi
mov rdi,rsi
add rdi,2
mov rcx,05
std
rep movsb
```

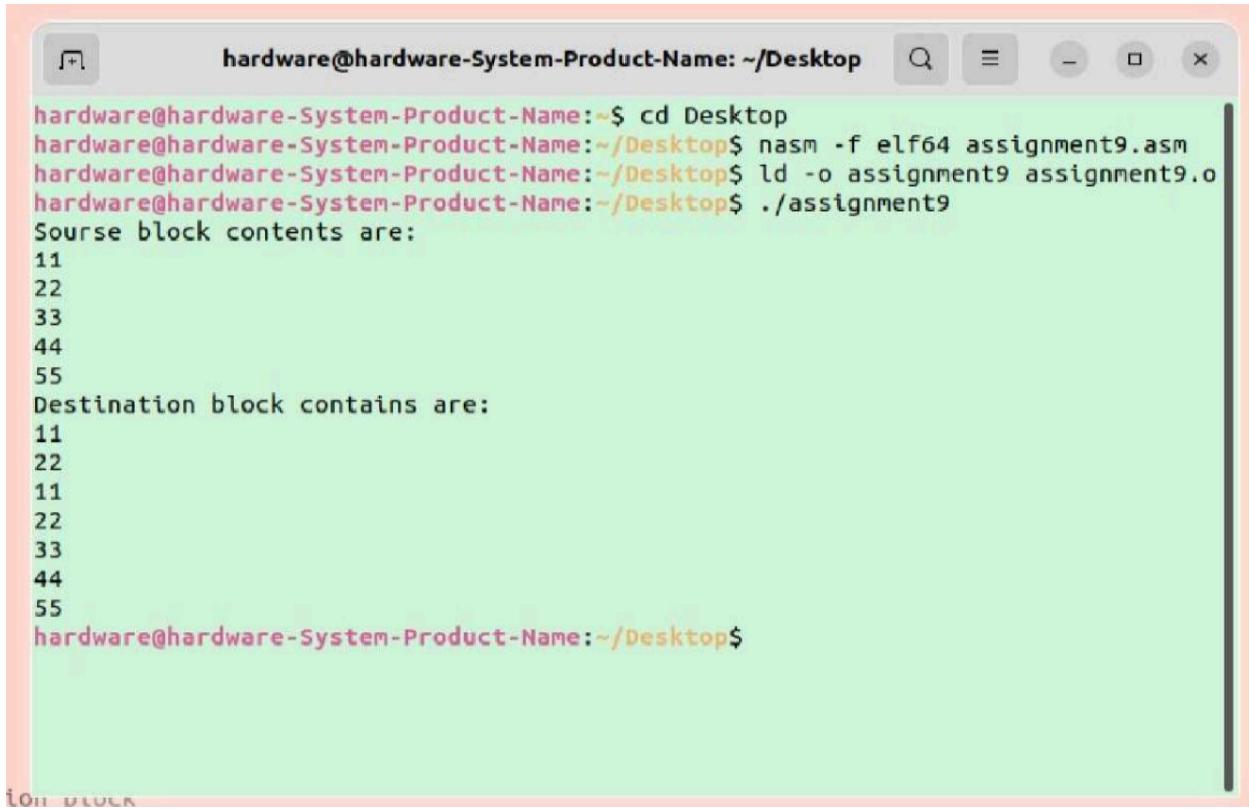
```
;Display of destination block
print msg2,len2
mov rbp,07h
mov rsi,src
l2:
mov bl,[rsi]
push rsi
call display
print msg3,len3
pop rsi
inc rsi
dec rbp
jnz l2
```

```
;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  
ret
```



A screenshot of a terminal window titled "hardware@hardware-System-Product-Name: ~/Desktop". The terminal shows the following command sequence and output:

```
hardware@hardware-System-Product-Name:~/Desktop$ cd Desktop  
hardware@hardware-System-Product-Name:~/Desktop$ nasm -f elf64 assignment9.asm  
hardware@hardware-System-Product-Name:~/Desktop$ ld -o assignment9 assignment9.o  
hardware@hardware-System-Product-Name:~/Desktop$ ./assignment9  
Source block contents are:  
11  
22  
33  
44  
55  
Destination block contains are:  
11  
22  
11  
22  
33  
44  
55  
hardware@hardware-System-Product-Name:~/Desktop$
```