UNIT 7

BUFFERS

Objectives

- Buffer
- Specifying Buffer Space
- Buffer usage

- BUFFER

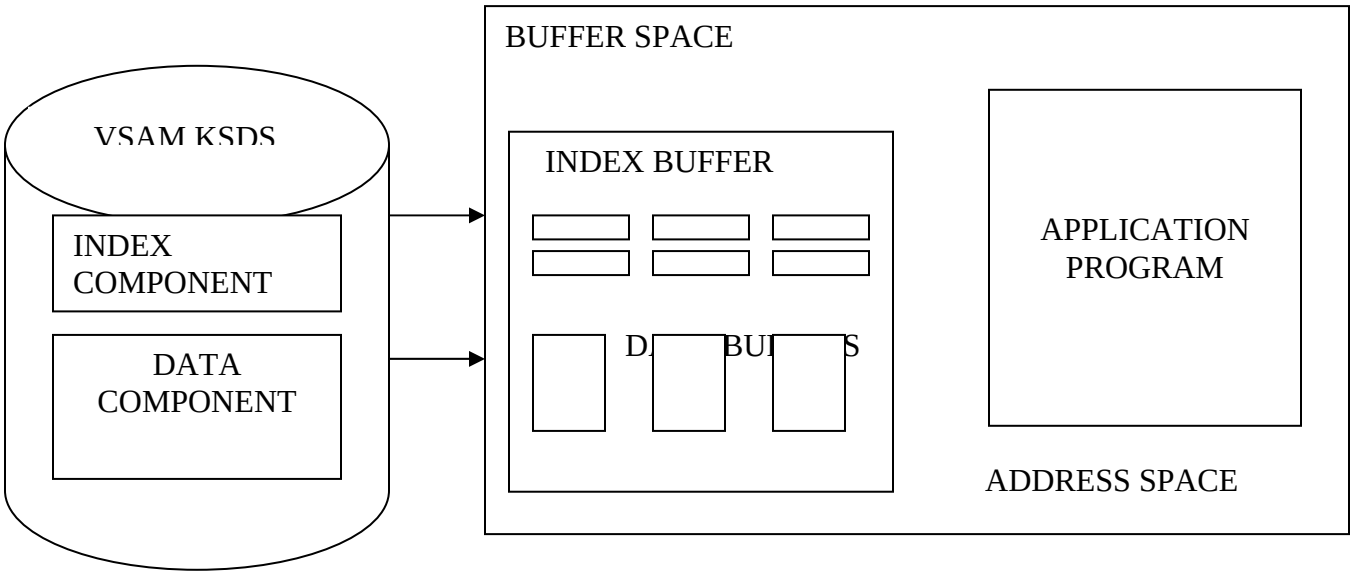


Figure 7-1.

I/O buffer are used by VSAM to read and write CI's from DASD to virtual storage.

Small Control intervals:

- Less buffer space required.
- May increase number of DASD I/O's

Large control intervals:

- Possibly fewer DASD I/O operations.
- Increased virtual storage requirement for buffers.

SPECIFYING BUFFER SPACE

AMS define

```
                    DEFINE CLUSTER
                          .
                          .
                          BUFFERSPACE(size)
                          .
```

ASSEMBLER ACB PROGRAM

```
BUFSP=size
      or
BUFND=number
BUFNI=number
```

JOB CONTROL

```
//BUF    DD    …AMP=('BUFNI=6,BUFNI=4')
                                Or
                        'BUFSP=2348'
```

STRINGS

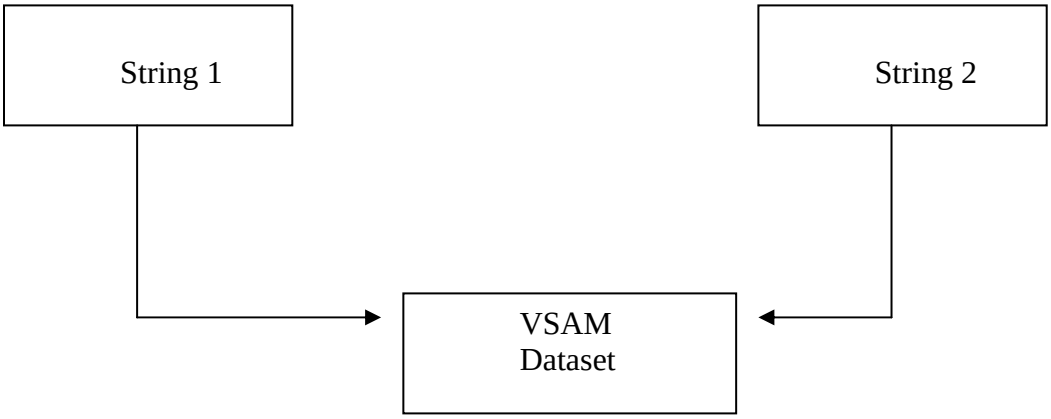


Figure 7-2.

```
//DDNAME   DD    DSN=dataset name,……
                 AMP=('strno=n',….)
```

- A String is a logical entity that provides a placeholder for an access request Strings are allocated via the STRNO parameter

BUFFERSPACE AT OPEN

PROCESSING MODE	MINIMUM		ADDITIONAL
DIRECT	STRNO STRNO+1	index data	index
SEQUENTIAL	STRNO STRNO+1	index data	data
DIRECT, SEQUENTIAL	STRNO STRNO+1	index data	data
SKIP SEQUENTIAL	STRNO STRNO+1	index data	data

The minimum buffer space for a cluster is

- STRNO index buffers
- STRNO+1 data buffers

SAMPLE KSDS

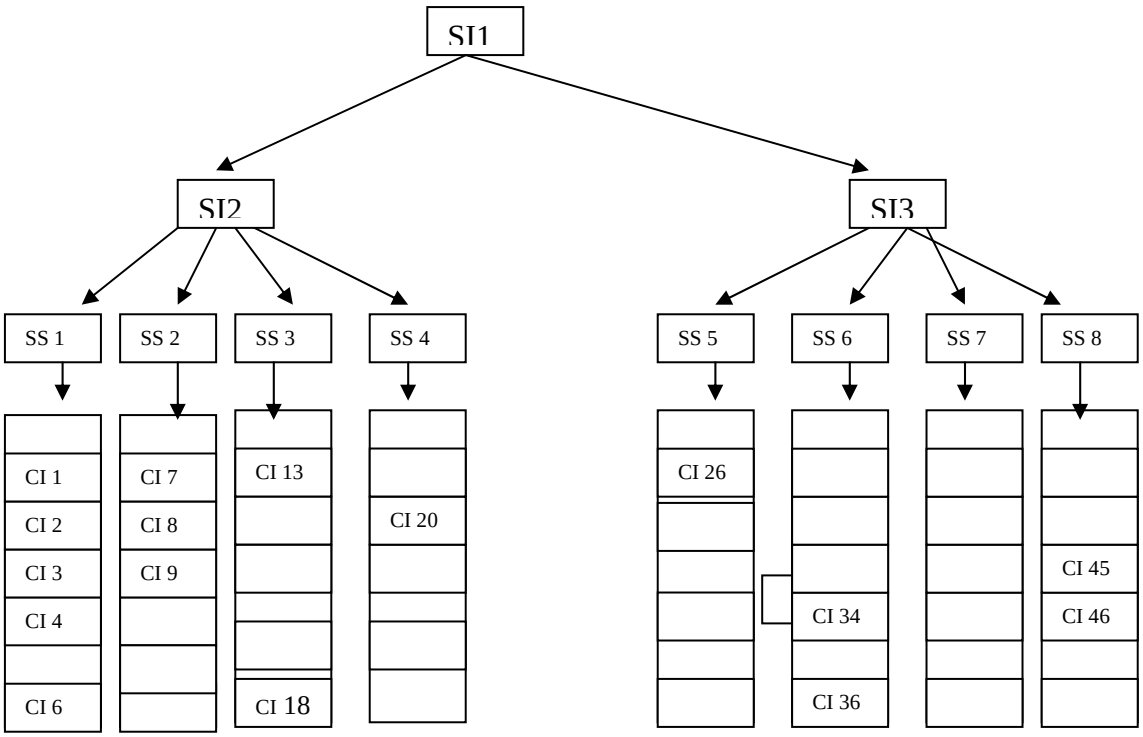


Figure 7-3.

DIRECT PROCESSING BUFFER EXAMPLE

DIRECT GET OF RECORD FROM CI n	INDEX BUFFERS						DATA BUFFER 1	DATA BUFFER 2
	1	2	3	4	5	6		
CI 7	IS 1	IS2	SS2				CI 7	
CI 18				SS3				CI 18
CI 26							CI 26	
CI 9								CI 19
CI 34							CI 34	
SAME CI								CI 34
CI 6							CI 6	
CI 20								CI 20
CI 5							CI 5	
CI 45								CI 45
CI 49							CI 49	
CI 46								CI 46
CI 67							CI 67	
CI 2								CI 2

Figure 7-4.

SEQUENTIAL PROCESSING BUFFER EXAMPLE

INDEX BUFFER	INDEX BUFFCI1	INDEX BUFFER 2
SS 1	CI 1	CI 2
	CI 3	CI 4

Figure 7-5.

BUFND=3,BUFNI=1,STRNO=1

- With sequential processing VSAM uses only sequence set records to retrieve the control interval in logical order
- For sequential processing, one index buffer is needed per string

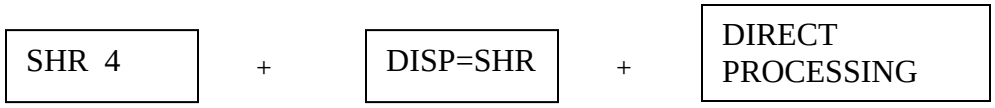
BUFFER RECOMMENDATION

	DEFAULT	RECOMMENDATION
DIR	DATA: STRNO + 1 INDEX: STRNO	DATA: Default INDEX: Min no: index level – 1 + STRNO Max: Index set + STRNO
SEQ	DATA: STRNO + 1 INDEX: STRNO	DATA; 3+STRNO INDEX: Default

Figure 7-6.

Buffer space is a trade-off between performance and virtual storage.

SHAREOPTION 4 AND BUFFERS



=BUFFERS REFRESHED EACH **READ**

Figure 7-6.

MINIMUM BUFFERS MAY IMPROVE PERFORMANCE

Unit 7 Exercises

Unit 7 Lab Exercises

Notes