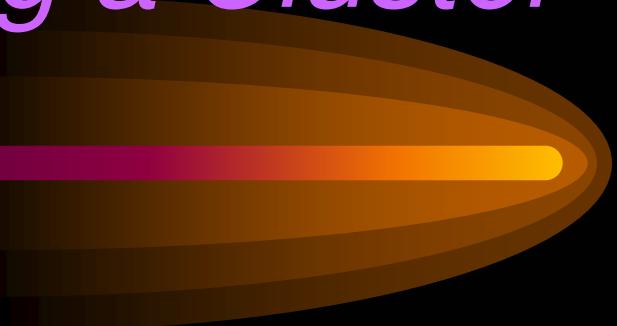


# *Overview of VSAM and Defining a Cluster*



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# *Introduction to VSAM*



- Virtual Storage Access Method
  - Three types of data set organizations
    - KSDS: key-sequenced data set
    - ESDS: entry-sequenced data set
    - RRDS: relative record data set

# KSDS



- A record is identified for access by specifying its key value
- A key is an imbedded field that is used to uniquely identify a particular record
- A newer version of ISAM (from my generation!)

# ESDS

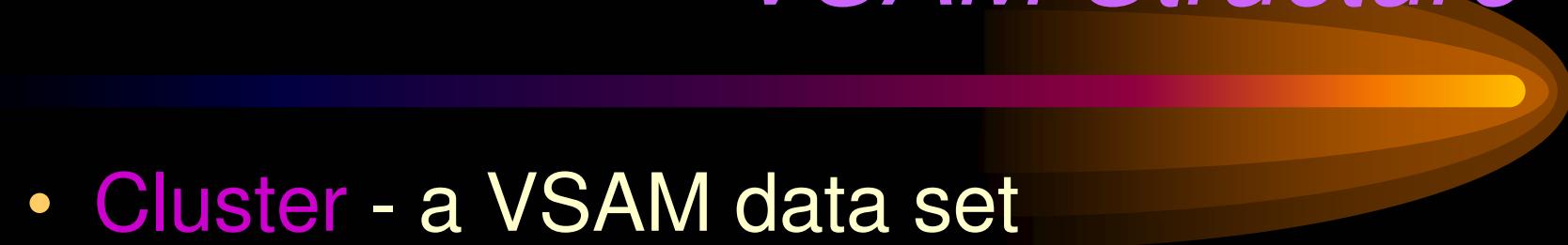
- A record is identified for access by specifying the physical byte location of the record's first byte relative to the beginning of the data set

# RRDS



- A record is identified for access by specifying its record number relative to the first record in the data set
- features in common with BDAM (basic direct access method) (another from my generation!)

# *VSAM Structure*

A decorative swoosh graphic consisting of three concentric, curved bands in shades of purple, pink, and orange, positioned horizontally across the slide.

- **Cluster** - a VSAM data set
- KSDS cluster
  - index component
  - data component
- ESDS and RRDS cluster
  - data component only

# *Creating a VSAM Data Set*



- Use Access Method Services (AMS)
- IDCAMS
  - Requires JCL statements
    - SYSPRINT - to produce a listing
    - SYSIN - contains AMS commands



*IDCAMS*

```
//jobname JOB,REGION=256K  
// EXEC PGM=IDCAMS  
//SYSPRINT DD SYSOUT=*  
//ddname DD parameters  
//SYSIN DD *
```

# *IDCAMS*

- On job card, IDCAMS requires a minimum of 256k
- ddname: other data set(s) that might be needed
- Control statements
  - must begin in cols 2-16
  - can use a hyphen(-) for a continuation char

# *IDCAMS*

- Documentation can go anywhere except columns 1 or 2
- /\* documentation is enclosed like C\*/

# *IDCAMS: Defining a Cluster*



- AMS DEFINE command is used to create VSAM objects
  - clusters
  - alternate indexes
  - user catalogs

# *IDCAMS: Defining a Cluster*

```
DEFINE    CLUSTER (subparam [subparm] .... [subparm] )  
          [ DATA (subparm [subparm] .... [subparm] ) ]  
          [ INDEX (subparm [subparm] .... [subparm] ) ]  
          [ CATALOG (subparm [subparm] .... [subparm] ) ]
```

# *IDCAMS: Defining a Cluster*



- CLUSTER sub-parameters
  - assign attributes to the cluster as a whole
- DATA and INDEX sub-parameters
  - assign attributes to the data component of ONLY KSDS clusters
- CATALOG sub-parameters
  - specify the name and optional password of the catalog where the catalog entries of the cluster are placed

# *IDCAMS: Defining a Cluster*

```
//SYSIN DD *  
DEFINE CLUSTER (-      /* DEFINE A CLUSTER */  
    NAME(KSDSCLUS) - /* CLUSTER NAME IS KSDSCLUS */  
    INDEXED -        /* TYPE OF CLUSTER IS KSDS */  
    VOLUMES(ACA301) - /* VOLUME IDENTIFICATION */  
    TRACKS(1 1) ) -   /* SPACE ALLOCATION */  
    DATA (-          /* DATA COMPONENT */  
        NAME(KSDSDATA) - /* NAME OF DATA COMP */
```

# *IDCAMS: Defining a Cluster*

```
KEYS(9 0) -          /* KEY LEN = 9 OFFSET = 0 */
RECORDSIZE(90 90) - /* FIXED LEN RECORD = 90 */
FREESPACE(10 5) ) - /* 10% FREE IN CI, 5% IN CA */
INDEX ( -           /* INDEX COMPONENT */
        NAME(KSDSNDX) ) /* NAME OF INDEX COMP */
/*

```

# *IDCAMS: Defining a Cluster*

- Smaller version of DEFINE

```
//SYSIN DD *  
  
DEFINE CLUSTER (-      /* DEFINE A CLUSTER */  
    NAME(KSDSCLUS) -  /* CLUSTER NAME IS KSDSCLUS */  
    INDEXED -          /* TYPE OF CLUSTER IS KSDS */  
    VOLUMES(ACA301) - /* VOLUME IDENTIFICATION */  
    TRACKS(1 1) ) -   /* SPACE ALLOCATION */  
    KEYS(9 0) -        /* KEY LEN = 9 OFFSET = 0 */  
    RECORDSIZE(90 90) ) /* FIXED LEN RECORD = 90 */  
/*
```

# *Defining a KSDS*

- DEFINE CLUSTER subparameters
  - NAME(cluster name)
    - used to assign a unique name to the cluster
    - standard 1 - 44 character
    - start with your znumber
  - INDEXED
    - specifies a KSDS

# *Defining a KSDS*

- DEFINE CLUSTER subparameters
  - VOLUMES (volser)
    - volume and serial number of the new cluster
    - use ACA301
  - TRACKS (primary secondary)
    - primary - primary allocation (use 1)
    - secondary - secondary allocation (use 1)
      - will be done up to 122 times

# *Defining a KSDS*

- DEFINE CLUSTER subparameters
  - RECORDSIZE (average maximum)
    - average - average number of bytes in the record
    - maximum - same as average for fixed length records otherwise the maximum number of bytes of the record

# *Defining a KSDS*

- DEFINE CLUSTER subparameters
  - KEYS (length position)
    - length - length of the key of the KSDA
    - position - beginning position of key (starting with 0)