

Chapter 1: VSAM Components and Evolution

You will learn:

- How to assess and define VSAM performance.
- The physical components of VSAM.
- The role of a CI: Control Interval.
- How data resides in the CI.
- Control Interval Control Information.
- The role of the CA: Control Area.
- VSAM file structures - KSDS: Key Sequenced Dataset, ESDS: Entry Sequenced Dataset, and RRDS: Relative Record Dataset, and LDS: Linear Dataset.
- AIX: Alternate Index.
- VSAM Type Comparison.
- Index Levels and Physical I/O's.
- 3380 and 3390 characteristics.
- Measuring DASD response time.

Chapter 2: KSDS Structure

You will learn:

- KSDS file structure.
- VSAM buffering.
- Structure of the index.
- Index record structure.
- Index CI: Control Interval sizes and capacities.
- Index CI capacity.
- How long keys can distort capacity estimates.
- How data is added to and removed from the data component and control interval.
- The role of CI and CA splits.
- Concept of FREESPACE.

Chapter 3: The Cluster on the Disk

You will learn:

- CIs and physical blocks.
- The CI: Control Interval as the logical unit of transfer.
- Devices and the physical record sizes chosen by VSAM.
- 3390 Device: Physical records per CI size.
- CA: Control Area and device characteristics.
- Optimizing CA: Control Area size.
- CA performance considerations.
- Allocation constraint relief.
- Control Interval sizing recommendations - CI: Data and CI: Index.

Chapter 4: Tuning AMS DEFINE CLUSTER

You will learn:

- AMS DEFINE CLUSTER Level: tuning.
- Define Cluster for the KSDS: important parameters.
- The role of free space and FREESPACE in the CI: Control Interval.
- CI FREESPACE: calculation.
- FREESPACE in the CA: Control Area.
- Free Space: choosing the optimal percentage.
- Uneven insert activity: anticipating.
- FREESPACE: distribution techniques.
- Direct versus sequential processing.
- Index Control Interval size: selecting.
- Test cluster: redefining and loading with data records.
- Index records test cluster: reanalyze.
- Index CI size: selection.
- Eliminate wasted Data CIs.
- Separate index CI sizes from data CI sizes.
- Large index CIs increase data transfer times and buffer requirements.
- Choosing index CI sizes - recommendations.
- Large Control Areas: advantages and disadvantages.

Chapter 4: Tuning AMS DEFINE CLUSTER - continued

You will learn:

- The implications associated with spanned records.
- Guidelines for space allocation and physical placement.
- Managing volume assignment.
- Using operational parameters - ERASE versus NOERASE, reusable files, reset action, and SHAREOPTIONS.
- The role of VSAM file integrity - ENQ/DEQ, and WRITECHECK versus NOWRITECHECK.
- VSAM buffer handling - sequential access and direct access.
- How to maximize sequential and random access efficiency.
- VSAM Dataset Definition with JCL.
- The options associated with string processing.
- Use and guidelines for LSR: Local Shared Resources.

Chapter 5: Alternative Indexes and Paths

You will learn:

- The role of alternate indexes and paths.
- How to use maintenance methods.

Chapter 6: Programming for Performance

You will learn:

- Sequential versus direct processing choices.
- Using generic keys.
- VSAM record-level sharing
- Transactional recovery.

Chapter 7: Strings and Buffer Pools

You will learn:

- Lookaside activity.
- NSR datasets: tuning.
- String level: lookaside activity.
- Strings - adding: data and index buffers.
- LSR: Local Shared Resources.
- BLDVRP: Build VSAM Resource Pool.
- Datasets assigned to LSR.
- Bufferpools.
- Strings: purpose, specifying, and problem diagnosis.

Chapter 8: Monitoring for Performance

You will learn:

- How to read and interpret the LISTCAT.
- Implement perform monitoring.
- Tools for reorganizing files for performance - DEFINE CLUSTER, REPRO, and XPORT/IMPORT.

Chapter 9: KSDX Index Component

You will learn:

- Structure of an index record.
- Key compression - index entry format, front compression, rear compression, and index header fields.
- Calculating VSAM's key compression rate.
- Analyzing an index record: index record components.
- Free Control Interval Pointer List.
- Average key entry length: calculating.

Chapter 10: VSAM and JCL

You will learn:

- How to process VSAM datasets.
- VSAM organization.
- Control Intervals and Control Area.
- Coding VSAM on JCL DD statements.
- Creating a VSAM dataset with a DD statement.