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FileTek OpticalVSAM Reference Guide

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FileTek

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Welcome

The FileTek® OpticalVSAM™ (FileTek OVSAM™) software product allows VSAM-based MVS applications transparent access to data stored on FileTek's StorHouse® system. StorHouse is FileTek's enterprise-wide software solution for managing the capture, storage, movement, and access of gigabytes to petabytes of relational and non-relational detail data. The combination of a transparent software interface and cost-effective online hardware to store enormous amounts of data allows batch and interactive applications direct access to archival data without requiring the creation of new applications or modification of existing software.

Purpose of This Document

The *FileTek OVSAM Reference Guide* is a manual for programmers who write applications that process OVSAM files. The purpose of this guide is to explain OVSAM services, override statement, run time statistics reports, SMF recording, and messages and codes. This guide also provides system programmers with instructions for the installation of the OVSAM software.

Intended Audience

This document is intended for all OVSAM users and system programmers who install mainframe software packages. It assumes that users are familiar with VSAM concepts and have a working knowledge of IDCAMS and other utilities that support VSAM. It also assumes that users understand basic StorHouse concepts.

Contents

This document contains five chapters:

- Chapter 1, “FileTek OVSAM Services,” contains an introduction to OVSAM, provides an overview of access method services (IDCAMS), describes the IDCAMS DEFINE CLUSTER, DELETE, LISTCAT, and REPRO commands, and provides IDCAMS DEFINE examples.

- Chapter 2, “FileTek OVSAM Override Capability,” describes the OVSAM DEFINE override statement format and provides keyword definitions. This chapter also gives examples of the OVSAM override statement.

- Chapter 3, “FileTek OVSAM Run Time Statistics Report and SMF Recording,” explains OVSAM Run Time Statistics. It describes the requirements to activate OVSAM’s run time statistics and provides examples of run time statistics reporting. This chapter also details the OVSAM Run Time Statistics Report and its major fields.

- Chapter 4, “FileTek OVSAM Messages and Codes,” describes the printer, console and TSO messages that may be displayed by OVSAM. These messages are followed by explanations of the user ABEND codes and the return/reason codes produced by OVSAM modules.

- Chapter 5, “Installation,” describes the installation and testing of OVSAM. It explains the Global Option Change Facility and discusses how to verify the installation. This chapter also specifies the use of OVSAM with other system software products.

Related Documentation

You should also be familiar with information in the following FileTek manuals in the StorHouse User Document Set:

- *StorHouse Concepts and Facilities Manual*, publication number 900026, defines the basic concepts, structures, and functions of StorHouse.

- *Command Language Reference Manual*, publication number 900005, is a general reference for StorHouse Command Language, the standard command interface between StorHouse and all host computers.

- *System Administrator's Guid*e, publication number 900007, describes StorHouse system recovery, account administration, and storage management procedures and concepts.

- *Messages and Codes Manual*, publication number 900032, lists StorHouse and host messages in ascending order by return code.

Notational Conventions

This book uses the following conventions for illustrating command formats, presenting examples, and identifying special terms:

Convention	Meaning
Angle brackets (< >)	Enclose optional entries
Braces ({ })	Enclose descriptive terms or a choice of entries
Courier font	Code
Ellipses (...)	A repetition of the preceding material
Italics	New terms and emphasized text
lower case Helvetica font	User entries
UPPER CASE	System responses and StorHouse terms

Chapter

1

FileTek OVSAM Services

This chapter contains an introduction to OVSAM, provides an overview of access method services (IDCAMS), describes IDCAMS JCL requirements, describes the IDCAMS DEFINE CLUSTER, DELETE, LISTCAT, and REPRO commands, and provides IDCAMS DEFINE examples.

Getting Started with OVSAM

This section provides an overview of FileTek OVSAM, describes how to define and allocate OVSAM files, and documents a straightforward method of converting VSAM clusters to OVSAM.

Overview

OVSAM allows IDCAMS, CICS, other on-line systems, batch programs, and TSO applications to use OVSAM files in place of single-indexed VSAM KSDS files without any change to programs or job step JCL. Both batch and on-line (synchronous and asynchronous) processing are supported. OVSAM supports any programming language that provides VSAM single-index KSDS key-indexed and sequential access or file creation. Note that:

- OVSAM is not a replacement for VSAM in the system.
- OVSAM does not affect the normal use of VSAM in the system.
- VSAM catalog management is not changed.

OVSAM is an alternative file structure that uses the same control block protocol as VSAM. OVSAM supports all the VSAM control blocks that a normal program would use. Higher level languages (for example, COBOL) normally generate these VSAM control blocks for the user.

Once OVSAM is active in the system, it inspects all VSAM OPEN, CLOSE and CATALOG requests. If the file being referenced is VSAM, the normal IBM routines are given control and VSAM processes the request. No further intercepts are made. If the file being referenced is OVSAM, the OPEN of the ACB is simulated. All the appropriate VSAM control blocks are built and hooked up just like a VSAM OPEN. OVSAM OPENs the file internally as non-VSAM. All RPL requests (GET, PUT, POINT, etc.) against an OVSAM file are intercepted. OVSAM deciphers the RPL command and processes the request in the same manner as VSAM.

To use OVSAM, follow the same rules as you would for VSAM. Most end users of VSAM files never need to know that they are referencing an OVSAM file instead of a VSAM cluster.

OVSAM supports single index (KSDS) VSAM files referenced sequentially or by key. The following are not KSDS files:

- Entry Sequenced (ESDS) VSAM clusters
- Relative Record (RRDS) VSAM clusters
- LINEAR VSAM clusters.

OVSAM does not support the creation or processing of alternative indexes. IMS files are usually ESDS and RRDS VSAM clusters. DB2 files are special format VSAM files. Records are accessed by internal tables built by DB2. IMS and DB2 cannot use OVSAM files.

OVSAM messages and return codes are comparable to VSAM. OVSAM logs its own special error messages to the JCL LOG. OVSAM's log messages may have a different meaning than VSAM. Check Chapter 4, "FileTek OVSAM Messages and Codes," for an explanation of OVSAM messages. The OPEN/CLOSE and I/O message areas may not contain a VSAM error message.

If a DD statement references an OVSAM file, the DSORG field in the JFCB will be marked as VSAM. If an OBTAIN is issued, the DSORG in the VTOC will indicate DA. Because OVSAM files are non-VSAM, they do not exist in the VVDS. Locate requests for an OVSAM file will indicate it is non-VSAM. Superlocate requests for an OVSAM file will indicate VSAM.

OVSAM supports the same level of security as VSAM. Support for RACF, TOP SECRET (or RACF compatible) and ACF2 is the same as any OS file. OS PASSWORD is not supported from the DEFINE statement. If it is needed, it must be coded the same as any non-VSAM file.

OVSAM will disconnect from StorHouse when it recognizes that a particular file is no longer actively in use. It automatically reconnects the next time I/O to StorHouse is required. This allows for more efficient use of StorHouse. OVSAM automatically closes and disconnects from the StorHouse subsystem and the MVS anchor in response to a MVS CLOSE and/or an abnormal termination.

Defining OVSAM Files

OVSAM files are defined through IDCAMS, using the same DEFINE CLUSTER statements that would be used to define a VSAM file. You indicate that an OVSAM rather than a VSAM file is desired by coding the character string $FTEK anywhere in the values for the NAME, OWNER, DATACLASS, or STORCLASS keywords. For example, if the parameter OWNER($FTEK) is added to a DEFINE statement, the next time the cluster is DEFINEd it will become an OVSAM file.

The recommended way to establish an OVSAM file is to include the characters $FTEK anywhere in the cluster name. The advantages of using this method are that OVSAM files will be easily identifiable when looking at the JCL, VTOC, and DASD management reports, and on SMF reports.

For example, a cluster name of USER.FILE.$FTEK.TEST will create an OVSAM file instead of a VSAM cluster.

SMS users can establish an OVSAM file using the DATACLASS and STORCLASS constructs. If $FTEK appears in either construct, the file will be defined as an OVSAM file. The values for DATACLASS and STORCLASS can be explicitly specified by DEFINE parameters, in the JCL, or by the ACS routines. Selecting a Data Class or Storage Class in the ACS routines can provide a mechanism to convert files to OVSAM automatically with minimal manual effort.

Note: The method chosen for DEFINEing an OVSAM file is a user option. Making this choice will be referred to as using the $FTEK parameter.

Converting VSAM Files

To convert a VSAM cluster to an OVSAM file with the same name, use the following procedure:

- REPRO the VSAM cluster to a sequential file on tape or disk.
- DELETE the VSAM cluster.
- DEFINE the file with the same name and attributes as the VSAM cluster, adding the parameter OWNER($FTEK) to the DEFINE statement.
- REPRO the sequential file into the OVSAM file.

OVSAM files can be loaded by any application program that currently loads VSAM files. For optimal load performance, the technique of a single record load followed by mass inserts should be avoided. COBOL users should note that when a file is opened for loading with ACCESS IS DYNAMIC or RANDOM, COBOL does a single dummy record load followed by a delete of that record. For optimal COBOL file loading, ACCESS IS SEQUENTIAL should be used.

Caution: Many applications contain more than one DELETE and DEFINE step. You must change all steps that DEFINE the file you are converting. If a DEFINE is executed without the ($FTEK) parameter, the file will revert to VSAM. If this should occur, jobs will still execute normally. However, the file will be stored on DASD instead of optical.

File Allocation

An OVSAM file's space allocation can be DEFINEd in records, tracks or cylinders and can extend across multiple volumes. OVSAM files do not have VSAM's 4.3 gigabyte (GB) file size restriction. The allocation for an OVSAM file must be sufficient to accommodate all the records to be loaded with additional allowance for records that will be added.

OVSAM's advanced file structure and data compression cuts the space requirement of VSAM files by 30 to 70%. DEFINE statement space requirements should be reviewed on all files converted to OVSAM.

OVSAM reserves the free space areas specified by the DEFINE when the file is loaded or REPROed. This free space is distributed throughout the file to accommodate future inserts.

Give careful consideration to the space allocation request, particularly when a single record loading technique is used. OVSAM will only use secondary space on file loads. With single record loads, OVSAM formats out 90% of the primary space allocation, dividing the space up between the Independent Overflow and Prime Extension areas. Secondary space will generally not be used for files that are loaded by a single record, unless explicit overrides are provided for the size of the overflow areas.

An OVSAM file only requires a single track of DASD space. This space is used for a control dataset containing the information required to access the optical file. The data and indexes reside entirely on optical media.

Access Method Services (IDCAMS) Overview

This section documents the use of IDCAMS with OVSAM files. Most IDCAMS commands will execute without change. For each command, special considerations or additional features available for an OVSAM file will be noted.

OVSAM supports the following IDCAMS commands:

- DEFINE – Use the IDCAMS parameters to define a VSAM KSDS cluster except add the parameter $FTEK.

- DELETE – Can be used, but only the single-track control dataset and MVS catalog entries are removed. The data (on write-once optical) cannot be erased and the optical disk space cannot be reused.

- LISTCAT – LISTCAT output for an OVSAM file will reflect a non-VSAM format. A LISTCAT ALL will result in OVSAM providing a full report on the file attributes to the IAMPRINT DD, which if not already allocated will be dynamically allocated to SYSOUT=* in batch, or to the terminal for TSO users. To direct the report elsewhere, code an IAMPRINT DD card in the job's JCL, for example:

  ```
  //IAMPRINT DD SYSOUT=A
  ```

- PRINT – Will execute the same as a VSAM cluster.

- REPRO – Will execute the same as a VSAM cluster. Use REPRO to copy VSAM clusters to OVSAM files and OVSAM files back to VSAM.

- VERIFY – IDCAMS will complete normally. However, because this command is not applicable to an OVSAM file, it performs no useful function.

OVSAM does not support the IDCAMS IMPORT, EXPORT, or ALTER commands.

Access Method Services (IDCAMS) – JCL Requirements

The VSAM access method services utility program, IDCAMS, executes under OVSAM without any required JCL modification.

The following describes each DD Statement and any special OVSAM JCL considerations:

- STEPLIB/JOBLIB DD – The OVSAM program load library should be included in the system LINKLIST. If it is not, include a STEPLIB/JOBLIB DD statement specifying the library in which the OVSAM program load modules reside. Because IDCAMS is an authorized program, all libraries in the STEPLIB or JOBLIB concatenation must be APF authorized.

- IAMPRINT DD – A LISTCAT ALL command will generate a report detailing the OVSAM file: record and key length, blocksize, overflow values, tracks used by the OVSAM file, etc. to this DD statement. If an IAMPRINT DD statement is not present, and the SYSPRINT DD specifies SYSOUT, then an IAMPRINT DD statement is dynamically allocated to SYSOUT=*. For TSO users, the output will be directed to the terminal with TPUT, unless an IAMPRINT DD statement is present.

- IAMINFO DD – Provides enhanced reporting. If OVSAM SMF records are enabled, the IAMINFO reports also can be obtained by running the IAMSMF utility program. If this DD statement is present, a report is generated each time the OVSAM file is CLOSEd. This report displays run time statistics (memory used, read and write I/Os), counts of each command issued (GET, PUT, ADD, DELETE, POINT), number of buffers used and additional information on the characteristics of the OVSAM file.

- FTKOVRID DD – This DD statement gives the user the capability of overriding OVSAM default values or values specified in the DEFINE CLUSTER command.

  ```
  //FTKOVRID   DD   *
  ```

- IAMNOLIC DD – An optional DD statement that eliminates LISTCAT processing. Used when IAMPRINT reports are not necessary.

  IDCAMS' commands to DEFINE, DELETE or access an OVSAM file follow the same conventions as for a VSAM cluster. There is no change in the format of the command statement. Command descriptions follow.

IDCAMS DEFINE CLUSTER Command

This section describes the DEFINE CLUSTER command, the DEFINE parameters, and the optional DEFINE parameters.

DEFINE CLUSTER Command

OVSAM analyzes every DEFINE statement. If the DEFINE statement contains the $FTEK parameter, the file is created as an OVSAM file. If the $FTEK parameter is not coded, a VSAM cluster is created.

OVSAM allocates a single-track, non-VSAM file on disk with a DSORG of DA. This file contains the file characteristics for the OVSAM file. The requested overflow areas are established in an OVSAM file when it is loaded.

The parameters specified in the DEFINE statement are applied to the OVSAM file. Because the OVSAM file and overflow structures are different from VSAM's, some of the parameters specified may be changed or ignored.

When the DEFINE command is for an OVSAM file, the following rules will apply:

- The cluster name will be the name of the OVSAM file.
- The data and index component names will be ignored.
- Index component attributes are not needed and will be ignored.
- Attribute parameters will be used or ignored as described in the following section.

DEFINE Parameters

Most VSAM DEFINE parameters are applicable to OVSAM. This section describes the parameters that are necessary for OVSAM, the parameters that do not apply, and any differences between OVSAM and VSAM.

The following parameters must be specified on a DEFINE statement:

CLUSTER — Identifies that a file is to be created. This is a required parameter for an OVSAM file.

NAME(ovsam filename) — This is a required parameter for an OVSAM file. The entry name specified for the cluster will be the name of the single-track control dataset and the StorHouse file. The data and index component names are ignored. If $FTEK appears anywhere in the name, the file will be created as an OVSAM file. The following dataset name examples will create an OVSAM file.

```
DEFINE CLUSTER   (NAME(PROD.VER1.$FTEK.EMPN) -

DEFINE CLUSTER   (NAME(CICS.TRANSACT.TST$FTEK) -
```

OWNER(ownerid) — If OWNER($FTEK) is coded on the CLUSTER statement, the file will be created as an OVSAM file. When $FTEK is not present in the cluster name and the $FTEK parameter is not otherwise specified, the file will be created as a VSAM cluster.

The following statement will create an OVSAM file:

```
DEFINE CLUSTER (NAME(MY.FILE)OWNER($FTEK) -
```

CYLINDERS (primary secondary) — DEFINEs file space in cylinder units. See RECORDS.

TRACKS (primary secondary) — DEFINEs file space in track units. See RECORDS.

RECORDS (primary secondary) — DEFINEs file space in record units.

The CYLINDERS, TRACKS, and RECORDS parameters specify the amount of space to be allocated for the file on StorHouse. The first field specifies the primary space allocation value.

The space allocation on optical volumes is computed from the product of the primary quantity and the number of volumes. If a non-zero secondary is specified, the optical file will be extended if the primary space fills.

VOLUMES(volser volser ...) — Specifies the volume on which the OVSAM control file is to be allocated. The OVSAM control file is allocated and cataloged only on the first volume. Specifying multiple volumes causes an increase in the amount of space requested on optical by multiplying the primary quantity times the number of volumes specified.

OVSAM files can be allocated to non-specific volumes. If you wish to use non-specific allocation, specify VOLUME(ANYVOL). This will result in OVSAM issuing a non-specific dynamic allocation request for the OVSAM file. The volumes must be mounted as STORAGE. Volume selection is done at DEFINE time, and a subsequent LISTCAT will show the volume selected. The default UNIT name used is SYSDA. If space is defined in CYLINDER or TRACK units, the cylinder/track size will be the first volume specified. That volume does not affect the placement of data on optical.

When using the OVSAM non-specific allocation, do not specify UNIQUE. If the MODEL parameter is specified, also specify the SUBALLOCATION parameter. This is to prevent IDCAMS from attempting to allocate the volumes before OVSAM intercepts the request. The UNORDERED parameter is ignored. UNIQUE, MODEL, and SUBALLOCATION are explained in the following paragraphs.

Optional DEFINE Parameters

The following parameters are optional on the DEFINE statement:

BUFFERSPACE (bytes)

Specifies the amount of BUFFERSPACE to be used when VSAM processes the file. OVSAM ignores the BUFFERSPACE parameter. OVSAM's Real Time Tuning and buffer management continually adjust the number of buffers in use as a file is being processed.

If you wish to override the OVSAM default buffer values, see Chapter 2, "FileTek OVSAM Override Capability." The keywords are MAXBUFNO=nnn and MINBUFNO=nnn.

CATALOG (catalog name)

Specifies the catalog in which the OVSAM file is to be cataloged. The CATALOG parameter should not be specified for datasets placed on SMS managed volumes. If CATALOG is not specified, the standard catalog search is used. If STEPCAT/JOBCAT is coded, the OVSAM file will be cataloged in the STEPCAT/JOBCAT. If STEPCAT/JOBCAT is not present, the file will be cataloged in the catalog containing the alias for the high level index.

DATACLAS (dataclas)

Specifies the name of the SMS DATACLASS construct that provides the allocation attributes for the new dataset. The DATACLASS name must have been previously established by the system administrator. If the DATACLASS name contains the literal $FTEK, the file will be defined as an OVSAM file. Attributes from the DATACLASS will be used, unless otherwise explicitly specified on the DEFINE statement. OVSAM will only detect a DATACLASS name when the DATASET is allocated on an SMS managed volume.

ERASE

Specifies that VSAM is to erase the dataset when it is DELETEd. OVSAM ignores this parameter.

EXCEPTIONEXIT

Specifies the name of a load module that gains control when an I/O error occurs. OVSAM ignores this parameter. OVSAM supports the exception exit list in the ACB.

FREESPACE(CI% CA%) Specifies the percentage of free space to be left empty in the VSAM cluster when the file is loaded.

CI% If the file is OVSAM, this value is used to calculate an Integrated Overflow percentage. OVSAM's concept of Integrated Overflow is essentially the same as CI%. OVSAM takes the value coded and leaves this percentage of each block empty to accommodate adds (inserts) to the block. On fixed length files, OVSAM will round this percentage down to an even multiple of the record size.

Data copied to a write once optical medium is usually archive data that is never changed. In this case, no free space should be allocated.

If a file is ever updated or has records added to it, some CI free space should be specified. This is of particular importance to compressed files that are updated, because even if the application does not change the length, the stored record may end up being longer after compression.

CA% The CA% freespace value is ignored for OVSAM files. The structure of an OVSAM file is different than a VSAM file; it does not have Control Areas (CA). A fixed quantity of OVERFLOW space is provided for OVSAM files. This quantity can be changed on a file basis through the use of overrides.

IMBED Specifies the OVSAM index is to be embedded in the data. See REPLICATE.

REPLICATE Specifies the index is to be replicated on the track. OVSAM files use a Super-Compressed index. This index is always loaded into storage eliminating all I/O to the index. Therefore, OVSAM does not need an embedded index and ignores these parameters.

INDEXED Specifies an indexed KSDS file is to be created. OVSAM supports single indexed files.

NONINDEXED Creates a sequential VSAM (ESDS) file. See LINEAR.

NUMBERED Creates a relative record VSAM (RRDS) file. See LINEAR.

LINEAR Creates sequential files addressed by memory location. ESDS, RRDS and LINEAR files are not indexed by key and the DEFINE will fail if used with a $FTEK parameter.

KEYRANGES (low high) Specifies that VSAM is to load the key values specified into separate components. OVSAM files do not have components. OVSAM will load all the records into one file and will make the secondary allocation value equal to the primary allocation whenever KEYRANGES is coded.

KEYS(length offset) The first value specifies the length of the file's record key. The second value is the relative key position of that field in the record. This parameter is used by OVSAM in the same manner as VSAM. For a variable length format file, OVSAM reports will show an internal 4-byte key offset added to the relative key position. Defaults are: length=64 offset=0.

MGMTCLAS (management class name)

Specifies the name of the SMS Management Class for the new dataset.

MODEL (datasetname)

Specifies that the attributes of the file being DEFINEd are to be copied from an existing VSAM dataset. The model dataset cannot be an OVSAM file. When using MODEL with ANYVOL, the SUBALLOCATION parameter must also be specified. Although it is ignored by OVSAM, it prevents IDCAMS from trying to allocate ANYVOL.

If you are copying an OVSAM file from an existing VSAM file, this parameter is an easy way to get the attributes of the VSAM cluster. You cannot use this parameter to point to an existing OVSAM file.

RECATALOG

Specifies that the VSAM file is to be recataloged using information contained in the VVDS. The OVSAM file is an OS dataset, which in non-SMS systems does not exist in the VVDS. If an OVSAM file becomes uncataloged, but still exists on the disk, this parameter will reestablish the OVSAM file's control information. A $FTEK parameter must also be specified to identify it as an OVSAM file.

Recatalog can also be used to modify StorHouse file access information, such as password, through the use of the override processor. Recatalog will only update the control file. It does not access the optical file.

RECORDSIZE (average maximum)

The first value specifies the average record length in bytes. The second value is the maximum record length. OVSAM assumes a variable length (VL) record format even though the average and maximum record length are the same.

REUSE

Specifies the VSAM file can be reloaded. This parameter is ignored.

NOREUSE

Specifies that the VSAM cluster cannot be reloaded. This parameter is ignored. OVSAM files cannot be reloaded. An attempt to load an OVSAM file that already contains data will result in the standard VSAM return code indicating that the file is NOT REUSABLE.

SHAREOPTIONS (cross-region cross-system)

Specifies how a file can be shared between different jobs. The first parameter specifies how a file can be shared in the same system (CPU). The second parameter specifies how a file is shared between systems.

OVSAM supports the share options in the same manner as VSAM. The share options are:

- 1 – Any number of users for read or one user for update.
- 2 – Any number of users for read and one user for update.
- 3 – Any number of users for read or update. Users are responsible for integrity.
- 4 – Any number of users for read or update. Users are responsible for integrity. Buffers are refreshed for each request.

Because of differences in OVSAM's file structure, share options 3 or 4 may not yield the same results, if records are being added to Independent Overflow. The default is:

```
SHAREOPTIONS(1 3)
```

SPANNED — Specifies that the OVSAM file contains records that are written across multiple CIs.

OVSAM has a blocksize of 31711 bytes. OVSAM block sizes are not restricted to 512- or 2048-byte multiples. If the CISIZE specified is smaller than the maximum record size, OVSAM will increase its blocksize to accommodate the record. SPANNED is not needed for OVSAM files and is ignored.

SPEED — Specifies that OVSAM is not to preformat each CA. See RECOVERY.

RECOVERY — Specifies that OVSAM is to preformat each CA on loads. OVSAM ignores this parameter. If an OVSAM file load is interrupted, the file must be deleted and redefined.

STORCLAS (Storage class name) — Specifies the name of the SMS Storage Class construct. For datasets that are placed on SMS volumes, Storage Class must be either implicitly specified by the ACS routines or explicitly specified on the DEFINE command. If the Storage Class Name contains the literal $FTEK, the file will be defined as an OVSAM file.

UNIQUE — UNIQUE should not be used because IDCAMS will dynamically allocate the volumes indicated by the VOLUME parameter before OVSAM intercepts the request.

SUBALLOCATION — OVSAM files are always allocated as if they were unique clusters. However, it may be necessary to specify this parameter when using the OVSAM non-specific allocation (ANYVOL) and the MODEL parameter. This is necessary because SUBALLOCATION prevents IDCAMS from allocating the volumes indicated in the VOLUME parameter when the MODEL parameter is specified.

WRITECHECK — OVSAM ignores this parameter.

IDCAMS DEFINE Examples

This section shows examples of converting a DEFINE procedure, specifying $FTEK in an IDCAMS DEFINE of an OVSAM file, DEFINE with an override, an IDCAMS DEFINE for an OVSAM file, and an OVSAM DELETE.

Converting a DEFINE Jobstream

```
//S1DEF01   EXEC  PGM=IDCAMS
//SYSPRINT  DD    SYSOUT=*
//SYSIN     DD    *
  DEFINE    CLUSTER -
        (NAME(SAMPLE.MASTER) -
        VOLUMES(SAMP01) -
```

```
       OWNER ($FTEK) - <-ADD
       SPEED REUSE) -
DATA (RECORDS(5000 500)
       FREESPACE(20 10) -
       KEYS(10 0) -
       RECORDSIZE(256 256)) -
       INDEX (IMBED)
```

DEFINE Using $FTEK in the Dataset Name

```
//DEFINE    EXEC  PGM=IDCAMS
//SYSPRINT  DD    SYSOUT=*
//SYSIN     DD    *
  DEFINE CLUSTER -
     (NAME(PAYROLL.$FTEK.MASTER) -
     VOLUMES(SAMP01) ) -
  DATA -
     (NAME(PAYROLL.MASTER.DATA) -
     CYLINDERS(100 20) -
     FREESPACE(10 5) -
     KEYS(24 8) -
     RECORDSIZE(250 480)) -
  INDEX -
     (NAME(PAYROLL.MASTER.INDEX))
```

DEFINE with an Override

```
//DEFINE    EXEC  PGM=IDCAMS
//SYSPRINT  DD    SYSOUT=*
//SYSIN     DD    *
  DEFINE     CLUSTER -
     (NAME(MASTER.TABLE.CLUSTER) -
            OWNER($FTEK) -
            CYLINDERS(600 100) -
            FREESPACE(0 0) -
            KEYS(20 0) -
            RECORDSIZE(80 200) -
            VOLUMES(SAMP01) )
/*
//FTKOVRID  DD    *
*****       THE FOLLOWING STATEMENT WILL OVERRIDE     *****
*****       THE DEFAULT INDEPENDENT OVERFLOW VALUE    *****
  DEFINE   OVERFLOW=100
/*
```

See Chapter 2, “FileTek OVSAM Override Capability” for additional information.

IDCAMS DEFINE with SMS Allocations

```
//DEFINE    EXEC  PGM=IDCAMS
//SYSPRINT  DD    SYSOUT=*
//SYSIN     DD    *
  DEFINE CLUSTER -
     (NAME(TSTSMS.SMS202.CLUSTER) -
            MGMTCLAS(DBSTNDRD) -
            STORCLAS(BASE) -
            DATACLAS($FTEKTST1))
```

IDCAMS DELETE Command

To delete an OVSAM file, use the IDCAMS DELETE or DELETE CLUSTER command. These commands delete and uncatalog the OVSAM control dataset on DASD. The data is not removed from StorHouse.

OVSAM files can also be DELETEd in JCL statements by using DISP=(OLD,DELETE) and by the program IEHPROGM.

The following example will DELETE two OVSAM files.

```
//DELETE    EXEC  PGM=IDCAMS
//SYSPRINT  DD    SYSOUT=*
//SYSIN     DD    *
  DELETE OVSAM.FILE.ONE CLUSTER
  DELETE OVSAM.FILE.TWO
/*
```

IDCAMS LISTCAT Command

IDCAMS will report an OVSAM file as non-VSAM. IDCAMS will also report the volumes to which the file is cataloged.

IAMPRINT DD specifies an output message dataset, usually SYSOUT, and its use enables additional reporting that details OVSAM file characteristics. If an IAMPRINT DD card is not currently allocated, OVSAM will automatically dynamically allocate an IAMPRINT DD to SYSOUT=* if a SYSPRINT DD is present in the step and it is a SYSOUT dataset. If the LISTCAT request is executed under TSO, OVSAM will automatically and dynamically allocate an IAMPRINT DD to the user's TSO.

LISTCAT Entries

Figure 1-1 shows the computer listing for a LISTCAT ALL of an OVSAM dataset.

```
IDCAMS  SYSTEM SERVICES                        TIME: 11:26:48   07/06/92   PAGE 1

     LISTC ENT(FILE.OVSAM.TEST)  ALL

NONVSAM ------- FILE.OVSAM.TEST
     IN-CAT --- CATALOG.FILETEK.USER
     HISTORY
       OWNER-IDENT----------.....    CREATION----------92.184
       RELEASE----------------2    EXPIRATION--------00.000
     VOLUMES
       VOLSER------------DATA20   DEVTYPE-------X'3010200E'  FSEQN-----0
     ASSOCIATIONS-------(NULL)


IDCAMS  SYSTEM SERVICES                        TIME: 11:26:48   07/06/92   PAGE 2

       THE NUMBER OF ENTRIES PROCESSED WAS:
                 AIX--------------------0
                 ALIAS------------------0
                 CLUSTER----------------0
                 DATA-------------------0
                 GDG--------------------0
                 INDEX------------------0
                 NONVSAM----------------1
                 PAGESPACE--------------0
                 PATH-------------------0
                 SPACE------------------0
                 USER CATALOG-----------0
                 TOTAL------------------1

       THE NUMBER OF PROTECTED ENTRIES SUPPRESSED WAS 0
IDC0001F FUNCTION COMPLETED, HIGHEST CONDITION CODE WAS 0

IDC0002I IDCAMS PROCESSING COMPLETE. MAXIMUM CONDITION CODE WAS 0
```

Figure 1-1: LISTCAT for FILE.OVSAM.TEST

IAMPRINT Reports

The IAMPRINT file attributes report will be different for an OVSAM file that has only been DEFINEd, (that is never been used) when compared to a file that has been loaded with records. Figure 1-2 shows a sample report for a file that was loaded after it was DEFINEd. It contains fields for the number of records in the file as well as a description of how the overflow was used.

```
IAM400 IAM CATALOG INFORMATION SERVICE -- VER 6.1/13P   DATE 92.259 TIME 13.42.41

IAM100 IAM FILE ANALYSIS - DSN=MAG.0710K
       ---------------------------------------------------------------------------
       RECORD SIZE -- =      4097  - INTEGRATED OVERFLOW --- =       0 PER    -
       BLOCK SIZE --- =     31711  - ACTUAL INTEGRATED OVFL  =       0 PER    -
       BLOCK FACTOR - =     31711  - INDEPENDENT OVFL REQ -- =       0 RECS   -
       KEY SIZE ----- =        10  - INDEPENDENT OVERFLOW -- =       0 BLOCKS -
       REL KEY POS -- =         4  - INDEPENDENT OPEN ------ =       0 PER    -
       RECORD FORMAT  =  VARIABLE  - INDEPENDENT FULL ------ =       0 PER    -
       FILE TYPE ---- =      KSDS  - PRIME EXTENSION ------- =       2 BLOCKS -
       DEVICE TYPE -- =      3380  - PRIME EXTENSION USED -- =       0 BLOCKS -
       VOLUME COUNT - =         1  - SPACE USED ------------ =       1 TRACKS -
       VOLSER ------- =    DATA21  - SPACE ALLOCATED ------- =       1 TRACKS -
       TOTAL EXTENTS  =         1  - TOTAL SPACE ALLOCATED - =       1 TRACKS -
       RELEASE ------ =        NO  - SHARE OPTIONS --------- =       1        -
       DATA COMPRESS  =   ENABLED  - INDEX COMPRESS -------- =       NO       -
       TOTAL RECORDS  =      1000  - INSERTS --------------- =       0        -
       UPDATES ------ =         0  - DELETES --------------- =       0        -

       PERCENT AVAILABLE IN INDEPENDENT OVERFLOW ---- =    100               -
       NUMBER OF RECORDS IN INDEPENDENT OVERFLOW ---- =      0               -
       NO OF UNUSED RECORDS IN INDEPENDENT OVERFLOW - =      0               -
       STORAGE REQUIRED FOR KEY STRUCTURE ----------- =   3770 BYTES        -
       NUMBER OF IAM DATA BLOCKS -------------------- =    379              -
       ---------------------------------------------------------------------------

IAM100 IAM OPTICAL VSAM FILE ACCESS INFORMATION

       SM FILE NAME: MAG.0V10K.D92259T1048
       ---------------------------------------------------------------------------
       SYSTEM ID ---- =         -  ACCOUNT ID --------- =            IBM       -
       SUBSYSTEM ID - =         -  GROUP -------------- =                      -
       VSET --------- =         -  DEFINED FILE SIZE -- =          7,574 K     -
       FSET --------- =         -  ACTUAL FILE SIZE --- =         11,799 K     -
                                -  DISCONNECT DELAY --- =       DEFAULT SECONDS-
       ---------------------------------------------------------------------------

IAM499 IAMLISTC(6.1/13P ) PROCESSING COMPLETED
```

Figure 1-2: IAMPRINT REPORT for FILE.OVSAM.TEST After Load and Use

Fields for an IAMPRINT report that accompanies the IDCAMS LISTCAT ALL for an OVSAM file are described in the following paragraphs:

RECORD SIZE — The logical fixed or maximum variable record length in the OVSAM file in bytes. This value will be 4 bytes higher than the maximum record size specified in the IDCAMS DEFINE command for files with variable length records.

BLOCKSIZE — The actual blocksize of the OVSAM file, given in bytes. This value is always 31711. This field is not provided until the file has been loaded.

BLOCK FACTOR — The block factor specified when this file was last DEFINEd, loaded, or reorganized. If the file has been DEFINEd, but not yet loaded, this value will reflect the CI SIZE, if any, specified on the DEFINE. It will be converted to a blocking factor when the file is loaded.

KEY SIZE — The length of the record key field in bytes.

REL KEY POS	The location of the key relative to the start of the record (RKP) in bytes. The first byte in a record is RKP=0. This amount will be 4 bytes higher than the value DEFINEd for files with variable length records, due to OVSAM's internal RDW.
RECORD FORMAT	The record format used in this file for either FIXED or VARIABLE length records. When a file is DEFINEd, OVSAM assumes that the file contains variable length records even though the average and maximum record lengths are equal.
FILE TYPE	Indicates the type of file being simulated is a KSDS.
DEVICE TYPE	Indicates the disk device type on which the OVSAM control file resides.
VOLSER	The volume on which the OVSAM control file currently resides.
RELEASE	Indicates whether OVSAM will automatically release space the next time the file is loaded or reorganized. Once an OVSAM file is loaded and the unused portion of its allocation is released, OVSAM will automatically change RELEASE=YES to RELEASE=NO. This will happen unless overridden by an OVSAM DEFINE override statement after the first load of the file.
INTEGRATED OVERFLOW	The Integrated Overflow (CI%) percentage specified when the file was last DEFINEd or loaded.
ACTUAL INTEGRATED OVFL	Indicates the percentage used in establishing the Integrated Overflow (CI%) for the OVSAM file. This figure may be lower than the requested Integrated Overflow due to rounding based on the record length and actual blocksize being used. This field is reported as 0 (zero) until the file has been loaded unless overridden at DEFINE time.
INDEPENDENT OVFL REQ	The number of Independent Overflow records specified when this OVSAM file was last DEFINEd or loaded.
INDEPENDENT OVERFLOW	The number of physical blocks OVSAM reserved for Independent Overflow records. This number is developed by OVSAM during file loading using the number of Independent Overflow records requested and the maximum record size. This field is reported as 0 (zero) until the file has been loaded unless it was overridden at DEFINE time.
INDEPENDENT OPEN	Specifies the percentage of Independent Overflow keys that will be reserved when the file is OPENed for update operations as specified by the OCOREO% keyword.
INDEPENDENT FULL	The percentage of Independent Overflow keys for which storage is acquired when the current index tables are full as specified by the OCOREX% keyword. This field is reported as 0 (zero) until the file has been loaded, unless overridden at DEFINE time.
PRIME EXTENSION	The number of blocks reserved by OVSAM for resume load type of operations when this file was last DEFINEd or loaded. This field is reported as 0 (zero) until the file has been loaded unless overridden at DEFINE time.
PRIME EXTENSION USED	Indicates the maximum number of prime extension blocks that have been used to store data records.

NO OF TRACKS USED — The actual number of tracks used to accommodate this OVSAM control file. This field will always contain a 1. This indicates that the OVSAM dataset only uses one track of disk space.

SHARE OPTIONS — Indicates the Cross Region share option that was specified when the OVSAM file was DEFINEd.

DATA COMPRESS — Indicates whether the OVSAM file can contain compressed data. Values are either ENABLED or NO. ENABLED indicates that the DATA COMPRESS option was either specified as YES or defaulted to YES. This is based on the Global Options Table and whether the OVSAM file met all other required criteria for data compression. NO indicates the OVSAM file does not contain any compressed data records. No report is made for this field until the file has been loaded.

INDEX COMPRESS — Indicates whether the OVSAM file contains a compressed index structure. Values are either YES, indicating a compressed key index structure exists, or NO, indicating that the file does not have a compressed key structure. This field is not reported until the file has been loaded.

MINBUFNO — Indicates the minimum number of buffers OVSAM will use when accessing the file. No report is made for this field unless a value was specified on a DEFINE override statement for MINBUFNO or MAXBUFNO when the file was DEFINEd or loaded. A value of N/A will be printed if no value was specified for MINBUFNO but a MAXBUFNO value was specified.

MAXBUFNO — Indicates the maximum number of buffers OVSAM will use when accessing the file. No report is made for this field unless a value was specified on a DEFINE override statement for MINBUFNO or MAXBUFNO when the file was DEFINEd or loaded. A value of N/A will be printed if no value was specified for MAXBUFNO but a MINBUFNO value was specified.

The following fields will not be reported for OVSAM files that have been DEFINED but not loaded or have experienced a failure during file load.

Note: The indications for TOTAL RECORDS, INSERTS, UPDATES, and DELETES may not be accurate if an UPDATE JOB failed to successfully close the OVSAM file. This may occur only if the ADDRESS SPACE failed, an UPDATE JOB was removed from the system with a FORCE command, or a system failure occurred.

TOTAL RECORDS — Indicates the total number of user data records currently residing in the file.

INSERTS — Indicates the total number of records added to the file since it was last loaded.

UPDATES — Indicates the total number of records updated in the file since it was last loaded.

DELETES — Indicates the total number of records DELETEd from the file since it was last loaded.

PERCENT AVAILABLE IN INDEPENDENT OVERFLOW

Indicates the percentage of the total Independent Overflow records that are currently available. A low value, in the range of 10 to 25, provides an indication that the file needs to be reorganized.

NUMBER OF RECORDS IN INDEPENDENT OVERFLOW

Indicates the number of records currently residing in the Independent Overflow area of the OVSAM file.

NO OF UNUSED RECORDS IN INDEPENDENT OVERFLOW

The number of additional records the Independent Overflow area can accommodate. This value added to the value in NUMBER OF RECORDS IN INDEPENDENT OVERFLOW may be slightly higher than the number of independent overflow records requested. This is because OVSAM uses a fully blocked overflow area.

STORAGE REQUIRED FOR COMPRESSED KEY STRUCTURE

The amount of virtual storage required for this OVSAM file's index. This message only appears if the OVSAM file has a compressed index.

STORAGE REQUIRED FOR KEY STRUCTURE

The amount of virtual storage required for this OVSAM file's index. This message only appears if the OVSAM file does not have a compressed index.

IDCAMS REPRO Command

OVSAM supports the IDCAMS REPRO command. The REPRO command will function the same way for an OVSAM file as for a VSAM cluster. Use IDCAMS REPRO to copy your existing VSAM files into OVSAM files. You can also use REPRO to copy OVSAM files back to VSAM clusters. However, do not use REPRO to back up data stored on optical. StorHouse facilities should be used to provide the required levels of backup. Refer to the *Command Language Reference Manual* in the StorHouse User Document Set for additional information on how to back up a StorHouse file.

The following paragraph illustrates the use of REPRO to copy an OVSAM file to a VSAM cluster and to change an existing VSAM dataset to an OVSAM file.

Copying to a New Name

DEFINE an OVSAM file by using the existing VSAM file as a model. The dataset name of the OVSAM file must be different from that of the VSAM cluster or it must be cataloged in a separate catalog. Then, REPRO the existing VSAM file to the OVSAM file. The following example will copy a VSAM cluster to an OVSAM file with a new name.

```
//DEFINE    EXEC  PGM=IDCAMS
//SYSPRINT  DD    SYSOUT=*
//IAMINFO   DD    SYSOUT=*
//SYSIN     DD    *
  DEFINE CLUSTER -
     (NAME(new.OVSAM.file.name) -
     MODEL(existing.VSAM.cluster) -
     OWNER($FTEK) -
     VOL(volume) )
REPRO       INDATASET(existing.VSAM.cluster) -
     OUTDATASET(new.OVSAM.file.name)
/*
```

Converting an Existing Cluster

To create an OVSAM file with the same name as an existing VSAM cluster:

- REPRO the VSAM cluster to a sequential file on tape or disk.
- DELETE the VSAM cluster.
- DEFINE the OVSAM file with the same name and attributes as the VSAM cluster.
- REPRO the sequential file into the OVSAM file.

The DD statement SEQFILE specifies a sequential file on disk (or tape) to which the VSAM file is copied. Its space allocation must be sufficient to hold the unloaded VSAM file.

```
//DEFINE    EXEC  PGM=IDCAMS
//SYSPRINT  DD    SYSOUT=*
//IAMINFO   DD    SYSOUT=*
//SEQFILE   DD    DSN=VSAM.backup,
//   DISP=(,CATLG),DCB=(RECFM=VB,BLKSIZE=nnnn),
//   UNIT=SYSDA,SPACE=(TRK,(1000,100))
//SYSIN     DD    *
  REPRO     INDATASET(existing.VSAM.name) -
            OUTFILE(SEQFILE)
  DELETE    existing.VSAM.name
  DEFINE    CLUSTER -
    (NAME(existing.VSAM.name) -
    RECORDSIZE(avg max) KEYS(length offset) -
    IMBED SPEED REUSE -
    FREESPACE(ci% ca%) -
    RECORDS(primary secondary) -
    OWNER($FTEK) -
    VOL(volume) )
  REPRO -
    INFILE(SEQFILE) -
    OUTDATASET(existing.VSAM.name)
/*
```

Chapter

2

FileTek OVSAM Override Capability

This chapter describes the OVSAM DEFINE override statement format and provides keyword definitions. This chapter also gives examples of the OVSAM override statement.

Overview

Because OVSAM's file structure is different from VSAM's, some DEFINE parameters do not have the same meaning to OVSAM as they do to VSAM. In addition, because StorHouse is a file server and not a disk emulator, there are optional control parameters that are not available through IDCAMS parameters. The OVSAM override statement can be used to directly override the OVSAM Global Option Table and IDCAMS DEFINE defaults.

The OVSAM override statement can also be used to specify special OVSAM file characteristics and features not available in VSAM. OVSAM has one override statement: DEFINE. This statement can be used when a file is DEFINEd to specify file characteristics and special features.

The FTKOVRID DD statement specifies the override control dataset. This dataset is in card image format and is usually an input stream (for example, DD *) dataset. FTKOVRID may be used in any job that defines OVSAM files.

DEFINE Statement Format

The OVSAM control statements consist of 80-character logical records. The general format of these records is:

- Columns 1 to 71 contain the command, operands, and comments fields except when continued to subsequent logical records.

- Column 72 must be blank if the command or operands extend to column 71.
- Columns 73 to 80 are not used by OVSAM. You may use them as an identification or sequence field.

Command Field

The command field identifies the control statement and consists of a command word. It may appear anywhere within columns 1 to 71 and may be preceded only by blanks. The command word must appear in its entirety within columns 1 to 71; it may not be continued.

Operand Field

The operand field follows the command field and is separated from it by at least one blank. The operand field consists of one or more keywords and/or positional parameters separated by commas. It may not contain embedded blanks except within quoted strings. Operand fields may be continued onto subsequent logical records. At least one operand must be on the logical record containing the command.

When the total length of an operand field exceeds the available columns in a logical record, it must be continued onto one or more following logical records. To continue an operand, interrupt the operand field after a complete parameter or subparameter including the following comma. Do this at or before column 71. Leave the next column blank. Continue the operand field starting anywhere between columns 1–71 on the following logical record. Any number of logical record continuations may be present.

Comments Field

The comments field, if present, follows the operand field(s) and is separated by one or more blanks. Comments fields may not be continued (in other words, they must end at or before column 71).

Parameters

Parameters are position independent and consist of either a keyword or a keyword followed by an equal sign (=) followed by variable information.

Subparameters

Parameters may consist of a list of subparameters. Such a list is composed of positional parameters that follow the usual rules for that type. A subparameter list must be enclosed within parentheses unless the list reduces to a single subparameter. In this case, the parentheses may be omitted.

Quoted Strings

When the variable data you specify for a parameter contains certain special characters (parentheses, commas, equal signs, apostrophes, and blanks), the data must be enclosed with apostrophes. This is called a quoted string. Within a quoted string, all characters, including blanks, may appear. If an apostrophe is to be part of the string, it must be coded as two apostrophes.

Comment Statement

You may code a statement with nothing but remarks contained within columns 2 to 71 (comment statement). Comment statements are identified by an asterisk (*) in column 1. They may appear anywhere within a group of control statements, even between continued logical records.

DEFINE Command Syntax

The command syntax for the OVSAM override statement DEFINE is:

```
DEFINE   ACCOUNT=uid,
         APASSWORD=password,
         ATF=,
         CACHE=,
         CLUSTER=,
         DATACOMPRESS=YES|NO,
         DISCONTIME=,
         DSN=dsname,
         EDC,
         FILENAME=,
         FPASSWORD=,
         FSET=,
         GPASSWORD=,
         GROUP=,
         MAXBUFNO=1–32,
         MINBUFNO=1–32,
         MODELNAME=model file,
         NOEDC,
         NOSUFFIX,
         OVERFLOW=records,
```

```
PE=blocks,
SIZE=,
SMID=,
SUBSYS=,
VSET,
VTF=NEXT|NOW|DIRECT
```

Keyword Definitions

Keyword definitions for the OVSAM DEFINE override statement are as follows:

ACCOUNT Specifies the 12-character StorHouse account identification code that is to be used by OVSAM.

APASSWORD Specifies the 32-character StorHouse password for the specified StorHouse ACCOUNT.

ATF Specifies the StorHouse Access Time Factor for the file that is being created. Valid values are 1, 2, or 3.

CACHE Specifies the number of records to be cached by StorHouse.

CLUSTER Specifies the OVSAM dataset name for which the overrides are to be used. If not specified, the override is treated as a generic override applicable to any file processed.

DATACOMPRESS Indicates whether OVSAM is to compress the data in the file. Valid values are YES or NO. The default is that all OVSAM files are data compressed if they meet the eligibility criteria.

DISCONTIME Specifies the time, in seconds, of inactivity after which OVSAM will disconnect from the StorHouse subsystem to free StorHouse resources for other files. The file will still appear to be open to the application program and will be reconnected automatically to StorHouse when another request is issued.

DSN Specifies the OVSAM dataset name for which the overrides are to be used. If not specified, the override is treated as a generic override, applicable to any file processed. The effect of this keyword is identical to that of the CLUSTER keyword.

EDC Specifies that the StorHouse host interface is to generate error detection codes when transferring data to StorHouse.

FILENAME Specifies the 56-character file name for the OVSAM file on StorHouse. The default is the OVSAM dataset name with a date/time suffix.

FPASSWORD Specifies an 8-character password that will be the READ, WRITE, and DELETE password for the file on StorHouse.

FSET Specifies the 8-character StorHouse file set name.

GPASSWORD Specifies up to three 8-character passwords that are the StorHouse GROUP READ, WRITE, and DELETE passwords required for accessing the StorHouse file. If multiple values are required, they are specified within parentheses and separated by commas.

GROUP Specifies the 8-character StorHouse file group name.

MAXBUFNO Specifies the maximum number of buffers for OVSAM file accessing. Valid values are 1 to 32.

MINBUFNO Specifies the minimum number of buffers to be used by OVSAM when accessing the file. Valid values are 1 to 32.

MODELNAME Specifies the name of a model file to be used when creating the StorHouse file. This model must be established prior to executing the OVSAM override DEFINE command. File characteristics for the new file are determined by copying the characteristics of the model file. A model file is optional. If specified, the model file is used to set values for the ATF, CACHE, EDC/NOEDC, FSET, VSET, and VTF keywords.

NOEDC Specifies that StorHouse is not to generate error detection codes.

NOSUFFIX Specifies that OVSAM will not suffix a date and time stamp to the end of the StorHouse file name. Normal OVSAM processing will suffix a date and time stamp in the form .DyydddThhmm to the end of the cluster name to use as the file name on StorHouse. This is done to prevent StorHouse from creating multiple versions of the same file name because older versions are not accessible through OVSAM. This keyword is ignored when the FILENAME parameter is specified because an explicitly overridden file name will never be suffixed.

OVERFLOW Specifies the capacity, in records, of the OVSAM file overflow area that is used when records are inserted into the file, or when an update record length is increased.

PE Specifies the capacity, in blocks, of the OVSAM file prime extension area. It is used to handle records that are added to the end of the file.

SIZE Specifies the estimated maximum size of the OVSAM file in units of 1,000 bytes. This value will be used instead of the value calculated from the space parameters on the VSAM DEFINE CLUSTER statement.

SMID Specifies the 6-character string that identifies the specific StorHouse system to be accessed.

SUBSYS Specifies the 4-character name for the StorHouse subsystem.

VSET Specifies the 8-character StorHouse volume set name.

VTF Specifies the StorHouse Vulnerability Time Factor. Refer to the *Command Language Reference Manual* in the StorHouse User Document Set for additional information. The valid values are NEXT, NOW, and DIRECT.

OVSAM Override Example

The following example shows how an OVSAM override statement is used during an IDCAMS DEFINE of an OVSAM file.

```
//DEFINE    EXEC   PGM=IDCAMS
//SYSPRINT  DD     SYSOUT=*
//FTKOVRID  DD     *
    DEFINE   DSN=MASTER.INVOICE.$FTEK,
             ACCOUNT=BILLING,
             APASSWORD=BILDEPPW,
             VSET=LONGTERM,
             FSET=INVOICES
/*
//SYSIN      DD    *
    DEFINE CLUSTER -
    (NAME(MASTER.INVOICE.$FTEK) -
    CYLINDERS(100 15) -
    FREESPACE(10 5) -
    KEYS(9 0) -
    RECORDSIZE(500 500) -
    VOLUMES(MVS001) )
/*
```

Chapter

3

FileTek OVSAM Run Time Statistics Report and SMF Recording

This chapter explains OVSAM run time statistics. It describes the requirements to activate OVSAM's run time statistics and provides examples of run time statistics reporting. This chapter also details the OVSAM Run Time Statistics Report and its major fields.

OVSAM Run Time Statistics Overview

OVSAM's Run Time Statistics (INFO) Report provides a means for accurately tracking a program's file processing workload and the amount of optical storage used by the OVSAM files.

Technical Summary

OVSAM maintains optical storage usage and run time statistics during execution for all OVSAM files in use. These statistics will be put in a SYSOUT dataset in report form whenever an IAMINFO DD statement is present in the JCL. They also can be written out to SMF in an OVSAM user record.

OVSAM's run time statistics include counts of requests by command type, number of StorHouse reads and writes, overflow records used, memory required, I/O buffer usage, buffering recommendations, and other file characteristics.

Recording OVSAM Statistics in SMF

OVSAM can record its run time statistics through SMF. When OVSAM's optional SMF recording is active, an SMF user record will be written containing the same execution statistics found in OVSAM's Run Time Statistics (INFO) Report.

Member OVUSMF in the SAMPLES library is a DSECT of the OVSAM SMF user record layout. This SMF record is approximately 500 bytes in length.

The information in the OVSAM SMF user record can be formatted and printed by any utility that can read SMF records.

Requirements to Activate OVSAM's Run Time Statistics

To activate the INFO report, include an IAMINFO DD statement in any run that processes OVSAM files. There are no other changes needed.

The IAMINFO DD Statement specifies the dataset to be used for the OVSAM run time statistics report. This is usually a SYSOUT dataset. If blocking is required, a BLKSIZE that is a multiple of 121 must be specified.

The OVSAM SMF recording facility must be enabled in a system before user SMF records can be written. The Global Option Change Facility discussion explains how to enable SMF recording using the ZAP command's RECTYP= and SMF= parameters.

Examples of Run Time Statistics Reporting

Figure 3-1 and Figure 3-2 show examples of OVSAM Run Time Statistics Reports from file load and file access, respectively. These reports were produced by adding the IAMINFO DD card to the jobstreams that loaded and accessed the file.

```
IAM400 INNOVATION IAM INFORMATION PRINT ROUTINE -- IAMINFO VER 6.1/14P -- INNOVATION
       DATA PROCESSING -- DATE - 92.288

IAM360 STEP - VTC002    DDNAME - OVTEST   DATA SET MONITORED - MAG.OV10K

IAM361 INFO REQUESTED BY IAMCRT  PROGRAM PERFORMING FILE CREATION  OPENED-
       92.288.15:40:45  CLOSED 92.288.15:41:38

IAM362 IAM DATA CHARACTERISTICS -

       LOGICAL RECORD LENTGH-----=  4097  - RECORD FORMAT-------------=  VARIABLE
       KEY LENGTH----------------=    10  - RELATIVE KEY POSITION-----=         4
       AVERAGE RECORD LENGTH-----=  1202  - LARGEST RECORD PROCESSED--=      4076

IAM363 IAM FILE CHARACTERISTICS -

       BLOCKING FACTOR-----------= 31711  - BLOCK SIZE----------------=     31711
       TRACKS IN USE-------------=     1  - DELETE BYTE SUPPORT-------=      NONE
       DATASET TYPE--------------=  KSDS  - SHARE OPTIONS-------------=         1
       NUMBER OF IAM DATA BLOCKS-=   414

IAM363 IAM OVIF FILE CHARACTERISTICS - SM FILE NAME=MAG.OV10K

       SM ID--------------------=        - ACCOUNT ID----------------=       IBM
       SUBSYSTEM ID-------------=        - GROUP---------------------=
       VSET---------------------=        - DEFINED FILE SIZE(K BYTES)=     7,574
       FSET---------------------=        - ACTUAL FILE SIZE(K BYTES)-=    12,852
                                         - DISCONNECT DELAY(SECONDS)-=   DEFAULT

IAM364 IAM OVERFLOW CHARACTERISTICS -
       INDEPENDENT RECORDS REQ--=    100  - REQUESTED INTEGRATED PER--=         0
       INDEPENDENT RECORDS ALLOC=    105  - ACTUAL INTEGRATED PER-----=         0
       INDEPENDENT RECORDS USED-=      0  - PE BLOCKS REQUESTED-------=         1
       INDEPENDENT RECORDS EMPTY=    105  - PE BLOCKS - ALLOCATED,USED=       2,0
       INDEPENDENT BLOCKS ALLOC-=     15  - INDEPENDENT PCT-OPEN,FULL-=     10,10

IAM365 IAM EXECUTION STATISTICS -

       TOTAL STORAGE REQUIRED---=  73232  - COMPRESSED KEY STRUCTURE--=        NO
       STORAGE ABOVE THE LINE---=      0  - COMPRESSED DATA STRUCTURE-=        NO
       REQUESTS PROCESSED-------= 100001  - REQUESTS FAILED-----------=         0
       DISK BLOCKS READ---------=      0  - DISK BLOCKS WRITTEN-------=       416
       DYNAMIC BUFFER RETRIEVALS=      0  - MAXIMUM BUFFERS USED------=         2
       DATA SPACE USED(M BYTES)-=      1  - DATA SPACE SIZE(M BYTES)--=       128

IAM366 IAM COMMAND EXECUTION SUMMARY -

       R,(READ)-----------------=      0  - W,(WRITE)-----------------=     10000
       F,(GETNEXT)--------------=      0  - A,(ADD)-------------------=         0
       D,(DELETE)---------------=      0  - N,(READ OR GETNEXT)-------=         0
       G,(GET)------------------=      0  - S,(START KEY EQUAL)-------=         0
       K,(START KC OR POINT)----=      0  - P,(GET PREVIOUS)----------=         0
       U,(READ FOR UPDATE)------=      0  - RESERVED------------------=         0
       I,(INFORMATION)----------=      0  - E,(STATISTICS)------------=         0
       C,(CLOSE)----------------=      1  - O,(OPEN)------------------=         0
       X,(FLUSH)----------------=      0  - VARIABLE LENGTH CHANGES---=         0
       SEQ CHAIN BUFF/DEL REC/BYP=     0  -
```

Figure 3-1: OVSAM Run Time Statistics Report From File Load

```
IAM400 INNOVATION IAM INFORMATION PRINT ROUTINE -- IAMINFO VER 6.1/14P -- INNOVATION
       DATA PROCESSING -- DATE - 92.288

IAM360 STEP - VTR001    DDNAME - OVTEST   DATA SET MONITORED - MAG.OV10K

IAM361 INFO REQUESTED BY IAMACC  PROGRAM PERFORMING RANDOM/GET-NEXT  OPENED-
       92.288.15:33:19  CLOSED 92.288.15:34:16

IAM362 IAM DATA CHARACTERISTICS -

       LOGICAL RECORD LENTGH-----=  4097  - RECORD FORMAT-------------=  VARIABLE
       KEY LENGTH----------------=    10  - RELATIVE KEY POSITION-----=         4
       AVERAGE RECORD LENGTH-----= 10000  - TOTAL RECORDS DELETED-----=         0
       TOTAL RECORDS UPDATED-----=     0  - TOTAL RECORDS INSERTED----=         0

IAM362 IAM FILE CHARACTERISTICS -

       BLOCKING FACTOR-----------= 31711  - BLOCK SIZE----------------=     31711
       TRACKS IN USE-------------=     1  - DELETE BYTE SUPPORT-------=      NONE
       DATASET TYPE--------------=  KSDS  - SHARE OPTIONS-------------=         1
       NUMBER OF IAM DATA BLOCKS-=   414

IAM363 IAM OVIF FILE CHARACTERISTICS - SM FILE NAME=MAG.OV10K

       SM ID--------------------=        - ACCOUNT ID----------------=       IBM
       SUBSYSTEM ID-------------=        - GROUP---------------------=
       VSET---------------------=        - DEFINED FILE SIZE(K BYTES)=     7,574
       FSET---------------------=        - ACTUAL FILE SIZE(K BYTES)-=    12,852
                                         - DISCONNECT DELAY(SECONDS)-=   DEFAULT

IAM364 IAM OVERFLOW CHARACTERISTICS -
       INDEPENDENT RECORDS REQ--=    100  - REQUESTED INTEGRATED PER--=         0
       INDEPENDENT RECORDS ALLOC=    105  - ACTUAL INTEGRATED PER-----=         0
       INDEPENDENT RECORDS USED-=      0  - PE BLOCKS REQUESTED-------=         1
       INDEPENDENT RECORDS EMPTY=    105  - PE BLOCKS - ALLOCATED,USED=       2,0
       INDEPENDENT BLOCKS ALLOC-=     15  - INDEPENDENT PCT-OPEN,FULL-=     10,10

IAM365 IAM EXECUTION STATISTICS -

       TOTAL STORAGE REQUIRED---= 140200  - COMPRESSED KEY STRUCTURE--=        NO
       STORAGE ABOVE THE LINE---= 102400  - COMPRESSED DATA STRUCTURE-=        NO
       ACCESS PROCESSING MODE---=      R  - KEY STRUCTURE STORAGE REQ-=      3970
       REQUESTS PROCESSED-------=    102  - REQUESTS FAILED-----------=         0
       DISK BLOCKS READ---------=    103  - DISK BLOCKS WRITTEN-------=         0
       DYNAMIC BUFFER RETRIEVALS=      3  - MAXIMUM BUFFERS USED------=         4
       DYNAMIC TABLE RETRIEVALS-=      0  - DYNAMIC TABLE RECORDS-----=         0

IAM366 IAM COMMAND EXECUTION SUMMARY -

       R,(READ)-----------------=    101  - W,(WRITE)----------------=         0
       F,(GETNEXT)--------------=      0  - A,(ADD)------------------=         0
       D,(DELETE)---------------=      0  - N,(READ OR GETNEXT)-------=         0
       G,(GET)------------------=      0  - S,(START KEY EQUAL)-------=         0
       K,(START KC OR POINT)----=      0  - P,(GET PREVIOUS)----------=         0
       U,(READ FOR UPDATE)------=      0  - RESERVED------------------=         0
       I,(INFORMATION)----------=      0  - E,(STATISTICS)------------=         0
       C,(CLOSE)----------------=      1  - O,(OPEN)------------------=         0
       X,(FLUSH)----------------=      0  - VARIABLE LENGTH CHANGES---=         0
       SEQ CHAIN BUFF/DEL REC/BYP=     0  -
```

Figure 3-2: OVSAM Run Time Statistics Report From File Access

The OVSAM Run Time Statistics (INFO) Report is produced when the OVSAM file is CLOSEd. One report will be produced for each OPEN/CLOSE combination a program issues for an OVSAM file. Each line in the report begins with a message number (for example, IAM361). Documentation of these messages is contained in Chapter 4, “FileTek OVSAM Messages and Codes.”

Chapter

4

FileTek OVSAM Messages and Codes

This chapter describes the printer, console and TSO messages that may be displayed by OVSAM. These messages are followed by explanations of the user ABEND codes, and the return and reason codes produced by OVSAM modules.

During processing, the StorHouse subsystem may pass various messages to OVSAM; only messages directly associated with an error condition will be displayed. If other messages are desired, add an FTKLOG DD statement to the applicable JCL. If OVSAM detects a FTKLOG DD statement, all messages from StorHouse for the selected job steps will be displayed in the job's log messages. Add the FTKLOG DD statement as follows:

```
//FTKLOG DD DUMMY
```

OVSAM Printer, Console, and TSO Messages

The general formats of OVSAM messages, either write to operator (WTO) or write to operator with reply (WTOR) are as follows:

```
IAMnnn Message-text

IAMWnn WTO/LOG Message-text
```

OVSAM passes a return code at the end of the step, unless it ABENDs. A return code of zero indicates that OVSAM has performed all functions successfully. Any other return code is accompanied by error messages and indicates that errors have occurred. Check the listing for the error messages.

OVSAM passes return codes comparable to the return codes from VSAM. The return codes are passed in the RPL or by IDCAMS. If the OVSAM return code is different than VSAM, it will be documented in the following sections.

OVSAM ABEND codes range from U0100 to U0999. Most user ABENDs are preceded by an OVSAM message. An ABEND from OVSAM is very unusual because OVSAM typically uses VSAM codes to indicate errors.

IAMW01 DD='ddname' I/O ERROR CODE=X'decb iobecb csw cccchhhhrr'

Explanation: This message is provided by the OVSAM processor when a file access fails with an I/O error. The message contains the following diagnostic information:

- DECB – Displays the two error bytes of the BDAM DECB(+1).
- IOBECB – Displays the first four bytes of the IOB.
- CSW – Displays the channel status word.
- cccchhhhrr – Displays the cylinder, head/record head number on which the error was detected. The head and record number may not be accurate. IBM's message IEA000I/IOS000I, if present, contains the real track address.

VSAM Return Codes: – A Return Code of 12, X'0C', and a reason code of X'04' or X'10' is stored in the RPL. The SYNAD exit will be invoked, if so specified by the program.

User Response: If an IBM IEA000I/IOS000I message appears on the JCL LOG, a hardware error has occurred. The IBM message gives the sense information (ex: data check, equipment check). If this message is not displayed, call your FileTek customer support representative.

Examine the error information provided in the IBM message to determine the cause of the error. The format of this information is documented in the IBM data management SRL for the operating system in use. The file in question is unreadable in its present state and must be reestablished. This may be the result of a hardware error. If possible the replacement file should be allocated to a different physical location.

IAMW02 REPLY RETRY WAIT OR CANCEL FOR ENQ WAIT ON 'dsname'

Explanation: The OVSAM file is not available to this job because some other job is currently accessing the file. A load process is always protected against concurrent access (read or update) or from another load. The Share Options specified when the file was DEFINEd determine which types of access can concurrently share the file.

User Response: The operator reply determines the course of action OVSAM will take. The following responses are allowed:

- RETRY – OVSAM retries the ENQUEUE for the dataset. If the file is still unavailable, the message is re-issued.

- WAIT – OVSAM waits for the dataset to become available. The job could time out.
- CANCEL – OVSAM fails the OPEN request with a return code indicating the file is not currently available.

IAMW03 DD='ddname' FILE FULL DUE TO INSUFFICIENT CORE

Explanation: This message is displayed by OVSAM when it finds an insert has failed because of insufficient storage to expand the incore overflow index. The record that was to be added was not placed in the file. Overflow may still be available at other locations within the file. Consequently, subsequent inserts may fail depending on where in the file they are placed. Additionally, changes in the storage available within a region may allow a subsequent GETMAIN to succeed. This message is displayed a maximum of 10 times per execution.

VSAM Return Codes: A return code of 8 and a reason code of X'1C' are stored in the feedback field of the RPL. The LERAD exit will be invoked, if so specified in the program.

User Response: The definition of the file's OVERFLOW parameters as well as the OCOREO% and OCOREX% parameters should be reviewed. Increasing the OCOREO% value to acquire a larger overflow index area when the file is OPENed should correct the problem. The job step region size or, for CICS users, the CICS OSCORE parameter may also need adjustment so more storage will be available for use by this particular task.

IAMW04 DD='ddname' OPEN ERROR - DATA SET NOT AVAILABLE

Explanation: This message is issued when an OPEN of an OVSAM file is terminated as a result of a CANCEL reply to the IAMW02 message.

VSAM Return Codes: Reason code of X'A8' is stored in the ACB error field at displacement decimal +49 and the OPEN/CLOSE flags at displacement decimal +48 will not show the file as OPENed (X'10').

User Response: The user should check to see if this job conflicts with some other job accessing the file.

IAMW05 DD='ddname' OPEN ERROR - MORE THAN 2 OPENS FOR UPDATE IN TASK

Explanation: This message is displayed by OVSAM when it finds a task has issued multiple OPENs for update against the same dataset.

VSAM Return Codes: A reason code of X'F8' is stored in the ACB error field at displacement decimal +49 and the OPEN CLOSE flags at displacement decimal +48. These codes will not show the file as OPENed (X'10').

User Response: Change the program to ensure that the same file is never OPENed for update more than once within the processing task without first closing it. Concurrent multiple OPENs for read-only processing are permitted.

IAMW06 DD='ddname' OPEN ERROR - DD STATEMENT MISSING

Explanation: This message is displayed when a task has issued an OPEN, but the 'ddname' the OPEN was issued against did not exist.

VSAM Return Codes: Reason code of X'80' is stored in the ACB error field at displacement decimal +49 and the OPEN/CLOSE flags at displacement decimal +48. These codes will not show the file as OPENed (X'10').

User Response: Check to see if the missing DD statement is not the result of a misspelling. If not, add the DD statement to the JCL.

IAMW07 DD='ddname' I/O ERROR CODE=X'decb iobecb csw cccchhhhrr'

Explanation: This message is displayed when a file OPEN fails with an I/O error. This message may also occur when an attempt is made to OPEN a non-OVSAM or non-VSAM dataset as VSAM. The message contains the following diagnostic information:

- DECB – Displays the two error bytes of the BDAM DECB(+1).
- IOBECB – Displays the first four bytes of the IOB.
- CSW – Displays the channel status word.
- cccchhhhrr – Displays the cylinder, head and record head number on which the error was detected. The head and record number may not be accurate. IBM's message IEA000I/IOS000I, if present, contains the real track address.

VSAM Return Codes: A return code of 12, X'0C', and a reason code of X'B8' is stored in the ACB error field at displacement decimal +49 and the OPEN/CLOSE flags at displacement decimal +48 will not show the file as OPENed (X'10').

User Response: If an IBM IEA000I/IOS000I messages appears on the JCL LOG, a hardware error has occurred. The IBM message gives the sense information (for example, data check, equipment check). If this message is not displayed, check to see if the file is a properly formatted OVSAM or VSAM file. If the file is OVSAM, call your FileTek customer support representative.

Examine the error information provided in the IBM message to determine the cause of the error. The format of this information is documented in the IBM data management SRL for the operating system in use. The file in question is unreadable in its present state and must be reestablished. This may be the result of a hardware error and if possible the replacement file should be allocated to a different physical location or volume.

IAMW08 DD='ddname' OPEN ERROR - INSUFFICIENT STORAGE IN REGION

Explanation: This message is displayed by OVSAM when a file OPEN fails because storage is not available for data, index, or control information buffers.

VSAM Return Codes: Reason code of X'88' is stored in the ACB error field at displacement decimal +49 and the OPEN/CLOSE flags at displacement decimal +48 will not show the file as OPENed (X'10').

User Response: The job step region size must be increased. For CICS users, the CICS OSCORE parameter may also need adjustment so more storage will be available for use by this particular task.

IAMW09 OPEN ERROR - FILE ALLOCATED BUT NOT CREATED DD='ddname'

Explanation: This message is displayed by OVSAM when a task has issued an OPEN against an OVSAM file but the dataset (referenced by 'ddname') was an allocation that had never been loaded as an OVSAM file.

VSAM Return Codes: Reason code of X'F8' is stored in the ACB error field at displacement decimal +49 and the OPEN/CLOSE flags at displacement decimal +48 will not show the file as OPENed (X'10').

User Response: The file must be created/loaded before it can be used or the file was not successfully loaded.

IAMW10 OPEN ERROR - NOT AN IAM/VSAM FILE OR CREATE FAILED DD = 'ddname'

Explanation: This message is displayed by OVSAM when a task has issued an OPEN for the dataset (referenced by 'ddname') but the file did not contain valid OVSAM or VSAM data. The dataset may be the result of a load that failed or some other processor overwriting the file.

VSAM Return Codes: Reason code of X'F8' is stored in the ACB error field at displacement decimal +49 and the OPEN/CLOSE flags at displacement decimal +48 will not show the file as OPENed (X'10').

User Response: Determine if the file being OPENed is supposed to be an OVSAM or a VSAM file. If it is supposed to be an OVSAM file, review the output from the job that created/loaded the file for errors.

IAMW11 DYNCORE DISABLED DUE TO INSUFFICIENT CORE DD = 'ddname'

Explanation: This message is displayed by OVSAM when a user requested storage for IAM's Dynamic Table option and the storage is not available. Processing continues as if the request for dynamic tabling had not been requested.

User Response: The user should increase the region size or decrease the value requested for DYNCORE.

IAMW12 DATA COMPRESS ERROR xxxxxxxx xxxxxxxxxxxxxx xxxxxxxxxxxxxx

Explanation: During a file access of data compressed OVSAM file, OVSAM decompression failed. The first four bytes are the internal RDW, the remaining data is the key.

User Response: Call your FileTek customer support representative for assistance.

IAMW14 DD = 'ddname' INVALID IAMCODE

Explanation: Results from a unrecognizable internal return code.

VSAM Return Codes: Reason code of X'F8' is stored in the ACB error field at displacement decimal +49 and the OPEN/CLOSE flags at displacement decimal +48. These codes will not show the file as OPENed (X'10').

User Response: Obtain a core dump and call your FileTek customer support representative for assistance.

IAMW16 DD = 'ddname' OPEN ERROR - IAM DOES NOT CURRENTLY SUPPORT LSR

Explanation: This message is displayed by OVSAM when a task has issued an OPEN for a dataset and the Local Shared Resources processing option was specified in the ACB. The OPEN fails.

VSAM Return Codes: Reason code of X'E4' is stored in the ACB error field at displacement decimal +49 and the OPEN/CLOSE flags at displacement decimal +48 will not show the file as OPENed (X'10').

User Response: If the task opening the dataset has retried the OPEN after removing LSR from the ACB, the task will continue processing normally after the IAMW16 message is issued. In this case, the task itself is prepared to process normally when LSR support is not available. If a task abnormally terminates following the message, the files in question must have the request for LSR support removed.

Note: In CICS, change the FCT entry to specify the parameter LSRPOOL= NONE.

IAMW17 DD = 'ddname' ADD FAILED - MORE THAN 1 ACB CONCURRENTLY UPDATING FILE.

Explanation: OVSAM does not support concurrent file update. This message will be displayed when OVSAM detects a concurrent attempt by more than one user (ACB) to add, update VL, or update compressed format records. OVSAM expects proper

procedures to be used to prevent concurrent update as it will eventually result in damage to the file. This message is displayed a maximum of 10 times per execution.

VSAM Return Codes: A return code of 8 and a reason code of X'1C' (file full) are stored in the feedback field of the RPL. The LERAD exit will be invoked if specified in the program.

User Response: In a multi-processor environment, OVSAM files must be protected by a global enqueue facility or manual scheduling from concurrent update by tasks running on different processors. Within a single processor, multiple tasks will be prevented from concurrently OPENing a file for update by the proper use of SHAREOPTIONS. OVSAM defaults to a cross region SHAREOPTION 1, multiple read access users or one update user. The use of SHAREOPTIONS 3 and 4 disable OVSAM's enqueue protection for a file as does the IAMOVRID parameter UPDATENQ=NONE. These facilities should be used with great care. Within a single task, use of multiple ACBs against an OVSAM file will defeat the enqueue protection for that file. To preserve the integrity of your OVSAM files, any application program that accesses an OVSAM file with multiple ACBs must be changed to ensure only one ACB is used to access the file for update.

IAMW20 DD = 'ddname' OPEN ERROR - LRECL SPECIFICATION

Explanation: The record length is incorrectly specified.

- The value of LRECL is equal to or less than zero, is less than RKP + KEYLEN, or for variable files, is less than four.
- A program coded to load a variable length file is processing against an OVSAM fixed format definition.
- No LRECL value was provided to the VSAM interface.

VSAM Return Codes: A reason code of 192(X'C0') is stored in the ACB error flags field (ACBERFLG) at displacement 49(X'31') and the OPEN indicator. ACBOPEN (X'10') in the ACN OPEN/CLOSE flags field (ACBOFLGS) at displacement 48(X'30') is not set.

User Response: This error may occur when using VSAM if the OVSAM file was allocated through some means other than an IDCAMS DEFINE and the user failed to correctly provide file specifications through a DEFINE Override Control Statement. Additionally, conflicts between the file itself and the user program's internal file definition must be resolved.

IAMW21 OPEN ERROR - KEY LENGTH SPECIFICATION

Explanation: The value of KEYLEN is less than one, greater than 250, or greater than LRECL.

VSAM Return Codes: A reason code of 192(X'C0') is stored in the ACB error flags field (ACBERFLG) at displacement 49(X'31') and the open indicator, ACBOPEN(X'10'), in the ACB OPEN/CLOSE flags field (ACBOFLGS) at displacement 48(X'30') is not set.

User Response: This error may occur when using VSAM if the OVSAM file was allocated through some means other than an IDCAMS DEFINE and the user failed to correctly provide file specifications through a DEFINE Override Control Statement.

IAMW22 DD = 'ddname' OPEN ERROR - BLOCKING FACTOR SPECIFICATION

Explanation: The specified BLOCKING FACTOR was incorrect because:

- The BLOCKING FACTOR value is less than one.
- The BLOCKING FACTOR value specified resulted in blocksize for the device in use that is less than LRECL or is less than LRECL = 4 for variable files.

VSAM Return Codes: A reason code of 192(X'C0') is stored in the ACB error flags field (ACBERFLG) at displacement 49(X'31'). The open indicator, ACBOPEN(X'10') in the ACB OPEN/CLOSE flags field (ACBOFLGS) at displacement 48(X'30') is not set.

User Response: Conflicts between the file itself and the user program's internal file definition must be resolved.

IAMW24 'ddname' OPEN ERROR - RKP SPECIFICATION

Explanation: An incorrect Relative Key Position was specified for the following reasons:

- The RKP is less than zero for a fixed length file or less than four for a variable length file.
- The RKP is greater than the LRECL minus the KEYLEN or is greater than 4095.

VSAM Return Codes: A reason code of 192(X'C0') is stored in the ACB error flags field (ACBERFLG) at displacement 49(X'31') and the open indicator, ACBOPEN(X'10'), in the ACB OPEN/CLOSE flags field (ACBOFLGS) at displacement 48(X'30') is not set.

User Response: The file must be re-DEFINEd with a proper RKP or use the OVSAM Override statements to change the RKP.

IAMW25 DD = 'ddname' OPEN ERROR - INDEPENDENT OVFL SPECIFICATION

Explanation: The number of Independent Overflow records requested is less than zero, greater than 2,000,000, or results in greater than 64,000 independent overflow blocks.

VSAM Return Codes: A reason code of 192(X'C0') is stored in the ACB error flags field (ACBERFLG) at displacement 49(X'31'). The open indicator, ACBOPEN(X'10'), in the ACB OPEN/CLOSE flags field (ACBOFLGS) at displacement 48(X'30') is not set.

User Response: Specify a smaller independent overflow value. If it is less than 2,000,000, try increasing the blocksize to allow more records to fit within the 64,000 block maximum.

IAMW26 DD = 'ddname' OPEN ERROR - INTEGRATED OVFL SPECIFICATION

Explanation: The percentage of Integrated Overflow (CI%) requested is less than zero or greater than 99%.

VSAM Return Codes: A reason code of 192((X'C0') is stored in the ACB error flags field (ACBERFLG) at displacement 49(X'31'). The open indicator, ACBOPEN(X'10'), in the ACB OPEN/CLOSE flags field (ACBOFLGS) at displacement 48(X'30') is not set.

User Response: The file must be re-DEFINEd with a smaller FREESPACE CI%, or use the OVSAM Override statements to change the amount of Integrated Overflow (I=).

IAMW27 DD = 'ddname' OPEN ERROR - PRIME EXTENT SPECIFICATION

Explanation: The number of Prime Extension Blocks (PE =) requested is less than zero or greater than 32,767.

VSAM Return Codes: A reason code of 192(X'C0') is stored in the ACB error flags field (ACBERFLG) at displacement 49(X'31'). The open indicator, ACBOPEN (X'10'), in the ACB OPEN/CLOSE flags field (ACBOFLGS) at displacement 48(X'30') is not set.

User Response: Specify a valid Prime Extension value.

IAMW29 DD = 'ddname' OPEN ERROR - DATA CONTROL AREA VALIDATION

Explanation: The DEFINE Data Control Area (DCA) contains invalid specifications.

- The DCA is not fullword aligned or it does not begin with the constant 'IDPC'. Also, it might contain blanks in the file DDNAME field or reserved fields are not binary zero filled.
- The last entry in the parameter list passed to OVSAM is not marked with a X'80' in the high order byte or there are more than three entries in the list.
- The DCA has been incorrectly modified. Under OVSAM, this may result if internal control blocks are overlaid by a user program or may result from an internal logic error.

VSAM Return Codes: A reason code of 192(X'C0') is stored in the ACB error flags field (ACBERFLG) at displacement 49(X'31') and the open indicator, ACBOPEN(X'10') in the ACB OPEN/CLOSE flags field (ACBOFLGS) at displacement 48(X'30') is not set.

User Response: Locate application program errors that may have caused storage overlay. If no problems can be found in the application, produce a dump and call your FileTek customer support representative.

IAMW30 DD = 'ddname' OPEN ERROR - FILE IN USE

Explanation: The OVSAM file is currently in use by some other job or an attempt was made to simultaneously load multiple OVSAM files to the same data set.

VSAM Return Codes: A reason code of 192(X'C0') is stored in the ACB error flags field (ACBERFLG) at displacement 49(X'31') and the open indicator, ACBOPEN(X'10') in the ACB OPEN/CLOSE flags field (ACBOFLGS) at displacement 48(X'30'), is not set.

User Response: An OVSAM load must be executed without any other job accessing the file at the same time.

IAMW31 DD = 'ddname' OPEN ERROR - NOT DASD DEVICE

Explanation: The device to which the OVSAM control file was being loaded is not a disk or a supported DASD device.

VSAM Return Codes: A reason code of 192(X'C0') is stored in the ACB error flags field (ACBERFLG) at displacement 49(X'31') and the open indicator, ACBOPEN(X'10') in the ACB OPEN/CLOSE flags field (ACBOFLGS) at displacement 48(X'30'), is not set.

User Response: Check to see if the DD statement is pointing to the OVSAM file. An OVSAM control file must reside on a DASD device.

IAMW32 DD = 'ddname' OPEN ERROR - DD STATEMENT MISSING

Explanation: The user failed to supply a 'ddname' statement for the file or used a DDNAME on the 'DD' statement that was different from the one coded in the program (or specified on a control statement).

VSAM Return Codes: A reason code of 192(X'C0') is stored in the ACB error flags field (ACBERFLG) at displacement 49(X'31') and the open indicator, ACBOPEN(X'10') in the ACB OPEN/CLOSE flags field (ACBOFLGS) at displacement 48(X'30'), is not set.

User Response: Check the OVSAM file's DD statement to ensure it is not misspelled.

IAMW37 DD = ddname I/O ERROR ECB = xx CSW = xxxx SENSE = xxxx

Explanation: This message is displayed when an I/O error has occurred during a load of an OVSAM file. This message may also be accompanied by an IEA0001/IOS0001 error message. The message contains the following information:

- ECB – Displays high-order byte of ECB as posted
- CSW – Contains the UNIT/CHANNEL status bytes from the CSW
- SENSE – Contains the first two sense bytes from the OVSAM internal ICB.

The job will abend with a U0233 ABEND code.

User Response: Examine the error information provided to diagnose the error. If it appears to be a hardware problem, contact the appropriate vendor for service. Try using a different volume for the OVSAM control file. If the problem does not appear to be caused by hardware, call your FileTek customer support representative. A dump may be necessary to diagnose the problem.

The file will have to be reloaded. It may also be necessary, in some circumstances, to delete or redefine the OVSAM file.

IAMW38 DD='ddname' DSPSERV CREATE FAILED, RC=xx REAS=nnnnnnnn

Explanation: OVSAM attempted to create a data space for holding the index structure during the file load; however, the request was rejected by MVS for the indicated return code and reason code. This message is for information only. OVSAM will attempt to continue processing.

Action: If necessary, call your FileTek customer support representative for assistance.

IAMW39 DD = 'ddname' ###### RECORDS ACCEPTED PRIOR TO ABEND

Explanation: OVSAM has determined that the task loading the specified file has abended after loading the indicated number of records. The number of records that were actually written to the file may be slightly less than indicated due to buffering. Please note that the OVSAM file must be reloaded successfully before attempting to access the file.

User Response: Correct the error condition as indicated by the ABEND and return the job. Depending on the cause of the ABEND, the file may have to be deleted and redefined (for example, if a larger space requirement is necessary).

IAMW40 CARD IMAGE - *cc.....cc*

Explanation: The input control statement(s) read from the FTKOVRID DD statement is displayed when the control statement(s) contains an error or if requested by the user via the LOG=YES operand.

User Response: None.

IAMW41 CONTROL STATEMENT OPEN FAILED - DDNAME = 'ddname'

Explanation: The DDNAME listed was required as control statement input to the override processor. An OPEN was attempted but failed. Processing of the override service is terminated. Normal processing continues.

User Response: Review the execution job log messages for more detail on cause of the failure. Correct the 'ddname' statement and, if necessary, rerun the job.

IAMW42 INVALID CONTINUATION CARD

Explanation: User coded a delimiting comma following the last keyword on a control statement input to the override processor, but neglected to provide the next logical record. Override processing is terminated. Normal processing continues.

User Response: Correct the control statement. The job will continue to run, but may fail if the Override data is critical.

IAMW43 I/O ERROR READING CONTROL STATEMENTS - DDNAME = 'ddname'

Explanation: An I/O error occurred reading the data set referenced by 'ddname'. IAMOVRID is terminated, but normal processing continues.

User Response: Examine any system message(s) to determine the cause of the error. System message format is documented in the IBM MESSAGE SRL for the operating system in use. The job will continue to run, but may fail if the Override data is critical.

IAMW44 CONTROL STATEMENT BYPASSED - 'MAXIMUM GLOBAL OVERRIDES EXCEEDED'

Explanation: An error was encountered by the override processor, IAMOVRID, during the processing of user-supplied Override Control statements. The in-storage table that holds the overrides is full. A maximum of 200 control statements may be specified.

User Response: Correct the Override statements to reduce the number of global overrides to 200 control statements or less.

IAMW46 'ddname' OPEN FAILURE - IAMNINFO PROCESSING TERMINATED

Explanation: The output report 'ddname' statement could not be OPENed by the INFO processor. This DDNAME is usually 'IAMINFO', but may have been overridden by the user. Processing continues without interruption and the OVSAM INFO report is bypassed.

User Response: Correct the allocation of DDNAME so the next execution of the job will produce the OVSAM INFO report.

IAMW47 I/O ERROR MONITORING DSN - 'DSNAME' - IAM MONITOR TERMINATED

Explanation: An OVSAM monitor facility processor encountered an I/O error while writing monitor/trace data. Monitoring has been discontinued. Normal OVSAM processing continues.

User Response: If a Monitor report is needed, correct the cause of the I/O error and rerun the job.

IAMW48 IAMNINFO PARAMETER LIST ABSENT OR IN ERROR - PROCESSING TERMINATED

Explanation: The parameter list required by the dynamic file status display processor, IAMNINFO, was missing or overlaid, or is in error. This may be an internal error. Processing continues; however, the OVSAM INFO report does not print.

User Response: If you are unable to determine the reason for the message, call FileTek for further assistance.

IAMW50 TOC ACCESS FAILED COMP = xxxx CODE = xxxx CLUSTER = clustername

Explanation: During an IDCAMS DEFINE or RECATALOG of an OVSAM file, an attempt to access or update a VTOC failed. The completion code and return codes from CVAF are displayed in the message.

Action: Refer to the IBM manual *Common VTOC Access Facility Diagnosis Reference* for the meaning of the codes. Correct the problem and re-submit.

IAMW51 IAM EXCEEDED MAX OF 20 VOLSERS FOR DEFINE ON FILE DDNAME = ddname

Explanation: An IDCAMS define was issued for an OVSAM file, but an excessive number of volumes were specified.

User Response: Reduce the number of candidate volumes to 20 and rerun the DEFINE.

IAMW52 IAM SHOWCAT INTERCEPT FAILED

Explanation: The OVSAM SHOWCAT intercept function within VSAM failed.

User Response: Obtain a core dump and call your FileTek customer support representative for assistance.

IAMW54 PROBABLE IAM FILE HAS NOT BEEN DEFINED, DSN = dsname

Explanation: The processing program issued a SHOWCAT catalog request for a non-VSAM file that is cataloged but does not have the OVSAM information in the OWNER ID field (as established by DEFINE). This message was issued by OVSAM's catalog request intercept facility.

User Response: The catalog requests being issued by this program require that an OVSAM file be DEFINEd as an INDEXED VSAM CLUSTER via IDCAMS. Check to ensure that this OVSAM file was not DEFINEd as NON-VSAM or that it was not cataloged via JCL.

IAMW56 ALLOCATION FAILED NOT AN INDEXED FILE

Explanation: An IDCAMS DEFINE was issued for an OVSAM file but the file type being DEFINEd was other than INDEXED, such as ESDS or linear data set. This message was issued by OVSAM's catalog request intercept facility.

User Response: OVSAM only supports the DEFINE of a VSAM single-index KSDS cluster. If the file is some other type of cluster it cannot be converted to use OVSAM. Correct the DEFINE control statements and resubmit.

IAMW57 IAM ALLOCATION FAILED COMP = xxxx CODE = xxxx CLUSTER = clustername

Explanation: An error occurred during an IDCAMS DEFINE of an OVSAM file. The codes displayed correspond to the return code and reason codes of the IDC30091

message from IDCAMS. There will also be a IDC30091 message on SYSPRINT with the same codes. There may also be additional IDC or IAMW messages.

User Response: Refer to IDCAMS error message IDC30091 for meaning of the codes. Correct the problem and resubmit. It may be necessary to issue an IDCAMS DELETE command before attempting to resubmit the DEFINE.

IAMW58 LISTC INTERCEPT FAILED COMP = xxxx CODE = xxxx CLUSTER = UNKNOWN

Explanation: A LISTC catalog request failed and received xxxx as the completion and return codes.

User Response: Refer to VSAM error message IDC30091 for meaning of the codes. Correct the problem and resubmit.

IAMW59 LOCATE FOR AN IAM FILE FAILED CODE = (cc)xxx(DSN=.....).

Explanation: LOCATE for a VSAM file failed for one of the following reasons.

- CODE=S1xxx – The VSAM SHOWCAT intercept issued a locate that failed with return code xxxx on the specified data set.
- CODE=S2xxx – The VSAM SHOWCAT intercept issued a locate that failed with return code xxxx. Because the LOCATE was issued by CI number, the data set name is unknown.
- CODE=L1xxx – The VSAM LOCATE intercept issued a locate that failed with return code xxxx. Because the LOCATE was issued by CI number, the data set name is unknown.

User Response: Make sure that the data set is still properly cataloged. If not, an IDCAMS DEFINE RECATALOG must be done.

IAMW60 IAM DYNALLOC FAILED 'description'

Explanation: During the processing of an IDCAMS DEFINE for an OVSAM file, OVSAM attempted use of Dynamic Allocation failed for the specified reason. This message presents a brief description of the error code returned by Dynamic Allocation that is supplied in the IAMW61 error message. Both messages are printed on the system log. There will also be an IDC30091 message on SYSPRINT with an appropriate error code.

User Response: Correct the error situation, as described with the matching text below, and rerun the DEFINE.

TEXT: DATA SET NAME IN USE BY ANOTHER JOB/USER

Explanation: The dataset name has been enqueued on by another job/user.

User Response: Through whatever software facilities available, determine which job and/or users are queued on the data set. Rerun the DEFINE upon the completion of the other job/user.

TEXT: VOLUME NOT MOUNTED ON SPECIFIED UNIT

Explanation: The specified volume was either not mounted or was mounted but not on the unit specified by the UNIT = keyword on the OVSAM override control statement for this file. For non-specific volume requests (in other words, with VOL(ANYVOL) coded), there were no volumes mounted as storage for the unit name specified on the OVSAM Override Control statement or SYSDA.

User Response: Mount the required volume or change the volume and/or unit specification.

TEXT: SPECIFIED UNIT NAME IS UNDEFINED

Explanation: The unit name specified on the OVSAM Override Control statement for this file does not exist on the system on which the define was attempted.

User Response: Correct the unit name specification or run on the proper operating system.

TEXT: REQUIRED CATALOG NOT MOUNTED

Explanation: The catalog required for the definition of the OVSAM data set is on a volume that is not currently mounted.

User Response: Ensure that the volume containing the user catalog is mounted and rerun the DEFINE.

TEXT: DATA SET ALREADY EXISTS

Explanation: The data set being DEFINEd already exists in the catalog and may or may not be on the volume to which it is cataloged.

User Response: Make sure that the cluster name is correct. If it is correct, delete the data set from the catalog (and volume if applicable) and rerun the DEFINE.

TEXT: DUPLICATE DATA SET NAME ON VOLUME

Explanation: The data set already exists on the specified volume and is not cataloged.

User Response: Delete the data set from the volume and rerun the DEFINE.

TEXT: NO SPACE IN VTOC

Explanation: There was no space in the VTOC (Volume Table of Contents) for the new data set on the specified or selected volume.

User Response: Correct the error by increasing the size of the VTOC on the volume, delete unwanted data sets from the volume, or select a different volume.

TEXT: VTOC I/O ERROR OR CVAF ERROR

Explanation: An I/O error occurred on the VTOC during file allocation.

User Response: Review SYSLOG for other messages indicating a more precise cause of error. Correct the problem and rerun DEFINE.

TEXT: REQUESTED SPACE NOT AVAILABLE ON VOLUME

Explanation: The volume specified or selected did not have sufficient space to satisfy the request.

User Response: Select a different volume or remove unneeded data sets from the volume.

TEXT: USER NOT AUTHORIZED TO ALLOCATE DATA SET

Explanation: The job lacks RACF authorization to DEFINE the data set.

User Response: Contact the Security Administrator for assistance.

TEXT: INSTALLATION EXIT REJECTED ALLOCATION REQUEST

Explanation: A dynamic allocation exit routine in the system did not allow the allocation request to be processed.

User Response: Correct the DEFINE to the installation requirements.

TEXT: REQUIRED CATALOG NOT AVAILABLE

Explanation: The user catalog required may have been DELETEd or disconnected from the system master catalog, or may have been damaged and is being recovered.

User Response: Correct the error with the user catalog, and rerun the DEFINE command.

TEXT: DUPLICATE DATA SET NAME IN CATALOG

Explanation: The data set name already exists in the catalog and may or may not exist on disk.

User Response: Make sure the cluster name is correctly specified. If it is, delete the current entry from catalog (and disk, if applicable).

TEXT: NO SPACE IN CATALOG

Explanation: Insufficient space in the catalog to contain the record for the new data set.

User Response: Enlarge the catalog and rerun the DEFINE.

TEXT: SMS FAILED REQUEST. REFER TO PRIOR MESSAGE(S)

Explanation: The allocation request was failed by SMS. There should be preceding messages from SMS indicating the reason for the error.

User Response: Correct the problem indicated by the SMS error messages and try request again.

IAMW61 IA DYNALLOC FAILED COMP = nnnn CODE - nnnn CLUSTER = clustername

Explanation: The dynamic allocation requested by OVSAM to perform the DEFINE operation failed with the printed error codes. This message may be accompanied by an IAMW60 message.

User Response: Refer to message IAMW60, if printed, and/or the IDC30091 error message on SYSPRINT. The error codes from Dynamic Allocation are documented in the MVS/XA and MVS/ESA *System Macros and Facilities Manual*, the *MVS Job Management SPL*, and under the *ISPF Tutorial*. Correct the error condition as indicated by the error codes and rerun the DEFINE.

IAMW62 IAM OPEN FAILED FOR DDNAME = ddname CLUSTER = clustername

Explanation: During DEFINE processing of an OVSAM file, OVSAM attempted to OPEN the DEFINEd file, however, the OPEN failed. Additional IBM messages may appear on the system log.

User Response: Determine the cause of the OPEN failure, correct the error, and rerun the job. For a new DEFINE (as opposed to RECATALOG), DELETE and re-DEFINE the data set. At this point, the data set has been allocated and cataloged but is not yet usable by OVSAM.

IAMW63 IAM I/O ERROR: 'dynad message'

Explanation: During the processing of a DEFINE command for an OVSAM file, an I/O error occurred when reading or writing the OVSAM control information.

User Response: Using the standard SYNAD message and other messages that may appear on SYSLOG, determine the cause of the I/O error and correct it. If this was not a RECATALOG operation, DELETE and DEFINE the OVSAM data set again. At this point, the data set has been allocated and cataloged, but is not yet usable by OVSAM.

For RECATALOG operations, the file is either not a previously DEFINED or loaded OVSAM file, or there is an error with the data set requiring recovery.

IAMW64 UNEXPECTED END OF FILE READING AN IAM FILE FOR RECATALOG REQUEST - NOT VALID IAM DATA SET.

Explanation: During the processing of a DEFINE RECATALOG command for an OVSAM file, an end of file occurred while attempting to read the file characteristics.

User Response: The data set is empty. The recatalog request was not performed. Either the file was never an OVSAM file, in that case no corrective action is required, or the data set has been corrupted. The data set must be restored from a good backup.

IAMW65 IAM SCRATCH FAILED COMP = nnnn CODE = nnnn VOLSER = vvvvvv

Explanation: After an error attempting to catalog an OVSAM file being DEFINEd, an attempt to DELETE the data set from the indicated volser failed. The codes, returned from SCRATCH, are documented in the *System Data Administration* manual.

User Response: The data set is still on the specified volume. Refer to an immediately preceding IAMWnn message for the data set name. The data set must be manually scratched from the indicated volume.

IAMW66 IAM REALLOC FAILED CODE = nnnn INFO = nnnn CLUSTER = clustername

Explanation: After successfully defining an OVSAM file, OVSAM determined that the job step had DD cards that were allocated to the file, but were allocated to the wrong volume. The attempt to reallocate the file with dynamic allocation failed with the indicated error codes.

User Response: The OVSAM file has been successfully defined but attempts to REPRO into the OVSAM file within the same step may fail. A subsequent REPRO into the OVSAM file can be done.

IAMW67 IAM SMS ALLOC FAILED RC = X'xx' REAS = X'xxxxxxxx' CLUSTER = clustername

Explanation: The define of an OVSAM file failed using DADSM allocation with the specified return code and reason code. Refer to the DADSM Create (ALLOCATE) Function Return Codes section of the *IBM MVS/ESA DADSM/CVAF Diagnostic Aids* for a description of the error codes.

User Response: Take the appropriate corrective action based on the error codes indicated and retry the define request.

IAMW68 IAM UNIT NAME SEARCH FAILED, RC = xx CLUSTER = clustername

Explanation: During the define of a multi-volume non-specific allocation, an OVSAM call to the MVS Unit Name look up service failed as indicated in the message. The return code, if provided, is documented in the *IBM MVS System Modifications Manual.*

User Response: If the condition indicated by the return code cannot be corrected, contact your FileTek representative. As a circumvention, try a different UNIT override or switch to specific volume allocation.

IAMW69 IAM xxx ELIGIBLE VOLUMES, nnn VOLUMES REQUIRED CLUSTER = clustername

Explanation: During the define of a multi-volume non-specific allocation, OVSAM found xxx storage volumes in the specified UNIT name pool. However, nnn volumes were needed to satisfy the allocation request.

User Response: Change the UNIT override to indicate a UNIT name that has sufficient storage volumes, or reduce the number of volumes requested.

IAMW70 DD=’ddname’ PUT ERROR – WORK FILE DATASPACE OVERFLOW

Explanation: The size of the data space used to hold the index structure during a file load was insufficient for the file indicated by the ddname.

User Response: Contact your FileTek customer support representative.

IAMW80 MODULE 'modname' INSTALLED AT 'address' - VER nn

Explanation: The message is issued in response to an OVSAM status request when the module 'modname' is in place and is ready to provide OVSAM services to programs using ACBs to access OVSAM files. The 'address' given is the virtual storage location of the named OVSAM module. The version level number is also given for the module.

User Response: None. Information message only.

IAMW81 THE IAM SYSTEM MODULES ARE 'status'

Explanation: This message is provided by IAMSTART when the OVSAM modules are installed or in response to OVSAM action commands when the OVSAM system-level interface is already in place. The 'status' of the modules may be: ACTIVE, REACTIVATED, or ALREADY INSTALLED. This message includes the version and release level of the OVSAM modules installed.

User Response: None. Information message only.

IAMW82 THE IAM SYSTEM MODULES ARE 'status'

Explanation: This message is provided by IAMSTART in response to VSAM action commands when the OVSAM system level interface is already in place. The status of the modules may be:

- NOT ACTIVE – The OVSAM system level interface is not in place.
- INACTIVE – The OVSAM system level interface is in place but is not active.

User Response: None. Information message only.

IAMW84 IDPSTART ESTAE RECOVERY ENTERED FOR ABEND Sxxx Uxxxx AT OFFSET xxxx

Explanation: This message is provided by IAMSTART when OVSAM abends. An attempt is made to provide diagnostic information.

User Response: If the problem persists, call your FileTek customer support representative for assistance.

IAMW85 'ADDRESS' 'HEX core print'----'EBCDIC core print'

Explanation: This message is provided by IAMSTART when the OVSAM modules are first installed. It is also the response to a OVSAM STATUS request when OVSAM is in place and is ready to provide OVSAM services to programs using ACBs. The 'ADDRESS' given is the virtual storage location of the VSAM Vector Table Entry. The remainder of the line is the entry in hex and display format.

User Response: None. Information message only.

IAMW86 IDPSTART FAILURE - REASON = 'number' 'reason'

Explanation: The activation of the OVSAM VSAM interface failed for one of the following reasons:

- 01OPERATING SYSTEM NOT MVS OR SP 1.2 OR HIGHER
- 02INVALID INPUT PARAMETERS
- 03UNABLE TO OBTAIN AUTHORIZATION
- 04'vector table name' VECTOR TABLE IS INVALID
- 05SYSLIB DD MISSING OR OPEN ERROR
- 06'modname' NOT FOUND IN SYSLIB
- 07'modname' MODULE LOAD ERROR
- 08ERROR MODIFYING THE SVC TABLE
- 09'modname' NOT FOUND
- 10'modname' NOT FOUND IN THE LINKLIST
- 11'modname' UNABLE TO DE-INSTALL
- 12'modname' CDE OR LPDE ABOVE 16M ERROR
- 13'modname' MODULE ABOVE 16M ERROR
- 14GETMAIN ERROR

- 15'modname' HAS SMP INSTALLED IDP MODULE
- 16UNABLE TO OBTAIN DISPATCHER LOCK
- 17FREEMAIN ERROR
- 18UNABLE TO OBTAIN LOCAL LOCK
- 19'modname' CDE NOT FOUND
- 20ENQUEUE/DEQUEUE ERROR ON IAM RESOURCE
- 21ENQUEUE/DEQUEUE ERROR ON SYSZSVC
- 22 INVALID VECTOR TABLE STATUS
- 23 INVALID VECTOR TABLE CDE ADDRESS
- 24RC = xxxx FROM SVCUPDTE
- 25'modname' and IAMVECTB ARE OUT OF SYNCH
- 26 VECTOR TABLE CANNOT BE STOPPED

User Response: If the problem persists, call your FileTek customer support representative for assistance.

IAMW99 INTERNAL LOGIC ERROR - JOB TERMINATED

Explanation: IAMOVRID has encountered an illogical condition.

User Response: Obtain a core dump and call your FileTek customer support representative for assistance.

IAMX01 DD=ddnameERROR FROM SM, FUNCTION= function CODE=0000

Explanation: The indicated StorHouse function requested during a file load failed with the indicated error code. This message will be followed with any messages that have been retrieved from StorHouse.

Diagnosis: Depending on which request failed, either the OPEN request will fail with a return code of 8, or an I/O error will be sent to the IAM create processor. This will result in a U233 ABEND.

IAMX20 DD=ddname SM FILE ALREADY CONTAINS DATA AND CANNOT BE REUSED

Explanation: StorHouse indicated that the file on StorHouse contained some data although the MVS anchor file indicated the file could be loaded. This error could occur if an attempt is made to restart loading a file after some type of failure.

Diagnosis: The OPEN request is failed with return code 8, error code 232.

IAMX22 DD=ddnameFILETEK SM FILES CAN NOT BE REORGANIZED OR RELOADED

Explanation: The OVSAM file had been previously loaded. OVSAM files will have to be deleted and redefined before reloading.

Diagnosis: The OPEN request is failed with return code 8, error code 232.

IAMX23 DD=ddnameBLOCKSIZE IS TOO SMALL FOR OPTICAL FILE

Explanation: The minimum blocksize for OVSAM files must be 756 bytes to contain the required file format information within one block. This message will generally occur if the blocksize has been overridden by the user.

Diagnosis: The OPEN request failed with return code 8, error code 140.

IAMX24 DD=ddnameSM ACCOUNT INFORMATION MISSING OR INCORRECT

Explanation: An internal OVSAM processing error occurred.

Diagnosis: The OPEN request failed with return code 8, error code 1888.

IAMX01 ERROR 0000 FROM SM FUNCTION=function DSN=dataset name

Explanation: StorHouse indicated an error for the specified function issued during the DEFINE process of an OVSAM file. This message will be followed by StorHouse error messages that are passed back to the OVSAM define process.

Diagnosis: The DEFINE failed with return code 62, reason code 0.

IAMX60 BLOCKSIZE TOO SMALL FOR SM DATA SECTION DSN=dataset name

Explanation: The minimum blocksize for OVSAM files must be 756 bytes to contain the required file format information within one block. This message will generally occur if the blocksize has been overridden by the user.

Diagnosis: The DEFINE failed with return code 212, reason code 8.

IAMX61 FILE SIZE OF xxx,xxx,xxxK TOO LARGE FOR SM DSN=dataset name

Explanation: The file size generated based on the space parameters for the OVSAM file exceeds 1 gigabyte.

Diagnosis: The DEFINE failed with return code 68, reason code 20.

User Response: Reduce the space parameters and rerun the define.

IAMX62 THE FOLLOWING SM COMMAND WILL BE ISSUED FOR DSN=dataset name

Explanation: This message is informational only. It precedes the text of the CREATE FILE command being issued during the DEFINE of an OpticalVSAM file.

IAMX63 CREATE FILE COMMAND EXCEEDS 255 BYTES FOR DSN=dataset name

Explanation: The generated CREATE FILE command is larger is allowed by the StorHouse Callable Interface because of the overrides coded by the user.

Diagnosis: The DEFINE failed with return code 62, reason code 0.

User Response: Reduce the number of overrides, and if necessary, use the appropriate StorHouse command combined with a DEFINE RECATALOG to update other information that will not fit on the CREATE FILE command.

IAM099 NEAR RELATIVE DATA LOCATION nnnn 'error description'

Explanation: The common parsing routine encountered an error in parsing the user specified control statements. The approximate location of the error was position nnnn, counting the first position as 000.

User Response: Correct the error and re-submit job.

IAM100 IAM file analysis information

Explanation: Lists criteria describing the OVSAM file and the processing performed. Refer to the utility or report (IAMINFO) sections for definitions of the various criteria.

User Response: This is an information message only.

IAM260 LISTC PROCESSING FAILED FOR DSN='dsname'

Explanation: An error occurred during OVSAM processing of an IDCAMS LISTC command for a possible OVSAM file. This message is preceded by one or more error messages describing the error in more detail.

User Response: Review other messages for source of error and correct as necessary. IDCAMS LISTC processing will continue normally. However, no information will appear in the IAMPRINT file for the named file.

IAM261 DYNAMIC ALLOCATION FAILED, RETURN CODE= REASON CODE= (DSN='dsname')

Explanation: OVSAM attempted to dynamically allocate a file; however, the allocation failed with the specified codes. The dataset name, if not displayed in this message, is presented in the accompanying IAM260 message.

User Response: Look up the Dynamic Allocation error codes in the IBM *System Macros and Facilities Manual* or the *ISPF Tutorial* and take appropriate corrective action.

IAM262 DATA SET IS NOT AN IAM FILE

Explanation: During an IDCAMS LISTC OVSAM attempted to process a dataset as an OVSAM file; however, it was determined that the dataset was not an OVSAM file. The dataset name is displayed in the IAM260 message.

User Response: None. Information message only.

IAM263 UNABLE TO OBTAIN VIRTUAL STORAGE FOR IAM PROCESSING

Explanation: During an IDCAMS LISTC command, a GETMAIN issued by OVSAM failed. The accompanying IAM260 message names the dataset.

User Response: If the OVSAM report is required, increase the region specification for IDCAMS.

IAM264 operation FAILED FOR IAM FILE, DD=ddname

Explanation: During an IDCAMS LISTC the specified operation, OPEN, RDJFCB, or DEVTYPE issued by OVSAM failed. The dataset name is presented in the accompanying IAM260 message.

User Response: If other error messages are not present indicating the problem, contact FileTek for assistance.

IAM265 DATA SET IS EMPTY, HAS NOT BEEN DEFINED OR LOADED

Explanation: During an IDCAMS LISTC command, OVSAM encountered an empty dataset while attempting to read the OVSAM control information. The dataset is probably not an OVSAM file. The dataset name is presented in the accompanying IAM260 message.

User Response: None. Information message only.

IAM266 LOAD OF MODULE 'modulename' FAILED

Explanation: During an IDCAMS LISTC command, OVSAM encountered an error loading the named support module. There should also be an accompanying message in SYSLOG indicating the cause of the problem (for example, a S106, S306, or S806 error). The dataset name is presented in the accompanying IAM260 message.

User Response: Find the IBM error message and take corrective action. Possibilities are insufficient virtual storage to load the module or OVSAM is not in the system LINKLIST and no STEPLIB has been provided.

IAM267 IAM 'command' COMMAND FAILED, COMPLETION CODE IS 'cc'

Explanation: During processing of an OVSAM file for IDCAMS LISTC command, the indicated OVSAM command failed with the indicated completion code. The dataset name is presented in the accompanying IAM260 message. No information about the file will be listed.

User Response: Contact your FileTek customer support representative for assistance.

IAM268 DYNAMIC DEALLOC FAILED, RETURN CODE= REASONCODE= (DSN='dsname')

Explanation: OVSAM attempted to dynamically deallocate the previously dynamically allocated file. The deallocation failed with the specified codes. The dataset name, if not displayed in this message, is presented in the accompanying IAM260 message.

User Response: Look up the Dynamic Allocation error codes in the *IBM System Macros and Facilities Manual* or the *ISPF Tutorial* and take appropriate corrective action.

IAM269 IAM CPL PROCESSING FAILED

Explanation: OVSAM was attempting to process a CATALOG parameter list to determine dataset name and volume information; however, the CPL did not contain the expected information. There will be no information listed about the OVSAM file.

User Response: Contact FileTek for assistance.

IAM303 CARD IMAGE -- * control statement image *

Explanation: A display of the SYSIN dataset input control statements.

User Response: None. Information message only.

IAM307 DSN ID. 'nn' DATA SET NAME 'dsn' IAM MODE 'mode' IAM DPC 'xx'

Explanation: Summary report heading line indicating the number 'nn' of the monitored OVSAM dataset in respect to 'nn' value shown in message IAM339, the 'dsn' name of the OVSAM dataset monitored, the OVSAM mode, and the OVSAM Data Protection Code currently in effect. Individual summary lines in this report show:

- REQUESTS PROCESSED – Total number of OVSAM requests processed.
- I/O OPERATIONS – StorHouse references used for requests.

- INACTIVE PERIODS – Number of times OVSAM waited on requests.
- IAM ACTIVATED – Monitor starting time stamp.
- IAM DEACTIVATED – Monitor ending time stamp.
- TOTAL TRANS TIME – Cumulative OVSAM processing time.
- TOTAL I/O TIME – Cumulative I/O processing time.
- TOT INACTIVE TIME – Cumulative time OVSAM spent waiting for requests.
- AVG TRANS TIME – Average time for OVSAM to satisfy a request.
- AVG I/O TIME – Average time from start of I/O to user CHECK.
- AVG INACTIVE TIME – Average time OVSAM was idle waiting for a request.

User Response: None. Information message only.

IAM310 NO USABLE MONITOR OR TRACE DATASETS FOUND

Explanation: User requested analysis of monitor and/or trace datasets but no valid input data could be found.

User Response: Check for IAM312 messages detailing the type(s) of datasets identified by the monitor facility. Correct as required and resubmit the job.

IAM312 DATA SET QUALIFIED BY DDNAME 'ddname' 'dataset type'

Explanation: IAMONRPT interrogates all datasets qualified by ddnames beginning with IAMN. As each dataset is examined, the 'dataset type' is listed, i.e., contains monitor data, trace data, or is empty and does not contain monitor or trace data. Only those datasets that have attributes corresponding to the operation keywords specified can take part in the processing.

User Response: None, unless the 'dataset type' listed does not match what you would expect. If errors occurred or empty datasets were encountered, check the JOB LOG of the job(s) that created the datasets for any abnormalities.

IAM313 NO DDNAMES WITH PREFIX 'IAMN' FOUND

Explanation: User did not provide any valid ddnames for monitor/trace report processing. All input monitor or trace datasets must have a DDNAME prefix of IAMN in order to be processed. Execution is terminated without any additional processing.

User Response: Check the spelling of the ddnames used in the execution of IAMONRPT. If spelling errors are present or if the DD statements were left out, insert them and rerun the job.

IAM317 I/O ERROR ON DISK TRACK X'cccchhhh'

Explanation: OVSAM encountered an I/O error while reading or writing the VTOC. A MINI DUMP will be printed.

User Response: OVSAM will continue processing the VTOC, bypassing this track. Contact your FileTek customer support representative for further assistance.

IAM318 * WARNING* DATASET-'dsn' DEFINED FIXED CONTAINS VARIABLE LEN RECORDS

Explanation: The DEFINE for this cluster shows the average and maximum record lengths to be equal. IAMSIMVS detected one or more records that were not equal to the average record length DEFINEd for this cluster.

User Response: IAMSIMVS continues processing as if the file contained fixed length records. Blocking, overflow, and other values established for a file, however, vary depending on whether record lengths are fixed or variable. To obtain a more accurate estimate of OVSAM's space savings for this file, include the VARIABLE keyword with the SELECT option.

To properly identify this file as containing variable length records, the DEFINE for this file should be changed so the average RECORDSIZE value is less than the maximum. During processing, if the DEFINEd average RECORDSIZE value is not changed, OVSAM will return a record-length error for this file.

IAM320 TRACING 'dsn' DSNAME IAM MODE 'mode' DPC 'cc'

Explanation: Summary report heading line indicating the 'dsn' name of the dataset being traced, the OVSAM mode, and the OVSAM Data Protection Code 'cc' in effect.

User Response: None. Information message only.

IAM323 SEQUENCE CHECK -- BLOCK nnnnnnnn

Explanation: An out-of-sequence record was encountered. The OVSAM block number is printed along with 24 bytes of the key in hexadecimal format. Processing continues.

User Response: Review the contents of the recovered file. A section of the file being recovered may not have been readable.

IAM330 DATA SET MONITORED: 'dsname'

Explanation: MONITOR Report header for:

- The User Report showing for each request to OVSAM:
  - COMMAND – The OVSAM command issued
  - COMP CODE – The OVSAM request completion code
  - REQUEST ISSUED – The TOD OVSAM received the request.
  - REQUEST COMPLETED – The TOD OVSAM completed the request.
  - REQUEST TIME – The time to complete the logical request
  - TIME ON QUEUE – The time the request was on a queue
  - I/O TIME USED – The time to complete the physical I/O, if any
  - I/O IAM SNS – The OVSAM sense returned, if any
  - REQUEST NUMBER – A transaction ID number
  - REQ ACT – Number of concurrent requests to a file
- The Graphic Report depicting the following distribution curves:
  - The percentages of logical requests and I/O operations completing within a specified time span.
  - A summary of the percentage of all logical requests and I/O operations completing within a specified time span.

User Response: None. Information message only.

IAM331 TRANSACTION SAMPLE FROM ddyyy-hhmm HRS

Explanation: Header for a detail transaction analysis report showing:

- TRANS NUM – An internal OVSAM trace point ID
- RESULTED FROM – The name for the trace point:
  - (000)INITIALIZE
  - (001)MAINLINE
  - (002)I/O START
  - (003)I/O CMPLTD
  - (004)RETURN
  - (007)NO I/O REQ
  - (255)TERMINATE
  - DATASET UTILIZED – Unique ID for this file
  - IAM CMD – The IAM command for this request
  - IAM COMP – The OVSAM completion code for this request
  - DECB ADDR – The virtual address of the I/O DECB
  - DECB CMD/CMP – The I/O CMD completed in the DECB
  - TIME STAMPED – A time stamp from the trace point
  - TRANS TIME – Time to complete the logical request
  - I/O TIME – Time from start of I/O to user check
  - CNCR TRANS – Concurrent requests queued to this file

User Response: None. Information message only.

IAM332 DATASET TRACED 'dsn'

Explanation: Report header for the Monitor Trace Report showing for each request made to OVSAM the following:

- COMMAND – The OVSAM command issued
- COMP CODE – The OVSAM request completion code
- REQUEST COMPLETED – The TOD OVSAM completed the request
- I/O TIME USED – The time to complete the logical I/O
- IAM SNS – The OVSAM sense returned, if any
- REQUEST NUMBER – A transaction ID number
- KEY IN USE – The key the command was issued against

User Response: None. Information message only.

IAM338 I/O ERROR PROCESSING MONITOR DATA FOR DSN 'dsname' - EOF FORCED

Explanation: The OVSAM monitor program, IAMONRPT, encountered an I/O error attempting to read the data output from a monitored use of the OVSAM dataset 'dsname' name. Rather than abort the interpretation of the data, an END OF FILE was forced and processing continues.

User Response: None. Information message only.

IAM339 SUMMARY REPORT FOR nn MONITORED DATASETS

Explanation: Summary report heading line indicating the number of monitored OVSAM datasets reported during this execution.

User Response: None. Information message only.

IAM340 'recovery operation' - DSN= 'dsname'

Explanation: Describes the user-specified OVSAM file recovery operation and the name of the OVSAM file being processed.

User Response: None. Information message only.

IAM350 'ddname' OPEN FAILED -- mmmmmmmm PROCESSING TERMINATED

Explanation: A file required by the processing module mmmmmmmm failed to OPEN. This message will always be preceded by MSG IAM465 detailing the reason for the OPEN failure. A user ABEND is forced.

User Response: Correct the problem(s) with the library addressed by the 'ddname' statement and rerun the job. If you are not able to identify the problem, call your FileTek customer support representative for further assistance after obtaining a storage dump.

IAM351 IAM PROCESSING OF USER DCA FAILED - mmmmmmmm PROCESSING TERMINATED

Explanation: OVSAM was unable to process a user-specified OVSAM DCA (Data Control Area) passed to module mmmmmmmm for dynamic service. Processing is terminated and a user ABEND is forced. The DCA error was:

- Not present
- Not fullword aligned
- Contained invalid data
- Reserved bytes were not set to hexadecimal zero.

User Response: Correct the problem(s) in the program that called module mmmmmmmm for dynamic service and rerun the job. If you are not able to identify the problem, call your FileTek customer support representative for further assistance after obtaining a storage dump.

IAM352 DEVICE ALLOCATED TO 'ddname' IS NOT DISK OR TAPE DEVICE -- mmmmmmmm PROCESSING

Explanation: A file required by the processing module mmmmmmmm can only reside on a disk or tape device. A user ABEND is forced.

User Response: Allocate the 'ddname' statement to either a disk or tape device and rerun the job.

IAM353 DEVICE ALLOCATED TO 'ddname' WILL NOT ACCEPT LRECL OF IAM DATASET

Explanation: The device allocated to the 'ddname' statement does not have a capacity record as large as the LRECL of an OVSAM file. This is usually caused by allocating the 'ddname' statement to a disk device with a smaller track capacity that the disk device used for the OVSAM file. A user ABEND is forced.

User Response: Allocate the 'ddname' statement to either the same disk device type as the OVSAM file or to a tape device and rerun the job.

IAM360 STEP - ssssssss DDNAME - 'ddname' DATA SET MONITORED - 'dsname'

Explanation: Identifies the OVSAM job step name, the DDNAME and, optionally, the dataset name of the OVSAM file being processed by the information service routines of the OVSAM monitor facility.

User Response: None. Information message only.

IAM361 INFO REQUESTED BY PROGRAM 'program' PERFORMING 'description' PROCESSING

Explanation: Identifies the OVSAM processing program that requested the printing of the information block, the type of processing being performed, and the time the information block was printed by the information service routines of the IAMINFO report.

User Response: None. Information message only.

IAM362 DATA CHARACTERISTICS

Explanation: Heading line that always precedes the OVSAM data characteristics when listed by the IAMINFO report.

- LOGICAL RECORD LENGTH – The maximum length of the record. OVSAM adds an internal 4 bytes to variable length and compressed records.
- RECORD FORMAT – Fixed or Variable format indication.
- KEY LENGTH – The length of the key.
- RELATIVE KEY POSITION – The position of the key in the record relative to zero (0). OVSAM adds an internal 4 bytes to variable length and compressed records.
- AVERAGE RECORD LENGTH – During a create (OPEN OUTPUT), OVSAM calculates an average length for the records that were loaded. This field only appears for a file OPENed OUTPUT.
- LARGEST RECORD PROCESSED – During a create (OPEN OUTPUT), OVSAM reports the length of the largest record that was written to the file. This field only appears for a file OPENed OUTPUT.
- TOTAL RECORDS – The total number of records in the OVSAM file. This field does not appear when the file is initially created.
- TOTAL RECORDS DELETED – The total number of records deleted from the OVSAM file since creation. This field does not appear when the file is initially created.
- TOTAL RECORDS UPDATED – The total number of records updated in the OVSAM file since creation. This field does not appear when the file is initially created.

- TOTAL RECORDS INSERTED – The total number of records inserted into the OVSAM file since creation. This field does not appear when the file is initially created.

User Response: None. Information message only.

IAM363 IAM FILE CHARACTERISTICS

Explanation: Heading line that always precedes the OVSAM file characteristics when listed by the IAMINFO report.

- BLOCKING FACTOR – This is the original Blocking Factor requested. A value of 1 - 9 indicates the number of blocks per track. A larger value is a specified blocksize.
- BLOCKSIZE – Physical blocksize of the OVSAM file.
- TRACKS IN USE – Number of tracks used.
- DELETE BYTE SUPPORT – Optional ISAM delete byte support.
- DATASET TYPE – Always indicates KSDS.
- SHARE OPTIONS – Describes the defined share options for this dataset.

User Response: None. Information message only.

IAM364 IAM OVERFLOW CHARACTERISTICS

Explanation: Heading line that always precedes the OVSAM overflow characteristics when listed by the IAMINFO report.

- INDEPENDENT RECORDS REQ – Number of Independent Overflow records requested or calculated from the DEFINE.
- REQUESTED INTEGRATED PER – Percentage of Integrated Overflow (CI%) requested.
- INDEPENDENT RECORDS ALLOC – Actual number of Independent Overflow records allocated by OVSAM.
- ACTUAL INTEGRATED PER – Actual percentage of Integrated Overflow (CI%) allocated by OVSAM.
- INDEPENDENT RECORDS USED – Number of records currently in use in Independent Overflow.

- PE BLOCKS REQUESTED – The number of Prime Extension blocks requested. If a specific amount of Prime Extension was not requested, this field will contain the default value.
- INDEPENDENT RECORDS EMPTY – Number of records currently available in Independent Overflow.
- PE BLOCKS – ALLOCATED,USE – The actual number of Prime Extension blocks allocated followed by the number of Prime Extension blocks in use.
- INDEPENDENT OPEN PERCENT – The percentage of the Overflow keys to be reserved at OPEN for inserts.
- INDEPENDENT BLOCKS ALLOC – The number of blocks used for Independent Overflow.
- INDEPENDENT FULL PERCENT – The percentage of Overflow keys to be acquired when the incore tables are filled up.

User Response: None. Information message only.

IAM365 IAM EXECUTION STATISTICS

Explanation: Heading line that always precedes the OVSAM execution statistics when listed by the IAMINFO report.

- TOTAL STORAGE REQUIRED – Total storage GETMAINed by OVSAM during this execution.
- COMPRESSED KEY STRUCTURE – Indicates whether a compressed index was used.
- STORAGE ABOVE THE LINE – Total amount of storage acquired above the 16MB line.
- COMPRESSED DATA STRUCTURE – Indicates whether the data in the file is in compressed format.
- ACCESS PROCESSING MODE – Type of processing for this OPEN:
  - R – READ only
  - U – UPDATE
  - O – ONLINE
- KEY STRUCTURE STORAGE REQ. – Total amount of storage required for the OVSAM Index Structure.
- REQUESTS PROCESSED – Number of requests processed during this OPEN.

- REQUESTS FAILED – Number of requests made to OVSAM that did not complete normally (in other words, EOF on sequential read, no record found on random read).
- DISK BLOCKS READ – Number of physical I/Os used to read blocks from the file.
- DISK BLOCKS WRITTEN – Number of physical I/O update blocks in the file.
- DYNAMIC BUFFER RETRIEVALS – Number of I/Os saved by OVSAM Real Time Tuning Buffer Management using buffers in storage.
- MAXIMUM BUFFERS USED – Maximum number of data buffers used by OVSAM's Real Time Tuning during this execution.
- DYNAMIC TABLE RETRIEVALS – Number of random read requests satisfied by OVSAM's Dynamic Table.
- DYNAMIC TABLE RECORDS – Maximum number of records tabled in OVSAM's Dynamic Table.

User Response: None. Information message only.

IAM366 IAM COMMAND EXECUTED SUMMARY

Explanation: Heading line that always precedes the OVSAM command summary when listed by the IAMINFO report.

- R.(READ) – Number of random read requests processed
- W.(WRITE) – Number of update requests processed
- F.(GETNEXT) – Number of OVSAM GETNEXT commands processed
- A.(ADD) – Number of insert requests processed
- D.(DELETE) – Number of delete requests processed
- N.(READ OR GETNEXT) – Number of OVSAM Read or GETNEXT commands
- G.(GET) – Number of sequential GET commands
- S.(START KEY EQUAL) – Number of OVSAM Start Key Equal commands
- K.(START KEY CLASS) – Number of point requests processed
- P.(GET PREVIOUS) – Number of Get Previous requests processed
- U.(READ FOR UPDATE) – Number of Read for Update commands

- RESERVED – Reserved
- I.(INFORMATION) – Number of OVSAM Information commands issued
- E.(STATISTICS) – Number of OVSAM statistic commands issued
- C.(CLOSE) – Number of CLOSE requests processed
- O.(OPEN) – Number of OVSAM OPEN commands issued
- X.(FLUSH) – Number of requests with RPL errors
- VARIABLE LENGTH CHANGES – Number of records with their record length changed
- DELETED RECORDS BYPASSED – Number of records bypassed because they contained X'FF' in first byte

User Response: None. Information message only.

IAM367 THERE WAS INSUFFICIENT STORAGE AVAILABLE TO ACQUIRE ADDITIONAL BUFFERS

Explanation: OVSAM's Real Time Tuning tried to acquire additional data buffers but there was insufficient virtual storage available.

User Response: Increase the REGION value on the JOB statement or the EXEC statement so the next execution of the job will have storage available to acquire additional buffers.

IAM368 SPECIFYING A BUFNO VALUE GREATER THAN nn MAY IMPROVE PERFORMANCE

Explanation: For this mix of data and file processing commands, OVSAM's Real Time Tuning buffer management found that if additional buffers had been available they would have been acquired. Additional buffers were not acquired because it would have exceeded the maximum buffers allowed for this job.

User Response: If you wish to increase the maximum buffers for this job, specify the MAXBUFNO=nn parameter on the OVSAM Override Control statement for this OVSAM file. If the number of I/Os (EXCPs) for this file is relatively small, there is no real need to increase the maximum number of buffers.

IAM371 INCREASING THE NUMBER OF PRIME EXTENSION BLOCKS MAY IMPROVE PERFORMANCE.

Explanation: This message is provided whenever OVSAM determines that a record has been added to the INDEPENDENT OVERFLOW instead of being added to the PRIME EXTENSION because the PRIME EXTENSION is full.

User Response: None. Information only.

IAM400 'processing function' - 'progname' - VER v.r. - INNOVATION DATA PROCESSING - DATE: 'yyddd' PAGE: 'nn'

Explanation: Generalized page header for the named processing functions that are provided by the program named in the printed title.

User Response: None. Information message only.

IAM401 PARM DATA - * parm-field-data *

Explanation: Displays the program control information specified in the PARM= field of the EXEC statement. This data will not be displayed if program is invoked under TSO.

User Response: None, information only.

IAM402 INVALID CONTINUATION

Explanation: User coded a delimiting comma following the last keyword on a control statement and did not provide the next logical record.

User Response: Correct and resubmit job.

IAM403 REQUIRED OPERAND(S) NOT SPECIFIED - cc...cc

Explanation: The operand cc...cc is required for the execution of the command. It must be specified; no defaults are available.

User Response: Correct and resubmit job.

IAM404 WORKING STORAGE AREA SIZE OF nn BYTES EXCEEDED - SUBCOMMAND IGNORED

Explanation: The maximum number of working storage bytes available to the subcommands was exceeded.

User Response: The number of bytes available for subcommand working storage is derived from the MAXCORE operand. It has a lower limit of 1000 bytes and an upper

limit of 120000 bytes. If the upper limit has been reached, call your FileTek customer support representative for technical support. If the upper limit has not been reached, resubmit the job specifying a value for MAXCORE greater than the number displayed.

IAM405 MAXIMUM CONTINUATION COUNT OF nnnn EXCEEDED - COMMAND FLUSHED

Explanation: The user control statement used too many continuations.

User Response: Reduce the number of continuations to the value nnnn. Resubmit the job.

IAM407 CONTROL STATEMENT ERROR - 'action taken'

Explanation: An error was encountered during the processing of user supplied control statements. This message is always preceded by one or more messages that define and delimit the error(s). The action taken is one of the following:

- JOB TERMINATED – Processing will stop after the first error has been encountered.
- SKIPPING FOR COMMAND – Processing will continue for all command statements within the SYSIN dataset.
- RE-ENTER COMMAND OR END – Message when the SYSIN dataset is assigned to a TSO terminal. Re-enter command in error or END to complete the processing.

User Response: Correct and resubmit job.

IAM408 NO CONTROL STATEMENTS WERE FOUND JOB TERMINATED

Explanation: SYSIN dataset is empty or contained only comment statements (* in column 1).

User Response: Correct and resubmit job.

IAM410 DSNAME='dsname' -- 'error description' -- PROCESSING BYPASSED

Explanation: The 'dataset name' printed encountered the error described and subsequent processing was bypassed. The error description can be one of the following:

- NOT RECOGNIZABLE OVSAM FILE
- TRKCALC FUNCTION FAILED
- NOT KSDS VSAM
- FILE HAS ALTERNATE INDEX

- AMEDS DATA NOT RETURNED
- UNABLE TO LOCATE DATA/INDEX
- FILE HAS ALTERNATE INDEX
- KEYLEN GREATER THAN 250 BYTES
- RKP GREATER THAN 4096
- FILE WAS NEVER LOADED
- IS NOT VSAM OR OVSAM

User Response: Check the dataset name for correctness. If the wrong dataset name was specified, specify the correct dataset name and resubmit the job. If the message indicates the dataset is not an OVSAM file it is because the OVSAM control record was not present.

IAM413 DSN/DSG INDEX ERROR - 'error description'

Explanation: When using the index level option to select datasets or dataset groups the user either:

- Specified too many index levels. (The maximum is 22).
- Failed to provide significant data. (The leading periods were followed by a comma or blank.)

User Response: Correct and resubmit.

IAM418 COMMAND PROCESSING DETECTED ERROR -- 'action taken'

Explanation: An error was encountered during the processing of the subcommand specified on a user supplied control statement. This message is always preceded by one or more messages that define and delimit the error(s). The action taken is one of the following:

- RE-ENTER COMMAND OR END – Message for user when the SYSIN dataset is assigned to a TSO terminal. Re-enter command in error or END to complete the processing.
- SKIPPING FOR COMMAND – Processing will continue for all command statements found within the SYSIN dataset.
- REVERTING TO SYSIN – The error occurred when reading from an alternate command input source. Processing will continue for commands in the SYSIN dataset.

User Response: Correct and resubmit job.

IAM421 LOCATE ERROR -- 'error description' - DSN='dsname'

Explanation: A LOCATE SVC was issued requesting identification of the component named by DSN='dsname'. The LOCATE either failed or returned a component cluster name type code that is not currently supported.

- If the error description is in the form: RETURN CODE rc - REASON IGGOCLAA - 'reason number', the LOCATE failed. Error codes are documented in the IBM *System Messages Manual* under message number IDC3009I.
- If the error description is in the form ENTYPE – C(X'xx'), the program encountered a type of component entry that it does not presently support.
- If the error description is in the form NAMEDS – C(X'xx'), the program encountered a type of cluster entry that it does not presently support.
- If the error description is in any other form, an catalog error exists.

User Response: Do one of the following:

- For the RETURN CODE type of error, look up the codes under message IDC3009I. The most likely cause is a STEPCAT or JOBCAT DD statement was not supplied for a user catalog that has entries in it for components on the volume(s) being processed and those entries that are not ALIASed.
- For any other type of errors, contact your FileTek customer support representative for assistance.

IAM457 ENQ FAILED -- RC='nn' -- QNAME=c...c - RNAME=c...c

Explanation: An attempt was made to reserve or enqueue on the resource listed. Control was not returned. An unexpected failure occurred.

User Response: Usually followed by a U0659 ABEND. Call your FileTek customer support representative for additional assistance after obtaining a storage dump.

IAM458 DEQ FAILED -- RC='nn' -- QNAME=c...c - RNAME=c...c

Explanation: An attempt was made to dequeue the controlled resource listed. Control would have been released but an unexpected failure occurred.

User Response: Usually followed by a U0659 ABEND. Call your FileTek customer support representative for additional assistance after obtaining a storage dump.

IAM465 UNABLE TO OPEN (DDNAME=|DSN=)'name' - 'reason'

Explanation: The 'ddname' named in the message failed to OPEN for the reason shown in the text. The recognized reasons are:

- ABEND exit taken
- VOL=volser
- Denied by OPEN exit
- DD='ddname' statement missing, misspelled, or incorrectly specified
- RC=nn ERROR CODE=nnn

User Response: If the named 'ddname' is required for the requested operation, correct the error and resubmit the job. This message may be ignored.

IAM471 DDNAME='ddname' I/O ERROR -- SYNAD='message'

Explanation: A permanent I/O error was detected on the dataset referenced by the DDNAME 'ddname'.

User Response: Examine the SYNADAF message to determine the cause of the error. The format of this message is documented in IBM SRL publications.

IAM476 DDNAME='ddname' REFERENCES A DEVICE TYPE OTHER THAN DISK

Explanation: The DDNAME 'ddname' listed can only be allocated to a disk device.

User Response: Check the unit specification in the JCL for errors. Correct and resubmit.

IAM484 INTERNAL LOGIC ERROR – JOB TERMINATED

Explanation: The program encountered an illogical condition.

User Response: Call your FileTek customer support representative for assistance after obtaining a storage dump.

IAM485 SORT FAILURE HAS OCCURRED RC='nn' - 'action description'

Explanation: Your installation's sort product has set a return code other than zero. The return code problem description can be found in the sort manual supplied with the sort program product. In many cases the sort program will provide an error message on DDNAME SYSOUT and/or on the system console.

User Response: If you cannot correct the problem from this information, call your FileTek customer support representative for assistance.

IAM491 'function' FUNCTION STARTED TIME=hh.mm.ss

Explanation: Identifies type of function and time the function started.

User Response: None. Information message only.

IAM492 'function' FUNCTION ENDED -- hh.mm.ss CONDITION CODE - nnnn

Explanation: Identifies type of function and time the function ended. The return code is printed if it is non-zero.

User Response: Review the completion code. If the completion code is greater than zero, check the output for the preceding messages that describe the reasons for a non-zero completion.

IAM493 'function' - BYPASSED -- PRIOR FUNCTION TERMINATED WITH KEYWORD OR COMMAND DETECTED ERROR

Explanation: A previous command upon which this function may be dependent encountered serious errors.

User Response: Correct the condition and resubmit.

IAM495 NO RECORDS MATCHED SELECTION CRITERIA

Explanation: The selection criteria specified did not cause any records to be selected for processing. For program IAMSMFVS, this message will also appear if the required SMF record types are not being collected.

User Response: Make sure the selection criteria is correct.

- If IAMSMFVS: Make sure you are collecting SMF records types 4 or 30 subtype 4 and type 64. If you are running against an SMF history tape, make sure that the required record types are being copied to the history tapes.
- If IAMSMF: Make sure you are collecting SMF records types 4 or 30 subtype 4 and type 14, 15, 64. If you are running against an SMF history tape, make sure that the required record types are being copied to the history tapes.

IAM496 MODULE 'modname' -- NOT USABLE WITH RELEASE v.r. PROGRAMS EXECUTION TERMINATED

Explanation: Module 'modname' is a release/version that is incompatible with the load module being executed.

User Response: Check for a STEPLIB/JOBLIB DD statement pointing to a library other than the correct library for the product level you expect to use. If present,

correct the library name and resubmit the job. If there is no STEPLIB/JOBLIB present, the module 'modname' is being obtained from a LINKLIST library. Add a STEPLIB or JOBLIB DD statement specifying the correct load module library and resubmit the job.

IAM497 cc..cc ABNORMALLY TERMINATED DUE TO KEYWORD/COMMAND DETECTED ERRORS

User Response: The common parsing routine encountered errors in parsing the user-specified control statements.

User Response: Previous message(s) describe the error(s); see those messages for further details.

IAM498 cc...cc PROCESSING COMPLETED WITH ERRORS

Explanation: The named program completed the requested processing but encountered abnormalities in the process.

User Response: Check the output for preceding messages that may describe the errors in detail.

IAM499 cc...cc PROCESSING COMPLETED

Explanation: The named program has completed processing as requested.

User Response: Check the output for messages that describe the results.

IAM516 CAMLST REGISTERS R0=nnnnnnnn R1=nnnnnnnn R15=nnnnnnnn

Explanation: A CAMLST request failed. The type of CAMLST function (shown in the immediately preceding message) and the registers allow problem diagnosis. The return code(s) from catalog management is(are) documented in the *IBM SRL System Programming Library: Data Management* (for MVS) or *Catalog Administration* (for MVS/XA).

User Response: Check the return code(s) and take corrective action. For assistance, call your FileTek customer support representative.

IAM530 MODULE 'modname' NOT FOUND - 'ddname' - 'dsname'

Explanation: A BLDL was issued for the module 'modname' in the dataset 'dsname' referenced by 'ddname' and the module was not found. The module is required to support a requested processing function.

User Response: Verify that the library dataset name 'dsname' specified on the 'ddname' statement was correct. If incorrect, correct it and resubmit the job. If the

dataset name is correct, check the OVSAM product install listing to see that all steps executed successfully. If required, rerun the installation steps missed.

IAM531 MODULE 'modname' CONTAINS NO TEXT RECORDS - 'ddname' - 'dsname'

Explanation: An attempt was made to read the module 'modname' in the dataset 'dsname' referenced by 'ddname' and no text records were found. The module is required to support a requested processing function.

User Response: Verify that the library dataset name 'dsname' specified on the 'ddname' statement was the correct one. If incorrect, change and resubmit the job. If the dataset name is correct, check the OVSAM product install listing to see that all steps executed successfully. If required, rerun the installation steps missed.

IAM532 MODULE 'modname' I/O ERROR READING - 'ddname' - 'dsname'

Explanation: An attempt was made to read the module 'modname' in the dataset 'dsname' referenced by 'ddname' and an I/O error occurred. The module is required to support a requested processing function.

User Response: Check the SYNAD error message(s) and MINI DUMP produced to see if the cause of the error is an obvious one. If so, correct and resubmit the job.

IAM533 MODULE 'modname' I/O ERROR WRITING - 'ddname' - 'dsname'

Explanation: An attempt was made to write the module 'modname' in the dataset 'dsname' referenced by 'ddname' and an I/O error occurred.

User Response: This is a serious error that may render the load module library referenced by 'dsname' unusable. If necessary, restore or re-create the library. Check the SYNAD error message(s) and MINI DUMP produced to see if the cause of the error is obvious. Correct and resubmit the job.

IAM534 'ddname' OPEN FAILURE -- AVAILABLE COMMANDS: HELP, END

Explanation: The required 'ddname' statement could not be OPENed. Commands that access modules in the 'ddname' dataset cannot be executed.

User Response: If the 'ddname' dataset is required for the operation being attempted, correct and resubmit the job. Otherwise, none, information only.

IAM535 MODULE 'modname' READ UNSUCCESSFUL -- 'command' BYPASSED

Explanation: The user requested function 'command' be performed against module 'modname' but the module was not successfully read. This message will be preceded by message IAM530, IAM531, or IAM532 detailing the reason the read failed.

User Response: See message IAM530, IAM531, or IAM532, as required.

IAM538 MODULE 'modname' -- WRONG VER/LEVEL 'ddname' - 'dsname'

Explanation: Module 'modname' is a release/version that is incompatible with the load module being executed.

User Response: Verify that the 'ddname' DD statement is pointing to the correct library for the product level you expect to use. If incorrect, change and resubmit the job. If the dataset name is correct, check the OVSAM product install listing to see that all steps were executed successfully. If required, rerun the installation steps missed.

IAM539 MODULE 'modname' 'function' - 'ddname'- 'dsname'

Explanation: The module 'modname from the dataset 'dsname' referenced by 'ddname' has had 'function' performed as requested by the user.

User Response: None. Information only.

IAM540 cccccccc CONTAINS INVALID CHARACTERS -- ZAP REJECTED

Explanation: The value specified for the operand cccccccc contained one or more characters that were not A-Z, 0-9, $#@.

User Response: Remove the invalid character(s) and resubmit the job.

IAM542 cccccccc CONTAINS INVALID INDEX STRUCTURE -- ZAP REJECTED

Explanation: The value specified for the operand cccccccc contains two or more consecutive periods in violation of operating system dataset naming conventions.

User Response: Correct the error(s) and resubmit the job.

IAM543 cccccccc DOES NOT CONTAIN CHARACTER STRING cccccccc – ZAP REJECTED

Explanation: The value specified for the operand cccccccc does not contain the character string cccccccc as the required start of an index level.

User Response: Correct the error(s) and resubmit the job.

IAM544 cccccccc REJECTED -- EXCEEDS MODIFIABLE PORTION OF IAMOPT

Explanation: The length of the value specified for the operand cccccccc taken in conjunction with the offset operand exceeds the modifiable portion of the IAMOPT table.

User Response: Correct the error(s) and resubmit the job.

IAM545 VERIFY FAILED -- CHAR/HEX PRINT FORCED

Explanation: The VERIFY of existing contents failed. A character/hexadecimal print of the module IAMOPT is produced. Always preceded by message IAM544.

User Response: See message IAM544.

IAM550 ERRORS ENCOUNTERED DURING EXECUTION -- REWRITE CANCELED

Explanation: One or more modules from the SYSLIB dataset were scheduled for rewrite at termination or by the execution of a REWRITE command. However, previous commands failed to complete successfully. The errors encountered have been documented by preceding error messages.

User Response: Correct the error conditions documented by the preceding error messages and resubmit the job.

IAM567 OBSOLETE OPERAND 'keyword' specified - 'action taken'

Explanation: User specified an obsolete operand 'keyword'. Rather than bypass the command, the operand was either converted internally to a currently supported operand. This operand will perform the same or a similar function to the one that was replaced or it will be ignored.

User Response: Change the control statement to the current standard.

IAM569 WARNING - cccccccc NOT CATALOGED - DSN='dsname'

Explanation: The dataset 'dsname' indicated is the new default for the file type indicated by cccccccc. A CAMLST LOCATE was issued to verify that the dataset is cataloged as required for OVSAM to dynamically allocate. The dataset name was not found by LOCATE. Message IAM516 detailing the CAMLST return code(s) follows this message.

User Response: See message IAM516. This is only a warning message. The dataset name listed has become the new name of the indicated default.

IAM574 'request' - DDNAME='ddname' - 'action'

Explanation: Failed I/O request resulting in the named action. The requests and their corresponding actions are shown in Table 4-1:

Table 4-1: Failed I/O Requests

Request	Action
** DD NOT OPEN	EXTRACT REQUEST DENIED
GET FAILED	EOF FORCED
CLOSE FAILED	JOB TERMINATED
OPEN FAILED	COPY REQUEST DENIED
OPEN FAILED	EXTRACT REQUEST DENIED
OPEN FAILED	REPORT REQUEST DENIED
**OPEN FAILED	REQUEST DENIED
OPEN FAILED	TO DDNAME COPY DENIED
RJFCB FAILED	REQUEST DENIED

The 'ddname' shown in the message is required as either INPUT TO or OUTPUT FROM a processing program. An unexpected failing request for an I/O related service against that DDNAME has forced the program to take the remedial action shown in the message text.

User Response: Correct the reason for the error and resubmit the job.

IAM600 MAXSTACK VALUE OF nnnnnn EXCEEDED - SMF RCD PROCESSING TERMINATED

Explanation: The SMF record processing subcommand being executed uses an in-storage stack specified by the operand MAXSTACK. This storage stack is full. The specified size is insufficient to allow all of the selected SMF records to be processed. IAMSMF terminates without producing a report.

User Response: Re-execute the program and specify the operand MAXSTACK= with a value greater than the value nnnnnn printed in this message.

IAM601 SMF RECORDS -- READ.nnnnnnnn USED.nnnnnnnn DROPPED.nnnnnnnn

Explanation: Documents the SMF records processed as follows:

- READ – Number of SMF records read from the input dataset. May not reflect the total number of records in the dataset if an IAM600 message was issued.

- USED – Number of SMF records selected from the input dataset by the criteria specified by the user.
- DROPPED – Number of SMF records dropped from the input dataset because of length checking or other user specified criteria.

User Response: None. Information only.

IAM602 FOLLOWING SMF RECORD DROPPED - LENGTH CHECK

Explanation: User specified the CHECKLENGTH operand, causing all SMF records selected to be checked against a table of minimum lengths. This record failed the length check. The first 32 bytes of the record are printed in hexadecimal.

User Response: Use the keyword RECSIZE=nn on the report control statement to specify an appropriate size.

IAM603 VSAM ERROR – (DDNAME=|DSN=)'name' 'error description' – R15=xxxxxxxx – CODE=xxxxxxxx

Explanation: An error occurred during the processing of a VSAM dataset. The error description will be one of the following:

- CLOSE failed – Close of VSAM dataset
- GENCB failed – Generation of a control block
- GET failed – Get next record
- OPEN failed – OPEN of VSAM dataset.

User Response: Check the values of R15 and CODE against the return codes listed in the *VSAM Reference for MVS/370 DFP*, *VSAM Administration: Macro Instruction Reference for MVS/XA*, or *OS/VS Virtual Storage Access Method Programmer's Guide* to determine the cause of the error. If possible, correct and re-execute the job.

IAM619 MODULE 'modname' TOO LARGE TO PROCESS – 'ddname' - 'dsname'

Explanation: IAMZAPFT attempted to read the module 'modname' in the dataset 'dsname' referenced by the statement 'ddname'. The module was required to support processing functions; however, due to the size of the module (or previously read modules), not enough buffer storage was available to complete the read.

User Response: Run IAMZAPFT specifying ZAP BUFSIZE=nnnn, where nnnn is the size of the buffer in bytes. Specify a value between 122,880 and 3,145,728. After the buffer size has been changed, rerun the job that failed.

IAM620 MAXJOB VALUE OF nnnnn EXCEEDED - ADDITIONAL JOB NAMES BYPASSED

Explanation: The maximum number of unique job names tabled by IAMSMFVS has been exceeded. SMF records that match the specified selection criteria but with job names other than those already tabled will be bypassed and not reported.

User Response: Specify a MAXJOB value greater than nnnnn but less than or equal to 32,000 and, if required, rerun the job.

IAM621 MAXDSN VALUE OF nnnn EXCEEDED - ADDITIONAL DATA SET NAMES BYPASSED

Explanation: The maximum number of unique dataset names tabled by IAMSMFVS has been exceeded. Records that match the specified selection criteria but with dataset names other than those already tabled will be bypassed and not reported or will be shown in a second report.

User Response: Specify a MAXDSN value greater than nnnnn but less than or equal to 32,000 and, if required, rerun the job.

IAM622 MAXDSN VALUE OF nnnnn EXCEEDED - ADDITIONAL VSAM CLUSTER RELATIONSHIPS BYPASSED

Explanation: IAMSMFVS issues a LOCATE for each ICF/VSAM DATA and/or INDEX component and adds the resulting cluster name to the tabled dataset names. Those DATA and/or INDEX components that remain unrelated (did not have the cluster name appended) when the value of MAXDSN is exceeded will be printed as unique datasets.

User Response: ICF/VSAM clusters can take up to three entries in the dataset name table that is generated from the MAXDSN operand. If you only plan to extract information on ICF/VSAM clusters and you expect to have approximately 1000 clusters listed, specify a MAXDSN no less than 3000. If the error reoccurs, specify a MAXDSN value greater than nnnnn but less than or equal to 32,000 and, if required, rerun the job.

IAM637 IAM INTERNAL BLOCK –

Explanation: The block shown contains file control information.

User Response: None. Information message only.

IAM638 IAM BLOCK NUMBER nnnnnn --

Explanation: The block shown is relative block number nnnnnn in the file.

User Response: None. Information message only.

IAM999 END OF JOB

Explanation: IAMUTIL terminated with the completion of the processing for the last control statement.

User Response: None. Information message only.

OVSAM User ABEND, Error, and Completion Codes

The following user ABEND codes are issued by OVSAM programs.

U0101 OVSAM I/O ERROR ON OVSAM FILE

Explanation: The file could not be OPENed because:

- The user failed to supply a DD statement for the file.
- The user specified an incorrect DDNAME in the control statement or DD statement.

Diagnosis: See log for an operating system message indicating the name of the missing DD statement (IEC130I 'ddname' DD statement missing).

Explanation: An unrecoverable I/O error occurred on the file during OPEN or during processing.

Diagnosis: When the error occurs during processing, R10+X'04' points to the DDNAME of the file and R7 points to the DCB address of the OVSAM file.

U0114 AMACC PROGRAM CHECK

Explanation: Since initial OPEN, another concurrent task has relocated data blocks in the file.

Diagnosis: R10+X'04' points to the DDNAME of the file. In the first case, an update may have resulted in a physical block being overlaid.

U0115 IAMACC PROGRAM CHECK

Explanation: The file being accessed contains overwritten data blocks. This may have resulted when a DEFINE or REORG was run concurrently against a file already OPEN and in use by an update task.

Diagnosis: R3 points to the last record key accessed. R10+X'04' points to the data buffer. Reload the file from a valid backup.

U0116 IAMACC PROTECTION MODE VIOLATION

Explanation: A WRITE, ADD, or DELETE was attempted in READ-ONLY mode.

Diagnosis: R10+X'04' points to the DDNAME of the file.

U0117 IAMACC PROGRAM CHECK

Explanation: Internal Logic Error. Contact your FileTek customer support representative for assistance.

U0118 IAMACC BLKSIZE ON DISK IS ZERO

Explanation: The file being accessed was only allocated; it was never created.

Diagnosis: R10+X'04' points to the DDNAME of the file. A valid OVSAM file will have a FORMAT-1 DSCB that specifies DSORG-DA, LRECL=0, and a valid physical blocksize.

U0119 IAMACC PROTECTION MODE ERROR

Explanation: The protection mode must be U, R, E, or J.

Diagnosis: R10+X'04' points to the DDNAME of the file. R10+X'04' points to the DDNAME of the file. R10+X'14' points to the invalid mode set.

U0120 IAMACC COMMAND CODE ERROR

Explanation: The command code in sequential mode must be I, R, W, G, D, E, or C. The command code in random mode must be I, R, A, W, D, S, K, G, E, C, N, or F.

Diagnosis: R10+X'04' points to the DDNAME of the file. R10+X'15' points to the invalid command.

U0121 IAMACC OVERFLOW ADD ERROR

Explanation: The disk file was not consistent with the index in memory. Most likely another partition or machine is concurrently adding records to the file.

Diagnosis: R10+X'04' points to the DDNAME of the file. This may have resulted in a physical block being overlaid.

U0125 IAMACC DATA LENGTH ERROR (VARIABLE LENGTH RECORD)

Explanation: The data length field in the IAMACC Data Control Area that specifies the portion of the record to be read or written is greater than the maximum record length or less than key length plus RKP.

Diagnosis: R3 at entry to ABEND contains the record's length. R14 at entry to ABEND points to the record area.

U0126 IAMACC RDW LENGTH ERROR (VARIABLE LENGTH RECORD)

Explanation: During sequential processing, the length of the record (the RDW value) was changed and a rewrite was attempted.

Diagnosis: R14 at entry to ABEND points to the record area.

U0127 IAMACC DATA LENGTH ERROR

Explanation: The record length given in the program's DCA that specifies the length of the record to be read or written is greater than the DEFINEd record length, or less than key length plus RKP.

Diagnosis: R10+X'04' points to the DDNAME of the file.

U0128 IAMACC SEQUENTIAL UPDATE ERROR

Explanation: In sequential processing mode, the user attempted to DELETE/REWRITE a record containing a key value that was different from the key of the last record read. In sequential mode, only the last record read may be deleted/rewritten.

Diagnosis: R15 points to the record before rewrite. R7 points to the key of the new record.

U0129 IAMACC SEQUENTIAL COMMAND ERROR

Explanation: In sequential mode, the first command a user issued was DELETE/REWRITE. In sequential mode, a record must be read before it can be DELETED/REWRITTEN.

Diagnosis: R10+X'04' points to the DDNAME of the file.

U0130 IAMACC GETMAIN REQUEST FAILED

Explanation: The user region did not contain sufficient core to OPEN the OVSAM file. The region size must be increased.

Diagnosis: R0 contains the amount of core requested.

U0209 IAMCRT OVERRIDE CONTROL STATEMENT SPECIFICATION ERROR

Explanation: An error was encountered while processing the user supplied control statements.

Diagnosis: Message IAMKWDPR is issued as a WTO, (ROUTCDE=11) detailing the nature and location of the error.

U0210 IAMCRT DELETE BYTE SUPPORT SPECIFICATION ERROR

Explanation: The OPTCD value specified in the control block or the control statement is not I, L, IL, or M, X, or ND.

Diagnosis: R10 points to CDCA, R15 points to OPTCD.

U0221 IAMCRT COMMAND CODE ERROR

Explanation: The CDCA command field is invalid.

Diagnosis: R10 points to CDCA.

U0223 IAMCRT VARIABLE LENGTH RDW ERROR

Explanation: The length in the first two bytes of a variable length record (RDW) is greater than maximum LRECL or less than the KEYLEN + RKP.

Diagnosis: R10 points to CDCA. R15 points to record.

U0233 IAMCRT OVSAM FILE I/O ERROR

Explanation: An unrecoverable error occurred on the file.

Diagnosis: R14 points to DCB. R15 points to DDNAME.

U0237 IAMCRT WORK FILE I/O ERROR

Explanation: An unrecoverable error occurred in the file.

Diagnosis: R14 points to DCB. R15 points to DDNAME.

U0238 IAMCRT OVERRIDE CONTROL FILE OPEN ERROR

Explanation: Two possibilities exist:

- The user failed to supply a DD statement for the file.
- The user specified an incorrect DDNAME on the control statement or the DD statement.

Diagnosis: R15 points to DDNAME.

U0239 IAMCRT OVERRIDE CONTROL FILE I/O ERROR

Explanation: An unrecoverable error occurred while reading control statements.

Diagnosis: R14 points to DCB. R15 points to DDNAME.

U0240 to U0249 IAMCRT PROGRAM CHECK

Explanation: Internal error. Contact your FileTek customer support representative.

U0250 INTERFACE ERROR

Explanation: The user program issuing the I/O request is not a subtask to OVSAM.

Diagnosis: The user programs expecting to do I/O against files through OVSAM must be named on the OVSAM PGM control statement or must be a subtask to that program.

U0251 INTERFACE ERROR

Explanation: Internal control error. Contact your FileTek customer support representative.

U0252 INTERFACE ERROR

Explanation: Internal control error. Contact your FileTek customer support representative.

U0254 INTERFACE ERROR

Explanation: User issued a PUTX or RELEASE command without a preceding READ.

U0282 VSAM INTERFACE ERROR

Explanation: Internal control error. Contact your FileTek customer support representative for assistance.

U0283 VSAM INTERFACE ERROR

Explanation: One or more of the following modules were not in the OVSAM Vector table (IAMVECTB):

- IAM0CLA0
- IAM0192A

- IAM0200T
- IAM0231T

Diagnosis: Contact your FileTek customer support representative for assistance.

U0302 IAMACC FILE ACCESS ERROR

Explanation: Three possibilities exist:

- An attempt was made to access a non-OVSAM file with OVSAM.
- An attempt was made to access an OVSAM file that was not properly CLOSEd during creation.
- The OVSAM file's control information on the disk has been destroyed or improperly modified.

Diagnosis: R10+X'04' points to the DDNAME of the OVSAM file. A validly created OVSAM file will have a FORMAT-1 DSCB that specifies DSORG=DA, LRECL=0 and a valid physical blocksize.

U0303 IAMACC FILE ACCESS ERROR

Explanation: An attempt was made to access a dataset that is not available.

U0304 IAMACC FILE ACCESS ERROR

Explanation: An attempt was made to OPEN the same dataset for update multiple times within the same task.

U0401 SYSIN ERROR

Explanation: The SYSIN DD statement failed to OPEN for IAMONRPT, IAMSMF, IAMSMFVS, or IAMZAPFT. It may have been missing or incorrect.

U0502 STATEMENT ERROR

Explanation: The OVSAM processor (IAMONRPT or IAMZAPFT) terminated because it found a control statement error. An error message is printed on SYSPRINT.

U0600 UTILITY PROCESSING ERROR

Explanation: Three possibilities exist:

- OPEN failed.
- I/O error. A message is printed on SYSPRINT. See messages IAM471, IAM532, IAM533, IAM574, or IAM603.
- CLOSE error. A message is printed on SYSPRINT. See messages IAM532 or IAM533.

U0658 UTILITY PROCESSING ERROR

Explanation: IAMSMF/IAMSMFVS error. A message is printed on SYSPRINT. See message IAM496.

U0659 UTILITY PROCESSING ERROR

Explanation: Two possibilities exist:

- IAMONRPT internal logic error.
- IAMZAPFT internal logic error.

See messages IAM484 or IAM530 on SYSPRINT. Call your FileTek customer support representative for assistance.

U0777 IAMSTART PROCESSING ERROR

Explanation: IAMSTART SETLOCK failed. Call your FileTek customer support representative for assistance.

Error Codes Issued by OVSAM

Return/Reason Codes issued by OVSAM that correspond to VSAM MESSAGE IDC3009I are shown in Table 4-2.

Table 4-2: Error Codes Issued by OVSAM

Return Code	Reason Code	Description
8	38	DATA SET ALREADY CATALOGED
16	0	SMS FAILED ALLOCATION
22	8	DEFINE IS NOT FOR AN INDEXED FILE
42	nnnn	MVS/ESA DASDM ALLOCATION FAILED - THE REASON CODE IS THE RETURN CODE FROM DASD
44	12	CALLER WORK AREA TOO SMALL
48	0	NOT IN AN ICF CATALOG
54	nnnn	DASD ALLOCATION FAILED - THE REASON CODE IS THE RETURN CODE FROM DASD
58	0	OBTAIN FAILED
	4	VOLUME NOT MOUNTED
	8	DSCB NOT FOUND IN VTOC
	12	CVAF READ/WRITE ERROR
62	0	INITIALIZATION OF OVSAM FILE FAILED
68	2	NO SPACE ON VOLUME
	20	PRIMARY ALLOCATION TOO LARGE
86	4	RECATALOG - DATA SET NOT OVSAM OR VSAM
	6	RECATALOG - DATA SET NOT ON VOLUME
72	4	VOLUME SERIAL NO ONLINE
108	0	FIELD NAME NOT FOUND
132	2	NO VOLUME FVT FOUND IN PARAMETER LIST
	4	NO AMDSB FVT FOUND IN PARAMETER LIST
	8	NO AVERAGE LRECL FVT FOUND IN PARAMETER LIST
	10	NO SPACE FVT FOUND IN PARAMETER LIST
	26	NO SPACE IN FPL

Table 4-2: Error Codes Issued by OVSAM (continued)

Return Code	Reason Code	Description
	48	NO AMDSB IN FPL
136	2	NO VOLUME LENGTH
	6	CLUSTER NOT FOUND
	18	NO AVERAGE LRECL IN FPL
168	2	NON-GENERATED DEVICE TYPE
176	0	NO SPACE IN VTOC
192	0	EXCEEDED MAX RECORD SIZE
212	8	BLOCKSIZE TOO SMALL FOR CONTROL INFORMA-TION
240	4	DEVTYPE FAILED
	22	MISSING DDNAME
224	0	EXCEEDED 5 VOLSERS ON DD STATEMENT

OVSAM Error Codes Passed in the RPL

Return/Reason Codes passed by OVSAM in the RPL are shown in Table 4-3.

Table 4-3: OVSAM Error Codes Passed in the RPL

Return Code	RPL Errcode	Description
LOGICAL ERROR OCCURRED		
08	X’04’	SET LOGICAL END OF FILE
	X’08’	SET DUPLICATE RECORD CODE
	X’0C’	SKIP SEQUENTIAL OUT OF SEQUENCE
	X’0C’	KEY SEQUENCE ERROR ON SEQUENTIAL ADD
	X’0C’	INDICATE SEQUENCE CHECK DURING LOAD
	X’10’	SET NO RECORD FOUND
	X’14’	SET RECORD UNDER EXCLUSIVE CONTROL
	X’1C’	SET FILE FULL FOR RPL
	X’28’	CORE NOT AVAILABLE FOR LOCATE
	X’2C’	WORK AREA NOT LARGE ENOUGH FOR RECORD
	X’40’	MAXIMUM NUMBER OF PLH USED
	X’44’	FILE NOT OPENED FOR UPDATE
	X’48’	KEYED ACCESS ATTEMPTED ON ESDS
	X’50’	ATTEMPTED ERASE ON ESDS
	X’54’	PUT LOCATE REQUEST IN INVALID
	X’58’	SEQUENTIAL REQUEST WITHOUT BEING POSI-TIONED
	X’5C’	PUT OR ERASE WITHOUT READ FOR UPDATE
	X’60’	PUT KEY DOES NOT MATCH READ
	X’64’	ATTEMPTED TO CHANGE RECORD LENGTH ON ESDS FILE
	X’68’	RBA PROCESSING IS NOT SUPPORTED
	X’68’	GET PREVIOUS IN SKIP SEQUENTIAL MODE
	X’6C’	RECORD LENGTH INVALID
	X’70’	KEY LENGTH IN RPL EXCEEDS KEY SIZE
	X’74’	SET INVALID REQUEST DURING LOAD
	X’F1’	INVALID REQUEST TYPE

Table 4-3: OVSAM Error Codes Passed in the RPL (continued)

Return Code	RPL Errcode	Description
	X'F2'	ECB ADDRESS INVALID
	X'F4'	INDEX DATASPACE FULL
PHYSICAL I/O ERROR OCCURRED		
0C	X'04'	SET READ I/O ERROR
	X'10'	SET WRITE I/O ERROR

OVSAM Error Codes Passed in the ACB

Error flags passed by OVSAM in the ACB if the file is not OPENed successfully are shown in Table 4-4.

Table 4-4: OVSAM ERROR Codes Passed in the ACB

Return Code	ACB ERFLG	Description
04	X'04'	CLOSE ERROR - ACB NOT OPEN
08	X'80'	OPEN ERROR - DD STATEMENT MISSING
	X'88'	OPEN ERROR - INSUFFICIENT STORAGE IN REGION
	X'8C'	OPEN ERROR - FILE ALLOCATED BUT NOT CREATED BLOCK SIZE TOO SMALL TO CONTAIN OVSAM FILE INFORMATION
	X'F4'	CONNECT TO STORHOUSE SUBSYSTEM FAILED
	X'EC'	OPEN VRAM CALL FAILED
	X'A8'	OPEN ERROR - DATA SET NOT AVAILABLE
		OPEN ERROR - MORE THAN 2 OPENS FOR UPDATE IN TASK
	X'B8'	OPEN ERROR - I/O ERROR
	X'BC'	OPEN ERROR - NOT IAM OR VSAM FILE OR LOAD FAILED.
	X'CO'	OPEN ERROR - UNUSABLE DATA SET OPENED FOR LOAD
	X'E8'	OPEN ERROR - OVSAM FILES ARE NOT REUSABLE.
	X'EC'	OPEN VRAM FAILED
	X'F1'	SET ERROR - BAD VERSION
	X'F4'	CONNECT TO STORHOUSE FAILED
	X'F8'	SET ERROR - BAD RETURN CODE
	X'FE'	SET ERROR - WRONG VERSION

Chapter

5

Installation

This chapter describes the installation and testing of OVSAM. It explains the Global Option Change Facility and discusses how to verify the installation. This chapter also describes the use of OVSAM with other system software products.

Installing OVSAM

The OVSAM software is installed with IBM's System Maintenance Program Extended (SMP/E). The software is distributed with the StorHouse host software as FMID LSM1741. The distribution tape for LSM1741 is labeled SM1741. Table 5-1 lists the files on the tape.

Table 5-1: LSM1741 Distribution Tape Files

File	Dataset Name	Contents
1	SMPMCS	SMP/E modification control statements
2	LSM1741.F1	LSM1741 JCLIN
3	LSM1741.F2	LSM1741 loadlib (LSMLOAD)

Files 1 through 3 are used by the SMP/E installation procedures. LSM1741 should be installed using the same SMP/E datasets that were used for the installation of the base component, LSM1700. The same target and distribution zones also may be used. The LSMSMPE procedure unloaded from the SAMPLES library when installing LSM1700 is also required.

Note: ISPF SMP/E Dialogs may be used for RECEIVE, APPLY, and ACCEPT commands.

Caution: OVSAM is built on the transparent VSAM interface technology created by Innovation Data Processing (IDP) for its IAM™ product. If IAM has been installed on your system or it is installed after OVSAM, the following guidelines must be observed when installing OVSAM:

- Do not copy OVSAM into any library containing any release of IAM.
- OVSAM is compatible with IAM VIF components at level 6.1/12P or higher.
- The IAM load library must be first in the LINKLIST and, if running a level prior to 6.1/12P, the OVSAM load library must be used as a STEPLIB in all jobs accessing OVSAM files.
- Only IAMSTRT is needed if running level 6.1/12P or higher of IAM. If a prior level is used, both IAMSTRT and OVSTART must be run with IAMSTRT run first and OVSTART run second with a STEPLIB to the OVSAM load library.
- Do not activate the LOADJCLALLOC feature if running both OVSAM and IAM on your system.
- Contact Innovation Data Processing for further instructions on concurrent use of both products.

Execute SMP/E RECEIVE

The software must be unloaded using the SMP/E RECEIVE command. An appropriate unit must be specified for tape devices. The use of the SOURCEID operand is optional.

```
//LSMRECV  JOB ....
//LSMSMPE  EXEC LSMSMPE
//SMPCNTL  DD
  SET BOUNDARY(GLOBAL).
  RECEIVE SELECT(LSM1741) SOURCEID(source id name).    <===
/*
//SMFTFIN  DD DSN=SMPMCS,VOL=SER=SM1741,UNIT=unit,     <===
//            LABEL=(1,SL),DISP=OLD
//SMPHOLD  DD DUMMY
```

The symbol <=== indicates that the JCL statement must be customized for your site.

Execute SMP/E APPLY

The APPLY process creates the executable load modules in the LSMLOAD library. You may direct these load modules to another library. Use the job stream that follows to execute the SMP/E APPLY after updating the target zone name.

```
//LSMAPPLY JOB ....
//LSMSMPE  EXEC LSMSMPE
//SMPCNTL DD *
  SET BOUNDARY(distribution zone name).                <===
```

```
  ACCEPT SELECT(LSM1741).
/*
```

The symbol <=== indicates that the JCL statement must be customized for your site.

Verify the Installation

All SMP/E return codes should be zero. Any non-zero values must be investigated. If necessary, call your customer support representative for assistance.

Execute SMP/E ACCEPT

The ACCEPT updates the distribution libraries and indicates that the software is completely installed as far as SMP/E is concerned. Use the job stream that follows to execute the SMP/E ACCEPT after updating the distribution zone name.

```
//LSMACEPT JOB ....
//LSMSMPE  EXEC LSMSMPE
//SMPCNTL  DD *
  SET BOUNDARY(distribution zone name).                <===
  ACCEPT SELECT(LSM1741).
/*
```

The symbol <=== indicates that the JCL statement must be customized for your site.

Activating OVSAM

The SAMPLES library built when FMID LSM1700 was installed contains five members to control the OVSAM Interface in your system.

- OVSTART – A procedure that activates OVSAM.
- OVSTAT – A job stream to check the status of OVSAM in the system.
- OVSTRT – A job stream to activate OVSAM for testing.
- OVCOMM – A command to activate OVSAM at IPL.
- OVSTOP – A job stream to deactivate OVSAM.

Activating OVSAM for Testing

You can activate the OVSAM interface at any time using the following procedure:

1. Review the JCL in member OVSTRT in the SAMPLES library.

2. Change the library name specified in the LIB= statement to reflect your OVSAM load library.

3. Submit this procedure to activate the OVSAM interface. This will not affect normal VSAM or system operations. OVSAM will remain active until the next IPL of your operating system.

4. Restart OVSAM after each IPL.

5. Activate OVSAM on each machine that uses OVSAM.

6. If the OVSAM program library is not in the LINKLIST, use a STEPLIB DD statement pointing to the OVSAM load library in the jobs processing OVSAM files.

Activating OVSAM at IPL

To have OVSAM started automatically at each IPL, use the following procedure:

1. In member OVSTART of the SAMPLES library, change the library name specified in the LIB= statement to reflect your OVSAM load library.

2. Copy OVSTART into SYS1.PROCLIB (or the procedure library used by your installation for system level user PROCs).

3. Copy the member OVCOMM from SAMPLES into the SYS1.PARMLIB member COMMNDxx. This creates a record that results in a system start command being issued for the OVSAM start up procedure at IPL. The record in COMMNDxx should be:

```
COM='START OVSTART'
```

Deactivating and Reactivating OVSAM

Warning: If you deactivate OVSAM in a production environment, all OPEN, CLOSE and IDCAMS processing against OVSAM files will fail.

To deactivate OVSAM, submit the member OVSTOP from SAMPLES. All VSAM requests will be routed directly to VSAM without checking for OVSAM files. To reactivate OVSAM, use the OVSTRT procedure.

Installation Test

To make a quick test to see if OVSAM is properly installed in the system, submit the job OVSAMIVP from SAMPLES. This job will execute IDCAMS to DEFINE and REPRO an OVSAM file.

A LISTCAT is executed against the OVSAM file. If OVSAM is properly installed, LISTCAT will show the file as a non-VSAM file. The IAMPRINT DD statement will display the characteristics of the OVSAM file. If LISTCAT shows the file as VSAM, OVSAM may not be properly installed.

Note: Before submitting the test job, review the JCL and control statements, making whatever changes are appropriate.

The most common errors encountered after the installation of OVSAM are: files remaining VSAM rather than being converted to OVSAM, IEC161I messages, and OVSAM files reverting to VSAM.

If a DEFINE CLUSTER creates a VSAM dataset when it should have created an OVSAM dataset or if message IEC161I is received for an OVSAM dataset, the following possibilities exist:

- OVSAM is not active. Running the OVSTRT procedure (in SAMPLES) will indicate the current active/inactive state of OVSAM.
- The OVSAM library is not authorized.
- The OVSAM library is not in LINKLIST, and no STEPLIB was supplied. An S806 ABEND, naming an IAMxxxx module, should be indicated.

  If files converted to OVSAM revert back to VSAM, check for the circumstances listed above. If none of these circumstances are the cause, the problem is a job executed against the OVSAM file that DELETEd and reDEFINEd the file as VSAM without the $FTEK parameter specified. Find this job and change the DEFINE procedure. Use an SMF analysis program to report on all the jobs that have DEFINEd the cluster so that you can identify the jobs causing the problem.

Global Option Change Facility

The Global Option Change Facility allows a site to modify OVSAM installation options. The installation options include defaults for FileTek Override DEFINE, special features in OVSAM, and other processing options. This facility provides the ability to PRINT present global option values, change values, and RESET options to their original values as supplied on the installation tape. You should carefully review the options available for the OVSAM system. The Global Options are used by the DEFINE process to pick up defaults for the values that can be provided with the OVSAM override statement in the FTKOVRID DD.

Batch Execution

The Global Option Change Facility is invoked from a batch job by executing program IAMZAPFT. The required JCL is:

- JOB – This statement is user specified and depends upon installation standards.
- EXEC – Must specify PGM=IAMZAPFT.
- STEPLIB or JOBLIB DD – If required, must specify the load module library in which OVSAM resides.
- COPYTO DD – Specifies the load library that contains the target option table for the copy operation. The changed options in the SYSLIB option table will be copied to the target option table.
- SYSPRINT DD – Specifies the output message dataset. This is a required statement and usually is a SYSOUT dataset.
- SYSLIB DD STATEMENT – Must specify the load module library in which OVSAM resides. It is also used as the source library for the copy function.
- SYSIN DD STATEMENT – Specifies the control statement dataset required for all functions. This is usually an input stream (DD*) dataset.

TSO Execution

Global Option Change Facility IAMZAPFT can be executed under TSO. The program will prompt the user for the commands. END will save the new options, if any, and terminate the program. The allocations required to execute IAMZAPFT in the TSO foreground are as follows:

```
ALLOC  F(SYSLIB)   DA('lsmload')   SHR
ALLOC  F(SYSPRINT) DA(*)
ALLOC  F(SYSIN)    DA(*)
IAMZAPFT
```

If the library containing OVSAM is not in LINKLIST, use:

```
CALL 'lsmload(IAMZAPFT)'
```

Available Functions

The Global Option Change Facility has the following commands:

- AUDIT – Lists the Global Options that have been changed from their distributed defaults.

- CANCEL – Terminates IAMZAPFT without updating the Option Table.
- COPY – Copies the changed Global Options from the Global Option Table in the SYSLIB dataset to the COPYTODD dataset. COPYTODD is a required DD statement for this operation.
- END – Terminates IAMZAPFT processing and rewrites the Global Option Table if any option was changed. This command is intended for TSO users.
- HELP ALL – Prints a menu of the IAMZAPFT options and related documentation.
- PRINT – Prints the current values of the Global Options table.
- RESET – Resets the Global Options to the original distributed defaults.
- ZAP – Modifies the Global Options. This command can be used to enable or disable specified processing options and set DEFINE defaults

  for the OVSAM system. The operands for this command are documented by function in the following sections. The ZAP command format is: ZAP operand=value, ...operand=value.

ZAP Command Syntax

The command syntax for ZAP is as follows:

```
ZAP   ACCOUNT=cccccccccccc,
      APASSWORD=cccccccccccccccccccccccccccccccc,
      DATACOMPRESS=ccc,
      DISCONTIME=nnnnnn,
      FILEPASSWORD=cccccccc,
      FSET=cccccccc,
      GROUP=cccccccc,
      GPASSWORD=(cccccccc,cccccccc,ccccccc),
      MAXBUFNO=nn,
      MINBUFNO=nn,
      NOSUFFIX,
      SUFFIX,
      OVERFLOW=nnnnnnn,
      PE=nnnnn,
      SMID=cccccc,
      SUBSYS=cccc,
      VSET=cccccccc
```

Operand Definitions

Operand definitions for the ZAP command are as follows. Operand names that have abbreviations are followed by "," and the abbreviation.

ACCOUNT, AC Specifies a default 12-character StorHouse account identification code that is to be used by OVSAM unless overridden at define time with an FTKOVRID DEFINE statement. The default is blanks.

APASSWORD, APASS Specifies a default 32-character StorHouse password that is required by the default StorHouse account. The default is blanks.

DATACOMPRESS, DATAC Specifies that all OVSAM files should be considered for data compression. The default is YES.

DISCONTIME, DISC Specifies the time, in seconds, after which OVSAM will disconnect from the StorHouse subsystem to free resources for other files. The file will still appear to be open to the application program and will be automatically reconnected when another request is issued. The default is 30.

FILEPASSWORD, FILEP Specifies a default 8-character password that will be the READ, WRITE and DELETE password for the file on StorHouse. The default is blank.

FSET Specifies a default 8-character StorHouse file set name. The default is blank.

GPASSWORD, GPASS Specifies up to three default 8-character passwords that are the StorHouse GROUP READ, WRITE and DELETE passwords for the default GROUP. The default is blank.

GROUP, GR Specifies a default 8-character StorHouse GROUP name. The default is blank.

MAXBUFNO, MAXB Specifies a default value for the maximum number of buffers OVSAM is allowed to use during file processing. During file processing, as demand warrants, OVSAM's Real Time Tuning will dynamically adjust the number of buffers actually used for a file up to this maximum. You may specify a value from 1 to 32 buffers. The default is nulls.

MINBUFNO, MINB Specifies a default value for the initial number of buffers OVSAM will acquire when OPENing a file for processing. OVSAM will acquire a number of buffers equal to this value or to the number of blocks contained on one track, whichever is greater.

OVSAM's Real Time Tuning starts with this initial number of buffers and during file processing, dynamically adjusts up or down the number of buffers actually used for a file based on demand. You may specify a value from 1 to 32 buffers. The default is nulls.

NOSUFFIX, NOS Specifies that OVSAM will not suffix a date and time stamp to the end of the StorHouse file name. The default is suffix.

OVERFLOW, O — Specifies the default number of records of file overflow area to be reserved when creating an OVSAM file. This area is used when records are inserted into the file or when an updated record's length is increased. You may specify a value from 0 to 2,000,000, inclusive. The default is 100.

PE — Specifies the number of blocks of prime extension area to be reserved when creating an OVSAM file. You may specify any number from 0 to 32,767, inclusive. The default is 1.

SMID — Specifies the default 6-character StorHouse ID to be used by OVSAM. The default is blank.

SUBSYS — Specifies the default 4-character StorHouse subsystem ID to be used by OVSAM. The default is blank.

SUFFIX, SUF — Specifies that OVSAM will suffix a date and time stamp to the end of the StorHouse file name. This is done to prevent StorHouse from creating multiple versions of the same file name because older versions are not accessible through OVSAM. This option is ignored when the FILENAME parameter is specified on an FTKOVRID. This is because an explicitly overridden file name is never suffixed. This option is set as the default.

VSET — Specifies the default 8-character StorHouse volume set name to be used by OVSAM. The default is blank.

IAMZAPFT JCL Examples

The following examples illustrate execution of the Global Option Change Facility.

Display Present Global Option Values

To display the present Global values:

```
//PRINT    EXEC   PGM=IAMZAPFT
//SYSPRINT DD     SYSOUT=A
//SYSLIB   DD     DSN=lsmload,DISP=SHR
//SYSIN    DD*
  PRINT
```

Set OVSAM Default Account

To set the default account to be used by OVSAM:

```
//ZAP      EXEC   PGM=IAMZAPFT
//SYSPRINT DD     SYSOUT=A
//SYSLIB   DD     DSN=lsmload,DISP=SHR
//SYSIN    DD*
    ZAP    ACCOUNT=FT1ACCOUNT,GPASS=(RDPASS,WRPASS,DELPASS)
```

Reset Global Option Values

To reset all the Global Option values to the values of the original defaults:

```
//RESET    EXEC   PGM=IAMZAPFT
//SYSPRINT DD     SYSOUT=A
//SYSLIB   DD     DSN=lsmload,DISP=SHR
//SYSIN    DD*
  RESET
```

Using OVSAM with Other System Software Products

OVSAM supports or co-exists with most software products that make decisions based on file DSORG or interface with the same MVS services as OVSAM. The main consideration when using OVSAM in conjunction with these products, especially one that requires a system interface or started task, is the order in which the product interfaces are activated. Generally, if a program provides a VSAM only service such as altering VSAM buffering or activating LSR, it should be started before OVSAM. However, if a product is applicable to OVSAM files, CICS and batch VSAM journaling facilities (for example, DRS™ from Integrity Solutions of Colorado) or VSAM allocation control products (for example, VAM™ from Sterling Software of California), OVSAM should be activated first.

If you are an ACF2™ user and you get an MSG IEC1611076-002 and/or an OPEN FAILURE RC=8, REASON=188 message when you try to open an OVSAM file with ACF2 active, you may have the following problem: If OVSAM is started after ACF2, the OVSAM open routine will not get control. Consequently, a real VSAM open is attempted, and fails. To bypass this problem start OVSAM before ACF2. To correct this problem and allow OVSAM to be started after ACF2, an ACF2 release dependent APAR (for example STAR #TS86366) is needed.

CICS Considerations

OVSAM files may be used in place of any single index KSDS VSAM cluster. OVSAM files do not support alternative index processing and cannot be used in place of VSAM clusters that are alternative indexes or have alternative indexes.

File Control Table

OVSAM files are defined in the File Control Table (FCT) as VSAM files. The only difference is that OVSAM files must not be defined as being part of an LSRPOOL.

Local Shared Resources (LSRPOOL)

OVSAM does not support Local Shared Resources (LSR). OVSAM manages its own buffer pools. OVSAM's buffer pool and VSAM's cannot be shared. CICS default is Local Shared Resources. FCTs that are to be used for OVSAM files must specify the parameter LSRPOOL=NONE.

String Number (STRNO)

CICS FCTs also should be checked to ensure that the STRNO parameter is specified and contains an adequate value. This parameter may have previously been specified as part of the LSRPOOL definition and consequently may not have been specified in the FCT. STRNO is needed in the FCT entry for an OVSAM file because it controls the number of transactions that have concurrent access to the file. STRNO should always specify a minimum value of 2. If a file is expected to have a high number of concurrent users, a value of 10 or more may be needed. The value specified in STRNO= should actually be equal to or slightly higher than the maximum number of users who will concurrently be accessing the OVSAM file for BROWSE or GET-FOR-UPDATE operations. If the value specified is not adequate, excessive “waiting for strings” conditions from CICS will occur.

OSCORE Requirements

OVSAM primarily uses storage above the line. However, there is need for some storage below the line. This is used to accommodate applications running in AMODE 24 and for data areas that are required to reside below the line by MVS. For CICS customers, all below-the-line storage comes out of OSCORE.

After taking into account the storage required for the OVSAM load modules, OVSAM files require about 2K to 4K more OSCORE than a VSAM file in an LSR pool. The base requirement OSCORE storage use is approximately 5K and the VSAM CB (above line in CICS 2.1) OSCORE storage use is approximately 2K for each open file. At least 64K is required to complete OPEN processing.

Certain storage sizes vary, depending on the file attributes, so actual storage required for any particular file may be slightly different. The example is for a STRNO value equal to 7 and assumes a key length of 32 bytes. For additional strings, add (24 + key

length) bytes per string to the VSAM control block storage requirement. These storage numbers reflect what is required during processing, after a file is opened. OPEN and CLOSE processing may require some additional storage. It is recommended that at least 32K of additional OSCORE be available to support OPEN and CLOSE.

CICS users who frequently CLOSE and OPEN OVSAM files, without bringing CICS down, should set core rounding options in the OVSAM global options table to help prevent fragmentation. This will round the GETMAIN for the VSAM control blocks to a 4K boundary.

Storage is also required for the OVSAM modules. Only the required module(s) are loaded. For example, to access a file without data compression and overrides requires modules IAMACC and IAMOPT. The modules are re-entrant, so only one copy is required, regardless of the number of files OPENed. The modules IAMACC, IAMCRT and IAMCOMPO can all be placed in LPA (Link Pack Areas) to avoid occupying OSCORE storage. Placing modules in LPA will not reduce virtual storage. It will, however, appropriate storage from LPA and reduce OSCORE. This is illustrated in Table 5-2.

Table 5-2: Load Module Storage

Module	Storage	LPA Eligible
IAMACC	32K	Y
IAMCRT	32K	Y
IAMCOMPO	8K	Y
IAMOPT	2K	N
IAMOPTFT	2K	N
IAMOVRID	12K	N
IAMXA101	12K	N
IAMXC101	12K	N
LSMLOAD	17K	Y
	129 k Maximum for all IAM routines	

Note: Modules placed in LPA will require special consideration when maintenance is applied.

CSA Storage Requirements

OVSAM's only use of CSA is for the interface screening modules such as Open, Close, or Locate. CSA storage required is approximately 20K.

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