CA IDMS - 19.0
Using Journal Analyzer

Date: 15-Jan-2018
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Using Journal Analyzer

This section is intended to serve as a comprehensive reference for the following CA IDMS database options:

- CA IDMS Database Dictionary Loader
- CA IDMS Database Dictionary Migrator
- CA IDMS Database Dictionary Query Facility
- CA IDMS Database Dictionary Module Editor
- CA IDMS Database Presspack

CA IDMS Specifications

If CA IDMS Journal Analyzer encounters a run unit whose program name is missing, it substitutes '-NULL-' for the name to alert the user of the situation. A possible cause of the missing name is a CA IDMS application program which does not issue 'COPY IDMS SUBSCHEMA-BINDS', but issues its own BINDS. In doing so, the program did not move a literal definition of the program's name to the PROGRAM-NAME field in the SUBSCHEMA-CTRL.

If CA IDMS Journal Analyzer encounters a run unit whose 8-byte task ID is binary zeros, it substitutes 'BATC' for the first four bytes (the environment type). Normally, the environment is signified by values such as 'BATC' and 'CICS'. A zero task ID can be the result of a batch program creating disk journals in a local environment.

If CA IDMS Journal Analyzer deems the SELECT LOCKS HELD count being too large (that is, larger than, 1,677,216-16Meg), CA IDMS Journal Analyzer will adjust the count to what is considers to be a reasonable value by subtracting the value from 1,677,216.

Program Registration

CA IDMS Journal Analyzer is able to produce a PROGRAM DISPLAY in the subschema format (SUBSCHEMA DISPLAY) only when the journaled program is registered to a subschema. A program is associated with a subschema in the data dictionary through one of the following methods:

1. The program is registered to a given subschema for authorized DML processing by the IDMSDDDL utility.

2. The program is complied by a DML processor which automatically maintains compile-time statistics.

If a program is not already registered, the following statements must be processed via IDMSDDDL:
/ ADD \< >\ MODIFY / PROGRAM program-name INCLUDE SUBSCHEMA subschema-name OF SCHEMA schema-name.

⚠️ **Note:** This specification can be changed, so that different subschemas are defined for compilation and for the Subschema Display. CA IDMS Journal Analyzer uses the subschema most recently registered for each program.

Program registration is also required if a user supplied decompression routine has been specified and if this routine requires a valid subschema name in the Applications Control Block (ACB).

### CA IDMS Journal Analyzer System Output

CA IDMS Journal Analyzer produces three classes of printed output for user analysis:

- **Journal Reports**
- **Journal Displays**
- **Audit Report**

The Journal Reports contain statistical information that provides numerous views of database activity recorded in the Archive Journal file.

These views include:

- Run unit activity
- Detail and summary statistics
- Problem solving information
- Highlights/rankings of program performance.

The Journal Displays provide a detailed view of specific database changes. These views include:

- Before and after images of database modifications shown in character/hexadecimal representation
- An optional subschema view of field changes.

The Audit Report provides a listing of any messages generated by CA IDMS Journal Analyzer and provides a summary of all processing.

- **Printed Output (see page 9)**
- **Journal Reports 1 (see page 9)**
- **Journal Displays 1 (see page 11)**
- **Audit Report 1 (see page 12)**
- **Examples (see page 54)**
Printed Output

CA IDMS Journal Analyzer produces three classes of printed output:

- Journal Reports
- Journal Displays
- Audit Report

Journal Reports 1

The first class of output generated by CA IDMS Journal Analyzer is the Journal Reports. These reports contain statistical information that provides views of the database activity recorded in the Archive Journal file. Each Journal Report type can be produced for selected time periods or for the entire duration represented in the Archive Journal file.

ACTIVITY Report

The ACTIVITY Report summarizes run unit activity in the Archive Journal file based on user-specified time intervals. The activity summarized can span the entire file, or can be from selected time periods. The reports can be used to monitor run unit activity on an ongoing basis, with special attention paid to peak periods.

By examining the reported totals such as the Maximum Concurrent Run Unit Count, you can evaluate the adequacy of the CV generation parameters. In addition, ACTIVITY Reports can help to verify the system activity. Journal Reports or Journal Displays can provide more details for the time intervals in question.

The activity statistics are reported by user-specified time intervals. For each time interval, activity is divided into ONLINE and BATCH run units, and reported accordingly. If both ONLINE and BATCH run units are reported, a TOTAL summary line is also produced. A set of GRAND TOTALS summarize all activity within the reporting periods.

PROGRAM Reports

The PROGRAM Reports feature detailed and summarized statistics by application program within selected time intervals. There are three levels of reporting available:

- Program Details -- includes run time counts (CA IDMS statistics) for all run units ordered by the selected program names.
- Program Summary -- records the sum of all run units for an application program.
- System Summary -- presents a sum of all Program summaries within a time interval.
The level of reporting (Detail vs. Summary) selection of the time interval length, and the programs to be analyzed are controlled by you. Each program's totals are also reflected as a ratio of the system totals (the percentage of all CA IDMS resources consumed that were accounted for by the program).

If Program Summary is the reporting level, you can optionally request program highlights that are statistics of the run units with lowest and highest duration (up to 10 each). A lower reporting level includes all higher summary reporting (Program Details are accompanied by Program and System Summaries). When only one time interval is reported, the System Summary is the total of all selected run units. Whenever multiple time intervals are reported, a Grand Summary is produced for all run units. The Grand Summary is simply a total of all the System Summaries.

**SPECIAL Reports**

The SPECIAL Reports provide key information with which to monitor and control the database environment. There are two SPECIAL Reports:

- CHRONOLOGICAL EVENT Report
- ABORT COINCIDENCE Report

Each report presents a different perspective from which to identify and correct performance problems and system abuses.

The CHRONOLOGICAL EVENT Report outlines all recorded activity in a time wise sequence. You can visualize all run unit events within selected time intervals. Each event (BGIN, COMT, ENDJ, and ABRT) is reported with a time stamp and the current quiesce level. The termination of each recovery unit (COMT, ENDJ, and ABRT) is accompanied by totals of critical resource consumption, and all ABRTs are flagged. Periods of inactivity or with no posted events are also highlighted on the report.

The ABORT COINCIDENCE Report provides a daily analysis of all aborted run units in two parts.

The first part of the analysis lists all programs executing concurrently with an aborted program along with their coincidence ratios. The second part of the analysis relates the coincident programs with the programs which aborted whenever the coincident programs were active.

**Note:** The coincidence of the RHDCRUAL program is automatically eliminated by CA IDMS Journal Analyzer (one or more RHDCRUAL run units will always be coincident) to eliminate unnecessary skewing. CA IDMS Journal Analyzer automatically sets the periodic time interval values to report.

**MANAGEMENT Reports**

The MANAGEMENT Reports feature two formats:

- Highlights
- Rankings
The Highlight reports contain summarized information of system performance and resource consumption derived from the original PROGRAM Report. These reports present totals, highest, lowest, means, medians of program attributes (quiesce levels, etc.), and program consumption (CA IDMS statistics).

The Ranking reports contain system performance and resource consumption information derived from the original PROGRAM Report that is ranked, rather than summarized. You can designate the particular item to be ranked (Pages Read, %ABORTED, etc.), and can designate the ranking process to be used (program type to be used, number of items to be ranked, etc.).

Journal Displays

The second class of output generated by CA IDMS Journal Analyzer is the Journal Displays. The Journal Displays provide you with the means to effectively monitor changes to sensitive record types, to scrutinize performance problems, and to assist in program debugging. The displays are extremely effective whenever you are most precise in defining the display selection parameters. The choice of parameter values can be influenced by close examination of the statistics produced by the Journal Reports.

The before and after images of database record modifications can be reported by several Journal Display types:

- RECORD Display
- DATABASE KEY Display
- PROGRAM Display

Each Journal Display type can be produced for selected time periods or for the entire duration represented by the Archive Journal file. The Journal Displays can be produced in two formats:

- Full Format -- all record positions or fields are displayed with the changed values highlighted
- Sparse Format -- only the changed positions or fields are displayed.

While the Journal Reports present you with a broad survey of the database activity recorded in the Archive Journal file, the Journal Displays enable you to view the database changes at a precise, almost microscopic level in three logical sequences:

- RECORD Display -- displays changes for particular record types during specific time periods
- DATABASE KEY Display -- displays changes for particular record occurrences or particular database pages during specific time periods.
- PROGRAM Display -- displays database changes effected by particular application programs during specific time periods. Fragmented records are automatically recomposed.

In addition, you can request the PROGRAM Display to provide a program's subschema view of database changes as defined in the data dictionary. The Subschema Display provides PROGRAM Display information in a format which is better suited for the less technical end-user. The data is
presented as individual fields, rather than complete records. Changes are paired in a Before/After, side-by-side format. All fields are identified similar to the original subschema definitions, and all values are converted to externally printable formats. Therefore, programmers and/or auditors can examine the Subschema Display with little or no interpretation by a database technician.

Audit Report 1

The third class of output generated by CA IDMS Journal Analyzer is the Audit Report. This report contains the informative, error, and processing messages generated by CA IDMS Journal Analyzer, and provides a summary of all processing.

ACTIVITY Report Summary

The ACTIVITY Report summarizes run unit activity in the Archive Journal file. The activity summarized can span the entire file, or can be from selected time periods. The report can be used to monitor run unit activity on an ongoing basis, with special attention paid to peak periods.

The ACTIVITY Report provides statistics on such items as:

- Number of run units initiated (START)
- Number of recovery checkpoints issued (COMMIT)
- Number of units successfully terminated (FINISH)
- Number of recovery units which terminated abnormally (ABORT)
- Number of run units active within the reported time interval (ACTIVE)
- Duration of run units within the reported time interval (DURATION)

The activity statistics are reported in the time intervals you specify (for example hourly). For each time interval, activity is divided into online (ONL) and batch (BTC) run units, and reported accordingly. If both ONL and BTC run units are reported, a total (TOT) summary line is also produced. A set of GRAND TOTALS summarize all activity within the reporting periods.

By examining the reported totals such as the Maximum Concurrent Run Unit Count, the adequacy of the CV generation parameters can be evaluated. In addition, the ACTIVITY Report can help to verify your suspicions of undue or unusual system activity. This may lead you to the use of other Journal Reports or Journal Displays for the time intervals in question.

⚠️ Note: It is recommended that the ACTIVITY Report be generated on a daily basis in order to get an overall view of system activity.
ACTIVITY Report Fields

The following is a description of the various fields which make up the ACTIVITY Report.

**PERIOD** - Start and stop date/time intervals.

**START (BGIN)** - Number of run units initiating activity within the reported time interval.

**COMMIT (COMT)** - Number of recovery unit checkpoints issued by run units activated within the reported time interval.

**FINISH (ENDJ)** - Number of recovery units activated within the reported time interval which terminated successfully.

**ABORT (ABRT)** - Number of recovery units activated within the reported time interval which terminated abnormally.

**ACTIVE** - Number of run units active within the time interval. When both ONL and BTC run units are present, an ACTIVE count is reported for the TOT summary line only.

---

**Note:** The value of ACTIVE can exceed the value of START if run units were active at the start of the current time interval.

---

**DURATION (SEC)**

- **LOW** - Lowest run unit duration encountered within the reported time interval.
- **HIGH** - Highest run unit duration encountered within the reported time interval.
- **MEAN** - Average run unit duration encountered within the reported time interval.
- **MEDIAN** - Median run unit duration encountered within the reported time interval, except for the TOT summary line.

**Processing Type** - Online (ONL), Batch (BTC), or total (TOT). When both ONL and BTC run units are present within a time interval, a TOT summary line is produced.

**MAXIMUM CONCURRENT RUN UNITS** - Highest quiesce level encountered in a BGIN archive record within the reported time interval.

The following example shows the Activity Report:
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**PROGRAM Reports Summary**

The PROGRAM Reports feature detailed and summarized statistics by application program within selected time intervals. There are three levels of reporting available:

- **Program Details** - presents run-time counts (CA IDMS statistics) for all run units ordered by the selected program names

- **Program Summary** - presents the sum of all run units for an application program

- **System Summary** - presents a sum of all program summaries within a time interval.

The level of reporting (Detail vs Summary), selection of the time interval length, and the programs to be analyzed are controlled by you. Each program's totals are also reflected as a ratio of the system totals (the percentage of all CA IDMS resources consumed that were accounted for by the program).

If Program Summary is the reporting level, you can optionally request program highlights which are statistics of the run units with lowest and highest duration (up to 10 each). A lower reporting level includes all higher summary reporting (e.g., Program Details are accompanied by Program and System Summaries). When only one time interval is reported, the System Summary is the total of all selected run units. Whenever multiple time intervals are reported, a Grand Summary is produced for all run units. The Grand Summary is simply a total of all the System Summaries.
Note: The most practical method of monitoring program activity periodically is to request program summary/highlights without a specific time interval (LEVEL=SUMMARY, HILITES=YES).

Program Details (LEVEL=DETAILS) should be reported on those occasions where there are more than 20 run unit occurrences for a program, when a strictly timewise sequence of all program activity is desired, or where it is necessary to view all occurrences of a program for detailed investigation.

Program highlights (HILITES=YES) represent those run units which are the lowest and the highest in duration for an application program. Up to ten (10) run units in each category are reported, and are sorted sequentially by length of duration.

When reviewing the Summaries (Program, System, or Grand) attention should be focused on the COUNTS and RATIOS. These statistics can reveal the trends which reflect upon the 'vitality' of the database environment.

In the Program Summary, attention should be paid to the highlighted run units with the longest duration. The cause of the lengthy duration could be:

- An extraordinary amount of processing was performed -- check COUNTS
- High run unit activity occurred at the time of execution of the run units -- check the ACTIVITY Report
- Inefficient database processing is indicated -- check COUNTS and RATIOS
- Program was locked out or had some resource conflict with a concurrently executing program -- check the CHRONOLOGICAL EVENT Report.

Note: If a more precise view of the suspected problem is needed, a PROGRAM Display can be requested using a narrow time interval. The run unit IDs and start date/time in the PROGRAM Reports can assist you in selecting the desired time interval.

Program Details

Program Details depict selected run unit activity in timewise order for each application program. The majority of the statistics is commonly known as CA IDMS statistics, and are additionally summarized in the summary reports. The information for each run unit is presented on two report lines.

Description of the Program Details layout starts on the following page.

Program Details Report Fields

The following is a description of the various fields which make up the Program Details Report.

Start and stop date/time of the time interval.
PROGRAM -- Application program name.

START -- Starting date/time of run unit.

END -- Ending date/time of run unit.

ABRT -- Abort flag (*) if the run unit is aborted.

DURATION (SEC) -- Run unit duration, shown in seconds.

AREAS OPENED -- Number of areas opened in an update mode.

RUN UNIT -- Run unit numeric ID.

QUIESCE LEVEL -- Highest quiesce level encountered at the run unit initiation (BGIN).

COUNTS -- The fields listed below are fields containing CA IDMS statistics

PAGES

- READ -- Number of pages read from database.
- WRITTEN -- Number of pages written to database.
- REQUESTED -- Number of pages requested from database.

CALC RECORDS

- HOME PAGE -- Number of CALC records stored on the home page.
- OVERFLOW -- Number of CALC records stored on an overflow page.

LOCKS

- REQUESTED -- Number of record locks requested by run unit.
- SELECT -- Number of select (shared) locks maintained by run unit.
- UPDATE -- Number of update (exclusive) locks held at the termination of the run unit.

RECORDS

- UPDATED -- Number of database records updated.
- REQUESTED -- Number of records requested.
- CURRENT -- Number of records made current by run unit.
- OWNER -- Number of VIA records stored on owner page.
- OVERFLOW -- Number of VIA records stored on an overflow page.

CALLS TO IDMSDBMS -- Number of DML verbs executed.
- **FRAGMENTS STORED** -- Number of record fragments stored.

- **ROOTS/RCDS RELOCATED** -- Number of records relocated because of restructuring.

The following example shows the PROGRAM REPORT (Details):

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<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>PROGRAM REPORT</td>
<td>mm/dd/yy</td>
<td>hh:mm:ss</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PROGRAM START</th>
<th>A DURATION AREAS</th>
<th>B (SEC) OPENED</th>
<th>READ</th>
<th>WRITTEN</th>
<th>REQUESTED</th>
<th>HOME PAGE</th>
<th>OVERFLOW</th>
<th>REQUESTED</th>
<th>SELECT</th>
<th>UPDATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>NODE NAME END</td>
<td>R RUN QUIESCE</td>
<td>RECORDS</td>
<td>VIA RECORDS</td>
<td>CALLS TO FRAGMENTS ROOTS/RCDS</td>
<td>IMXSDBMS</td>
<td>STORED</td>
<td>RELOCATED</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>T UNIT LEVEL</td>
<td>UPDATED</td>
<td>REQUESTED</td>
<td>CURRENT OWNER PAGE</td>
<td>OVERFLOW</td>
<td>IDMSDBMS</td>
<td>STORED</td>
<td>RELOCATED</td>
<td></td>
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<td></td>
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<tr>
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<td>8,911</td>
<td>229</td>
<td>637</td>
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<td>8,911</td>
<td>229</td>
<td>637</td>
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<tr>
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<td>902</td>
<td>23,927</td>
<td>0</td>
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<td>26,162</td>
<td>8,912</td>
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<td>8,912</td>
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<td>637</td>
<td>11,601</td>
<td>34</td>
<td>0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Program Summary/Highlights**

A Program Summary Report presents a sum-total of all run unit totals for an application program. Optionally, whenever a program has three or more run units, detailed statistics of those run units with the lowest and highest durations can be reported. Up to ten run units with the lowest duration are presented with the lowest duration depicted as number '1'. Also, up to ten run units with highest duration are presented with the highest duration depicted as number '1'.

**Program Summary/Highlights Report Fields**

The following is a description of the various fields which make up the Program Summary Report.

**SUMMARY** -- Application program name and processing type.

Start and stop date/time interval of report.

**LOWEST/HIGHEST** -- category of program highlights.

Sequence, relative to duration, within the highlight category.

Starting date/time of run unit.
Ending date/time of run unit.

**ABRT** -- Abort flag (*) if run unit is aborted.

**Note:** Some run units may show up as aborted when, in fact, they have not. The reason is that CA IDMS Journal Analyzer did not detect an ENDJ checkpoint record for the run unit.

**DURATION** -- Run unit duration.

**AREAS OPENED** -- Number of areas opened in an update mode.

**RUN UNIT** -- Run unit numeric ID.

**QUIESCE LEVEL** -- Highest quiesce level encountered at the run unit initiation (BGIN).

**COUNTS** -- (See Program Details (see page 15) for definitions).

**NODE NAME** -- The name of a CA IDMS System in a data sharing group or "*LOCAL*" if data sharing is not in use.

The following example shows the PROGRAM Report (Summary/Highlights):

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUMMARY = IDMSDDDL BTC**

```
****** START A DURATION AREAS -----------PAGES----------- ----CALC RECORDS---- ------LOCKS--------
  B (SEC) OPENED READ WRITTEN REQUESTED HOME PAGE OVERFLOW REQUESTED SELECT UPDATE
  T UNIT LEVEL UPDATED REQUESTED CURRENT OWNER PAGE OVERFLOW IDMSDBMS STORED RELOCATED

1 mm/dd/yy hh:mm:ss 1.80 1 38 1 146 0 0 123 19 2
2 mm/dd/yy hh:mm:ss  47.45 1 1,018 938 5,533 0 0 14,998 154 7,948
3 mm/dd/yy hh:mm:ss  60.78 1 1,198 685 19,724 17 49 20,656 128 7,611
4 mm/dd/yy hh:mm:ss  73.64 1 1,142 902 23,927 0 0 32,538 232 15,566

****** HIGHEST PAGES -----------RECORDS--------- VIA RECORDS------ CALLS TO FRAGMENTS ROOTS/RCDS
  T UNIT LEVEL UPDATED REQUESTED CURRENT OWNER PAGE OVERFLOW IDMSDBMS STORED RELOCATED

4 mm/dd/yy hh:mm:ss  73.64 1 1,142 902 23,927 0 0 32,538 232 15,566
3 mm/dd/yy hh:mm:ss  77.29 1 1,407 884 22,982 4 8 32,280 253 15,266
2 mm/dd/yy hh:mm:ss  84.39 1 1,442 982 23,929 0 0 32,543 230 15,372
1 mm/dd/yy hh:mm:ss  83.83 1 1,441 901 23,984 0 0 32,577 240 15,395
```
Program Summary/Totals

A Program Summary Report presents a sum-total of all run unit totals of an application program. In addition to a summary of the CA IDMS statistics, statistics for run unit occurrence, duration, and quiesce level are reported along with several key processing ratios.

Program Summary/Totals Report Fields

The following is a description of the various fields which make up the Program Summary/Totals Report.

**SUMMARY** -- Application program name and processing type.

Start and stop date/time interval of report.

**RUN UNITS**

- **SUCCESSFUL (ENDJ)** -- Number of recovery units activated within the reported time interval which terminated successfully.
- **ABORTED (ABRT)** -- Number of recovery units activated within the reported time interval which terminated abnormally.
- **TOTAL (BGIN)** -- Total number of run units activated within the reported time interval.
- **CHECKPOINT (COMT)** -- Number of recovery unit checkpoints issued within the reported time interval.

**DURATION (SEC)**

- **LOWEST** -- Lowest run unit duration encountered.
- **HIGHEST** -- Highest run unit duration encountered.
- **MEAN** -- Average run unit duration encountered.
- **MEDIAN** -- Median run unit duration encountered.

**QUIESCE LEVEL**

- **MEAN** -- Average quiesce level encountered.
- **HIGHEST** -- Highest quiesce level encountered.

**COUNTS** -- The CA IDMS statistics (see the Program Details (see page 15) for definitions) are reported in three values.

- **MEAN VALUE** -- Average value per run unit occurrence within the reported time interval.
- **ACCUMULATED VALUE** -- Total value for all run unit occurrences within the reported time interval.
- **PERCENT OF SYSTEM OCCURRENCES** -- Ratio of the accumulated value for this program against the accumulated value for all programs active within the reported time interval. Highlights the programs which consume the largest amount of system resources.

The following example shows the PROGRAM Report (Summary/Totals):

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rnn.nn</td>
<td>BTC</td>
<td>mm/dd/yy hh:mm:ss</td>
<td>3</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**SUMMARY** = IDMSDDDL BTC

<table>
<thead>
<tr>
<th>RUN UNITS</th>
<th>SUCCESSFUL (ENDJ)</th>
<th>0 1.00</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABORTED (ABRT)</td>
<td>0 0.00</td>
<td></td>
</tr>
<tr>
<td>TOTAL (BGIN)</td>
<td>0 1.00</td>
<td></td>
</tr>
</tbody>
</table>

**DURATION** | LOWEST (SEC) | 1.80 |
| HIGHEST | 78.83 |
**MEAN** | 61.43 |
**MEDIAN** | 73.64 |

**QUIESCE LEVEL** | MEAN | 2.00 |
| HIGHEST | 2 |

| COUNTS | RECORDS UPDATED | 15,726.75 |
| RECORDS READ | 1,178.50 |
| PAGES REQUESTED | 764.50 |
| CALC RCDS ON HOME PAGE | 18,009.25 |
| VIA RCDS ON OWNER PAGE | 185.63 |
| VIA RCDS OVERFLOW | 468.25 |
| RECORDS REQUESTED | 19,974.50 |
| CALLS TO IDMSDBMS | 8,672.63 |
| FRAGMENTS STORED | 26.00 |
| ROOTS OR RCS RELOCATED | 0.00 |
| LOCKS REQUESTED | 24,781.75 |
| SELECT LOCKS HELD | 184.63 |
| UPDATE LOCKS HELD | 11,542.25 |

| RATIOS | PAGES REQUESTED / PAGES READ | 15.28 |
| RECORDS REQUESTED / PAGES READ | 16.95 |
| RECORDS REQUESTED / RECORDS CURRENT | 2.99 |
| CALC RCDS OVERFLOW / CALC RCDS HOME | 2.33 |
| VIA RCDS OVERFLOW / VIA RCDS OWNER | 2.52 |

| AREAS | SHR UPD DLDML |
| LOW= | 60,001 |
| HIGH= | 62,000 |
| COUNT= | 1 |

**RATIOS** -- The ratios are calculated from the accumulated values of the appropriate counts.

**PAGES REQUESTED/PAGES READ** -- Measures the effectiveness of buffer pool size and allocation. Small ratios (less than 2.00) can indicate random processing, inadequate buffer pool size, or the need for additional buffer pools.

**RECORDS REQUESTED/PAGES READ** -- Measures the overall effectiveness of space management, CALC synonym handling, VIA options, and buffer management. Large ratios (greater than 20) usually indicate effective buffering (the minimizing of database I/O).
RECORDS REQUESTED/RECORDS CURRENT -- Measures the amount of processing transparency provided by the database management system. High ratios (greater than 20) indicate a large amount of database traversing is occurring before target records are retrieved. Close examination must be paid to sorted sets, sets without PRIOR or OWNER pointers, or improper program strategy which does not adequately capitalize on currency.

CALC RCDS OVERFLOW/CALC RCDS HOME -- Measures the randomness of the CALC field values, or the fullness of database areas. Large ratios (greater than 1 or 2) or steadily increasing ratio values indicate a large number of CALC synonyms, or that space use is increasing and that an area needs reorganizing or enlarging.

VIA RCDS OVERFLOW/VIA RCDS OWNER -- Measures the effectiveness of the storage of VIA records, or the fullness of database areas. Large ratios (greater than 1 or 2) or steadily increasing ratios can indicate very large clustering or packing of VIA records (near the associated OWNER records), or a lack of randomness of the OWNER record types or VIA member records. Space utilization may be getting high that may indicate that the area should be reorganized or enlarged.

AREAS -- List of up to 8 areas opened by the program with the following information: usage mode, area name, page range, and ready count.

System Summary

A System Summary Report presents totals of all Program Summary accumulated values within a time interval. All statistical categories are reported by processing type: ONLINE, BATCH, and SYSTEM (total of all ONL and BTC run unit activity during time interval).

System Summary Report Fields

The fields of the System Summary Report are described below.

Start and stop date/time of the time interval of the report. RUN UNITS -- (see below)

SUCCESSFUL (ENDJ) -- Number of recovery units activated within the reported time interval which terminated successfully.

ABORTED (ABRT) -- Number of recovery units activated within the reported time interval which terminated abnormally.

TOTAL (BGIN) -- Total number of run units activated within the reported time interval.

CHECKPOINT (COMT) -- Number of recovery unit checkpoints issued within the reported time interval.

DURATION (SEC)

- LOWEST -- Lowest run unit duration encountered.
- HIGHEST -- Highest run unit duration encountered.
- MEAN -- Average run unit duration encountered.
QUIESCE LEVEL

- **MEAN** -- Average quiesce level encountered.
- **HIGHEST** -- Highest quiesce level encountered.

**COUNTS** -- The CA IDMS statistics are reported. (See Program Details (see page 15) for definitions.) The ratio of ONLINE or BATCH to SYSTEM is presented for all non-zero counts.

**RATIOS** -- See Program Summary/Totals (see page 19) Report for definitions.

The ratios are calculated from the appropriate counts.

---

**Grand Summary**

A Grand Summary Report is produced for all run units whenever multiple time intervals are reported (in effect, a total of all System Summaries). The format of the Grand Summary Report is identical to the System Summary Report.

The following example shows the PROGRAM System Summary Report:

<table>
<thead>
<tr>
<th>ID Rnn.nn</th>
<th>RELEASE PROGRAM REPORT</th>
<th>CA IDMS JOURNAL ANALYZER PROGRAM REPORT</th>
<th>DATE mm/dd/yy</th>
<th>TIME hh:mm:ss</th>
<th>PAGE 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>SYSTEM SUMMARY mm/dd/yy hh:mm - mm/dd/yy hh:mm</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*** CATEGORY ***

<table>
<thead>
<tr>
<th>RUN UNITS SUCCESSFUL (ENDJ)</th>
<th>ONLINE</th>
<th>BATCH</th>
<th>SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>12 0.55</td>
<td>10 0.45</td>
<td>22 0.79</td>
<td></td>
</tr>
<tr>
<td>ABDORERT (ABRT)</td>
<td>6 1.00</td>
<td>0 0.00</td>
<td>6 0.21</td>
</tr>
<tr>
<td>TOTAL (BGIN)</td>
<td>18</td>
<td>10</td>
<td>28</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CHECKPOINT (COMT)</th>
<th>ONLINE</th>
<th>SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>53</td>
<td>0</td>
<td>53</td>
</tr>
</tbody>
</table>

**DURATION**

<table>
<thead>
<tr>
<th>DURATION LOWEST (SEC)</th>
<th>HIGHEST</th>
<th>MEAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>88,285.96</td>
<td>88,285.96</td>
<td>5,152.66</td>
</tr>
</tbody>
</table>

**QUIESCE LEVEL**

<table>
<thead>
<tr>
<th>MEAN</th>
<th>HIGHEST</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.67</td>
<td>2</td>
</tr>
</tbody>
</table>

**COUNTS**

<table>
<thead>
<tr>
<th>RECORDS REQUESTED</th>
<th>RECORDS BECOMING CURRENT</th>
<th>CALLS TO IDMSDBMS</th>
</tr>
</thead>
<tbody>
<tr>
<td>20,898 0.12</td>
<td>9,662 0.17</td>
<td>11,649 0 16</td>
</tr>
</tbody>
</table>

**RATIOS**

<table>
<thead>
<tr>
<th>PAGES REQUESTED / PAGES READ</th>
<th>RECORDS REQUESTED / PAGES READ</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.08</td>
<td>2.86</td>
</tr>
<tr>
<td>19.82</td>
<td>21.29</td>
</tr>
</tbody>
</table>

---

15-Jan-2018 22/92
The following example shows the PROGRAM Grand Summary Report:

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**GRAND SUMMARY**

```
mm/dd/yy hh:mm - mm/dd/yy hh:mm
```

<table>
<thead>
<tr>
<th>*** CATEGORY ***</th>
<th>*** ONLINE ***</th>
<th>*** BATCH ***</th>
<th>*** SYSTEM ***</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUN UNITS--------SUCCESSFUL</td>
<td>18 0.56</td>
<td>14 0.44</td>
<td>32 0.78</td>
</tr>
<tr>
<td>ABORTED</td>
<td>9 1.00</td>
<td>0 0.00</td>
<td>9 0.22</td>
</tr>
<tr>
<td>TOTAL (BGIN)</td>
<td>27</td>
<td>14</td>
<td>41</td>
</tr>
<tr>
<td>CHECKPOINT (CONT)</td>
<td>0.66</td>
<td>0.34</td>
<td></td>
</tr>
<tr>
<td>DURATION---------LOWEST</td>
<td>0.04</td>
<td>1.80</td>
<td>0.04</td>
</tr>
<tr>
<td>HIGHEST</td>
<td>88,285.96</td>
<td>78.83</td>
<td>88,285.96</td>
</tr>
<tr>
<td>MEAN</td>
<td>9,641.56</td>
<td>36.70</td>
<td>6,361.85</td>
</tr>
<tr>
<td>QUIESCE LEVEL--MEAN</td>
<td>1.63</td>
<td>2.00</td>
<td>1.76</td>
</tr>
<tr>
<td>HIGHEST</td>
<td>2</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>COUNTS---------RECORDS UPDATED</td>
<td>11,235 0.07</td>
<td>158,324 0.93</td>
<td>169,559</td>
</tr>
<tr>
<td>PAGES READ</td>
<td>8,552 0.50</td>
<td>8,624 0.50</td>
<td>17,176</td>
</tr>
<tr>
<td>PAGES WRITTEN</td>
<td>1,271 0.19</td>
<td>5,397 0.81</td>
<td>6,668</td>
</tr>
<tr>
<td>PAGES REQUESTED</td>
<td>26,249 0.14</td>
<td>167,133 0.86</td>
<td>193,382</td>
</tr>
<tr>
<td>CALC RCDS ON HOME PAGE</td>
<td>63 0.69</td>
<td>28 0.31</td>
<td>91</td>
</tr>
<tr>
<td>CALC RCDS OVERFLOW</td>
<td>14 0.22</td>
<td>49 0.78</td>
<td>63</td>
</tr>
<tr>
<td>VIA RCDS ON OWNER PAGE</td>
<td>166 0.84</td>
<td>4,190 0.96</td>
<td>4,256</td>
</tr>
<tr>
<td>VIA RCDS OVERFLOW</td>
<td>57 0.01</td>
<td>3,822 0.99</td>
<td>3,879</td>
</tr>
<tr>
<td>RECORDS REQUESTED</td>
<td>1,574 0.01</td>
<td>178,866 0.89</td>
<td>212,030</td>
</tr>
<tr>
<td>RECORDS BECOMING CURRENT</td>
<td>11,413 0.16</td>
<td>58,813 0.84</td>
<td>70,226</td>
</tr>
<tr>
<td>CALLS TO IDMSDBMS</td>
<td>13,560 0.15</td>
<td>76,259 0.85</td>
<td>89,819</td>
</tr>
<tr>
<td>FRAGMENTS STORED</td>
<td>2 0.00</td>
<td>534 1.00</td>
<td>536</td>
</tr>
<tr>
<td>ROOTS OR RCDS RELOCATED</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>LOCKS REQUESTED</td>
<td>31,909 0.12</td>
<td>237,816 0.88</td>
<td>269,725</td>
</tr>
<tr>
<td>SELECT LOCKS HELD</td>
<td>224 0.14</td>
<td>1,808 0.89</td>
<td>2,032</td>
</tr>
<tr>
<td>UPDATE LOCKS HELD</td>
<td>12,415 0.10</td>
<td>112,662 0.90</td>
<td>125,077</td>
</tr>
<tr>
<td>RATIOS---------PAGES REQUESTED / PAGES READ</td>
<td>3.07</td>
<td>10.38</td>
<td>11.26</td>
</tr>
<tr>
<td>RECORDS REQUESTED / PAGES READ</td>
<td>2.86</td>
<td>21.79</td>
<td>12.34</td>
</tr>
<tr>
<td>RECORDS REQUESTED / RECORDS CURRENT</td>
<td>2.12</td>
<td>3.19</td>
<td>3.02</td>
</tr>
<tr>
<td>CALC RCDS OVERFLOW / CALC RCDS HOME</td>
<td>0.22</td>
<td>1.75</td>
<td>0.69</td>
</tr>
<tr>
<td>VIA RCDS OVERFLOW / VIA RCDS OWNER</td>
<td>0.34</td>
<td>0.91</td>
<td>0.89</td>
</tr>
</tbody>
</table>

---

**CHRONOLOGICAL EVENT Report**

The CHRONOLOGICAL EVENT Report outlines all recorded activity in a timewise sequence. The user is presented a detailed view of run unit events in contrast to the ACTIVITY Report which summarizes run unit activity during user-defined time intervals (for example, hourly). Although much of the information contained in the CHRONOLOGICAL EVENT report is identical to the PROGRAM Reports, the information is reported in a strictly chronological order.

Each reported event includes the current quiesce level which indicates the degree of total run unit concurrency.

---

**Note:** In CA IDMS environments, the quiesce level can be non-zero although no user tasks are active because all active RHDCRUAL system run units are reflected in the quiesce level count. Events for the RHDCRUAL program will not be reported unless RHDCRUAL=YES was specified on the PROCESS parameter card when the journal extract records were produced.
The CHRONOLOGICAL EVENT Report is normally requested on special demand only. For example, when unusual activity is recorded in the ACTIVITY Report, you can use the CHRONOLOGICAL EVENT Report to acquire a detailed view of such activity by specifying the appropriate time intervals on the REPORT parameter cards.

If a PROGRAM Report shows run units with excessively long durations, or a large number of program aborts, the cause may be resource contention among concurrently executing run units. In which case, the CHRONOLOGICAL EVENT Report of the time period in question will reveal the contending programs, and the ABORT COINCIDENCE Report will reaffirm coincidence of such programs.

If you are required to manually recover part of the CA IDMS database, the following functions are generally performed:

1. A quiesce point must be determined in order to limit the extent of the recovery by the ROLLBACK or the ROLLFORWARD utilities.

2. The ROLLFORWARD utility is executed with the PRINT parameter to list the before and after images.

3. You search through a stack of ROLLFORWARD image reports to establish a quiesce point on which to synchronize the recovery.

4. The ROLLBACK or ROLLFORWARD utility is executed with the appropriate DATE and TIME parameters.

**Note:** The CHRONOLOGICAL EVENT Report offers you a reasonable alternative to steps 2 and 3. A significant savings in computer resources, paper, and research time can be realized if this report is used to establish the recovery quiesce point. The concise format of the CHRONOLOGICAL EVENT Report eases your burden in this most unenviable task.

**CHRONOLOGICAL EVENT Report Fields**

The following is a description of the various fields that make up the CHRONOLOGICAL EVENT Report.

**EVENT**

- **TIME** -- Time recorded for each event.

- **TYPE** -- BGIN, COMT, ENDJ, or ABRT. ABRT’s are further highlighted by "- >" next to the event time.

- **DURATION** -- Run unit duration reported in seconds, for ENDJ and ABRT events.

**IDENT**

- **RUN UNIT** -- Run unit numeric ID.

- **PROGRAM** -- Application program name and processing type (ONL or BTC).
QUIESCE LVL/USER/EXT ID -- Quiesce level at the time of the event, reported as a number of X's. A fully quiesce system is represented by a zero. If the number of concurrent run units exceeds 20, that number is reported.

User ID reported on the BGIN checkpoint journal record. If the report is run against journal files created prior to r16 SP4 (the user ID is not present in the BGIN), the report displays USER ID NOT CAPTURED. If the report is run against journal files created after r16 SP4, but the user does not sign on, the user ID field in the BGIN is filled with spaces, and the report displays NO USER SIGNON.

Ext ID reported on the BGIN checkpoint journal record. If the report is run against journal files created before IDMS Server r16.1 or before IDMS r16 SP6 (the external ID is not present in the BGIN), the report displays spaces. If the report is run against journal files created after IDMS Server r16.1 or after IDMS r16 SP6 and the external ID field is not populated, the report displays spaces.

**Note:** Whether a run-unit affects the quiesce level is determined by the manner that an area is READY. Since the READY may occur sometime after the BIND RUNUNIT, the quiesce level may sometime appear to change erratically.

The following example shows the CHRONOLOGICAL EVENT Report:

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rnn.nn</td>
<td></td>
<td>CHRONOLOGICAL EVENT REPORT</td>
<td>mm/dd/yy</td>
<td>hh:mm:ss</td>
<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TIME</th>
<th>TYPE</th>
<th>DURATION</th>
<th>RUN UNIT</th>
<th>PROGRAM</th>
<th>READ</th>
<th>WRITTEN</th>
<th>REQUESTED</th>
<th>SELECT</th>
<th>UPDATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>hh:mm</td>
<td>START</td>
<td>hh:mm:ss</td>
<td>BGIN</td>
<td>USER01</td>
<td>27414</td>
<td>FILLJNL1</td>
<td>BTC</td>
<td>X</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>END</td>
<td></td>
<td></td>
<td>CUSTOMER99</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>TIME</th>
<th>TYPE</th>
<th>DURATION</th>
<th>RUN UNIT</th>
<th>PROGRAM</th>
<th>READ</th>
<th>WRITTEN</th>
<th>REQUESTED</th>
<th>SELECT</th>
<th>UPDATE</th>
</tr>
</thead>
<tbody>
<tr>
<td>hh:mm:ss</td>
<td>COMT</td>
<td></td>
<td>27414</td>
<td>FILLJNL1</td>
<td>BTC</td>
<td>X</td>
<td>19</td>
<td>15</td>
<td>65</td>
</tr>
<tr>
<td>hh:mm:ss</td>
<td>ENDBJ</td>
<td></td>
<td>27414</td>
<td>FILLJNL1</td>
<td>BTC</td>
<td>0</td>
<td>0</td>
<td>8</td>
<td>32</td>
</tr>
<tr>
<td>hh:mm:ss</td>
<td>BGIN</td>
<td></td>
<td>27415</td>
<td>FILLJNL2</td>
<td>BTC</td>
<td>X</td>
<td>USER01</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rnn.nn</td>
<td></td>
<td>CHRONOLOGICAL EVENT REPORT</td>
<td>mm/dd/yy</td>
<td>hh:mm:ss</td>
<td>2</td>
</tr>
</tbody>
</table>

PAGES

- **READ** -- Number of pages read from the database.
- **WRITTEN** -- Number of pages written to the database.
- **REQUESTED** -- Number of pages requested that were satisfied by a read of a database page or an access into the buffer pool.

LOCKS

- **REQUESTED** -- Number of record locks requested by the run (recovery) unit, automatically or upon request.
- **SELECT** -- Number of select (shared) locks maintained by the run (recovery) unit.
UPDATE -- Number of update (exclusive) locks held at the termination of the run (recovery) unit.

TIME LINE -- A line of asterisks is printed for each hour of activity.

AREAS OPENED -- Each area readied by the run unit is listed with the following information: usage mode, area name, and page range.

NO EVENTS POSTED -- A line of asterisks is printed for each hour when no events were posted although at least one run unit was active.

NO ACTIVITY -- A line of asterisks is printed for each hour when no run units were active.

Note: The CHRONOLOGICAL EVENT Report manipulates data on the Archive Journal file to show PAGES and LOCKS in relation to the work accomplished by the recovery unit. A recovery unit is that segment of CA IDMS activity bounded by BIND, COMMIT, ROLLBACK, and/or FINISH. In this context, a run unit may be one or several recovery units. As maintained by CA IDMS, these values are incremented throughout the run unit and are only reset to zero at the end of the run unit. UPDATE LOCKS is the exception. It is reset to zero at the end of each recovery unit. Therefore it is reported without manipulation.

ABORT COINCIDENCE Report

The ABORT COINCIDENCE Report provides a daily analysis of all aborted recovery units. The report is in two parts. In the first part, the report is ordered by aborted program name. You should be alerted to programs that were concurrently executing when a program aborted, especially when the coincidence ratio exceeds 50%. The excessive consumption of database resources by one run unit can cause other run units to prematurely terminate with resource acquisition delays or deadly embraces.

The second part of the ABORT COINCIDENCE Report, that is only produced when at least one program was executing when another program aborted, is ordered by coincident program name. The associated aborted programs are ranked by their coincidence ratios. A high ratio may reveal resource contention between program types, or possibly between run units of the same program.

The instances of program aborts are recorded in the PROGRAM Reports and the CHRONOLOGICAL EVENT Report, if available. The CHRONOLOGICAL EVENT Report explicitly lists the concurrent programs. This may reveal a pattern such as excessive contention at certain periods of the day.

ABORT COINCIDENCE Report Fields (Part 1)

The following is a description of the various fields which make up Part 1 of the ABORT COINCIDENCE Report.

DATE -- Date of activity.

ABORTED PROGRAM -- Name of aborted application program.

ABORTS -- Number of run units aborted.
COINCIDENT PROGRAM -- Name of application program active when the program aborted.

OCCURS -- Total occurrences of coincident program when the program aborted.

COINCIDENCE RATIO -- Ratio of occurrences of a coincident program to the number of aborts for the program. Ratios of 50 percent or greater are flagged with asterisks (*).

The following example shows the ABORT COINCIDENCE Report (Part 1):

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rnn.nn</td>
<td>ABORT COINCIDENCE REPORT PART 1</td>
<td>mm/dd/yy</td>
<td>hh:mm:ss</td>
<td>1</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COINCIDENT PROGRAM</th>
<th>ABORTS</th>
<th>COINCIDENT PROGRAM</th>
<th>OCCURS</th>
<th>RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td>RHDCRUAL</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

ABORT COINCIDENCE Report Fields (Part 2)

The following is a description of the various fields that make up Part 2 of the ABORT COINCIDENCE Report.

DATE -- Date of activity.

COINCIDENT PROGRAM -- Name of application program active when program aborted.

OCCURS -- Total occurrences of coincident program when the program aborted.

ABORTED PROGRAM -- Name of aborted application program.

ABORTS -- Number of recovery units aborted.

COINCIDENCE RATIO -- Ratio of occurrences of the coincident program to the number of aborts for a program. Ratios of 50 percent or greater are flagged with asterisks (*).

RANK -- Relative order by the magnitude of the coincidence ratio. The highest rank is "1".

The following example shows the ABORT COINCIDENCE Report (Part 2):

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rnn.nn</td>
<td>ABORT COINCIDENCE REPORT PART 2</td>
<td>mm/dd/yy</td>
<td>hh:mm:ss</td>
<td>nnnn</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COINCIDENT PROGRAM</th>
<th>OCCURS</th>
<th>ABORTED PROGRAM</th>
<th>ABORTS</th>
<th>COINCIDENCE RATIO</th>
<th>RANK</th>
</tr>
</thead>
<tbody>
<tr>
<td>DBMSNNNN</td>
<td>6</td>
<td>DBMSEEEE</td>
<td>8</td>
<td>75.0**</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>DBMSAAAA</td>
<td>4</td>
<td>50.0**</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>DBMSBBBB</td>
<td>6</td>
<td>33.3</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>DBMSMMMN</td>
<td>3</td>
<td>DBMS0000D</td>
<td>4</td>
<td>75.0**</td>
<td>1</td>
</tr>
<tr>
<td>2</td>
<td>DBMSEEEE</td>
<td>8</td>
<td>25.0</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>DBMSBBBB</td>
<td>6</td>
<td>16.7</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>DBMSXXXX</td>
<td>4</td>
<td>DBMSAAAA</td>
<td>4</td>
<td>100.0**</td>
<td>1</td>
</tr>
<tr>
<td>4</td>
<td>DBMS0000D</td>
<td>4</td>
<td>100.0**</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>
MANAGEMENT Reports Summary

The MANAGEMENT Reports are grouped into two formats:

**Highlights**
- Summaries
- Online Response Time
- Buffer Pool Utilization

**Rankings**

Management Highlights

The Highlight reports contain summarized information of system performance and resource consumption derived from the original PROGRAM Report. The Highlight reports provide three levels of summaries:

- Program Summary -- accumulation for one program in one time interval
- System Summary -- accumulation for one time interval
- Grand Summary -- accumulation of all system summaries whenever multiple time intervals are reported.

These summary reports present totals, highest, lowest, means, medians of program attributes (Quiesce Levels, etc.), and program consumption (CA IDMS statistics).

The Highlight reports also include Online Response Time and BUFFER POOL UTILIZATION. Online Response Time provides distribution of run unit duration, on an hourly basis, for each day's activities. In addition, Buffer Pool Utilization distributes the ratios of Pages Requested to Pages Read into hourly brackets for each day's activities.

Program Summary Report

The Program Summary Report contains summarized information of system performance and resource consumption accumulated by one program in one time interval. The information is derived from the Program Details Report.

**MANAGEMENT Highlights/Program Summary Report Fields**

The following is a description of the various fields which make up the MANAGEMENT Highlights/Program Summary Report.

**RUN UNITS**
- **SUCCESSFUL (ENDJ)** -- Number of recovery units activated within the reported time interval which terminated successfully.
• **ABORTED (ABRT)** -- Number of recovery units activated within the reported time interval which terminated abnormally.

• **TOTAL (BGIN)** -- Total number of run units activated within the reported time interval.

• **CHECKPOINT (COMT)** -- Number of recovery unit checkpoints issued within the reported time interval.

**LOWEST** -- Lowest value encountered for any run unit within the reported time interval.

**HIGHEST** -- Highest value encountered for any run unit within the reported time interval.

**MEAN** -- Average value for all run units within the reported time interval.

**MEDIAN** -- Median value for all run units within the reported time interval.

**DURATION** -- Run unit duration. **QUIESCE LEVEL**

**LEVEL** -- Quiesce level encountered at the run unit initiation (BGIN). **COUNTS** -- The CA IDMS statistics (see Program Details (see page 15) for definitions) are reported in four values: Lowest, Highest, Mean, and Median.

**RATIOS** -- The Ratios (see Program Summary/Totals (see page 19) for definitions) are calculated for each run unit and are reported in four values: Lowest, Highest, Mean, and Median.

The following example shows the MANAGEMENT HIGHLIGHTS/PROGRAM SUMMARY Report:

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>MANAGEMENT HIGHLIGHTS/PROGRAM SUMMARY</td>
<td>mm/dd/yy</td>
<td>hh:mm:ss</td>
<td>5</td>
</tr>
<tr>
<td></td>
<td></td>
<td>RHDCRUAL ONL</td>
<td>mm/dd/yy</td>
<td>hh:mm</td>
<td></td>
</tr>
</tbody>
</table>

**RUN UNITS** -- Number of run units activated within the reported time interval.

- **SUCCESSFUL** (ENDJ) 2 1.08
- **ABORTED** (ABRT) 0 0.08
- **TOTAL** (BGIN) 2

**CHECKPOINTS** (COMT) 47

<table>
<thead>
<tr>
<th>DURATION (SEC)</th>
<th>LOWEST</th>
<th>HIGHEST</th>
<th>MEAN</th>
<th>MEDIAN</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.38</td>
<td>8,601.92</td>
<td>4,301.65</td>
<td>8,601.92</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>QUIESCE LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>COUNTS</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECORDS UPDATED 0 272 136.00 272</td>
</tr>
<tr>
<td>PAGES READ 17 1,308 662.50 1,308</td>
</tr>
<tr>
<td>PAGES WRITTEN 36 80 48.00 80</td>
</tr>
<tr>
<td>PAGES REQUESTED 221 3,690 1,955.50 3,690</td>
</tr>
<tr>
<td>CALC RCDS ON HOME PAGE 0 8 4.00 8</td>
</tr>
<tr>
<td>CALC RCDS OVERFLOW 0 2 1.00 2</td>
</tr>
<tr>
<td>VIA RCDS ON OWNER PAGE 0 35 17.50 35</td>
</tr>
<tr>
<td>VIA RCDS OVERFLOW 0 20 10.00 20</td>
</tr>
<tr>
<td>RECORDS REQUESTED 261 2,875 1,568.00 2,875</td>
</tr>
<tr>
<td>RECORDS BECOMING CURRENT 10 2,251 1,136.50 2,251</td>
</tr>
<tr>
<td>CALLS TO IDMSDBMS 24 2,931 1,477.50 2,931</td>
</tr>
<tr>
<td>FRAGMENTS STORED 0 0 0.00 0</td>
</tr>
<tr>
<td>ROOTS OR RCDS RELOCATED 0 0 0.00 0</td>
</tr>
<tr>
<td>LOCKS REQUESTED 472 2,331 1,401.50 2,331</td>
</tr>
<tr>
<td>SELECT LOCKS HELD 2 5 3.50 5</td>
</tr>
<tr>
<td>UPDATE LOCKS HELD 108 329 218.50 329</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>RATIOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>RECORDS REQUESTED / PAGES READ 2.82 13.00 7.91 13.00</td>
</tr>
<tr>
<td>RECORDS REQUESTED / PAGES READ 2.20 15.35 8.78 15.35</td>
</tr>
</tbody>
</table>
System Summary Report

The System Summary Report contains summarized information of system performance and resource consumption accumulated for one time interval.

MANAGEMENT Highlights/System Summary Report Fields

The following is a description of the various fields which make up the MANAGEMENT Highlights/System Summary Report.

Start and stop date/time of the time interval of the report.

RUN UNITS

- SUCCESSFUL (ENDJ) -- Number of recovery units activated within the reported time interval which terminated successfully.
- ABORTED (ABRT) -- Number of recovery units activated within the reported time interval which terminated abnormally.
- TOTAL (BGIN) -- Total number of run units activated within the reported time interval.
- CHECKPOINT (COMT) -- Number of recovery unit checkpoints issued within the reported time interval.

DURATION

- LOWEST -- Lowest run unit duration encountered.
- HIGHEST -- Highest run unit duration encountered.
- MEAN -- Average run unit duration.

QUIESCE LEVEL

- LOWEST -- Lowest quiesce level encountered.
- HIGHEST -- Highest quiesce level encountered.
- MEAN -- Average quiesce level.

RATIOS -- See Program Summary/Totals (see page 19) for definitions. The ratios are reported in three values: Lowest, Highest, and Mean.

COUNTS -- The CA IDMS statistics (see Program Details (see page 15) for definitions) are reported in three values: Lowest, Highest, and Mean.

The following example shows the MANAGEMENT HIGHLIGHTS/SYSTEM SUMMARY Report:
The following example shows the MANAGEMENT HIGHLIGHTS/SYSTEM SUMMARY Report:

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>ONLINE</th>
<th>BATCH</th>
<th>SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUN UNITS - SUCCESSFUL (ENDJ)</td>
<td>11 1.00</td>
<td>0.00</td>
<td>11 1.00</td>
</tr>
<tr>
<td>ABORTED (ABRT)</td>
<td>0 0.00</td>
<td>0.00</td>
<td>0 0.05</td>
</tr>
<tr>
<td>TOTAL (BEGIN)</td>
<td>11 1.00</td>
<td>0.00</td>
<td>11</td>
</tr>
<tr>
<td>CHECKPOINTS (COMT)</td>
<td>54</td>
<td>0</td>
<td>54</td>
</tr>
<tr>
<td>DURATION - LOWEST</td>
<td>0.04</td>
<td>0.00</td>
<td>0.84</td>
</tr>
<tr>
<td>HIGHEST</td>
<td>8,601.92</td>
<td>0.00</td>
<td>8,601.92</td>
</tr>
<tr>
<td>MEAN</td>
<td>783.40</td>
<td>0.00</td>
<td>783.40</td>
</tr>
<tr>
<td>QUIESCE LEVEL - LOWEST</td>
<td>1</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>HIGHEST</td>
<td>2</td>
<td>0</td>
<td>2</td>
</tr>
<tr>
<td>MEAN</td>
<td>1.82</td>
<td>0.00</td>
<td>1.82</td>
</tr>
<tr>
<td>RECORDS REQUESTED / PAGES REQUESTED</td>
<td>LOWEST</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>HIGHEST</td>
<td>17.80</td>
<td>0.00</td>
<td>17.80</td>
</tr>
<tr>
<td>MEAN</td>
<td>7.19</td>
<td>0.00</td>
<td>7.19</td>
</tr>
<tr>
<td>RECORDS REQUESTED / PAGES READ</td>
<td>LOWEST</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>HIGHEST</td>
<td>25.00</td>
<td>0.00</td>
<td>25.00</td>
</tr>
<tr>
<td>MEAN</td>
<td>9.10</td>
<td>0.00</td>
<td>9.10</td>
</tr>
<tr>
<td>RECORDS REQUESTED / RECORDS CURRENT</td>
<td>LOWEST</td>
<td>1.06</td>
<td>0.00</td>
</tr>
<tr>
<td>HIGHEST</td>
<td>26.10</td>
<td>0.00</td>
<td>26.10</td>
</tr>
<tr>
<td>MEAN</td>
<td>4.27</td>
<td>0.00</td>
<td>4.27</td>
</tr>
<tr>
<td>CALC RCDS OVERFLOW / CALC RCDS HOME</td>
<td>LOWEST</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>HIGHEST</td>
<td>1.00</td>
<td>0.00</td>
<td>1.00</td>
</tr>
<tr>
<td>MEAN</td>
<td>0.20</td>
<td>0.00</td>
<td>0.20</td>
</tr>
<tr>
<td>VIA RCDS OVERFLOW / VIA RCDS OWNER</td>
<td>LOWEST</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>HIGHEST</td>
<td>0.57</td>
<td>0.00</td>
<td>0.57</td>
</tr>
<tr>
<td>MEAN</td>
<td>0.06</td>
<td>0.00</td>
<td>0.06</td>
</tr>
</tbody>
</table>

The following example shows the MANAGEMENT HIGHLIGHTS/SYSTEM SUMMARY Report:
Grand Summary Report

The Grand Summary Report contains summarized information of system performance and resource consumption accumulated for all System Summaries whenever multiple time intervals are reported.

MANAGEMENT Highlights/Grand Summary Report Fields

The following is a description of the various fields which make up the MANAGEMENT Highlights/Grand Summary Report.

Start and stop date/time of the time interval of the report.

RUN UNITS

- **SUCCESSFUL (ENDJ)** -- Number of recovery units activated within the reported time interval which terminated successfully.

- **ABORTED (ABRT)** -- Number of recovery units activated within the reported time interval which terminated abnormally.

- **TOTAL (BGIN)** -- Total number of run units activated within the reported time interval.

- **CHECKPOINT (COMT)** -- Number of recovery unit checkpoints issued within the reported time interval.

DURATION

- **LOWEST** -- Lowest run unit duration encountered.

- **HIGHEST** -- Highest run unit duration encountered.

- **MEAN** -- Average run unit duration.

QUIESCE LEVEL

- **LOWEST** -- Lowest quiesce level encountered.
- **HIGHEST** -- Highest quiesce level encountered.
- **MEAN** -- Average quiesce level.

**RATIOS** -- Refer to *Program Summary/Totals (see page 19)* for definitions. The ratios are reported in three values: Lowest, Highest, and Mean.

**COUNTS** -- The CA IDMS statistics (refer to *Program Details (see page 15)* for definitions) are reported in three values: Lowest, Highest, and Mean.

The following example shows the MANAGEMENT HIGHLIGHTS/GRAND SUMMARY Report:

```
<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>CATEGORY</th>
<th>ONLINE</th>
<th>BATCH</th>
<th>SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rnn.nn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>MANAGEMENT HIGHLIGHTS/GRAND SUMMARY</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>mm/dd/yy</td>
<td>hh:mm:ss</td>
<td>19</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>ONLINE</th>
<th>BATCH</th>
<th>SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>RUN UNITS</td>
<td>SUCCESSFUL (ENDJ)</td>
<td>37 1.00</td>
<td>0 0.00</td>
</tr>
<tr>
<td>ABORTED</td>
<td>(ABRT)</td>
<td>2 1.00</td>
<td>0 0.00</td>
</tr>
<tr>
<td>TOTAL</td>
<td>(BGIN)</td>
<td>39 1.00</td>
<td>0 0.00</td>
</tr>
<tr>
<td>CHECKPOINTS</td>
<td>(COMT)</td>
<td>167</td>
<td>0</td>
</tr>
<tr>
<td>DURATION</td>
<td>LOWEST (SEC)</td>
<td>0.03</td>
<td>0.00</td>
</tr>
<tr>
<td>HIGHEST</td>
<td></td>
<td>8,601.92</td>
<td>0.00</td>
</tr>
<tr>
<td>MEAN</td>
<td></td>
<td>456.73</td>
<td>0.00</td>
</tr>
<tr>
<td>QUIESCE LEVEL</td>
<td>LOWEST</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>HIGHEST</td>
<td></td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>MEAN</td>
<td></td>
<td>1.05</td>
<td>0.00</td>
</tr>
<tr>
<td>RATIOS</td>
<td>PAGES REQUESTED / PAGES REQUESTED</td>
<td>LOWEST</td>
<td>0.00</td>
</tr>
<tr>
<td>HIGHEST</td>
<td></td>
<td>63.50</td>
<td>0.00</td>
</tr>
<tr>
<td>MEAN</td>
<td></td>
<td>8.29</td>
<td>0.00</td>
</tr>
<tr>
<td>RECORDS REQUESTED / RECORDS CURRENT</td>
<td>LOWEST</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>HIGHEST</td>
<td></td>
<td>121.50</td>
<td>0.00</td>
</tr>
<tr>
<td>MEAN</td>
<td></td>
<td>11.04</td>
<td>0.00</td>
</tr>
</tbody>
</table>

|                | RECORDS REQUESTED / PAGES READ | LOWEST | 0.00 | 0.00 | 0.00 |
|                |                                  | HIGHEST | 121.50 | 0.00 | 121.50 |
|                |                                  | MEAN | 11.04 | 0.00 | 11.04 |
|                | RECORDS REQUESTED / RECORDS CURRENT | LOWEST | 1.06 | 0.00 | 1.06 |
|                |                                  | HIGHEST | 26.10 | 0.00 | 26.10 |
|                |                                  | MEAN | 3.39 | 0.00 | 3.39 |
|                | CALC RCDS OVERFLOW / CALC RCDS HOME | LOWEST | 0.00 | 0.00 | 0.00 |
|                |                                  | HIGHEST | 1.00 | 0.00 | 1.00 |
|                |                                  | MEAN | 0.13 | 0.00 | 0.13 |
|                | VIA RCDS OVERFLOW / VIA RCDS OWNER | LOWEST | 0.00 | 0.00 | 0.00 |
|                |                                  | HIGHEST | 0.80 | 0.00 | 0.80 |
|                |                                  | MEAN | 0.13 | 0.00 | 0.13 |
```

The following example shows the MANAGEMENT HIGHLIGHTS/GRAND SUMMARY Report:

```
<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>CATEGORY</th>
<th>ONLINE</th>
<th>BATCH</th>
<th>SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rnn.nn</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th></th>
<th>MANAGEMENT HIGHLIGHTS/GRAND SUMMARY</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>mm/dd/yy</td>
<td>hh:mm:ss</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>ONLINE</th>
<th>BATCH</th>
<th>SYSTEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>COUNTS</td>
<td>RECORDS UPDATED</td>
<td>LOWEST</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HIGHEST</td>
<td>424</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MEAN</td>
<td>98.33</td>
</tr>
<tr>
<td>PAGES READ</td>
<td>LOWEST</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HIGHEST</td>
<td>2,573</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MEAN</td>
<td>338.82</td>
</tr>
<tr>
<td>PAGES WRITTEN</td>
<td>LOWEST</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td></td>
<td></td>
<td>HIGHEST</td>
<td>224</td>
</tr>
<tr>
<td></td>
<td></td>
<td>MEAN</td>
<td>22.36</td>
</tr>
</tbody>
</table>
```

15-Jan-2018 33/92
Online Response Time

The Online Response Time Report is used to distribute run unit duration, on an hourly basis, for each day’s activities. This report can be help you gain an understanding of how response time patterns change over periods of time based on system activity.

 MANAGEMENT Highlights/Online Response Time Report Fields

The following is a description of the various fields that make up the MANAGEMENT Highlights/Online Response Time Report.

Date of the report.

**HOUR** -- Hour of the day for which reporting occurred. The numbers of run units whose duration, in seconds, falls within the indicated range are listed with the associated percentage of the total run units for the indicated hour.

**TOTAL** -- Number of run units reported in the indicated hour time frame.

**MEAN DURTN** -- Average duration of run units reported.

**MEDN DURTN** -- Median duration of run units reported.
Buffer Pool Utilization

The Buffer Pool Utilization Report is used to distribute the ratio of Pages Requested to Pages Read into hourly time brackets for each day's activities.

MANAGEMENT Highlights/Buffer Pool Utilization Report Fields

The following is a description of the various fields which make up the MANAGEMENT Highlights/Buffer Pool Utilization Report.

Date of the report.

HOUR -- Hour of the day for which reporting occurred. The numbers of run units whose ratios are within the indicated range are listed with the associated percentage of the total run units for the indicated hour.

TOTAL -- Number of run units reported in the indicated hour time frame.

MEAN RATIO -- Average ratio value of run units reported.

MEDN RATIO -- Median ratio value of run units reported.

The following example shows the MANAGEMENT HIGHLIGHTS/Online Response Time Report:

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rnn.nn</td>
<td>MANAGEMENT HIGHLIGHTS/ONLINE RESPONSE TIME</td>
<td>mm/dd/yy</td>
<td>hh:mm:ss</td>
<td>21</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HOUR</th>
<th>00.00 - 00.99</th>
<th>01.00 - 01.99</th>
<th>02.00 - 03.99</th>
<th>04.00 - 07.99</th>
<th>08.00 - 15.99</th>
<th>16.00 -</th>
<th>TOTAL</th>
<th>MEAN DURTN</th>
<th>MEDN DURTN</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0.50</td>
<td>2</td>
<td>4,301.65</td>
<td>8,601.92</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0.22</td>
<td>9</td>
<td>1.57</td>
<td>0.60</td>
</tr>
<tr>
<td></td>
<td>6</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0.11</td>
<td>11</td>
<td>781.99</td>
<td>0.78</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>2</td>
<td>0.50</td>
<td>2</td>
<td>1.38</td>
<td>2.55</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>0</td>
<td>1</td>
<td>0.20</td>
<td>5</td>
<td>117.15</td>
<td>1.52</td>
</tr>
<tr>
<td></td>
<td>8</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
<td>9</td>
<td>0.48</td>
<td>0.37</td>
</tr>
<tr>
<td>TOTAL</td>
<td>23</td>
<td>7</td>
<td>3</td>
<td>0</td>
<td>1</td>
<td>0.03</td>
<td>4</td>
<td>456.73</td>
<td>*</td>
</tr>
</tbody>
</table>

The following example shows the MANAGEMENT HIGHLIGHTS/Buffer Pool Utilization Report:

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rnn.nn</td>
<td>MANAGEMENT HIGHLIGHTS/BUFFER POOL UTILIZATION</td>
<td>mm/dd/yy</td>
<td>hh:mm:ss</td>
<td>22</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>HOUR</th>
<th>00.00 - 00.99</th>
<th>01.00 - 01.99</th>
<th>02.00 - 03.99</th>
<th>04.00 - 07.99</th>
<th>08.00 - 15.99</th>
<th>16.00 -</th>
<th>TOTAL</th>
<th>MEAN RATIO</th>
<th>MEDN RATIO</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0.50</td>
<td>2</td>
<td>7.91</td>
<td>13.00</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>2</td>
<td>0.22</td>
<td>9</td>
<td>7.03</td>
<td>6.21</td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>0</td>
<td>2</td>
<td>0</td>
<td>3</td>
<td>0.27</td>
<td>11</td>
<td>6.25</td>
<td>5.56</td>
</tr>
<tr>
<td></td>
<td>1</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0.00</td>
<td>2</td>
<td>9.02</td>
<td>18.03</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>0.20</td>
<td>5</td>
<td>8.26</td>
<td>5.57</td>
</tr>
</tbody>
</table>
Management Rankings

The Ranking reports contain system performance and resource consumption information derived from the original PROGRAM Report which is ranked, rather than summarized. The user can designate the particular item(s) to be ranked, and can designate the ranking process to be used (program type to be used, number of items to be ranked, etc.). The following information is listed for each ranked item:

- Rank of run unit
- Run Unit ID (ABSOLUTE value type only)
- Program Name
- Processing Type (ONL or BTC)
- Start date/time (ABSOLUTE value type only)
- Item value

The Ranking reports can specify the value type of the item to be ranked:

**ABSOLUTE** -- indicates value of an individual run unit from a single execution of the named program.

**MEDIAN** -- indicates a middle value for all executions of the named program.

**MEAN** -- indicates an average value for all executions of the named program.

The Ranking Report also provides cumulative values for all like named program executions for the following attributes:

- LOCKS REQUESTED
- PAGES READ
- PAGES WRITTEN
- PAGES WRITTEN + PAGES READ (TOTAL I/O's)
- RECORDS UPDATED

The following example shows the Management Ranking Report Attributes:
The following are descriptions of the various fields that make up the MANAGEMENT Ranking Reports.

**MANAGEMENT Ranking Report (ABSOLUTE value type).**

Start and stop date/time of the report.

Description of report function.

**RANK** -- Ranking of run unit as requested by report.

**RUN UNIT** -- Run unit numeric ID.

**PROGRAM** -- Program name and processing type.

**START** -- Start date/time of the run unit.

**VALUE** -- Value of run unit (seconds, percentage, etc.).

**MANAGEMENT Ranking Report (MEDIAN value type).**

Start and stop date/time of report.

Description of report function.

**RANK** -- Ranking of run unit as requested by report.

**PROGRAM** -- Program name and processing type.

**VALUE** -- Value of run unit (seconds, percentage, etc.).

**MANAGEMENT Ranking Report (MEAN value type).**

Start and stop date/time of report.

Description of report function.

**RANK** -- Ranking of run unit as requested by report.

**PROGRAM** -- Program name and processing type.

**VALUE** -- Value of run unit (seconds, percentage, etc.).
The MANAGEMENT RANKING Report (%ABORTED) is an example of a Ranking Report using a different attribute (%ABORTED). The field descriptions are identical to the MEDIAN and MEAN value type reports.

The following example shows the MANAGEMENT RANKING Report (ABSOLUTE Value Type):

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rnn.nn</td>
<td></td>
<td>MANAGEMENT RANKINGS</td>
<td>mm/dd/yy</td>
<td>hh:mm:ss</td>
<td>23</td>
</tr>
</tbody>
</table>

ALL RUN UNITS RANKED HIGHEST (TO LOWEST) BY PAGES READ + WRITTEN

<table>
<thead>
<tr>
<th>RANK</th>
<th>RUN UNIT</th>
<th>PROGRAM</th>
<th>START</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2090437</td>
<td>IDMSDDDL ONL</td>
<td>mm/dd/yy hh:mm:ss</td>
<td>1,113</td>
</tr>
<tr>
<td>2</td>
<td>2092894</td>
<td>ADSOGEN1 ONL</td>
<td>mm/dd/yy hh:mm:ss</td>
<td>403</td>
</tr>
<tr>
<td>3</td>
<td>2091234</td>
<td>ADSOGEN1 ONL</td>
<td>mm/dd/yy hh:mm:ss</td>
<td>309</td>
</tr>
<tr>
<td>4</td>
<td>2090152</td>
<td>ADSOGEN1 ONL</td>
<td>mm/dd/yy hh:mm:ss</td>
<td>379</td>
</tr>
<tr>
<td>5</td>
<td>2092617</td>
<td>ADSOGEN1 ONL</td>
<td>mm/dd/yy hh:mm:ss</td>
<td>375</td>
</tr>
</tbody>
</table>

TOTALS ADSOGEN1 | 1,546

6 2090589 RHDCSGEN ONL | mm/dd/yy hh:mm:ss | 366
7 2090664 RHDCSGEN ONL | mm/dd/yy hh:mm:ss | 361
8 2090509 RHDCSGEN ONL | mm/dd/yy hh:mm:ss | 358
9 2090365 RHDCSGEN ONL | mm/dd/yy hh:mm:ss | 355
10 2090269 RHDCSGEN ONL | mm/dd/yy hh:mm:ss | 351

TOTALS RHDCSGEN | 1,791

The following example shows the MANAGEMENT RANKING Report (MEDIAN Value Type):

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rnn.nn</td>
<td></td>
<td>MANAGEMENT RANKINGS</td>
<td>mm/dd/yy</td>
<td>hh:mm:ss</td>
<td>32</td>
</tr>
</tbody>
</table>

ALL PROGRAMS RANKED HIGHEST (TO LOWEST) BY MEDIAN PAGE/BUFFER RATIO

<table>
<thead>
<tr>
<th>RANK</th>
<th>PROGRAM</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ADSOGEN1 ONL</td>
<td>17.80</td>
</tr>
<tr>
<td>2</td>
<td>RHDCRUAL ONL</td>
<td>13.80</td>
</tr>
<tr>
<td>3</td>
<td>RHDCSGEN ONL</td>
<td>6.22</td>
</tr>
<tr>
<td>4</td>
<td>IDMSDDDL ONL</td>
<td>1.10</td>
</tr>
<tr>
<td>5</td>
<td>ADSOEDIT ONL</td>
<td>0.80</td>
</tr>
</tbody>
</table>

The following example shows the MANAGEMENT RANKING Report (MEAN Value Type):

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rnn.nn</td>
<td></td>
<td>MANAGEMENT RANKINGS</td>
<td>mm/dd/yy</td>
<td>hh:mm:ss</td>
<td>26</td>
</tr>
</tbody>
</table>

ALL PROGRAMS RANKED HIGHEST (TO LOWEST) BY AVERAGE PAGES READ + WRITTEN

<table>
<thead>
<tr>
<th>RANK</th>
<th>PROGRAM</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>RHDCSGEN ONL</td>
<td>788.50</td>
</tr>
<tr>
<td>2</td>
<td>RHDCRUAL ONL</td>
<td>710.50</td>
</tr>
<tr>
<td>3</td>
<td>IDMSDDDL ONL</td>
<td>122.00</td>
</tr>
<tr>
<td>4</td>
<td>ADSOGEN1 ONL</td>
<td>67.50</td>
</tr>
<tr>
<td>5</td>
<td>ADSOEDIT ONL</td>
<td>1.00</td>
</tr>
</tbody>
</table>

The following example shows the MANAGEMENT RANKING Report (%ABORTED):

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rnn.nn</td>
<td></td>
<td>MANAGEMENT RANKINGS</td>
<td>mm/dd/yy</td>
<td>hh:mm:ss</td>
<td>29</td>
</tr>
</tbody>
</table>

ALL PROGRAMS RANKED HIGHEST (TO LOWEST) BY %ABORTED

<table>
<thead>
<tr>
<th>RANK</th>
<th>PROGRAM</th>
<th>VALUE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### About Record Display

The Record Display is used to display changes for particular record types during specific time periods, or for the duration of the Archive Journal file. The Record Display can be produced in two formats:

- **Full Format** -- all record positions are displayed with the changed values highlighted.
- **Sparse Format** -- only the changed values are displayed.

### Record Display Report Fields (Full Format)

The following is a description of the various fields that make up the Record Display (Full Format).

- **Display type**, record ID, and record name.
- **Starting date/time of the run unit.**
- **RU** -- Run unit numeric ID.
- **IMAGE TYPE** -- Indicates either a before image (BFOR), or an after image (AFTR).
- **Abort Flag** -- If run unit (or recovery unit) terminates abnormally, "ABORTED" is displayed following image type.
- **PREFIX LEN** -- Length (in bytes) of the prefix portion (pointers) of the database record.
- **DATA LEN** -- Length (in bytes) of the data portion of the database record.
- **Program name and database key.**
- **DML VERB** -- Verb that caused the creation of the before or after image.
- **PREFIX** -- All pointers are displayed. The pointer position, relative to 1, appears to the left of the database key. If the pointer was modified, an asterisk (*) appears between the pointer position and the database key.
- **DATA** -- Five display lines present the character/hexadecimal representation of each record position and any changes. The CHGS line flags any data change as "A" (added character), "D" (deleted character), or "*" (modified character). The CHAR line lists the EBCDIC character value of each record position. The ZONE line lists the hex equivalent of the zone bits of each record position. The NUMR line lists the hex equivalent of the numeric bits of each record position. The fifth line numbers the character position within the record.

The following example shows the Record Display (Full Format):

<p>| | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ADSGEDIT ONL</td>
<td>0.00</td>
</tr>
<tr>
<td>2</td>
<td>ADSGEN1 ONL</td>
<td>0.00</td>
</tr>
<tr>
<td>3</td>
<td>IDMSDDDL ONL</td>
<td>0.00</td>
</tr>
<tr>
<td>4</td>
<td>RHDCRUAL ONL</td>
<td>0.00</td>
</tr>
<tr>
<td>5</td>
<td>RHDCSGEN ONL</td>
<td>0.00</td>
</tr>
</tbody>
</table>
### Record Display Report Fields (Sparse Format)

The following is a description of the various fields that make up the Record Display (Sparse Format).

**Display type, record ID, and record name.**

**RU** -- Run unit numeric ID.

**IMAGE TYPE** -- Indicates either a before image (BFOR), or an after image (AFTR).

Abort Flag -- If run unit (or recovery unit) terminates abnormally, "ABORTED" is displayed following image type.

---

<table>
<thead>
<tr>
<th>Field</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ID</td>
<td>Run unit numeric ID.</td>
</tr>
<tr>
<td>RELEASE</td>
<td>Display type, record ID, and record name.</td>
</tr>
<tr>
<td>DATE</td>
<td>Starting date/time of the run unit.</td>
</tr>
<tr>
<td>TIME</td>
<td><strong>BFOR</strong> -- Before Image Flag.</td>
</tr>
<tr>
<td>PAGE</td>
<td><strong>AFTR</strong> -- After Image Flag.</td>
</tr>
</tbody>
</table>

**Example:**

```
** mm/dd/yy RU = 1,707 PREFIX LEN = 76 IDMSDDOL 60,086:0010 **
hh:mm:ss BFOR DATA LEN = 188 MODIFY RECORD SEQ # = 621,934
```

---

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**PREFIX LEN** -- Length (in bytes) of the prefix portion (pointers) of the database record.

**DATA LEN** -- Length (in bytes) of the data portion of the database record.

Program name and database key.

**DML VERB** -- Verb that caused the creation of the before or after image.

**PREFIX CHANGES** -- Only pointers which were modified are displayed. The pointer position, relative to 1, appears to the left of the database key. If none of the pointers were modified, *** NONE *** appears.

**DATA** -- Four display lines present the character/hexadecimal representation of each record position whose value has changed. Only those positions that have changed are displayed. The CHAR line presents the EBCDIC character value of each record position. The ZONE line presents the hex equivalent of the zone bits of each record position. The NUMR line presents the hex equivalent of the numeric bits of each record position. The fourth line numbers character positions within the record. If a record position has been deleted (shortening of a variable-length record), a "D" appears on the ZONE line at the corresponding record position. If the data portion was not changed, *** NONE *** appears in place of the four display lines.

**Note:** The data portion of a database record will be decompressed if it can be uniquely determined that the record type is compressed by the IDMSCOMP program. NONUNIQ=Y may be required on the PROCESS parameter card.

The following example shows the Record Display (Sparse Format):

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rnn.nn</td>
<td>mm/dd/yy</td>
<td>RECORD DISPLAY</td>
<td>mm/dd/yy</td>
<td>hh:mm:ss</td>
<td>2</td>
</tr>
</tbody>
</table>

**PREFIX CHANGES**

**DATA**

**Note:** The data portion of a database record will be decompressed if it can be uniquely determined that the record type is compressed by the IDMSCOMP program. NONUNIQ=Y may be required on the PROCESS parameter card.
About DATABASE KEY Display

The Database Key Display is used to display changes for particular record occurrences, or particular database pages during specific time periods. The Database Key Display can be produced in two formats:

- **Full Format** -- all record positions are displayed with the changed values highlighted.
- **Sparse Format** -- only the changed values are displayed.
- DATABASE KEY Display Report Fields (Full Format) (see page 42)
- DATABASE KEY Display Report Fields (Sparse Format) (see page 44)

DATABASE KEY Display Report Fields (Full Format)

The following is a description of the various fields which make up the Database Key Display (Full Format).

Display type, page and line of database record.

Starting date/time of the run unit.

**RU** -- Run unit numeric ID.

**IMAGE TYPE** -- Indicates either a before image (BFOR), or an after image (AFTR).

Abort Flag -- If run unit (or recovery unit) terminates abnormally, "ABORTED" is displayed following image type.

**PREFIX LEN** -- Length (in bytes) of the prefix portion (pointers) of the database record.

**DATA LEN** -- Length (in bytes) of the data portion of the database record.

Program name, record ID, and record name.

**DML VERB** -- Verb that caused the creation of the before or after image.
PREFIX -- All pointers are displayed. The pointer position, relative to 1, appears to the left of the database key. If the pointer was modified, an asterisk (*) appears between the pointer position and the database key.

DATA -- Five display lines present the character/hexadecimal representation of each record position and any change flags. The CHGS line flags any data change as "A" (added character), "D" (deleted character), or "**" (modified character). The CHAR line presents the EBCDIC character value of each record position. The ZONE line presents the hex equivalent of the zone bits of each record position. The NUMR line presents the hex equivalent of the numeric bits of each record position. The fifth line numbers the character positions within the record.

The following example shows the DATABASE KEY Display (Full Format):

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rnn.nn</td>
<td>DATABASE KEY DISPLAY</td>
<td>mm/dd/yy</td>
<td>hh:mm:ss</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

** mm/dd/yy | RU = 1,706 | PREFIX LEN = 76 | IDMSDDDL | SR0036 SR-036 | SEQ # = 621,934 |

| 1 | 60,086:0011 | 2 | 60,086:0009 | 3 | 60,086:0010 | 4 | 60,086:0010 | 5 | 60,086:0010 |
| 6 | 60,086:0010 | 7 | 60,086:0010 | 8 | 60,086:0010 | 9 | 60,086:0010 | 10 | 60,086:0010 |
| 16 | 60,086:0012 | 17 | 61,948:0012 | 18 | 60,945:0023 | 19 | 60,945:0023 | 20 | 60,945:0010 |

** mm/dd/yy | RU = 1,706 | PREFIX LEN = 76 | IDMSDDDL | SR0036 SR-036 | SEQ # = 621,935 |

| 1 | 60,086:0011 | 2 | 60,086:0009 | 3 | 60,086:0010 | 4 | 60,086:0010 | 5 | 60,086:0010 |
| 6 | 60,086:0010 | 7 | 60,086:0010 | 8 | 60,086:0010 | 9 | 60,086:0010 | 10 | 60,086:0010 |
| 16 | 60,086:0012 | 17 | 61,948:0012 | 18 | 60,945:0023 | 19 | 60,945:0023 | 20 | 60,945:0010 |

** mm/dd/yy | RU = 1,706 | PREFIX LEN = 76 | IDMSDDDL | SR0036 SR-036 | SEQ # = 621,952 |

| 1 | 60,086:0011 | 2 | 60,086:0009 | 3 | 60,086:0010 | 4 | 60,086:0010 | 5 | 60,086:0010 |
| 6 | 60,086:0010 | 7 | 60,086:0010 | 8 | 60,086:0010 | 9 | 60,086:0010 | 10 | 60,086:0010 |
| 16 | 60,086:0012 | 17 | 61,948:0012 | 18 | 60,945:0023 | 19 | 60,945:0023 | 20 | 60,945:0010 |

** mm/dd/yy | RU = 1,706 | PREFIX LEN = 76 | IDMSDDDL | SR0036 SR-036 | SEQ # = 621,953 |

| 1 | 60,086:0011 | 2 | 60,086:0009 | 3 | 60,086:0010 | 4 | 60,086:0010 | 5 | 60,086:0010 |
| 6 | 60,086:0010 | 7 | 60,086:0010 | 8 | 60,086:0010 | 9 | 60,086:0010 | 10 | 60,086:0010 |
| 16 | 60,086:0012 | 17 | 61,948:0012 | 18 | 60,945:0023 | 19 | 60,945:0023 | 20 | 60,945:0010 |
DATABASE KEY Display Report Fields (Sparse Format)

The following is a description of the various fields which make up the DATABASE KEY Display (Sparse Format).

Display type, page and line of database record.

Starting date/time of the run unit.

**RU** -- Run unit numeric ID.

**IMAGE TYPE** -- Indicates either a before image (BFOR), or an after image (AFTR).

Abort Flag -- If run unit (or recovery unit) terminates abnormally, "ABORTED" is displayed following image type.

**PREFIX LEN** -- Length (in bytes) of the prefix portion (pointers) of the database record.

**DATA LEN** -- Length (in bytes) of the data portion of the database record.

Program name, record ID, and record name.

**DML VERB** -- Verb which caused the creation of the before or after image.

**PREFIX CHANGES** -- Only pointers which were modified are displayed. The pointer position, relative to 1, appears to the left of the database key. If none of the pointers were modified, *** NONE *** appears.

**DATA** -- Four (4) display lines present the character/hexadecimal representation of each record position whose value has changed. Only those positions which have changed are displayed. The CHAR line presents the EBCDIC character value of each record position. The ZONE line presents the hex equivalent of the zone bits of each record position. The NUMR line presents the hex equivalent of the numeric bits of each record position. The fourth line numbers the character positions within the record. If a record position has been deleted (shortening of a variable-length record), a "D" appears on the ZONE line at the corresponding record position. If the data portion was not changed, *** NONE *** appears in place of the four display lines.

**Note:** The data portion of a database record will be decompressed if it can be uniquely determined that the record type is compressed by the IDMSCOMP program. NONUNIQ=Y may be required on the PROCESS parameter card.

The following example shows the DATABASE KEY Display (Sparse Format):

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER DATABASE KEY DISPLAY</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rnn.nn</td>
<td>DATABASE KEY DISPLAY</td>
<td>mm/dd/yy</td>
<td>hh:mm:ss</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>60,086:0010</strong></td>
<td><strong>BFOR</strong></td>
<td><strong>RU = 1,706</strong></td>
<td><strong>PREFIX LEN = 76</strong></td>
<td><strong>DATA LEN = 188</strong></td>
<td><strong>IDMSDDL</strong></td>
</tr>
<tr>
<td>PREFIX CHANGES</td>
<td>1</td>
<td>60,086:0011</td>
<td>2</td>
<td>60,086:0009</td>
<td>3</td>
</tr>
<tr>
<td>6</td>
<td>60,086:0010</td>
<td>7</td>
<td>60,086:0010</td>
<td>8</td>
<td>60,086:0010</td>
</tr>
</tbody>
</table>

15-Jan-2018
PROGRAM Display (Regular View)

The Program Display is used to display database changes effected by particular application programs during specific time periods. The Program Display can be produced in two formats:

- **Full Format** -- all record positions are displayed with the changed values highlighted

- **Sparse Format** -- only the changed values are displayed.

PROGRAM Display Report Fields (Full Format)

The following is a description of the various fields which make up the PROGRAM Display (Full Format).

Display type and program name.

Starting date/time of the run unit.

RU -- Run unit numeric ID.
IMAGE TYPE -- Indicates either a before image (BFOR), or an after image (AFTR).

Abort Flag -- If run unit (or recovery unit) terminates abnormally, "ABORTED" is displayed following image type.

PREFIX LEN -- Length (in bytes) of the prefix portion (pointers) of the database record.

DATA LEN -- Length (in bytes) of the data portion of the database record.

Database key, record ID, and record name.

DML VERB -- Verb that caused the creation of the before or after image.

PREFIX -- Appears unless DATA-ONLY was specified. All pointers are displayed. The pointer position, relative to 1, appears to the left of the database key. If the pointer was modified, an asterisk (*) appears between the pointer position and the database key.

DATA -- Five display lines present the character/hexadecimal representation of each record position and any change flags. The CHGS line flags any data change as "A" (added character), "D" (deleted character), or "*" (modified character). The CHAR line presents the EBCDIC character value of each record position. The ZONE line presents the hex equivalent of the zone bits of each record position. The NUMR line presents the hex equivalent of the numeric bits of each record position. The fifth line numbers the character position within the record.

The following example shows the PROGRAM Display (Full Format):

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rnn.nn</td>
<td>PROGRAM DISPLAY</td>
<td>mm/dd/yy</td>
<td>hh:mm:ss</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>PREFIX LEN</td>
<td>DATA LEN</td>
<td>MODIFY RECORD</td>
<td>SEQ #</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DATA</td>
<td>CHGS</td>
<td>MESSAGE-77</td>
<td>U D</td>
<td>mm/dd/yy</td>
<td></td>
</tr>
<tr>
<td>ZONE</td>
<td>CHGS</td>
<td>CHAR</td>
<td>60,196:0025</td>
<td>1,706</td>
<td></td>
</tr>
<tr>
<td>NMRR</td>
<td>CHGS</td>
<td>CHAR</td>
<td>60,196:0025</td>
<td>1,706</td>
<td></td>
</tr>
<tr>
<td>**</td>
<td>mm/dd/yy</td>
<td>RU =</td>
<td>AFTR</td>
<td>60,196:0025</td>
<td>1,706</td>
</tr>
<tr>
<td>**</td>
<td>RU =</td>
<td>AFTR</td>
<td>60,196:0025</td>
<td>1,706</td>
<td></td>
</tr>
</tbody>
</table>
** PROGRAM Display Report Fields (Sparse Format) **

The following is a description of the various fields which make up the PROGRAM Display (Sparse Format).

Display type and program name.

Starting date/time of the run unit.

RU -- Run unit numeric ID.

IMAGE TYPE -- Indicates either a before image (BFOR), or an after image (AFTR).

Abort Flag -- If run unit (or recovery unit) terminates abnormally, "ABORTED" is displayed following image type.

PREFIX LEN -- Length (in bytes) of the prefix portion (pointers) of the database record.

DATA LEN -- Length (in bytes) of the data portion of the database record.

Database key, record ID, and record name.

DML VERB -- Verb that caused the creation of the before or after image.

PREFIX CHANGES -- Only pointers which were modified are displayed. The pointer position, relative to 1, appears to the left of the database key. If none of the pointers were modified, *** NONE *** appears.

DATA -- Four display lines present the character/hexadecimal representation of each record position whose value has changed. Only those positions that have changed are displayed. The CHAR line presents the EBCDIC character value of each record position. The ZONE line presents the hex equivalent of the zone bits of each record position. The NUMR line presents the hex equivalent of the numeric bits of each record position. The fourth line numbers the character positions within the record. If a record position has been deleted (shortening of a variable-length record), a "D" appears on the ZONE line at the corresponding record position. If the data portion was not changed, *** NONE *** appears in place of the four display lines.

Note: The data portion of a database record will be decompressed if it can be uniquely determined that the record type is compressed by the IDMSCOMP program. NONUNIQ=Y may be required on the PROCESS parameter card.
The following example shows the PROGRAM Display (Sparse Format):

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rnn.nn</td>
<td>PROGRAM DISPLAY</td>
<td>mm/dd/yy</td>
<td>hh:mm:ss</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

** mm/dd/yy **

** hh:mm:ss **

** PREFIX CHANGES **

** DATA **

** CHAR **

** MESSAGE-77 **

** U D **

** mm/dd/yy **

** PROGRAM Display (Subschema View)**

You can request the PROGRAM Display to provide a program’s subschema view of database changes as defined in the data dictionary. The Subschema Display provides PROGRAM Display information in a format that is better suited for the less technical end-user. The data is presented as individual fields,
rather than complete records. Changes are paired in a Before/After, side-by-side format. All fields are identified similar to the original subschema definitions, and all values are converted to externally printable formats. Therefore, programmers and/or auditors can examine the Subschema Display with little or no interpretation by a database technician.

This optional subschema view for the PROGRAM Display can be requested for all programs or for selected programs by specifying 'VIEW=SUBSC' on the appropriate DISPLAY parameter.

⚠️ **Note:** The record identification portion of the PROGRAM Display is revised for the Subschema View.

As defined in a program's registered subschema, each prefix pointer and each field for every valid record is individually identified and presented in a columnar before/after format. For additions, an AFTER-ONLY image is formatted; for updates, a BEFORE-AFTER pair is formatted side-by-side; and for deletions, a BEFORE-ONLY image is formatted. The display of a record's prefix portion can be optionally suppressed by specifying 'DATA=ONLY' on the DISPLAY parameter.

Prefix pointers are individually identified by pointer position, Owner/Member relationship, set name, and pointer type. The Database Key values are presented in Page:Line formats. When sparse formatting is specified, only the pointers which were changed are displayed. When DATA=ONLY is specified, no pointer information is displayed.

The Subschema Display fields are identified by COBOL level, field name, and field subscript value (if applicable). When sparse formatting is specified, only the elementary items which were changed are displayed along with any preceding group items to ensure non-ambiguous identification. Field values are only formatted for elementary items having (a PICTURE clause). Each item value is automatically converted to a printable character format as necessary. Display numeric (signed or unsigned), binary (COMP) and packed (COMP-3) values are treated as numerical quantities and are zero-suppressed and left-justified. Eight byte binary values are handled as exceptions and are formatted as 2-byte hexadecimal pairs (16 hexadecimal digits). All other non-character data types are also converted to a hexadecimal format along with any fields that do not conform to their defined data types.

The Program Display (Subschema View) can be produced in two formats:

- **Full Format** -- all fields are displayed.
- **Sparse Format** -- only the changed fields are displayed.

### Subschema Display Report Fields (Full Format)

The following is a description of the various fields which make up the Subschema Display (Full Format).

Display type and program name.

**RECORD IDENT** -- Record name.

Record ID.

**DATABASE KEY** -- Database key of the record.
RUN UNIT -- Run unit numeric ID.

Starting date/time of the run unit.

Abort Flag -- If run unit (or recovery unit) terminates abnormally, "ABORTED" is displayed.

DML VERB -- Verb that caused the creation of the before or after image.

Image Type -- Image types affected by DML VERB: AFTER-ONLY; BEFORE-AFTER; BEFORE-ONLY.

PREFIX -- The first 64 pointers are displayed. The following information is formatted for each pointer: the position (relative to 1); Owner or member relationship; set name; pointer type (NEXT, PRIOR, OWNER); and the before and after values of the database key.

DATA -- All fields (defined in subschema) are displayed. The following information is formatted for each field: COBOL level number; field name; before/after field values (for elementary items) converted to printable characters.

Subschema Display Report Fields (Sparse Format)

The following is a description of the various fields which make up the Subschema Display (Sparse Format).

Display type and program name.

RECORD IDENT -- Record name.

Record ID.

DATABASE KEY -- Database key of the record.

RUN UNIT -- Run unit numeric ID.

Starting date/time of the run unit.

Abort Flag -- If run unit (or recovery unit) terminates abnormally, "ABORTED" is displayed.

DML VERB -- Verb that caused the creation of the before or after image.

Image Type -- Image types affected by DML VERB: AFTER-ONLY; BEFORE-AFTER; BEFORE-ONLY.

PREFIX -- The first 64 pointers are processed, and only those that were modified are displayed. The following information is formatted for each pointer: the position (relative to 1); Owner or member relationship; set name; pointer type (NEXT, PRIOR, OWNER); and the before and after values of the database key.

DATA -- Only those fields which were modified are displayed. All pertinent group level fields are included for completeness. The following information is formatted for each field: COBOL level number; field name; before/after field values (for elementary items) converted to printable characters.

The following example shows the Subschema Display (Full Format):
The following example shows the Subschema Display (Sparse Format):

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td></td>
<td>CA IDMS JOURNAL ANALYZER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PROGRAM DISPLAY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>mm/dd/yy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>hh:mm:ss</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>TIME-LU-036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>OCCURS-036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>RCD-VERS-036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>DLGTH-036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>BUILDER-036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>DESCR-036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>DATE-LU-036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>RECTYPE-036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>REC-FORMAT-036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>ALT-PIC-TYPE-036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>DATE-CREATED-036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>PREP-BY-036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>REV-BY-036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>ENT-TYPE-036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>ERR-036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>TIME-LU-036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>PUB-ACCESS-FLAG-036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>FLAG-036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>USER-COUNT-036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>FILLER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>LOGICAL-RECORD-USE-COUNT-036</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>FILLER</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**RECORD IDENT: NAMEYN-083  SR0083  SEQ # = 621,263**

DATABASE KEY: 60,196:0028

RUN UNIT : 1,706 mm/dd/yy hh:mm:ss

DML VERB : ERASE RECORD ALL BEFORE-ONLY

---

The following example shows the Subschema Display (Sparse Format):

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td></td>
<td>CA IDMS JOURNAL ANALYZER</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>PROGRAM DISPLAY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>mm/dd/yy</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>hh:mm:ss</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>02</td>
<td>TIME-LU-036</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**RECORD IDENT: SR-036  SR036  SEQ # = 621,261**

DATABASE KEY: 60,196:0025

RUN UNIT : 1,706 mm/dd/yy hh:mm:ss

DML VERB : MODIFY RECORD BEFORE-AFTER

PREFIX *** NO CHANGES ***

DATA 02 TIME-LU-036 10322213 18524988
Audit Report Summary

The third class of output generated by CA IDMS Journal Analyzer is the Audit Report. This report contains the informative, error, and processing messages generated by CA IDMS Journal Analyzer, and provides a summary of all processing.

The following is a description of the various fields that make up the AUDIT Report.

Report title.

Informative messages.

PROCESS parameters.

Error Messages.

Valid parameters.

Extracting phase.

Report phase.

Processing messages.
The following example shows the AUDIT Report:

<table>
<thead>
<tr>
<th>ID</th>
<th>RELEASE</th>
<th>CA IDMS JOURNAL ANALYZER</th>
<th>DATE</th>
<th>TIME</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1027</td>
<td>INPUT PARAMETER STATEMENT</td>
<td>P=ALL ,CON=N,NONUNIQ=Y ,RHDCRUAL=Y ,IDMS=Y ,ABEND=N,FORMAT=FULL</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Formatting:**

- **IDMS - 19.0**
- **AUDIT Report**
- **PROCESSING OPTIONS**
  - PROCESS = EXTRACTS/REPORTS/DISPLAYS
  - DISCONTINUE IF ERRORS
  - DISPLAY FORMAT = FULL
  - PROCESS RHDCRUAL RUN UNITS
  - PROCESS IDMS.... PROGRAMS
  - ALLOW NON-UNIQUE SCHEMAS
  - NO USER DECOMPRESS MODULE SPECIFIED
  - RETURN CODE OF 16 IF SERIOUS ERROR
- **INPUT PARAMETER STATEMENT**
  - R=ACTV, A LL=Y, INTVL=120
  - R=PROG, N AME=IDMSDDL, LEVEL=DETAIL
  - R=PROG, A LL=IDMSDDL, LEVEL=SUMMARY , HI-LIGHTS=Y
  - R=CHRON, A LL=Y, START=1025941030,STOP=1025941200
  - R=ABORT, A LL=Y
  - R=HI-SUM, A LL=Y, LEVEL=PROGRAM
  - R=HI-ONL, A LL=Y
  - R=HI-BPU, A LL=Y
  - R=RANK, RANKWHAT=PGIO, RANKHOW=HIGH, RANK# = 50,RANKV=ABSOLUTE
  - R=RANK, RANKWHAT=PG-RATIO, RANKHOW=HIGH, RANK# = 50,RANKV=MEDIAN
- **EXTRACT RECORDS WILL BE CREATED FOR**
  - ACTIVITY
  - DATABASE/AREA
  - PROGRAM
  - CHRON-EVENT
  - ABORT-COINCIDENCE
  - MANAGEMENT
- **EXTRACT RECORDS WILL BE SUPPRESSED FOR**
  - DATABASE/AREA
  - PROGRAM
  - CHRON-EVENT
- **EXTRACT RECORDS WILL BE BYPASSED AFTER FIRST BGN**
  - DATABASE/AREA
  - PROGRAM
- **TOTAL ARCHIVE RECORDS PROCESSED**
  - 191,179
- **ARCHIVE RECORDS PROCESSED FOR THIS TYPE**
  - USER
  - JSEG
  - BFG
  - ABRT
  - AREA
  - AKP
  - ABORT-COINCIDENCE
  - ACTIVITY
- **TOTAL ARCHIVE RECORDS PROCESSED**
  - 191,179
- **TOTAL RUN UNITS PROCESSED**
  - 43
Examples

This section contains examples that show how the various parameter statements can be coded to produce CA IDMS Journal Analyzer Reports and Displays.

The examples in this section will consist of a mandatory PROCESS statement and the other parameter statements which are required to attain the desired output. The examples are divided into two groups: Journal Reports and Journal Displays.

Example One

This example creates a set of Journal Reports for each Archive Journal file. The reports include an ACTIVITY Report, an ABORT COINCIDENCE Report, and several MANAGEMENT reports (Highlights and Rankings). These reports will provide measurements with which to evaluate system performance and resource consumption. This set of reports is an example of the types of reports which could be run regularly (e.g., daily) as a means of monitoring the CA IDMS environment.

Note: Records for all other report types are suppressed by using the SUPPRESS=#3 parameter statement. Changes to the SUPPRESS parameter are required if extract records are to be created for other report types. Proper use of the SUPPRESS parameter can significantly reduce the time and cost required to run CA IDMS Journal Analyzer.

The following example shows journal reports for each archive journal file:

```
PROCESS=ALL, CONT=N, RHDCRUAL=N, IDMSXXXX=N, NONUNIQ=N
*$
SUPPRESS=#3
$
$ ACTIVITY AND ABORT COINCIDENCE REPORTS
```
Example Two

This example specifies a CHRONOLOGICAL EVENT Report which reports all significant events recorded in a 30 minute period. This type of report can be useful in establishing a quiesce point on which to synchronize a recovery job. For this example, assume that an Extract file was previously created using either PROCESS=EXTRACTS or PROCESS=ALL.

Warning: The CHRONOLOGICAL EVENT Report is normally run on a special request basis.

The following example shows the PROGRAM Report (Activity of One Type):

\[ \text{PROCESS=REPORTS, CONT=N, RHDCRUAL=N, IDMSXXXX=N, NONUNIQ=Y} \]

\[ \text{CHRONOLOGICAL REPORT: LIMITED TO + HOUR PERIOD} \]

\[ R=\text{CHRONO, ALL=Y, START=0115921015, STOP=0115921044} \]
Example Three

This example specifies a RECORD Display which displays one record type using a full format. The amount of display is limited to the first twenty before/after sets created by online run units. More efficient displays can be realized if the START and STOP operands are specified to indicate a limited time period.

⚠️ **Note:** The RECORD Display is normally run on a special request basis and would not be combined with a request for Journal Reports.

The following example shows the PROGRAM Report (Activity of One Type):

```plaintext
PROCESS=DISPLAYS, CONT=N, FORMAT=FULL, RHDCRUAL=N, IDMSXXXX=N, NONUNIQ=N
* $ RECORD DISPLAY: FULL FORMAT, LIMITED TO ONLINE RUN UNITS,
  $ LIMITED TO 20 BEFORE/AFTER SETS
$ DISPLAY=REC, RECID=8823
DLIMITS=REC, TYPE=ONL, #SETS=20
```

Example Four

This example specifies a DATABASE KEY Display that selects one record occurrence for display in the sparse format. The amount of display is limited to the modifications performed by batch run units, and by a sampling of every fifth before/after set. More efficient displays can be realized if the START and STOP operands are specified to indicate a limited time period.

⚠️ **Note:** The DATABASE KEY Display is normally run on a special request basis and would not be combined with a request for Journal Reports.

The following example shows the DATABASE KEY display:

```plaintext
PROCESS=DISPLAYS, CONT=N, FORMAT=SPARSE, RHDCRUAL=N, IDMSXXXX=N, NONUNIQ=N
* $ DATABASE DISPLAY: SPARSE FORMAT, LIMITED TO BATCH RUN UNITS,
  $ SAMPLING EVERY 5TH BEFORE/AFTER SET
$ D=DBKEY, PAGE=19025, LINE=3
DLIMITS=DBKEY, TYPE=BTC, NTH=5
```
Example Five

This example specifies a PROGRAM Display (Regular View) that selects one program for display in the sparse format. All display images for SR1 records are suppressed. More efficient displays can be realized if the START and STOP operands are specified to indicate a limited time period.

Note: The PROGRAM Display is normally run on a special request basis and would not be combined with a request for Journal Reports.

The following example shows the PROGRAM display:

```
PROCESS=DISPLAYS, CONT=N, FORMAT=SPARSE, RHDCRUAL=N, IDMSXXXX=N, NONUNIQ=N
*
$ PROGRAM DISPLAY: SPARSE FORMAT, SUPPRESSING SR1's
$ D=PROG, NAME=USERPROG
D=PROG, NAME=USERPROG
```

Example Six

This example specifies a PROGRAM Display (Regular View) that presents, in the sparse format, all programs whose names begin with 'DBM'. The amount of display is limited to five online run units and to the first ten before/after sets for each run unit. More efficient displays can be realized if the START and STOP operands are specified to indicate a limited time period.

Note: The PROGRAM Display is normally run on a special request basis and would not be combined with a request for Journal Reports.

The following example shows the PROGRAM display (regular view) names that begin with DBM:

```
PROCESS=DISPLAYS, CONT=N, FORMAT=SPARSE, RHDCRUAL=N, IDMSXXXX=N, NONUNIQ=N
*
$ PROGRAM DISPLAY: SPARSE FORMAT, PROGRAMS START WITH 'DBM',
$ LIMITED TO 5 ONLINE UNITS AND ONLY
$ 10 BEFORE/AFTER SETS PER RUN UNIT
$ D=PROG, NAME=DBM
D=PROG, NAME=DBM
```

Example Seven

This example specifies a PROGRAM Display (Regular View) which displays one run unit in the sparse format. The amount of display is limited to one run unit.
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Note: Multiple DLIMITS parameters can be specified to individually select more than one run unit. The run unit IDs are available from the PROGRAM, CHRONOLOGICAL EVENT, or MANAGEMENT Reports.

The following example shows the PROGRAM display (regular view) one run unit:

```
PROCESS=DISPLAYS, CONT=N, FORMAT=SPARSE, RHDCRUAL=N, IDMSXXXX=N, NONUNIQ=N
*
$ PROGRAM DISPLAY: SPARSE FORMAT, LIMITED TO RUN UNIT #551168
$ D=PROG, ALL=Y
DLIMITS=PROG, TYPE=SYS, RU=551168
```

Example Eight

This example specifies a SUBSCHEMA Display (PROGRAM Display with a subschema view) which displays one program in the sparse format. The amount of display is limited to twenty run units. More efficient displays can be realized if the START and STOP operands are specified to indicate a limited time period.

Note: The SUBSCHEMA Display is normally run on a special request basis and would not be combined with a request for Journal Reports.

The following example shows the PROGRAM display with subschema view:

```
PROCESS=DISPLAYS, CONT=N, FORMAT=SPARSE, RHDCRUAL=N, IDMSXXXX=N, NONUNIQ=N
*
$ SUBSCHEMA DISPLAY: SPARSE FORMAT, LIMITED TO 20 RUN UNITS
$ D=PROG, NAME=USERPROG, VIEW=SUBSC
DLIMITS=PROG, TYPE=SYS, #RUS=20
```

Example Nine

This example specifies a SUBSCHEMA Display (PROGRAM Display with a subschema view) which displays one program in the sparse format. The prefix pointers and a range of record IDs are suppressed. Multiple DSUPPS parameters can be specified to suppress more than one range of record IDs. More efficient displays can be realized if the START and STOP operands are specified to indicate a limited time period.

Note: The SUBSCHEMA Display is normally run on a special request basis and would not be combined with a request for Journal Reports.
The following example shows the subschema display:

```
PROCESS=DISPLAYS, CONT=N, FORMAT=SPARSE, RHDCRUAL=N, IDMSXXXX=N,
NONUNIQ=N
*: SUBSCHEMA DISPLAY: SPARSE FORMAT, SUPPRESS PREFIX CHANGES,
$ SUPPRESS SR4015 THRU SR4089
D=PROG, NAME=USERPROG, VIEW=SUBSC, DATA=ONLY
DSUPPS=RANGE, LOWID=4015, HIGHID=4089
```

Summary of Examples

The following table lists the various examples described in this section:

<table>
<thead>
<tr>
<th>Example Report/Display</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 ACTIVITY ABORT</td>
<td>Creates a set of Journal Reports to evaluate system performance and resource consumption.</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>2 CHRONOLOGICAL EVENT</td>
<td>Reports all significant events recorded in a 30 minute period.</td>
</tr>
<tr>
<td>3 RECORD Display</td>
<td>Displays the first 20 before/after sets created by online run units using a full format.</td>
</tr>
<tr>
<td>4 DATABASE KEY Display</td>
<td>Displays a sampling of every 5th before/after set in a sparse format.</td>
</tr>
<tr>
<td>5 PROGRAM Display</td>
<td>Displays one program in sparse format, and suppresses SR1 records.</td>
</tr>
<tr>
<td>6 PROGRAM Display</td>
<td>Programs starting with 'DBM' are displayed in the sparse format.</td>
</tr>
<tr>
<td>7 PROGRAM Display</td>
<td>Displays one run unit in sparse format.</td>
</tr>
<tr>
<td>8 SUBSCHEMA Display</td>
<td>PROGRAM Display with a subschema view and limiting the amount of display.</td>
</tr>
<tr>
<td>9 SUBSCHEMA Display</td>
<td>PROGRAM Display with a subschema view and suppressing all SR1 records.</td>
</tr>
</tbody>
</table>

Each example consists of an operational description and a sample of the parameter statement(s) required, which produces the desired output.

PROCESS Parameter Summary

The PROCESS parameter is used to specify the input required, and the output(s) to be created by the execution of CA IDMS Journal Analyzer. It also indicates if processing is to be discontinued if a parameter error is detected. A single valid PROCESS parameter is required as the first request in the Parameter file.

The following is a listing of the default values assigned to the operands associated with the PROCESS parameter statement.
**Note:** There is no default value for the USERDCOM operand.

The following example shows default values:

```
PROCESS=EXTRACTS,
CONT=N,
FORMAT=SPARSE,
RHDCRUAL=N,
IDMSXXXX=N,
NONUNIQ=N
```

The following is a listing of replacement values that can be used in place of the default values assigned to the operands of the PROCESS parameter statement.

**Note:** There is no default value for the USERDCOM operand, users must specify the appropriate name when this operand and its implied features are required.

The following example shows replacement values:

```
PROCESS=ALL,
CONT=Y,
FORMAT=FULL,
RHDCRUAL=Y,
IDMSXXXX=Y,
NONUNIQ=Y,
USERDCOM=DBMSDCOM
```

### Parameters and Keywords

This section lists all of the major and minor keywords and their value fields. In addition, all valid synonyms for both the keywords and value fields are listed. The listings are grouped by parameter type.

- PROCESS Parameter 1 (see page 60)
- SUPPRESS Parameter Details (see page 64)
- REPORT Parameter 1 (see page 65)
- DISPLAY Parameter 1 (see page 74)
- BYPASS Parameter 1 (see page 83)

### PROCESS Parameter 1

The PROCESS parameter specifies the input required, and the output(s) to be created by this execution of CA IDMS Journal Analyzer. It also indicates whether processing is to be discontinued if a parameter error is detected. A single valid PROCESS parameter is required as the first request in the Parameter file.

The PROCESS parameter syntax is as follows.
Identifies the type of processing to be performed by CA IDMS Journal Analyzer. You can use one of four options to define the type of processing:

**ALL** - This option directs CA IDMS Journal Analyzer to create an Extract file and any Journal Reports and Journal Displays requested by appropriate parameters.

**REPORTS** - This option indicates that an Extract file is to be input and that only Journal Reports are to be produced.

**DISPLAYS** - this option indicates that an Archive Journal is input and that journal displays are to be created. No Extract file creation is performed, and no reports are produced.

**EXTRACTS** - This option indicates that only an Extract file is to be created (no journal displays, and no reports are produced). Input is one or more Archive Journal files.

Note: An Extract file must be input to CA IDMS Journal Analyzer when the REPORTS option is specified.

Indicates whether processing should continue if parameter errors are detected.

**Y** - Indicates that processing is to continue.

**N** - Indicates that processing is to terminate. This option is the default value.
Designates the format of the journal displays.

**FULL** - Indicates that all record positions are to be displayed with the changed values highlighted.

*Note:* No highlighting occurs for SUBSCHEMA DISPLAYS.

**SPARSE** - indicates that only the changed values are to be displayed. This option is the default value.

Allows extract and display records to be produced for run units whose program name begins with **IDMS**.

*Y* - Causes the extract and display records to be produced.

*N* - Indicates that the extract and display records are not required. This option is the default value.

*Note:* Blanks are not a valid option for this parameter.
Specifies the action to be taken when a record id is not uniquely defined in the data dictionary (is described in multiple schemas).

Y - Causes only the first description for the record id to be processed.

N - Causes only the first description for the record id to be processed, prevents the record from being decompressed if it is compressed, and causes an error message (**NON-UNIQUE RECORD TYPE**) to replace the record name if multiple record descriptions are encountered for a record id. This option is the default value.

⚠️ **Note:** Blanks are not a valid option for this parameter.

[ ,USERDCOM = procedure name ]

Designates the database procedure name of a user-written decompression routine for Journal Displays. This routine, substitutes for the CA IDMS supplied module IDMSDCOM, and must not issue any CA IDMS Central Version macros such as #GETSTG and #FREESTG. If IDMSDCOM is replaced with a user version of the same name, then USERDCOM = IDMSDCOM must be entered. If the compressed version of the database record is to be retained for displays, then a 'dummy' procedure name must be specified (e.g., USERDCOM = NONE).

⚠️ **Note:** If your decompression routine requires that the valid subschema name be placed in the Applications Control Block, then the programs must be registered to their subschemas.

Specifies that upon certain processing errors CA IDMS Journal Analyzer will either produce an operation exception abend, or that it will terminate with a return code of 16.

Y - causes termination with an operation exception.

N - causes termination with a return code of 16. This option is the default value.

⚠️ **Note:** Blanks are not a valid option for this parameter.
Specifies that the journal record times on all reports and displays are shown in UTC time. By default all journal record times are shown in local time.

**SUPPRESS Parameter Details**

The SUPPRESS parameter is used to inhibit the automatic generation of extract records for a specific Journal Report type. A report cannot be produced if that report type has been suppressed. A SUPPRESS parameter is not required to suppress a Journal Display because the absence of a valid DISPLAY parameter effectively suppresses the production of the display.

⚠️ **Note:** The use of the SUPPRESS parameter can influence the operational efficiency of CA IDMS Journal Analyzer, by reducing the volume of data written to the EXTRACT file. The SUPPRESS parameter syntax is as follows.

```
/ ACTIVITY
| PROGRAM |
SUPPRESS = < CHRONO-EVENT >
| ABORT-COINCIDENCE |
| MANAGEMENT |
| ALL |
\ #n |
```

where:

**SUPPRESS =**

indicates the Journal Report type whose extract records are to be suppressed.

⚠️ **Note:** The SUPPRESS parameter has no default value.

**ALL** - indicates that all Journal Report types will be suppressed.

The #n operand is used to suppress multiple journal report types.

- **#1** - suppresses all Journal Reports except MANAGEMENT.
- **#2** - suppresses all Journal Reports except PROGRAM and CHRONO-EVENT.
- **#3 or #4** - suppresses all Journal Reports except ACTIVITY, ABORT-COINCIDENCE, and MANAGEMENT.
- **#4** - suppresses all Journal Reports except ACTIVITY, DATABASE/RECORD, ABORT-COINCIDENCE, and MANAGEMENT.
REPORT Parameter 1

The REPORT parameter specifies the Journal Report type to be printed, and the criteria by which to select extract records for the report. It is possible to define multiple selection criteria for a particular report type by submitting multiple REPORT parameters for that report type. The only restrictions imposed on multiple selection criteria for a given report type are that the report options be identical, and that the time periods do not overlap. However, the time periods can differ between the different Journal Report types.

Note: Up to twenty system output requests (REPORT and/or DISPLAY parameters) can be specified per program run. Additionally, up to twenty requests for Management Ranking (REPORT=RANK) can be specified.

The REPORT parameter contains keywords common to all report types and some that are specific to a report type. The common REPORT keywords are described first, followed by the specific keywords by report type.

Common Syntax

The common REPORT parameter syntax is as follows.

```
REPORT = report type [,ALL = Y ]
[ ,START = start date/time ] [ ,STOP = stop date/time ] [ ,INTVL = length ]
```

where:

- **REPORT = report type**
  - specifies the Journal Report type to be printed. The values for report type are described with specific keywords for a particular report (see the specific report types in this section).

- **[ ,ALL = Y ]**
  - specifies whether extract records for a particular report type, within a designated time period, are to be included in the production of the Journal Report.

  **Y** - causes all extract records to be processed. This option will override certain selection criteria of several report types.

- **[ ,START = start date/time ]**
  - defines the start of a selection time period for a single REPORT request. If this keyword is omitted, the assumed value for the start date is taken from the first TIME record on the input file, and for start time is 0000.

  **start date/time** - this value must be specified in the MMDDYYHHMM format, where MMDDYY is the Gregorian date and HHMM is the time (24 hr. clock)
Note: Run units are associated with their initiation time (BGIN) and not their termination time (ENDJ, ABRT). Reports will show all selected activity for run units that begin during the selection time period.

\[ \text{,STOP = stop date/time} \]

defines the end of a selection time period for a single REPORT request. If this keyword is omitted, the assumed value is 1231992359.

stop date/time - this value must be specified in the MMDDYYHHMM format, where MMDDYY is the Gregorian date and HHMM is the time (24 hr. clock).

\[ \text{,INTVL = length} \]

defines the constant length (in minutes) by which the selection time period is to be divided. If this keyword is omitted, the time period is not divided.

length - this value must be specified in the MMMMM (minutes) format. It is not necessary to include leading zeros.

Note: It is recommended that a START keyword accompany the use of the INTVL keyword.

ACTIVITY Report 3

The following is the REPORT parameter syntax for designating an ACTIVITY report.

\[ \text{,START = start date/time} \]
\[ \text{,STOP = stop date/time} \]
\[ \text{,INTVL = length} \]

where:
**REPORT** = *ACTV* - specifies the Journal Report type to be printed.

*ACTV* - indicates that an ACTIVITY report is to be printed.

/ / Y \\ < SELECT = > \\
\ N / / used when the user submits multiple requests for ACTIVITY reports for several distinct time periods. This keyword is mutually exclusive from the **ALL** keyword.

Y - used when the definition of multiple time periods is required (i.e., multiple **REPORT = ACTV** parameters).

N - indicates that all extract records are to be produced. As a result, it is not necessary to include the **SELECT** keyword phrase.

⚠️ **Note:** Blanks are not a valid option for this parameter.

### PROGRAM Report

The following is the **REPORT** parameter syntax for designating a PROGRAM report.

⚠️ **Note:** The following syntax contains all the keywords which can be used for designating this report. However, only the keywords not previously defined will be described in detail.

**REPORT** = *PROG*

/ , **NAME** = name \ < > \\
\ , **ALL** = Y / 

/ **DETAIL** ; / Y \_ \_ \\
, **LEVEL** = : **SUMMARY** | **HILITES** | > \\
\ **SYSTEM** L \ N / - / 

[ , **START** = start date/time ]

[ , **STOP** = stop date/time ]

[ , **NTRVL** = length ]

where:

**REPORT** = *PROG*
specifies the Journal Report type to be printed.

**PROG** - indicates that a PROGRAM report is to be printed.

\texttt{,NAME = name}

allows the user to select a program by name. This keyword is mutually exclusive from the ALL keyword.

name - this field specifies the name of the selected program.

\textbf{Note}: If the first character of the name field is an asterisk (*), all programs whose names begin with the remaining characters of the name field will qualify for reporting. For example, if NAME=*ABC, all programs whose names begin with ABC will be reported.

\texttt{/ DETAIL \}

\texttt{,LEVEL = < SUMMARY >}

\texttt{\ SYSTEM /}

specifies the level of reporting.

\textbf{Note}: There is no default value for the LEVEL keyword.

**DETAIL** - indicates that program details (run units in time-wise sequence) are required. In addition, program summaries and a system summary are produced for each time interval.

**SUMMARY** - indicates that program summaries are required. In addition, a system summary is produced for each time interval.

**SYSTEM** - indicates that only system summaries are produced for each time interval. A grand summary is produced if multiple intervals are reported.

\texttt{/ Y \}

\texttt{,HILITES =}

\texttt{\ N /}

used to request the highlighting of the run units with the lowest and highest durations. This keyword is honored only when the level of reporting begins with program summaries (LEVEL = SUMMARY).

**Y** - causes program highlights to be produced with the program summaries.

**N** - indicates that no program highlights are required.

\textbf{Note}: Blanks are not a valid option for this parameter.

**CHRONOLOGICAL EVENT Report 1**

The following is the REPORT parameter syntax for designating a CHRONOLOGICAL EVENT report.

\textbf{Note}: The following syntax contains all the keywords which can be used for designating this report. However, only the keywords not previously defined will be described in detail.
REPORT = CHRONO / / Y \ 
| ,SELECT = | 
< \ N / > 
| ,ALL = Y | 
\ / 

[ ,START = start date/time ]
[ ,STOP = stop date/time ]

where:

REPORT = CHRONO

specifies the Journal Report type to be printed.

CHRONO - indicates that a CHRONOLOGICAL EVENT report is to be printed.

/ Y\ ,SELECT = 
\ N /

used when submitting multiple requests for CHRONOLOGICAL EVENT reports for several distinct time periods. This keyword is mutually exclusive from the ALL keyword.

Y - used when the definition of multiple time periods is required (multiple REPORT = CHRONO parameters).

N - indicates that all extract records are to be processed. Therefore, it is not necessary to include the SELECT keyword phrase.

Note: Blanks are not a valid option for this parameter.

ABORT COINCIDENCE Report 1

The following is the REPORT parameter syntax for designating an ABORT COINCIDENCE report.

Note: The following syntax contains all the keywords which can be used for designating this report. However, only the keywords not previously defined will be described in detail.

REPORT = ABORTC / / Y \ 
| ,SELECT = | 
< \ N / > 
| ,ALL = Y | 
\ / 

[ ,START = start date/time ]
[ ,STOP = stop date/time ]

where:
REPORT = ABORTC

specifies the Journal Report type to be printed.

ABORTC - indicates that an ABORT COINCIDENCE report is to be printed.

/ Y /
,SELECT =
\ N /

used to submit multiple requests for ABORT COINCIDENCE reports for several distinct time periods. This keyword is mutually exclusive from the ALL keyword.

Note: A report interval of INTVL = 1440 is always assumed.

Y - used when the definition of multiple time periods is required.

N - indicates that all extract records are to be processed. Therefore, it is not necessary to include this keyword phrase.

Note: Blanks are not a valid option for this parameter.

MANAGEMENT HIGHLIGHT Reports

The following are the REPORT parameter syntaxes for designating the various MANAGEMENT HIGHLIGHT reports.

Note: The following syntax contains all the keywords which can be used for designating this report. However, only the keywords not previously defined will be described in detail.

Selection time periods specified for MANAGEMENT HIGHLIGHT reports must not overlap. Also, all such reports must be for the same INTVL.

REPORT = HI-SUM, / PROGRAM \ |
| LEVEL = < SYSTEM > |
| \ GRAND / |
| ]

[ ,START = start date/time ]
[ ,STOP = stop date/time ]
[ ,INTVL = length ]

where:

REPORT = HI-SUM

specifies the Journal Report type to be printed.

HI-SUM - indicates that a MANAGEMENT HIGHLIGHT/ SUMMARIES report is to be printed.
/ PROGRAM \\n.LEVEL = < SYSTEM > \\
GRAND / 

specifies the level of reporting,

PROGRAM - indicates accumulation for each program in a time interval.
SYSTEM - indicates accumulation for a time interval.
GRAND - indicates accumulation of all system summaries whenever multiple time intervals are reported. This option is the default value.

**Online Response Time 1**

REPORT = HI-ONL

[ ,START = start date/time ]
[ ,STOP = stop date/time ]
[ ,INTVL = length ]

where:

REPORT = HI-ONL

specifies the Journal Report type to be printed.

HI-ONL - indicates that a MANAGEMENT HIGHLIGHT/ ONLINE RESPONSE TIME report is to be printed.

**Note:** Regardless of what you specify, the report is produced as though start time is 0000, stop time is 2359, and INTVL=1440.

**Buffer Pool Utilization 1**

REPORT = HI-BPU

[ ,START = start date/time ]
[ ,STOP = stop date/time ]
[ ,INTVL = length ]

where:

REPORT = HI-BPU

specifies the Journal Report type to be printed.
**HI-BPU** - indicates that a MANAGEMENT HIGHLIGHT/BUFFER POOL UTILIZATION report is to be printed.

**Note:** Regardless of what you specify, the report is produced as though start time is 0000, stop time is 2359, and INTVL=1440.

## MANAGEMENT RANKING Report

The following is the REPORT parameter syntax for designating the MANAGEMENT RANKING report.

Up to twenty requests for Management Ranking reports can be specified in a single run of CA IDMS Journal Analyzer.

**Note:** The following syntax contains all the keywords which are used for designating this report. However, only the keywords not previously defined will be described in detail.

\[
\text{REPORT} = \text{RANK} \ [ \ \text{,RANK#} = \text{number of items} \ ]
\]

\[
\begin{array}{l}
/ \text{ONL}\ / \ \\
\text{,RANKPROG} = \langle \text{BTC} \rangle \ |\\
\text{SYS} / \ \text{,} \ \\
/ \text{,RANKWHAT} = \text{item} \ \\
\text{,RANKITEM} = \text{nn} / \\
/ \ \\
| \text{LOW} | \\
| \text{HIGH} | \\
| \text{LT: value} | \\
\text{,RANKHOW} = \langle \text{LE: value} \rangle | \\
| \text{GT: value} | \\
| \text{GE: value} | \\
\text{,STDEV} | \\
/ \ \\
\end{array}
\]

\[
\begin{array}{l}
\text{,START} = \text{start date/time} \ ] \\
\text{,STOP} = \text{stop date/time} \ ] \\
\text{,INTVL} = \text{length} \ ] \\
\end{array}
\]

where:

\[
\text{REPORT} = \text{RANK}
\]

indicates that a MANAGEMENT RANKING report is to be printed.
, RANK# = number of items

indicates the number of items to be ranked. The maximum number is 50. The default value is 20.

/ONL \,
, RANKPROG = BTC
\SYS /

indicates the type of program to be used in the ranking.

ONL - indicates that only ONLINE programs are to be ranked.

BTC - indicates that only BATCH programs are to be ranked.

SYS - indicates that ONLINE and BATCH programs are to be ranked. This option is the default value.

, RANKWHAT = item

specifies the attribute to be ranked in the report. This keyword is mutually exclusive from the RANKITEM keyword. There is no default value.

, RANKITEM = nn

specifies a numeric identifier (1 to 13) for the attribute to be ranked. This keyword is mutually exclusive from the RANKWHAT keyword. There is no default value.

The following example shows Management Ranking Report Attributes:

RANKWHAT RANKITEM ATTRIBUTE

#RU 1 #RUN UNITS (#BGIN)
#SUCCESS 2 #SUCCESSFUL (#ENDJ)
#ABORT 3 #ABORTED (#ABRT)
%ABORT 4 %ABORTED (#ABRT/#BGIN)
DURATION 5 DURATION
REC-UPD 6 RECORDS UPDATED
PG-READ 7 PAGES READ
PG-WRITTEN 8 PAGES WRITTEN
PG-10 9 PAGES WRITTEN + PAGES READ (TOTAL I/O'S)
LOCK-REQ 10 LOCKS REQUESTED
PG-RATIO 11 PAGES REQUESTED/PAGES READ
CALC-RATIO 12 CALC RECORDS OVERFLOW/
RECORDS ON HOME PAGE
VIA-RATIO 13 VIA RECORDS OVERFLOW/
RECORDS ON OWNER PAGE

/ LOW \ 
| HIGH | 
| LT:value | 
\ RANKHOW = < LE:value > 
| GT:value | 
\ GE:value /
specifies how the attribute is to be ranked.

**LOW** - the attribute will be ranked from its lowest value in an ascending order.

**HIGH** - the attribute will be ranked from its highest value in a descending order.

**LT:**value - the attribute will be ranked from a point less than the specified value in ascending order.

**LE:**value - the attribute will be ranked from a point less than or equal to the specified value in ascending order.

**GT:**value - the attribute will be ranked from a point greater than the specified value in ascending order.

**GE:**value - the attribute will be ranked from a point greater than or equal to the specified value in ascending order.

**Note:** If RANKITEM = 1, 2, 3, or 4 or RANKVALU = MEAN or MEDIAN, then RANKHOW will default to HIGH if anything other than LOW is specified.

The specified values for LT, LE, GT, and GE must include two (2) decimal positions when ranking durations or ratios (e.g., duration of 5 seconds is 500; a ratio of 3.14 is 314).

**Note:** There is no default value for the RANKHOW operand.

\[ / \text{MEAN} \backslash \]

\[ , \text{RANKVALU} = < \text{MEDIAN} > \]

\[ \backslash \text{ABSOLUTE} / \]

specifies the value type of the attribute to be ranked.

**MEAN** - indicates an average value for all executions of the ranked program.

**MEDIAN** - indicates a middle value for all executions of the ranked program.

**ABSOLUTE** - indicates a value from a single execution of the ranked program. This option is the default value.

**Note:** If RANKITEM = 1, 2, 3, or 4, then RANKVALU must be specified as ABSOLUTE.

**DISPLAY Parameter 1**

The DISPLAY parameter specifies the criteria by which the before and after images of database records are selected from the Archive Journal file. For the archive records meeting the selection criteria, display records are created and passed to the DISPLAY phase for printing. It is possible to define multiple selection criteria for a particular display type by submitting multiple DISPLAY parameters for that display type.
Note: Up to twenty system output requests (REPORT and/or DISPLAY parameters) can be specified per program run. Additionally, up to twenty requests for Management Ranking reports (REPORT=RANK) can be specified.

The DISPLAY parameter contains keywords common to all display types and some which are specific to a display type. The common DISPLAY keywords are described first, followed by the specific display type keywords.

The DISPLAY parameter syntax is as follows.

DISPLAY = display type ,ALL = Y

,START = start date/time

,STOP = stop date/time

where:

DISPLAY = display type

specifies the Journal Display type to be printed. The values for display type are described with the specific keywords for a particular display (see specific display types in this section).

,ALL = Y

indicates whether all display records for a particular display type are to be included in the production of the Journal Display.

Y - causes start/stop to be ignored, and all display records to be processed.

,START = start date/time

defines the start of a selection time period for a single DISPLAY request. If this keyword is omitted, the assumed value is 0701810000. This keyword is mutually exclusive from the ALL keyword for PROGRAM displays.

start date/time - this value must be specified in the MMDDYYHHMM format, where MMDDYY is the Gregorian date and HHMM is the time (24 hr. clock).

Note: Run units are associated with their initiation time (BGIN) and not their termination time (ENDJ, ABRT).

STOP = stop date/time

defines the end of a selection time period for a single DISPLAY request. If this keyword is omitted, the assumed value is 1231992359. This keyword is mutually exclusive from the ALL keyword for PROGRAM displays.

stop date/time - this value must be specified in the MMDDYYHHMM format, where MMDDYY is the Gregorian date and HHMM is the time (24 hr. clock).
**Note**: During DISPLAY processing, the data dictionary is navigated to determine the characteristics of the data records to be displayed. This information is obtained by relating schemas with their associated schema records. Only the highest version schema number for any given schema is processed. Therefore, you must ensure that the definitions in the highest version schema number for a given schema match the data contained in the actual archive journal records.

### RECORD Display Parameter

The following is the DISPLAY parameter syntax designating a RECORD display.

**Note**: The following syntax contains all the keywords which can be used for designating this display. However, only the keywords not previously defined are described in detail.

```
DISPLAY = REC
/ ,ALL = Y 
\ ,RECID = record ID /

[ ,START = start date/time ]
[ ,STOP = stop date/time ]
```

where:

- **DISPLAY = REC**

  specifies the Journal Display type to be printed.

- **REC** - indicates that a RECORD display is to be printed.

- **,RECID = record ID**

  allows the user to select a record type by record ID. This keyword is mutually exclusive from the ALL keyword.

  record ID - this value must be specified in the RRRR format (numeric record ID). It is **not** necessary to include leading zeros.

### DATABASE/KEY Display

The following is the DISPLAY parameter syntax for designating a DATABASE/KEY display.

**Note**: The following syntax contains all the keywords which can be used for designating this display. However, only the keywords not previously defined will be described in detail.
DISPLAY = DBKEY

/ ALL = Y \\
\ PAGE = page number [,LINE = line-number ] /

[,START = start date/time ]

[,STOP = stop date/time ]

where:

DISPLAY = DBKEY

specifies the Journal Display type to be printed.

DBKEY - indicates that a DATABASE/KEY display is to be printed.

, PAGE = page-number

specifies the page portion of the database key. All Archive Journal BEFORE or AFTER record images which reside on the specified page will be displayed. This keyword is mutually exclusive from the ALL keyword.

Note: Blanks are not a valid option for this parameter.

page-number - the page number can have up to 10 digits. It is not necessary to include leading zeros.

, LINE = line-number

specifies the line portion of the database key. This option is used when a single database key is specified for display. This keyword is mutually exclusive from the ALL keyword.

line-number - the line number can have up to four digits. It is not necessary to include leading zeros. If this value is omitted and all images with matching database pages are selected for display.

PROGRAM Display 1

The following is the DISPLAY parameter syntax for designating a PROGRAM display.

Note: The following syntax contains all the keywords that can be used for designating this display. However, only the keywords not previously defined will be described in detail.

DISPLAY = PROG

/ ALL = Y \\
\ NAME = name /

[,START = start date/time ]

[,STOP = stop date/time ]
DISPLAY = PROG

specifies the Journal Display type to be printed.

PROG - indicates that a PROGRAM display is to be printed.

, NAME =

allows user to select records that were modified by a certain program.

name - specifies the selected program by name.

Note: If the first character of the name field is an asterisk (*), all programs whose names begin with the remaining characters of the name field will qualify for display. For example, if NAME=*ABC, all programs with names beginning with ABC will be displayed.

/ SUBSC \ 
\ VIEW = 
\ FULL /

specifies the scope of the program display.

SUBSC - indicates that the records will be displayed by data fields (i.e., Subschema Display).

Note: All programs selected for the Subschema Display must be registered to a valid subschema.

FULL - indicates that the records will be displayed in a continuous character string. This option is the default value.

Note: Blanks are not a valid option for this parameter.

Note: The VIEW keyword is used in conjunction with the FORMAT keyword of the PROCESS parameter. For example, if VIEW = SUBSC and FORMAT = SPARSE, the PROGRAM display will show after images of data fields that have changed.

, DATA = ONLY

indicates that only the data portion of the database records will be displayed for subschema displays.

DISPLAY LIMITS

The following is the parameter syntax for designating a DISPLAY LIMITS request. Up to 20 DLIMITS requests can be submitted.
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/ REC / \  
DLIMITS = < DBKEY > | / ONL |  
\ PROG | , TYPE = < BTC > |  
\ SYS /  

/ ,RU = run unit ID 
\ ,#RUS = # of run units /  

/ ,#SETS = # of before/after sets 
< ,#RUSETS = # of before/after sets per run unit > 
\ ,#NTH = sampling frequency /  

where:

/ REC / \  
DLIMITS = < DBKEY >  
\ PROG /  

specifies the Journal Display type to be limited.

REC - indicates a RECORD display.

DBKEY - indicates a DATABASE/KEY display.

PROG - indicates a PROGRAM display.

/ ONL /  
, TYPE = < BTC >  
\ SYS /  

specifies the type of programs to be used in the display.

ONL - indicates that only ONLINE programs are to be used.

BTC - indicates that only BATCH programs are to be used.

SYS - indicates ONLINE and BATCH programs are to be used. This option is the default value.

, RU =

indicates that the display output will be limited to a selected run unit ID. This operand is mutually exclusive from the #RUS operand.

, #RUS = # of run units

indicates that the display output will be limited by the number of run units. This operand is mutually exclusive from the RU operand. This operand applies only to the PROGRAM display.

, #SETS = # of before/after sets

indicates that the display output will be limited by the number of before/after sets. This operand is mutually exclusive from the RUSETS and NTH operands.
, #RUSETS = # of before/after sets per run unit

indicates that the display output will be limited by the number of before/after sets per run unit. This operand is mutually exclusive from the #SETS, and NTH operands. This operand applies only to the PROGRAM display.

Note: Blanks are not a valid option for this parameter.

, /NTH = sampling frequency

indicates that the display output will be limited by a sampling of every NTH set. This operand is mutually exclusive of the #SETS and #RUSETS operands. The value of this operand must be 2 or more.

/ ,RU = run unit ID \< ></\, #RUS = # of run units /

/ ,#SETS = # of before/after sets \< ></\, #RUSETS = # of before/after sets per run unit >
\, #NTH = sampling frequency /

Program Display Suppression

The following are DSUPPS parameter syntaxes for designating suppression of PROGRAM displays. Multiple DSUPPS requests can be submitted.

Record ID

DSUPPS

/ RecID ,ID=record ID \< ></\, Range ,LOWID=lowest record ID >
\, HIGHID=highest ID /

where:

DSUPPS

indicates that the PROGRAM display output will be qualified.

RECID - indicates that the display output will be suppressed by record ID.

ID = record ID specifies the record ID to be suppressed in the display output.

RANGE indicates that the display output will be suppressed by a range of record IDs.

,LOWID = lowest record ID

specifies the lowest record ID in the range to be suppressed.

, HIGHID = highest record ID
specifies the highest record ID in the range.

**Note:** SR4’s should not be suppressed because of the automatic fragment recomposition feature. Any requests to suppress SR4’s will be ignored.

**Parameter Summary**

On the following pages is a summary of the Journal Analyzer parameters. Default values are listed at the bottom of a set of options.

**Note:** Blanks are not a valid option for this parameter.

```
PROCESS = < REPORTS [ \ .CONT = / Y \ ] [ \ .FORMAT = / FULL \ ]>
          [ \ DISPLAYS \ EXTRACTS ]
          [ \ .RHDCRUAL = / Y \ ] [ \ .IDMSXXX = / Y \ ]
          [ \ .Y \ ] [ \ .NONUNIQ = / Y \ ]
          [ \ .USERCOM = procedure-name ]

SUPPRESS = < CHRONO-EVENT >
           < ABORT-COINCIDENCE >
           < MANAGEMENT >
           < ALL #n >
```

**Suppress Options**

1. Suppress all EXCEPT
   Management
   HI-SUM
   HI-ONL
   RANK

2. Suppress all EXCEPT
   Program
   Chrono-Event

3. and 4. Suppress all EXCEPT
   Activity
   Abort-Coincidence
   Management

4.  
   Activity
   Abort-Coincidence
   Management
   < ACTIV >
   < SELECT = / Y \ >
   < ALL = Y >
   < PROG / .NAME = name \ .LEVEL = < DETAIL SUMMARY .HILITES / Y \ > \ .ALL = Y >
   < \ .LEVEL = < SUMMARY SYSTEM .HILITES / Y \ > \ .ALL = Y >
REPORT = RANK Options

<table>
<thead>
<tr>
<th>RANKWHAT</th>
<th>RANKITEM</th>
</tr>
</thead>
<tbody>
<tr>
<td>DURATION</td>
<td>1</td>
</tr>
<tr>
<td>REC-UPD</td>
<td>2</td>
</tr>
<tr>
<td>PG-READ</td>
<td>3</td>
</tr>
<tr>
<td>PG-WRITTEN</td>
<td>4</td>
</tr>
<tr>
<td>PG-IO</td>
<td>5</td>
</tr>
<tr>
<td>LOCK-REQ</td>
<td>6</td>
</tr>
<tr>
<td>PG-RATIO</td>
<td>7</td>
</tr>
<tr>
<td>CALC-RATIO</td>
<td>8</td>
</tr>
<tr>
<td>VIA-RATIO</td>
<td>9</td>
</tr>
<tr>
<td>#RU</td>
<td>10</td>
</tr>
<tr>
<td>#SUCCESS</td>
<td>11</td>
</tr>
<tr>
<td>#ABORT</td>
<td>12</td>
</tr>
<tr>
<td>%ABORT</td>
<td>13</td>
</tr>
</tbody>
</table>

The following example shows the CA IDMS Journal Analyzer Parameter Summary:

```plaintext
[.START=mmddyyhhmm ]
[.STOP=mmddyyhhmm ]
[.INTVL=minutes ]
```
BYPASS Parameter 1

The BYPASS Parameter is used to define a specific Program Name that will be bypassed during Data Extraction and Reporting.

Each BYPASS parameter identifies one such program. Up to ten BYPASS Parameters can be specified as follows:

```
BYPASS = < Program name >
```

Extract File Format

This article describes the Extract file and the various extract data formats and report types with which the extracts are associated. This file can be used as input to user written Special Purpose reporting programs.

Extract Record

The following is a COBOL definition of the extract record.

```
*----------------------------------------------------------------*  *
*T  EXTRACT RECORD  *  *
*----------------------------------------------------------------*  *
  SKIP1
  01 JOURNAL-EXTRACT VALUE LOW-VALUES PIC X(311).
  SKIP1
  01 FILLER REDEFINES JOURNAL-EXTRACT SYNC.
```
05 JER-REPORT-IDENT.
   10 JER-REPORT-TYPE      PIC X(02).
   88 JER-ACTIVITY         VALUE '11'.
   88 JER-DB-AREA          VALUE '21'.
   88 JER-DB-RECORD        VALUE '22'.
   88 JER-PROGRAM          VALUE '31'.
   88 JER-EVENT            VALUE '91'.
   88 JER-ABORTC           VALUE '92'.
   88 JER-MGMT             VALUE '95'.

20 FILLER      PIC X(02).
EJECT

05 JES-SORT-DATA       PIC X(52).
SKIP1

05 JES-ACTIVITY-SORT REDEFINES JES-SORT-DATA.
   10 JES-ACTV-KEY.
      15 JES-ACTV-DATE.
         20 YY      PIC X(02).
         20 SLASH1 PIC X(01).
         20 MM      PIC X(02).
         20 SLASH2 PIC X(01).
      15 JES-ACTV-TIME.
         20 HH      PIC X(02).
         20 MIN     PIC X(02).
         20 SEC     PIC X(02).
         20 TTH     PIC X(02).
      15 JES-ACTV-RUNUNIT-IDENT.
         20 JES-ACTV-RUNUNIT-QUAL PIC X(8).
         20 JES-ACTV-RUNUNIT-ID  PIC S9(9) COMP.
         20 JES-ACTV-RUNUNIT-SEQ PIC S9(9) COMP.
   10 JES-ACTV-ONLINE-BATCH PIC X(01).
      88 JES-ACTV-ONLINE     VALUE '1'.
      88 JES-ACTV-BATCH      VALUE '2'.
   10 JES-ACTV-RECORD-TYPE PIC X(01).
      88 JES-ACTV-BGIN       VALUE '1'.
      88 JES-ACTV-ENDJ       VALUE '2'.
      88 JES-ACTV-ABRT       VALUE '3'.
      88 JES-ACTV-COMT       VALUE '4'.
      88 JES-ACTV-AREA       VALUE '5'.
      10 FILLER              PIC X(03).
      10 JES-ACTV-ARCHIVE-SEQ PIC S9(18) COMP.
      88 JES-ACTV-FLUSH      VALUE ZERO.
   10 FILLER              PIC X(04).
SKIP1

05 JES-ACTIVITY-RESORT REDEFINES JES-SORT-DATA.
   10 JES-ACTV-RS-ONLINE-BATCH PIC X(01).
      88 JES-ACTV-RS-ONLINE  VALUE '1'.
      88 JES-ACTV-RS-BATCH   VALUE '2'.
   10 FILLER              PIC X(03).
   10 JES-ACTV-RS-RECORD-TYPE PIC X(01).
      88 JES-ACTV-RS-BGIN    VALUE '1'.
      88 JES-ACTV-RS-ENDJ    VALUE '2'.
      88 JES-ACTV-RS-ABRT    VALUE '3'.
      88 JES-ACTV-RS-COMT    VALUE '4'.
      88 JES-ACTV-RS-AREA    VALUE '5'.
      10 FILLER              PIC X(26).
EJECT

05 JES-DB-AREA-SORT REDEFINES JES-SORT-DATA.
   10 JES-DBAREA-KEY.
      15 JES-DBAREA-DATE.
         20 YY      PIC X(02).
         20 SLASH1 PIC X(01).
         20 MM      PIC X(02).
         20 SLASH2 PIC X(01).
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20 DD PIC X(02).
15 JES-DBAREA-TIME.
20 HH PIC X(02).
20 MIN PIC X(02).
20 SEC PIC X(02).
20 TTH PIC X(02).
15 JES-DBAREA-RUNUNIT-IDENT.
20 JES-DBAREA-RUNUNIT-QUAL PIC X(8).
20 JES-DBAREA-RUNUNIT-ID PIC S9(9) COMP.
20 JES-DBAREA-RUNUNIT-SEQ PIC S9(9) COMP.
10 JES-DBAREA-ARCHIVE-SEQ PIC S9(18) COMP.
88 JES-DBAREA-FLUSH VALUE ZERO.
10 JES-DBAREA-PAGE PIC S9(9) COMP.
10 JES-DBAREA-ONLINE-BATCH PIC X(01).
88 JES-DBAREA-ONLINE VALUE '1'.
10 FILLER PIC X(01).
10 JES-DBAREA-RUNUNIT-IDENT.
15 JES-DBAREA-RUNUNIT-QUAL PIC X(8).
15 JES-DBAREA-RUNUNIT-ID PIC S9(9) COMP.
15 JES-DBAREA-RUNUNIT-SEQ PIC S9(9) COMP.
10 JES-DBAREA-ARCHIVE-SEQ PIC S9(18) COMP.
10 JES-DBAREA-RECORD-ID PIC S9(4) COMP.
88 JES-DBAREA-BFOR VALUE '1'.
88 JES-DBAREA-AFTR VALUE '2'.
10 FILLER PIC X(03).

05 JES-DB-AREA-RESORT REDEFINES JES-SORT-DATA.
10 JES-DBA-RS-PAGE PIC S9(9) COMP.
10 JES-DBA-RS-RECORD-ID PIC S9(4) COMP.
10 JES-DBA-RS-ONLINE-BATCH PIC X(01).
88 JES-DBA-RS-ONLINE VALUE '1'.
88 JES-DBA-RS-BATCH VALUE '2'.
10 FILLER PIC X(01).
10 JES-DBA-RS-DATE PIC X(08).
10 JES-DBA-RS-TIME PIC X(06).
10 FILLER PIC X(02).
10 JES-DBA-RS-RUNUNIT-IDENT.
15 JES-DBA-RS-RUNUNIT-QUAL PIC X(8).
15 JES-DBA-RS-RUNUNIT-ID PIC S9(9) COMP.
15 JES-DBA-RS-RUNUNIT-SEQ PIC S9(9) COMP.
10 JES-DBA-RS-ARCHIVE-SEQ PIC S9(18) COMP.
10 JES-DBA-RS-RECORD-ID PIC S9(4) COMP.
88 JES-DBA-RS-BFOR VALUE '1'.
88 JES-DBA-RS-AFTR VALUE '2'.
10 FILLER PIC X(03).

EJECT

05 JES-DB-RECORD-SORT REDEFINES JES-SORT-DATA.
10 JES-DBRCD-KEY.
15 JES-DBRCD-DATE.
20 YY PIC X(02).
20 SLASH1 PIC X(01).
20 MM PIC X(02).
20 SLASH2 PIC X(01).
20 DD PIC X(02).
15 JES-DBRCD-TIME.
20 HH PIC X(02).
20 MIN PIC X(02).
20 SEC PIC X(02).
20 TTH PIC X(02).
15 JES-DBRCD-RUNUNIT-IDENT.
20 JES-DBRCD-RUNUNIT-QUAL PIC X(8).
20 JES-DBRCD-RUNUNIT-ID PIC S9(9) COMP.
20 JES-DBRCD-RUNUNIT-SEQ PIC S9(9) COMP.
10 JES-DBRCD-ARCHIVE-SEQ PIC S9(18) COMP.
88 JES-DBRCD-FLUSH VALUE ZERO.
10 JES-DBRCD-RECORD-ID PIC S9(4) COMP.
10 JES-DBRCD-ONLINE-BATCH PIC X(01).
88 JES-DBRCD-ONLINE VALUE '1'.
88 JES-DBRCD-BATCH VALUE '2'.
10 FILLER PIC X(08).

SKIP1
05 JES-DB-RECORD-RESORT REDEFINES JES-SORT-DATA.
  10 JES-DBR-RS-RECORD-ID PIC S9(4) COMP.
  10 JES-DBR-RS-ONLINE-BATCH PIC X(01).
  88 JES-DBR-RS-ONLINE VALUE '1'.
  88 JES-DBR-RS-BATCH VALUE '2'.
  10 FILLER PIC X(05).
  10 JES-DBR-RS-DATE PIC X(08).
  10 JES-DBR-RS-TIME PIC X(06).
  10 FILLER PIC X(02).
  10 JES-DBR-RS-RUNUNIT-IDENT.
   15 JES-DBR-RS-RUNUNIT-QUAL PIC X(8).
   15 JES-DBR-RS-RUNUNIT-ID PIC S9(9) COMP.
   15 JES-DBR-RS-RUNUNIT-SEQ PIC S9(18) COMP.
  10 JES-DBR-RS-ARCHIVE-SEQ PIC X(01).
  88 JES-DBR-RS-BFOR VALUE '1'.
  88 JES-DBR-RS-AFTR VALUE '2'.
  10 FILLER PIC X(03).
EJECT

05 JES-PROGRAM-SORT REDEFINES JES-SORT-DATA.
  10 JES-PROG-KEY.
   15 JES-PROG-DAY.
     20 YY PIC X(02).
     20 SLASH1 PIC X(01).
     20 MM PIC X(02).
     20 SLASH2 PIC X(01).
     20 DD PIC X(02).
   15 JES-PROG-TIME.
     20 HH PIC X(02).
     20 MIN PIC X(02).
     20 SEC PIC X(02).
     20 TTH PIC X(02).
   15 JES-PROG-RUNUNIT-IDENT.
     20 JES-PROG-RUNUNIT-QUAL PIC X(8).
     20 JES-PROG-RUNUNIT-ID PIC S9(9) COMP.
     20 JES-PROG-RUNUNIT-SEQ PIC S9(18) COMP.
  10 JES-PROG-PROGRAM-NAME PIC X(08).
  10 JES-PROG-RECORD-TYPE PIC X(01).
  88 JES-PROG-FLUSH VALUE LOW-VALUES.
  88 JES-PROG-BGIN VALUE '1'.
  88 JES-PROG-ENDJ VALUE '2'.
  88 JES-PROG-ABRT VALUE '3'.
  88 JES-PROG-COMT VALUE '4'.
  88 JES-PROG-AREA VALUE '5'.
  10 FILLER PIC X(11).
SKIP1

05 JES-PROGRAM-RESORT REDEFINES JES-SORT-DATA.
  10 JES-PROG-PS-PROGRAM-NAME PIC X(08).
  10 JES-PROG-PS-LEVEL PIC X(01).
  88 JES-PROG-PS-RU VALUE '1'.
  88 JES-PROG-PS-DUR VALUE '2'.
  10 FILLER PIC X(03).
  10 JES-PROG-PS-RUNUNIT.
   15 JES-PROG-PS-DATE PIC X(08).
   15 JES-PROG-PS-TIME PIC X(08).
   15 JES-PROG-PS-RUNUNIT-IDENT.
    20 JES-PROG-PS-RUNUNIT-QUAL PIC X(8).
    20 JES-PROG-PS-RUNUNIT-ID PIC S9(9) COMP.
    20 JES-PROG-PS-RUNUNIT-SEQ PIC S9(18) COMP.
  10 FILLER PIC X(04).
EJECT

05 JES-CHRONO-SORT REDEFINES JES-SORT-DATA.
  10 JES-CE-DATE.
   20 YY PIC X(02).
   20 SLASH1 PIC X(01).
   20 MM PIC X(02).
   20 SLASH2 PIC X(01).
   20 DD PIC X(02).
   15 JES-CE-TIME.
    20 HH PIC X(02).
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20 MIN PIC X(02).
20 SEC PIC X(02).
20 TTH PIC X(02).
15 JES-CE-TIME-X REDEFINES JES-CE-TIME.
20 JES-CE-HH PIC S9(2).
20 JES-CE-MIN PIC S9(2).
10 JES-CE-ARCHIVE-SEQ PIC S9(18) COMP.
10 JES-CE-RUNUNIT-IDENT.
15 JES-CE-RUNUNIT-QUAL PIC X(8).
15 JES-CE-RUNUNIT-ID PIC S9(9) COMP.
15 JES-CE-RUNUNIT-SEQ PIC S9(9) COMP.
10 JES-CE-ONLINE-BATCH PIC X(01).
88 JES-CE-ONLINE VALUE '1'.
88 JES-CE-BATCH VALUE '2'.
10 JES-CE-RECORD-TYPE PIC X(01).
88 JES-CE-BGIN VALUE '1'.
88 JES-CE-ENDJ VALUE '2'.
88 JES-CE-ABRT VALUE '3'.
88 JES-CE-COMT VALUE '4'.
88 JES-CE-AREA VALUE '5'.
88 JES-CE-DPRP VALUE 'A'.
88 JES-CE-DIND VALUE 'B'.
88 JES-CE-DCOM VALUE 'C'.
88 JES-CE-DBAK VALUE 'D'.
88 JES-CE-DPND VALUE 'E'.
88 JES-CE-DFGT VALUE 'F'.
88 JES-CE-DLID VALUE 'G'.
10 FILLER PIC X(10).

EJECT
05 JES-ABORTC-SORT REDEFINES JES-SORT-DATA.
10 JES-ABORTC-DATE.
15 YY PIC X(02).
15 SLASH1 PIC X(02).
15 MM PIC X(02).
15 SLASH2 PIC X(02).
15 DD PIC X(02).
10 JES-ABORTC-TIME.
20 HH PIC X(02).
20 MIN PIC X(02).
20 SEC PIC X(02).
20 TTH PIC X(02).
10 JES-ABORTC-PROGRAM-NAME PIC X(08).
10 JES-ABORTC-COINCIDENT-NAME PIC X(08).
88 JES-ABORTC-ABORTED VALUE LOW-VALUES.
10 FILLER PIC X(20).

EJECT
05 JES-ABORTC-RESORT REDEFINES JES-SORT-DATA.
10 JES-ABORTC-DATE.
15 YY PIC X(02).
15 SLASH1 PIC X(02).
15 MM PIC X(02).
15 SLASH2 PIC X(02).
15 DD PIC X(02).
10 JES-ABORTC-TIME.
20 HH PIC X(02).
20 MIN PIC X(02).
20 SEC PIC X(02).
20 TTH PIC X(02).
10 JES-ABORTC-PROGRAM-NAME PIC X(08).
10 JES-ABORTC-COINCIDENT-NAME PIC X(08).
88 JES-ABORTC-ABORTED VALUE LOW-VALUES.
10 FILLER PIC X(20).

EJECT
05 JES-MANAGEMENT-SORT REDEFINES JES-SORT-DATA.
10 JES-MGMT-KEY.
15 JES-MGMT-DATE.
20 YY PIC X(02).
20 SLASH1 PIC X(02).
20 MM PIC X(02).
20 SLASH2 PIC X(02).
20 DD PIC X(02).
15 JES-MGMT-TIME PIC X(08).
15 JES-MGMT-PROGRAM-NAME PIC X(08).
15 JES-MGMT-RUNUNIT-IDENT.
20 JES-MGMT-RUNUNIT-QUAL PIC X(8).
20 JES-MGMT-RUNUNIT-ID PIC S9(9) COMP.
20 JES-MGMT-RUNUNIT-SEQ PIC S9(9) COMP.
10 JES-MGMT-RECORD-TYPE PIC X(01).
88 JES-MGMT-FLUSH VALUE LOW-VALUES.
88 JES-MGMT-BGIN VALUE '1'.
88 JES-MGMT-ENDJ VALUE '2'.
88 JES-MGMT-ABRT VALUE '3'.
88 JES-MGMT-COMT VALUE '4'.
10 FILLER PIC X(11).

SKIP1
05 JED-EXTRACT-DATA PIC X(255).
SKIP1
05 JD1-TYPE1-DATA REDEFINES JED-EXTRACT-DATA.
10 JD1-PROGRAM-NAME PIC X(08).
10 JD1-PROGRAM-DURATION REDEFINES JD1-PROGRAM-NAME.
10 JD1-QUIESCE-LEVEL PIC S9(4) COMP.
10 JD1-TASK-ID.
  15 JD1-TASK-ID-PREFIX PIC X(04).
  88 JD1-BATCH VALUE 'BATCH'.
  15 JD1-TASK-ID-SUFFIX PIC X(04).
10 JD1-USER-ID PIX X(32).
10 JD1-EXT-USERID PIX X(32).
10 FILLER PIC X(173).
EJECT
05 JD2-TYPE2-DATA REDEFINES JED-EXTRACT-DATA.
10 JD2-PROGRAM-NAME PIC X(08).
88 JD2-PROGRAM-ABORTED VALUE LOW-VALUES.
10 JD2-CHKPT-DATE.
  15 YY PIC X(02).
  15 SLASH1 PIC X(01).
  15 MM PIC X(02).
  15 SLASH2 PIC X(01).
  15 DD PIC X(02).
10 JD2-CHKPT-TIME.
  15 HH PIC X(02).
  15 MIN PIC X(02).
  15 SEC PIC X(02).
  15 TTH PIC X(02).
10 FILLER PIC X(02).
10 JD2-QUIESCE-LEVEL PIC S9(4) COMP.
10 JD2-TASK-ID PIC X(08).
10 JD2-AREA-COUNT PIC S9(5) COMP.
10 JD2-BFOR-COUNT PIC S9(5) COMP.
10 JD2-AFTR-COUNT PIC S9(5) COMP.
10 JD2-COMT-COUNT PIC S9(5) COMP.
10 JD2-RECORDS-UPDATED PIC S9(9) COMP.
10 JD2-PAGES-READ PIC S9(9) COMP.
10 JD2-PAGES-WRITTEN PIC S9(9) COMP.
10 JD2-PAGES-TOTAL PIC S9(9) COMP.
10 JD2-CALC-HOME-PAGE PIC S9(9) COMP.
10 JD2-CALC-OVERFLOW PIC S9(9) COMP.
10 JD2-VIA-OWNER-PAGE PIC S9(9) COMP.
10 JD2-VIA-OVERFLOW PIC S9(9) COMP.
10 JD2-RECORDS-REQUESTED PIC S9(9) COMP.
10 JD2-RECORDS-CURRENT PIC S9(9) COMP.
10 JD2-CALLS-TO-DBMS PIC S9(9) COMP.
10 JD2-RECORDS-STORED PIC S9(9) COMP.
10 JD2-ROOTS-RCDS-RELOC PIC S9(9) COMP.
10 JD2-LOCKS-REQUESTED PIC S9(9) COMP.
10 JD2-LOCKS-REQUESTED PIC S9(9) COMP.
10 JD2-LOCKS-Held PIC S9(9) COMP.
10 JD2-COUNT17 PIC S9(9) COMP.
10 JD2-COUNT18 PIC S9(9) COMP.
10 JD2-COUNT19 PIC S9(9) COMP.
10 JD2-COUNT20 PIC S9(9) COMP.
10 JD2-COUNT21 PIC S9(9) COMP.
10 JD2-COUNT22 PIC S9(9) COMP.
10 JD2-COUNT23 PIC S9(9) COMP.
10 JD2-COUNT24 PIC S9(9) COMP.
10 JD2-COUNT25 PIC S9(9) COMP.
10 JD2-COUNT26 PIC S9(9) COMP.
10 JD2-COUNT27 PIC S9(9) COMP.
10 JD2-COUNT28 PIC S9(9) COMP.
10 JD2-COUNT29 PIC S9(9) COMP.
Display File Format

This article describes the Display file and the various display record formats and the display types with which the records are associated. This file can be used as input to user written Special Purpose reporting programs.
Display File

The Display file is created by the EXTRACT phase and is input to the DISPLAY phase. It contains selected before and after images from the Archive Journal file. Normally, the Display file is of a transient nature (passed from the MAIN phase to the DISPLAY phase and then released); however, the Display file can be kept for your own special reporting requirements.

The display record is a variable-length record composed of an 84-byte sort header and a database record image. A 4-byte segment (record descriptor word - RDW) physically precedes each display record but is logically transparent to COBOL programs.

Display Record

The following is a COBOL definition of the display record.

```cobol
01 DISPLAY-RECORD.
  05 DVL-RDW.
     10 DVL-LENGTH PIC S9(4) COMP.
     10 DVL-FILLER PIC X(2).
  05 DDI-DISPLAY-IDENT.
     10 DDI-DISPLAY-TYPE PIC X(2).
     88 DDI-RECORD-ID VALUE 'D1'.
     88 DDI-RECORD-DBKEY VALUE 'D2'.
     88 DDI-PROGRAM VALUE 'D3'.
  10 FILLER PIC X(2) EJECT.
  05 DSD-SORT-DATA PIC X(40).
  05 FILLER REDEFINES DSD-SORT-DATA.
     10 DS1-SORT-DATA-1 PIC X(8).
     15 DS1-RECORD-ID-SORT REDEFINES DS1-SORT-DATA-1.
     15 DS1-RECORD-DBKEY-SORT REDEFINES DS1-SORT-DATA-1.
     15 DS1-DBK-PAGE PIC S9(9) COMP.
     15 DS1-DBK-LINE PIC S9(4) COMP.
     10 DS1-PROGRAM-SORT REDEFINES DS1-SORT-DATA-1.
     15 DS1-PROGRAM-NAME PIC X(8).
     10 DS2-SORT-DATA-2.
      15 DS2-KEY.
        20 DS2-DATE PIC X(8).
        20 DS2-TIME PIC X(8).
        20 DS2-RUNUNIT-IDENT.
          25 DS2-RUNUNIT-ID PIC S9(9) COMP.
          25 DS2-RUNUNIT-SEQ PIC S9(9) COMP.
        15 DS2-ARCHIVE-SEQ PIC S9(18) COMP.
        88 DS2-ABORT VALUE ZERO.
  05 DAD-ADDITIONAL-DATA PIC X(32).
  05 FILLER REDEFINES DAD-ADDITIONAL-DATA.
     10 DAD-PROGRAM-NAME PIC X(8).
     10 DAD-DBKEY FORMAT PIC S9(9) COMP.
     10 DAD-DBKEY.
      15 DAD-DBK-PAGE PIC S9(4) COMP.
      15 DAD-DBK-LINE PIC S9(4) COMP.
     10 DAD-VERB PIC S9(3) COMP.
     10 DAD-RECORD-ID PIC S9(4) COMP.
     10 DAD-RECORD-LENGTH PIC S9(4) COMP.
     10 DAD-PREFIX-LENGTH PIC S9(4) COMP.
     10 DAD-PROGRAM-VIEWS.
      15 DAD-SUBSCHEMA-VIEW PIC X(1).
      88 DAD-DATA-VIEW VALUE '1'.
  10 DAD-DBKEY.
   88 DAD-BFOR VALUE '1'.
   88 DAD-AFTR VALUE '2'.
  10 DAD-PROGRAM-VIEWS.
   15 DAD-SUBSCHEMA-VIEW PIC X(1).
   88 DAD-DATA-VIEW VALUE '1'.
```
Concatenation Utility

This article describes the z/VSE Journal Concatenation Utility program (USJCNCT) that lets you concatenate multiple Archive Journal files into a single tape file, including an example of JCL for installing and using the utility.

Archive Journal File

If several disk journals are offloaded to tape during a processing day, it is possible that run unit information might straddle multiple archive files. If an individual archive file is processed by CA IDMS Journal Analyzer, some run unit statistics may be lost. To avoid this situation, CA IDMS Journal Analyzer accepts concatenated archive files as input. The files must be concatenated in timewise sequence for proper processing.

In z/VSE environments, a user can execute the DITTO utility to concatenate multiple archive tapes, in lieu of a data management facility or another z/VSE utility program. One alternative is to use CAs concatenation utility (USJCNCT) to accomplish the concatenation task.

z/VSE Journal Concatenation Utility

The z/VSE Journal Concatenation Utility (USJCNCT) program allows the z/VSE user to concatenate multiple Archive Journal files into a single tape file. All input tapes are mounted on the SYS011 tape unit, and the output tape is mounted on the SYS012 device.

The CPU operator is prompted with mounting and dismounting messages for the input files. The operator is also queried whether another tape file is available. The valid operator responses are: 'TAPE', 'TAP', 'TA', and 'T'. All other responses cause the termination of the utility program.

The following is an example of the JCL required to install the concatenation utility.

```
// JOB CATALOG*** CATALOG CONCATENATION UTILITY ***
// OPTION CATAL
PHASE USJCNCT,*
INCLUDE USJCNCT
// LBLTYP TAPE
// EXEC LNKEDT
/*
/6
```

The following is an example of the USJCNCT JCL.
// JOB USJCNCT                     * TAPE CONCATENATION UTILITY*
// TLBL TAPEIN                    INPUT TAPE FILES
// ASSGN SYS011,TAPE
// TLBL TAPEOUT,'ARCHIVE.JOURNAL' OUTPUT TAPE FILE
// ASSGN SYS012,TAPE
// EXEC USJCNCT
/*

Character Set

This section describes the use for the Subschema View of Program Displays EBCDIC character set is used. If a field contains data not listed here, that field is shown in hexadecimal format.

The following is a listing of the character set used:

SPACE
CENT
PERIOD
LESS
LEFT PAREN
PLUS
OR
AMPERSAND
EXCLAMATION
DOLLAR
ASTERISK
RIGHT PAREN
SEMI COLON
NOT
HYPHEN
SLASH
COMMA
PERCENT
UNDER
GREATER
QUESTION
COLON
POUND (NUMBER)
AT
APOSTROPHE (single quote)
EQUAL
QUOTE (double quote)
UPPERCASE English ALPHA
A-Z
NUMBERS
0-9