

# SmartProduction<sup>®</sup>

## Release 5.2.0 Level 2013/01 – Enhancements

### Major Enhancements

The following **major enhancements** are implemented in **SmartProduction** Release 5.2.0 Level 2013/01, extending product performance analysis coverage:

- **Extended Knowledgebase**

Over 30 new cases have been added, detecting new inefficiencies and tuning opportunities in the following areas: unnecessary work, Sort-related inefficiencies, backup utility-related inefficiencies, DB2 utility-related inefficiencies, DB2 application-related inefficiencies, slow utilities, data set compression-related inefficiencies, storage management-related inefficiencies, application logic-related inefficiencies, tape data set block sizes.

- **New/Enhanced Reports**

The new D15 Global Report identifies unnecessary or inefficient VSAM cluster reorganizations.

The new J7 Global Report identifies slow string-searching, data-copying and data-manipulation service programs. These service programs can usually be easily replaced by the more efficient Sort program.

Most reports have been enhanced, and now provide additional observations.

Several reports (for example: D10, J2, L3) now provide additional selection or display options.

- **Extended zAAP/zIIP Support**

Previously, zAAP/zIIP-related information has been displayed only under the WLM analysis panel. The following additional information is now displayed:

- The panel J Historical Job Execution Details section displays zAAP/zIIP CPU usage for job executions, job step executions, Sort executions and DB2 threads.
- The major job-related, Sort-related and DB2-related Global Reports have been enhanced as following:
  - a) The reports display zAAP/zIIP CPU usage.
  - b) The reports allow you to sort the results by total CPU usage (on both general processors and zAAP/zIIP processors).
  - c) Relevant reports allow you to sort the results by zAAP/zIIP CPU usage.
- Major CPU-saving cases display zAAP/zIIP CPU usage.

# Complete List of Enhancements

This section provides a complete list of enhancements implemented in **SmartProduction** Release 5.2.0 Level 2013/01.

## Reporting Facility

- **General**

The following enhancements have been implemented:

- The major job-related, Sort-related and DB2-related Global Reports have been enhanced as following:
  - a) The reports display zAAP/zIIP CPU usage.
  - b) The reports allow you to sort the results by total CPU usage (on both general processors and zAAP/zIIP processors).
  - c) Relevant reports allow you to sort the results by zAAP/zIIP CPU usage.
- Enhanced report description, more comprehensive usage notes and additional summary details are displayed in some reports.
- Some data set-related reports now run faster.

- **Global Report A2**

This report now identifies additional inefficiency cases.

- **Global Report B1**

This report now identifies additional inefficiency cases.

- **Global Report D3**

This report now identifies additional inefficiency cases.

- **Global Report D10**

The following enhancements have been implemented:

- This report now identifies additional inefficiency cases.
- The report has been extended to identify unnecessary passes over DB2 table spaces, performed by the IBM High Performance Unload (HPU) utility.

- **Global Report D11**

This report now identifies additional inefficiency cases.

- **Global Report D12**

This report now identifies additional inefficiency cases.

- **Global Report D14**

The following enhancements have been implemented:

- This report now identifies additional inefficiency cases.
- The report has been enhanced to suggest the use of large block sizes (>32K) when the data set was accessed by a locally-developed program.

- **Global Report D15**

This new report identifies unnecessary or inefficient VSAM cluster reorganizations.

- **Global Report J1**

This report now identifies additional inefficiency cases.

- **Global Report J2**

The report previously analyzed JCL-triggered Sorts only. The report has been extended to analyze internal Sorts as well, and now identifies additional unnecessary Sorts.

- **Global Report J3**

The following enhancements have been implemented:

- This report now identifies additional inefficiency cases.
- The report has been extended to identify unnecessary passes over DB2 table spaces, performed by popular DB2 unload utilities.

- **Global Report J7**

This new report identifies slow string-searching, data-copying and data-manipulation service programs. These service programs can usually be easily replaced by the more efficient Sort program.

- **Global Report L4**

When FUNC=JOIN is specified to Global report L4 , the statistics of all DFSort Join events are displayed. (This functionally was previously available only for SyncSort Join events.)

- **Global Report L5**

This report now displays the number of DB2 PREPARE SQLs executed.

- **Good Data Set Candidates Report**

This report now identifies additional inefficiency cases.

- **Good Job Candidates Report**

This report now identifies additional inefficiency cases.

## Online Facility

- **General**

The major job-related, Sort-related and DB2-related panels provide a new display option (CPUANY) to display the report results by total CPU usage (on both general processors and zAAP/zIIP processors). Some panels also provide a new option (ZAAPZIIP) to display the report results by zAAP/zIIP CPU usage.

- **Panel B**

Global reports D10 and J3 have been added to this report panel.

- **Panel D**

The following enhancements have been implemented:

- The analysis now identifies additional inefficiency cases.
- The STATE command (invoking the State Management facility) is now available when accessing the analysis results in ISPF *View mode*.
- An informational message is now displayed at the top of the analysis if the data set is a VSAM Alternate Index (AIX) file.
- In the Data Set References section, the following information is now displayed:
  - DEFINE and DELETE events are now displayed for *all* VSAM cluster entities (base cluster, AIX, path).
  - Data set DELETE events are now displayed for all non-VSAM data sets. (Previously, SCRATCH events were displayed for disk data sets. Now, DELETE events are displayed for tape data sets, and DELETE and SCRATCH events are displayed for disk data sets.)
  - DFSort information now indicates when a JOIN has been performed (previously available for a SyncSort Join).

- **Panel I**

The panel provides online information on the new "DB2 PARALLEL" (DB2 query parallelism) topic.

Some performance documentation provided under that panel (for example, topic LBI SUPPORT) has been enhanced.

- **Panel J**

The following enhancements have been implemented:

- The analysis now identifies additional inefficiency cases.
- The STATE command (invoking the State Management facility) is now available when accessing the analysis results in ISPF *View mode*.
- In the Historical Job Execution Details section, the following information is now displayed:
  - Execution statistics for all significant DB2 DSNUTILB step threads are now displayed. (Previously, the number of threads and execution statistics for only the first thread were displayed.)
  - DB2 parallelism statistics have been added (when applicable).

- DFSort information now indicates when a JOIN has been performed (previously available for a SyncSort Join).
  - zAAP/zIIP CPU usage is displayed for job executions, job step executions, Sort executions and DB2 thread executions. An indication has been added when a job step was *eligible* for (additional) zIIP or zAAP processing.
- **Panel R.D10**  
The panel provides a new option to select DB2 table spaces only.
  - **Panel R.D14**  
A new panel option allows for large block size (LBI) suggestions when the data set was accessed by a locally-developed program.
  - **Panel R.D15**  
This new panel can be used to generate the new Global report D15.
  - **Panel R.J2**  
The panel provides a new option to analyze only JCL-triggered Sorts, or all Sorts.
  - **Panel R.J3**  
The panel provides a new option to analyze only accesses to DB2 table spaces.
  - **Panel R.J7**  
This new panel can be used to generate the new Global report J7.
  - **Panel R Topic UNNECESSARY**  
Global report D15 has been added to this report topic.
  - **Panel R Topic UTIL**  
Global report J7 has been added to this report topic.
  - **Panel R Topic SAVECPU**  
Global reports D15 and J7 have been added to this report topic.
  - **Panel R Topic VSAM**  
Global report D15 has been added to this report topic.

## Knowledgebase

- **New Cases**  
Over 30 new cases have been added, detecting new inefficiencies and tuning opportunities in the following areas: unnecessary work, Sort-related inefficiencies, backup utility-related inefficiencies, DB2 utility-related inefficiencies, DB2 application-related inefficiencies, slow utilities, data set compression-related inefficiencies, storage management-related inefficiencies, application logic-related inefficiencies, tape data set block sizes.
- **zAAP/zIIP Support**

Major DB2-related and Sort-related CPU-saving cases display zAAP/zIIP CPU usage.

- **Case Logic and Output Enhanced**

The logic and output of several cases have been significantly enhanced.

## **Job Statistics Extractor**

- **Extracting Additional Data**

The Extractor program has been enhanced to record additional performance data from SMF in the JOBHIST database (for example: additional DB2 records and details; additional Sort details; SMF 65 information for non-VSAM data sets).

- **Enhanced Filtering**

The Extractor prevents additional (unnecessary) vendor-product-related data from being recorded in the JOBHIST database. For example, DB2 VSAM database define, delete and scratch information is no longer recorded in the JOBHIST database.

## **Miscellaneous**

- **New CASEJ28x Customization Parameter**

The new CASEJ28x EXCLUDE customization parameter optionally specifies one or more service programs that should not be flagged as replaceable by Sort.

The new CASEJ28x INCLUDE customization parameter optionally specifies one or more service programs that should be flagged as replaceable by Sort.

- **Maintenance Applied**

All existing **SmartProduction** maintenance has been applied in the new software.