

SmartProduction[®]

Release 4.8.0 Level 2010/08 – Enhancements

Major Enhancements

The following **major enhancements** are implemented in **SmartProduction** Release 4.8.0 Level 2010/08, extending product performance analysis coverage:

- **Extended Knowledgebase**

Over 35 new cases have been added, detecting new inefficiencies and tuning opportunities in the following areas: DB2 application-related inefficiencies, DB2 utility-related inefficiencies, VSAM-related inefficiencies, Natural/DB2-related inefficiencies, Sort-related inefficiencies, eliminating unnecessary work.

The logic of several cases has been enhanced; as a result, more observations will be reported.

- **New/Enhanced Reports**

New Global report J8 lists jobs accessing VSAM data sets in an inefficient manner.

New Global report D11 lists data sets that were unnecessarily sorted – as concluded from an analysis of the work flow. The observations are provided for both SyncSort and DFSort users.

New Global report D12 lists VSAM data sets that were processed via LSR in an inefficient way.

Several reports (primarily: J1, J3, A2, D4, D5, J7, A4, D10) have been enhanced, and will provide additional observations.

Several reports (for example: J1, J2, L1, L2) now provide additional selection or display options.

- **Excel Support for Major Reports**

Report data from the Good Candidate reports and major Global reports can now be written to a CSV-format data set. The data set's content can then be transferred to a PC and imported into Microsoft Excel (or similar spreadsheet applications), allowing you to analyze the report data using the spreadsheet.

CSV-format data sets are generated by entering the new SUBCSV command in the relevant report panel. Panel 0 defines how to dynamically allocate the new CSV-format data sets.

- **Enhanced Application Support**

The Application Definition now supports selecting jobs by from/until execution time frame and by user id.

Additional reports now support the selection of jobs via an Application Definition.

When an Application Definition is specified for a report: the report now lists the content of the Application Definition.

- **Enhanced VSAM RLS Support**

A new case identifies inefficient access to a VSAM cluster performed via RLS. This case is triggered under Panel J, Panel D, report J8, report D4, and the Good Data Set Candidates report.

In the Panel D Data Set References section, RLS statistics are displayed for an RLS access to the data set.

In the Panel J Historical Job Execution Statistics section, RLS statistics are displayed for an RLS access to a data set.

Panel I provides online information on the new VSAM RLS topic.

Complete List of Enhancements

This section provides a complete list of enhancements implemented in **SmartProduction** Release 4.8.0 Level 2010/08.

Reporting Facility

- **General**

The following enhancements have been implemented:

- Major reports support the writing of the report data to a CSV-format data file. The data file's content can then be transferred to a PC and imported into Microsoft Excel (or similar spreadsheet applications), allowing you to analyze the report data using the spreadsheet.
- The reports now display the name of the JOBHIST database that was processed by the report.
- Enhanced report description and more comprehensive usage notes are displayed in some reports.
- The Application Definition (supported by most reports, to select jobs to be analyzed) has been significantly enhanced. It now supports selecting jobs by from/until execution time frame and by user id.
- When an Application Definition is specified to a report: the report now lists the content of the Application Definition.

- **Good Data Set Candidates Report**

This report now identifies additional inefficiency cases.

- **Good Job Candidates Report**

This report now identifies additional inefficiency cases.

- **Global Report A2**

The following enhancement has been implemented:

- The report now identifies additional cases of DB2 application-related inefficiencies.
- The report enables you to select timeout, deadlock or RID List processing failure-related problems.

- **Global Report A3**

The following enhancements have been implemented:

- This report now identifies additional inefficiency cases.
- The job steps listed in the report can be sorted by job step CPU time.

- **Global Report A4**

This report now identifies additional inefficiency cases.

- **Global Report D2**

This report now identifies additional cases of VSAM buffering-related inefficiencies.

- **Global Report D4**

This report now identifies additional inefficiency cases.

- **Global Report D5**

This report now identifies additional cases of VSAM LSR-related inefficiencies. Among other new cases, the report has been enhanced to analyze RRDS and ESDS clusters (in addition to KSDS clusters) when accessed in direct (random) mode.

- **Global Report D8**

This report now displays the read-to-write ratio for each data set listed.

- **Global Report D10**

This report now identifies additional cases of unnecessary passes over data sets.

- **Global Report D11**

This new report lists data sets that were unnecessarily sorted – as concluded from an analysis of the work flow. The observations are provided for both DFSort and SyncSort users.

- **Global Report D12**

This new report lists VSAM data sets that were processed via LSR in an inefficient way.

- **Global Report J1**

The following enhancements have been implemented:

- A more comprehensive analysis of VSAM-to-VSAM copy processes is now performed. As a result, the report will usually generate additional observations for DFSort users.
- The jobs listed in the report can be sorted by CPU time.

- **Global Report J2**

The following enhancements have been implemented:

- The report enables you to select specific jobs (defined via job name mask or application).
- The report enables you to select jobs by minimum execution time.
- The jobs listed in the report can be sorted by job name, execution time or CPU time.

- **Global Report J3**

This report now identifies additional cases of unnecessary passes over data sets.

- **Global Report J7**

This report now identifies additional inefficiency cases.

- **Global Report J8**

This new report lists jobs accessing VSAM data sets in an inefficient manner.

Note: The report complements Global reports D2 and D5, listing inefficient VSAM data set accesses from a data set perspective.

- **Global Report L1**

The report has been enhanced to select jobs by time frame. Any job that was executing during the specified time frame will be selected.

- **Global Report L2**

The following enhancements have been implemented:

- The report has been enhanced to select only VSAM data sets accessed using a specific sharing method (for example, LSR or RLS).
- The report can now be ordered to list each access to a data set separately (rather than to summarize all accesses to a data set).

- **Global Report L5**

The following enhancements have been implemented:

- The report now displays thread DB2 CPU time and I/O wait execution time for DB2 database I/O.
- The report now displays IMS BMP DB2 thread information. The report also displays information for IMS MPP DB2 threads executing for more than 2 minutes.
- The report now displays Java DB2 thread information.
- When applicable, the report indicates multi-row fetch processing.
- The jobs listed in the report can be sorted by thread DB2 CPU time or I/O wait execution time for DB2 database I/O.

- **Global Report W1**

The report now identifies additional cases of WLM-related inefficiencies.

- **Global Report W3**

The report has been enhanced to differentiate between the service class of an address space that was switched *prior* to address space execution and one that was switched *during* address space execution.

- **Report Topic "SAVECPU"**

This new topic includes the major reports used to identify CPU time usage savings opportunities.

- **Report Topic "VSAM"**

Global Report J8 has been added to report topic "VSAM." This report lists jobs accessing VSAM data sets in an inefficient manner.

Online Facility

- **General**

The new SUBCSV command can be entered under the Good Job Candidate Report panel, under the Good Data Set Candidate Report panel, and under major Global Report panels.

As a result, the report job will write the report data to a CSV-format data file. The data file's content can then be transferred to PC and imported into Microsoft Excel (or similar spreadsheet applications), allowing to analyze the report data using the spreadsheet.

- **Panel D**

The following enhancements have been implemented:

- The analysis now identifies additional inefficiency cases.
- In the Current Data Set Information section, the VSAM cluster freespace definition is now displayed.
- In the Data Set References section, the following information is now displayed:
 - VSAM record number at data set open/close time
 - VSAM CI number at close time
 - VSAM key length and key position
 - VSAM RLS statistics
 - exact DB2 SQL counters (not in units of K or M)
 - more details on compressed sequential data sets
 - FTP / CA-COM file transfer destination address

- **Panel J**

The following enhancements have been implemented:

- The analysis now identifies additional inefficiency cases.
- In the Historical Job Execution Statistics section, the following information is now displayed:
 - accumulated DB2 thread CPU time
 - accumulated DB2 thread I/O wait execution time for DB I/O
 - DB2 COMMIT, OPEN, CLOSE, LOG, MERGE and lock counts
 - DB2 row statistics
 - exact DB2 SQL counts (not in units of K or M)
 - VSAM RLS statistics
 - indication whether Sort SUM FIELDS NONE has been used

- **Panel R.A2**

The Problem Type parameter now supports two more options.

- **Panel R.A3**

The panel provides a new option to sort the job steps listed in the report by job step CPU time.

- **Panel R.D11**

This new panel can be used to generate the new Global report D11.

- **Panel R.D12**

This new panel can be used to generate the new Global report D12.

- **Panel R.J1**

The panel provides a new option to sort the jobs listed in the report by CPU time.

- **Panel R.J2**

The following enhancements have been implemented:

- The panel provides a new parameter to select specific jobs (defined via job name mask or application).
- The panel provides a new parameter to select jobs by minimum execution time.
- The panel provides a new parameter to list the jobs in the report sorted by job name, execution time or CPU time.

- **Panel R.J8**

This new panel can be used to generate the new Global report J8.

- **Panel R.L1**

A new time frame parameter has been added. Any job that was executing during the specified time frame will be selected.

- **Panel R.L2**

The following enhancements have been implemented:

- A new VSAM sharing mode selection parameter has been added. Only VSAM data sets that were accessed using the specified sharing method (for example, LSR or RLS) will be selected.
- The panel provides a new option to list each access to a data set separately (rather than to summarize all accesses to a data set).

- **Panel R.L5**

The panel provides a new option to sort the jobs listed in the report by thread DB2 CPU time or I/O wait execution time for DB2 database I/O.

- **Panel R.L7**

The panel supports the selection of jobs via an Application Definition.

- **Panel I**

The panel provides online information regarding the new VSAM RLS topic.

- **Panel R Topic SAVECPU**

Report Topic SAVECPU has been added. This topic provides the major reports used to identify CPU time savings opportunities.

- **Panel R Topic SORT**

Global report D11 has been added to this report topic. The report lists data sets that were unnecessarily sorted – as concluded from an analysis of the work flow.

- **Panel R Topic Unneeded Work**

Global report D11 has been added to this report topic. The report lists data sets that were unnecessarily sorted – as concluded from an analysis of the work flow.

- **Panel R Topic "VSAM"**

Global Report J8 has been added to this report topic. This report lists jobs accessing VSAM data sets in an inefficient manner.

Global report D12 has been added to this report topic. The report lists VSAM data sets that were processed via LSR in an inefficient way.

- **Panel W**

The analysis now identifies additional inefficiency cases.

- **Panel 0.A**

The Application Definition panel has been enhanced to define the application jobs by from/until execution time frame, or by user id.

- **Panel 0.G**

The panel defines how to dynamically allocate the new CSV-format report data sets (sharing the existing GAF data set allocation parameters). The new %FORMAT% variable can optionally be specified in the data set name pattern, in order to distinguish between GAF data sets and the new CSV-format data sets.

Knowledgebase

- **New Cases**

Over 35 new cases have been added, detecting new inefficiencies and tuning opportunities in the following areas: DB2 application-related inefficiencies, DB2 utility-related inefficiencies, VSAM-related inefficiencies, Natural/DB2-related inefficiencies, Sort-related inefficiencies, eliminating unnecessary work.

- **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 data, IMS BMP/MPP DB2 data, additional VSAM data, additional DFSort data).

Miscellaneous

- **New CASE878 Customization Parameter**

The new CASE878 customization parameter specifies when to examine a DB2 application for over-committing.

- **Enhanced INCLUDE DSNIO Customization Parameter**

The minimum number of IOs can now be specified as a 5-digit number (previously: a 4 digit-number).

- **Maintenance Applied**

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