

# SmartProduction<sup>®</sup>

## Release 4.6.0 – Enhancements

### Major Enhancements

The following **major enhancements** are implemented in **SmartProduction** Release 4.6.0 Level 2008/08, extending product performance and analysis coverage:

- **DFSMSHsm Data Set Migration/Recall Activity Analysis**

This new feature provides information and analysis for data set migrations and recalls performed via DFSMSHsm (HSM).

A new report (Report D9) lists data sets which are migrated in and out frequently (“migration thrashing”).

Panel D has been enhanced to display (in the Data Set References section) details of DFSMSHsm recalls that have taken place. In addition, two cases have been added to Panel D and Panel J to identify migration thrashing.

- **Extended Knowledgebase**

Over 20 new cases have been added, detecting new inefficiencies and tuning opportunities in the following areas: resource contention problems, inefficient DB2 utility executions, Sort inefficiencies, DFSMSHsm migration/recall inefficiencies, candidates for data set striping.

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

- **New/Enhanced Reports**

A new report (Report D9) lists data sets which are migrated in and out frequently via DFSMSHsm (“migration thrashing”).

Several reports (primarily: GJC, GDC, A4, O6, J7) have been enhanced, and will provide additional observations.

Several reports (e.g., GDC, O6, WA) now provide additional selection or display options.

- **Extended Performance Documentation**

Panel I provides online information regarding the following new topics: STRIPING (using data set striping), COMPRESSION (using DFSMS data set compression).

The performance documentation provided under Panel I (for example, topic SYSTEM ENQ) has been enhanced.

# Complete List of Enhancements

This section provides a complete list of enhancements implemented in **SmartProduction** Release 4.6.0.

## Reporting Facility

- **General**

The following enhancements have been implemented:

- Enhanced report description and more comprehensive usage notes are displayed in some reports.
- When the JOBHIST database is allocated as an extended-format data set, some reports can process the database using system-managed buffering (SMB). This will significantly enhance performance of these reports.

- **Good Data Set Candidates (GDC) Report**

The following enhancements have been implemented:

- The report now identifies additional cases of inefficiencies.
- The new Inefficiency Type = EXTENTS selects only data sets allocated with an excessive number of extents.

- **Good Job Candidates (GJC) Report**

This report now identifies additional cases of inefficiencies.

- **Global Report A1**

The report provides additional program information, such as:

- The release of the COBOL compiler used to generate the program.
- Indication if the program is a COBOL CICS program.
- Indication if the program is an alias program (followed by the name of the base program).
- For non-COBOL programs: indication whether the program is a C, C++, PL/I or FORTRAN program.

- **Global Report A4**

This report now identifies additional cases of inefficient sort executions.

- **Global Report D9**

This new report lists data sets which are migrated in and out frequently via DFSMSHsm (“migration thrashing”).

- **Global Report J1**

This report now identifies additional cases of slow data extractions.

- **Global Report J7**

This report now identifies additional cases of inefficient DB2 utility executions.

- **Global Report L3**

The report now enables you to select programs that were executed by specific jobs (defined via job name mask or application).

- **Global Report L4**

The report now enables you to select sort-copy and sort-merge executions (rather than sort executions).

- **Global Report L7**

This report now displays the FTP data transfer rate.

- **Global Report LA**

The report now enables you to select data by MVS system.

- **Global Report O6**

The following enhancements have been implemented:

- The report has been enhanced to identify additional cases of ENQ conflicts (CA-MIM data set contentions and IMS RECON data set contentions).
- The report has been enhanced to display ENQ conflicts for certain delayed jobs (defined via job name mask or application).
- A new detailed report provides information on a job basis (rather than on an ENQ major name basis).

- **Global Report WA**

The report now enables you to select data by WLM importance.

## Online Facility

- **Good Data Set Candidates Panel**

The new Inefficiency Type = EXTENTS parameter allows you to select only data sets allocated with an excessive number of extents.

- **Panel D**

The following enhancements have been implemented:

- The following additional details are displayed in the Data Set References section: VSAM HURBA (high-used RBA); QSAM/BSAM BUFNO; BSAM NCP; DFSMSHsm data set migration/recall activity; indication whether the sort program was sorting, copying or merging data.
- An informational message is now displayed at the top of the analysis if the data set is an IMS RECON file.
- An informational message is now displayed at the top of the analysis if the data set is a VSAM extended-addressability file.

- **Panel J**

In the Historical Job Execution Statistics section, the following information is now displayed: the BUFNO (for QSAM and BSAM data set access); DFSMSHsm data set migration/recall activity; indication whether DFSort made use of memory objects.

- **Panel I**

The following enhancements have been implemented:

- The panel provides online information on the following new topics: STRIPING (using data set striping), COMPRESSION (using DFSMS data set compression).
- Online information provided in some topics (for example, SYSTEM ENQ) has been enhanced.
- **Panel R.A4**  
The panel now enables you to select I/O-related sort inefficiencies.
- **Panel R.D9**  
This new panel can be used to generate the new Global Report D9.
- **Panel R.L3**  
The panel now enables you to select programs that were executed by specific jobs (defined via job name mask or application).
- **Panel R.L4**  
The panel now enables you to select sort-copy and sort-merge executions (rather than sort executions).
- **Panel R.LA**  
The panel now enables you to select data by MVS system.
- **Panel R.O6**  
The following enhancements have been implemented:
  - The panel has been enhanced to select data using additional ENQ major names.
  - The panel has been enhanced to select data for certain delayed jobs (defined via job name mask or application).
  - A new selection parameter allows you to order a detailed report (on a job basis).
- **Panel R.WA**  
The panel now enables you to select data by WLM importance.
- **Panel W**  
The following enhancements have been implemented:
  - The Active Service Classes List panel now shows whether a service class period has been defined with the CPU-critical option.
  - The Service Class Analysis Results panel now shows additional resources usage and delay types (e.g., zIIP and zAAP delays) in the Historical Service Class Period Activity Details section.
- **Panel 0.G**  
A new parameter defines whether the JOBHIST database can be processed by certain **SmartProduction** reports using system-managed buffering (SMB). **Note:** SMB can be used only if the JOBHIST database has been allocated as an extended-format data set.
- **Report Topic UNNEEDED**  
Global Report D9 has been added to Report Topic UNNEEDED. This report lists data sets which are migrated in and out frequently via DFSMSHsm (“migration thrashing”).
- **Report Topic FAILURES**  
Global Report D9 has been added to Report Topic FAILURES. This report lists among else DFSMSHsm data set recall processes that have failed.

## Knowledgebase

- **New Cases**

Over 20 new cases have been added, detecting new inefficiencies and tuning opportunities in the following areas: resource contention problems, execution of slow DB2 utilities, Sort inefficiencies, DFSMSHsm migration/recall inefficiencies, candidates for data set striping.

- **Case Logic and Output Enhanced**

The logic and output of several cases has been enhanced.

## Job Statistics Extractor

- **Extracting Additional Data**

The Extractor program has been enhanced to record additional performance data from SMF in the JOBHIST database (additional SMF 77 data, Sort data, VSAM data, WLM data, DFSMSHsm data set migration/recall data).

- **Enhanced JOBHIST Database Allocation Information**

The Extractor program (HISTSPCE job) has been enhanced to provide two alternative allocation sizes for the VSAM database: for allocating a regular data set or for allocating an extended-format data set. In addition, a message is now issued when the data size to be kept in the database is greater than 4 GB and, as a result, an extended-format VSAM data set with the extended-addressability attribute must be allocated.

## Miscellaneous

- **New \$SMFHSM Global Installation Parameter**

The new \$SMFHSM global installation parameter defines the DFSMSHsm SMF record type number (relevant for DFSMSHsm sites only).

- **New RECALL Customization Parameter**

The new RECALL customization parameter defines the minimum allowable number of days between the migration and recall of a data set (relevant for DFSMSHsm sites only).

- **Enhanced STRIPED MINTRKS Customization Parameter**

The STRIPED MINTRKS customization parameter has been enhanced to provide different thresholds for VSAM and for non-VSAM data sets.

- **Documentation Enhanced**

The **SmartProduction** User and Reference Guide has been enhanced (primarily the "Implementation Notes" chapter). Also, the **SmartProduction** Administrator Guide has been enhanced (primarily the sections dealing with JOBHIST database generation and maintenance).

- **Maintenance Applied**

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