CPExpert Product Update 2000-1

This product update forwards updates to both software and documentation. The software update is Release 10.1 of CPExpert. The release number indicates that it is the first release of 2000.

This release (1) provides support for OS/390 Version 2 Release 9 (V2R9), (2) provides additional performance analysis for the WLM Component, (3) enhances the DB2 Component; (4) provides additional performance analysis for the CICS Component; (5) provides additional performance analysis for the MVS Component, (6) provides updated documentation on CD-ROM, and (7) corrects errors that have been reported.

- **OS/390 Version 2 Release 9**. OS/390 Version 2 Release 9 was made Generally Available (GA) by IBM at the end of September. Since Computer Management Sciences is a Partner in Development with IBM, I normally can provide support for new releases of MVS within 30 days of GA of the new IBM release.
    - All CPExpert components have been updated to provide support for OS/390 Version 2 Release 9.
    - All CPExpert documentation has been updated with references to applicable OS/390 Version 2 Release 9 documents from IBM.

      Recall that all references in CPExpert documentation refer to IBM documents contained in IBM BookManager format. I will be happy to provide a cross-reference to hard-copy of IBM documents if any user does not have access to IBM documents in BookManager format.
- **Provides additional performance analysis for the WLM Component.** Additional analysis has been provided for the WLM Component in the following areas:
    - **WLM-managed initiator analysis.** Prior to OS/390 Version 2 Release 9, only the SMF Type 26 records contained an indication as to whether a job was assigned a job class with MODE=JES or MODE=WLM. Since SMF Type 26 records are not often kept in a performance data base (and are not available until after a job has ended) analysis of conflicts between JES-managed and WLM-managed initiators was not feasible.

      Consequently, I requested that IBM place an indicator in the SMF Type 30 records so that potential problems with WLM-managed initiators could be analyzed. With OS/390 Version 2 Release 9, IBM created the SMF30WMI indicator as a part of the SMF30PF1 (performance section flag byte) variable.

      As a result of the new indicator, CPExpert now can distinguish between JES-managed initiators and WLM-managed initiators. The following new rules have been added to analyze your WLM-managed initiator/job class assignment scheme:
        - A rule to analyze whether JES-managed and WLM-managed job classes conflict by being assigned to the same service class period, with a resulting lack of efficient management by the Workload Manager.
        - A rule to analyze whether WLM-managed job class were assigned to multiple service classes, with a resulting lack of efficient management by the Workload Manager.
        - A rule to analyze whether job(s) or job class(es) might not be suitable for assignment to WLM-managed initiators, due to the tendency of the execution queue delay to dominate total execution time.
    - **System logger analysis.** The system logger is an MVS component system logger component resides in its own address space on each system in a sysplex. Applications can log data from one system or from multiple systems across the sysplex. One significant advantage of the MVS system logger design is that any system in a sysplex can recover data in the log stream. This feature prevents data loss in case of failure of one system.

      The system logger was introduced with MVS/ESA SP5.2, but no CPExpert user had requested analysis of this area until this year. With CPExpert Release 9.2, I began some rudimentary analysis of the log stream for CICS applids, based on the information contained in IBM's *CICS Performance Guides*. After reviewing the analysis that was available for CICS log streams, **Paul Gordon** (Bank of America, VA) asked that I expand the analysis. Based on Paul's suggestions, I developed code for the CICS Component to analyze system logger problems for both coupling facility log streams and DASD-only log streams. **Bryant Osborn** (Bank of America, VA) provided test data for the new analysis, and IBM Poughkeepsie provided additional test data.

      After developing the system logger analysis for the CICS Component, I decided to include the analysis in the WLM Component and the MVS Component. Consequently, The following new rules have been added to the WLM Component to analyze performance problems with your system logger:
        - A rule to analyze when the log stream coupling facility structure was full.
        - A rule to analyze when the log stream staging data set was full.
        - A rule to analyze when the log stream structure offloads occurred because the coupling facility structure was 90% full.
        - A rule to analyze when interim storage was not efficiently used for log stream.
        - A rule to analyze when local storage buffers were not efficiently used, for a DASD-only log stream.
        - A rule to analyze when the DASD staging data set high threshold was reached for a log stream.
        - A rule to analyze when frequent log stream DASD-shifts (with concurrent unnecessary overhead) occurred.
        - A rule to analyze whether a log stream caused a coupling facility structure to reach the high threshold (HIGHOFFLOAD).
        - A rule to analyze situations when a log stream consumed most of a coupling facility structure's resources.

      Please note two important aspects of this analysis:
        - You must collect SMF Type 88 records and have the TYPE88 file available in your MXG performance data base, in order for the WLM Component to analyze system logger performance problems.
        - By default, CPExpert will expect the TYPE88 records to be present in the MXG performance data base! Whether CPExpert analyzes the TYPE88 records is controlled by the SMFTYP88 guidance variable.

The default value for the SMFTYP88 variable is "YES". If you do not have TYPE88 records available in your MXG performance data base (or do not wish CPExpert to analyze log stream problems) you must specify %LET SMFTYP88=NO; in either USOURCE(GENGUIDE) or USOURCE(WLMGUIDE).

- **Enhance the DB2 Component.** The DB2 Component has been enhanced in the following areas:
  - Added support for DB2 performance data contained in a MICS performance data base.

    I would like to thank **Mike McInerney** (Computer Associates, VA) for providing tremendous documentation support in this effort, and thank **Bryant Osborn** (Bank of America, VA) for providing test data and feed-back on the results of his beta testing of the DB2 Component for MICS.
  - Added reports to show information about non-allied agent tasks that abended or that were deleted from memory, for those non-allied agent tasks that required a rollback. The report includes resource usage that was "wasted" by the abend or deletion from memory.
  - Added a report to list the rules that would be suppressed and show the variables that were missing from the performance data base, and thus restricting the analysis of DB2 performance constraints. This report will be useful when users decide whether to include missing files or variables in either a MXG or MICS performance data base.

  I am extremely pleased with the way the new DB2 Component has been received. With over 20 users so far (the product started delivery in January 2000), only two minor errors have been reported. The reaction from users has been very positive (comments have ranged from "This is good stuff!" to "I love it!").

- **Provides additional performance analysis for the CICS Component.** As mentioned above (under the discussion of WLM Component enhancements), with CPExpert Release 9.2, I began some rudimentary analysis of the log stream for CICS applids, based on the information contained in IBM's CICS Performance Guides. After reviewing the analysis that was available for CICS log streams, **Paul Gordon** (Bank of America, VA) asked that I expand the analysis. Based on Paul's suggestions, I developed code for the CICS Component to analyze system logger problems for both coupling facility log streams and DASD-only log streams.

  With CPExpert Release 10.1, The following new rules have been added to the CICS Component to analyze performance problems with your system logger:
  - A rule to analyze when the CICS applid log stream structure offloads occurred because the coupling facility structure was 90% full.
  - A rule to analyze when interim storage was not efficiently used for the CICS applid log stream.
  - A rule to analyze when local storage buffers were not efficiently used, for a CICS applid DASD-only log stream.
  - A rule to analyze when the DASD staging data set high threshold was reached for a CICS applid log stream.
  - A rule to analyze when frequent CICS applid log stream DASD-shifts (with concurrent unnecessary overhead) occurred.
  - A rule to analyze whether a CICS applid log stream caused a coupling facility structure to reach the high threshold (HIGHOFFLOAD).
  - A rule to analyze situations when a CICS applid log stream consumed most of a coupling facility structure's resources.

  Please note two important aspects of this analysis:
  - You must collect SMF Type 88 records and have the TYPE88 file available in your MXG performance data base, in order for the CICS Component to analyze system logger performance problems with the new rules listed above.
  - By default, CPExpert will expect the TYPE88 records to be present in the MXG performance data base! Whether CPExpert analyzes the TYPE88 records is controlled by the SMFTYP88 guidance variable.

    The default value for the SMFTYP88 variable is "YES". If you do not have TYPE88 records available in your MXG performance data base (or do not wish CPExpert to analyze log stream problems) you must specify %LET SMFTYP88=NO; in either USOURCE(GENGUIDE) or USOURCE(CICGUIDE).

- **Provides additional performance analysis for the MVS Component.**
  Additional analysis has been provided for the MVS Component in the following areas:

  As mentioned above (under the discussion of WLM Component enhancements), with CPExpert Release 9.2, I began some rudimentary analysis of the log stream for CICS applids, based on the information contained in IBM's CICS Performance Guides. Af ter reviewing the analysis that was available for CICS log streams, Paul Gordon (Bank of America, VA) asked that I expand the analysis. Based on Paul's suggestions, I developed code for the CICS Component to analyze system logger problems for both couplin g facility log streams and DASD-only log streams.

  After developing the system logger analysis for the CICS Component, I decided to include the analysis in the WLM Component and the MVS Component. Consequently, The following new rules have been added to the MVS Component to analyze performance problems with your system logger:
  - A rule to analyze when the log stream coupling facility structure was full.
  - A rule to analyze when the log stream staging data set was full.
  - A rule to analyze when the log stream structure offloads occurred because the coupling facility structure was 90% full.
  - A rule to analyze when interim storage was not efficiently used for log stream.
  - A rule to analyze when local storage buffers were not efficiently used, for a DASD-only log stream.
  - A rule to analyze when the DASD staging data set high threshold was reached for a log stream.
  - A rule to analyze when frequent log stream DASD-shifts (with concurrent unnecessary overhead) occurred.
  - A rule to analyze whether a log stream caused a coupling facility structure to reach the high threshold (HIGHOFFLOAD).
  - A rule to analyze situations when a log stream consumed most of a coupling facility structure's resources.

  Please note two important aspects of this analysis:

- You must collect SMF Type 88 records and have the TYPE88 file available in your MXG performance data base, in order for the MVS Component to analyze system logger performance problems.
- By default, CPExpert will expect the TYPE88 records to be present in the MXG performance data base! Whether CPExpert analyzes the TYPE88 records is controlled by the SMFTYP88 guidance variable.

  The default value for the SMFTYP88 variable is "YES". If you do not have TYPE88 records available in your MXG performance data base (or do not wish CPExpert to analyze log stream problems) you must specify %LET SMFTYP88=NO; in either USOURCE(GENGUIDE) or USOURCE(MVSGUIDE).

- **Provide documentation on CD-ROM**. This release provides all updated documentation to reflect references for OS/390 Version 2 Release 9. The CPExpert documentation is accessible via Adobe Acrobat Reader, and the CD-ROM contains a free copy of Adobe Acrobat Reader. The Adobe Acrobat Reader should be installed on your PC under Windows 3.1, Windows 95, Windows for Workgroups, or Windows NT. Installation of the Reader will require about 6 megs of space on your hard drive.

  There is no additional charge for the CD-ROM versions of CPExpert documentation. If any user does not have the capability to access documentation on CD-ROM (or simply prefers to have hard-copy documentation), please give me a call.

- **Correct errors that have been reported**. I've added a new member titled SOURCE(GENERR92) which contains a listing of the errors that were discovered in CPExpert code for Release 9.2, and an acknowledgment of the user who found the error.

  I **really** appreciate calls from users reporting problems or simply asking questions. As I said in the original delivery letter for CPExpert, if errors occur with your installation, please don't waste your time trying to solve the error. Just give me a call and I will quickly fix the problem!

Installation

I suggest that you use the following steps to install Release 10.1:

- Create a new PDS titled "prefix.CPEXPERT.V101.SOURCE".
- Create a new PDS titled "prefix.CPEXPERT.V101.USOURCE".
- Install CPExpert into the "prefix.CPEXPERT.V101.SOURCE" using the normal installation procedures described in the *CPExpert Installation Guide*.
- Copy your **old** USOURCE members into "prefix.CPEXPERT.V101.USOURCE". This step should be done so you do not have to recreate all of your unique parameters. There are no changes to the variables in USOURCE members, unless you are exercising new options provided with this code.

  PLEASE NOTE: If you license the WLM Component, the CICS Component, or the MVS Component, and do NOT collect SMF TYPE88 records and retain these records in your MXG performance data base, you must modify USOURCE(GENGUIDE) to specify %LET SMFTYP88=N;. Otherwise, you will encounter a SAS error.

  The above note does not apply if you execute CPExpert analyzing a CA-MICS performance data base. MICS does not process SMF Type 88 records. Consequently, CPExpert cannot analyze system logger performance problems with a MICS performance data base.

  If you license both MICS and MXG, please contact me for information on how to create a MXG performance data base containing only the TYPE88 records necessary for CPExpert's analysis of system logger problems.

Thanks

I would like to say "**Thank you**" to the following individuals. These folks have discovered errors, proposed new features, or suggested documentation changes since the last Update Bulletin:

Glen Bowman (Wakefern Food Corporation, NJ)

Dave Cogor (US Department of Transportation)

David Ehresman (University of Louisville, KY)

Kris Ferrier (State of Washington, WA)

Paul Gordon (Bank of America,VA)

Bill Hatcher (Department of Veterans Affairs, TX)

Mike Jacques (Branch Bank & Trust, NC)

Mike McInerney (Computer Associates, VA)

Alex Benny Nielsen (TELE-DANMARK, Denmark)

Alex Torben Nielsen (TELE-DANMARK, Denmark)

Bryant Osborn (Bank of America, VA)

Harald Seifert (HUK-Coburg, Germany)

WEB site

Please visit my web site **(www.cpexpert.com**) for information about CPExpert. I post answers to frequently asked questions, errors reported by users for the current release of CPExpert, and information about CPExpert components that you might not license.

Additionally, I've posted several papers on the web site that I've presented at professional conferences.

Please call, fax, or send me a note on the Internet if you have suggestions, you want new features, or you would like to see more or different reporting done by CPExpert.

Best regards,

Don Deese

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