

Changes

CPExpert Release 13.2:

The main changes to the WLM Component for CPExpert Release 13.2 are as shown below:

- C Rule WLM017 (*Server and subsystem transactions in same service class*) is not applicable if APAR OW45239 is installed, or with z/OS V1R1 and subsequent releases of z/OS.
- C Rule WLM017 (*Server and subsystem transactions in same service class*) is not applicable if APAR OW45239 is installed, or with z/OS V1R1 and subsequent releases of z/OS.
- C Rule WLM103 (*Service class did not achieve velocity goal*) has been revised to provide a more comprehensive explanation of the way the Workload Manager calculates DASD using and delay samples.
- C Rule WLM104 (*Served service class did not achieve average response goal*) and Rule WLM105 (*Served service class did not achieve percentile response goal*) have been revised to include waiting for SSL thread, waiting for regular thread, and waiting for work table.
- C Rule WLM173 (*The response performance goal may be too large*) was expanded to describe more completely the reasons from an internal Workload Manager logic view why long response time goals are not effective.
- C The documentation for many rules have been revised to distinguish between “legacy” systems (e.g., 3380 devices attached to 3990-2 controllers) and more modern systems so readers will not be confused about discussions that do not apply to the modern environments. Additionally, the documentation related to I/O delays has been revised to discuss differences between ESCON channels and FICON channels.
- C The documentation for rules that relate to “served” transaction service classes (e.g., CICS transactions or IMS transactions) have been revised to distinguish between the transaction delay data that is available for CICS regions versus IMS Message Processing Regions.
- C Rule WLM103 (*Service class did not achieve velocity goal*) has been revised to provide a more comprehensive explanation of the way the Workload Manager calculates DASD using and delay samples.

- C Rule WLM104 (*Served service class did not achieve average response goal*) and Rule WLM105 (*Served service class did not achieve percentile response goal*) have been revised to include waiting for SSL thread, waiting for regular thread, and waiting for work table.
- C Rule WLM173 (*The response performance goal may be too large*) was expanded to describe more completely the reasons from an internal Workload Manager logic view why long response time goals are not effective.
- C The documentation for rules that relate to “served” transaction service classes (e.g., CICS transactions or IMS transactions) have been revised to distinguish between the transaction delay data that is available for CICS regions versus IMS Message Processing Regions.

CPExpert Release 13.1:

The main changes to the WLM Component for CPExpert Release 13.1 are to:

- C Updates have been provided for neuMICS, to analyze additional problems or potential problems that occur with Service Definition specifications. The WLM Component analyzes such areas as:
 - C Conflicts between Dynamic Alias Management specifications for Parallel Access Volume (PAV) and specifications for I/O Priority Management.
 - C Conflicts between CPU Critical specifications for transaction service classes and their associated CICS or IMS region service classes.
 - C Conflicts between job classes and workload executing in JES-managed initiators and WLM-managed initiators.
- C With Release 13.1, the output from the WLM Component can be produced based on “level of impact” of each finding. Some CPExpert users with large sites were receiving many pages of output from the WLM Component. This large output partially was because CPExpert was analyzing data from many systems, with 15-minute RMF intervals, and for 24 hours a day. Since such a large amount of output is difficult to review, options have been added to allow a user to specify that the output should be available on a summary basis, for only important findings, or for all findings.
- C Add the ability to select up to 10 systems individually for analysis. Until Release 13.1, a user had the options of analyzing data for all systems in the performance data base, analyzing data for a specific sysplex (in case the performance data base contained data for more than one sysplex), or analyzing data for a specific system in the performance data base. With Release 13.1, up to 10 systems can be individually selected for analysis.

- C Enhance the options provided with the SAS Output Delivery System (ODS). With Release 13.1, users who exercise the SAS ODS feature for creating CPExpert output can optionally create the output as a PDF file, which can be emailed to other users. Additionally, users can optionally specify a STYLE feature for either HTML or PDF output, if they have a preferred STYLE for HTML or PDF output. The optional links that are available with the HTML have been revised; SAS at some user sites did not create the HTML output in the “standard” way, and the CPExpert code that inserted links into the HTML output did not work properly. I have revised the code to place the links into the output as the output is created, rather than attempting to place the links into the final HTML output created by SAS.

CPExpert Release 12.2:

The main changes to the WLM Component for CPExpert Release 12.2 are to:

- C Update the Component to support z/OS Version 1 Release 4.
- C Add Rule WLM031 to analyze conflicts between Dynamic Alias Management specifications for Parallel Access Volume (PAV) and specifications for I/O Priority Management.
- C Add Rule WLM032 to analyze conflicts between CPU Critical specifications for transaction service classes and their associated CICS or IMS region service classes.
- C Provide an introductory listing of significant analysis that cannot be done by CPExpert because (1) files are missing in the performance data base being evaluated or (2) analysis options have not directed the WLM Component to perform the analysis.
- C Correct code based on errors reported by users.

CPExpert Release 12.1:

The main changes to the WLM Component for CPExpert Release 12.1 are to update the Component to support z/OS Version 1 Release 3.

CPExpert Release 11.2:

The main changes to the WLM Component for CPExpert Release 11.2 are to:

- C Update the Component to support z/OS Version 1 Release 2.

- C Add support for the SAS Output Delivery System (ODS) feature, to enable optional web access of CPEXpert reports (this new option was suggested by **Harald Seifert** of HUK, Coburg, Germany).
- C Add optional links in CPEXpert reports (if the SAS ODS feature is invoked), that link rule output to CPEXpert documentation for the rules produced.

CPEXpert Release 11.1:

The main changes to the WLM Component for CPEXpert Release 11.1 are to:

- C Update the Component to support z/OS Version 1 Release 1.
- C Added SYSOTHER analysis for MICS.
- C Enhanced the data shaping code to improve execution performance.
- C Created option to process all data in a performance data base with more than one sysplex. The new code optionally analyzes each sysplex in the performance data base.
- C Enhanced code to analyzed function-shipped transactions, analyzing the transactions both on the originating and supporting system.
- C Added analysis of IMS subsystem delay states for transaction service classes (applicable only with IMS Version 5 and subsequent versions of IMS).
- C Added analysis of DB2 subsystem delay states for transaction service classes (applicable only with DB2 Version 6 and subsequent versions of DB2).
- C Changed analysis of whether log stream interim storage was efficiently used to report on both log stream and the coupling facility structure involved.
- C Eliminate report classes from server delay analysis (report classes can have server information reported in the SMF Type 72 Service Class Served Data Section, but all work units may not be servers).
- C Correct code based on errors reported by users.

CPEXpert Release 10.2:

The main changes to the WLM Component for CPEXpert Release 10.2 are to:

- C Update the Component to support OS/390 Version 2 Release 10.

- C Correct code based on errors reported by users.

CPExpert Release 10.1:

The main changes to the WLM Component for CPExpert Release 10.1 are to:

- C Update the Component to support OS/390 Version 2 Release 9.
- **WLM-managed initiator analysis.** 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 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.

CPExpert Release 9.2:

The main changes to the WLM Component for CPExpert Release 9.2 are to:

- C Update the Component to support OS/390 Version 2 Release 8.
- C Provide the ability to specify analysis guidance for individual structures in a coupling facility. The guidance variables for structures normally are globally applied during CPExpert's analysis of structure performance. These global guidance variables might not be applicable to some structures, however. With this change, guidance can **optionally** be applied to specific structures.
- C Add an option to suppress the analysis and findings of particular rules. This feature typically is desired by users who (1) have an overall disagreement with the finding, (2) are unable to make a suggested change, or (3) decide that a particular finding is inapplicable to a their environment.
- C Correct code to account for errors discovered in IBM's SMF documentation.
- C Correct documentation and code based on errors reported by users.

CPExpert Release 9.1:

The main changes to the WLM Component for CPExpert Release 9.1 are to:

- C Update the Component to support OS/390 Version 2 Release 7.
- C Add a new rule to analyze situation when Execution Phase samples for CICS transaction service class data did not exist in SMF Type 72 records (Work Manager/Resource manager section).
- C Add a new rule to advise that the response performance goal may be too large.
- C Add a new rule to advise that a service class was capped for discretionary goal management.
- C Add a new rule to advise that non-DASD I/O activity or delay was significant.

- C Add a new rule to advise that non-paging DASD I/O activity caused significant delays.
- C Correct code to account for errors discovered in IBM's SMF documentation.
- C Correct documentation and code based on errors reported by users.

CPExpert Release 8.2:

The main changes to the WLM Component for CPExpert Release 8.2 are to:

- C Update the Component to support OS/390 Version 2 Release 6.
- C Add analysis to support discretionary goal management introduced with OS/390 Version 2 Release 6.
- C Enhance the code to remove SAS work files when no longer needed. This feature was required for users with extremely large performance data bases. These users experienced significant increases in the amount of SAS work space required for CPExpert to analyze data. The amount of SAS work space was significantly decreased by deleting CPExpert work files when they were no longer required by the logic.
- C Add the SYSPLEX variable to all data selection criteria. This data selection option is required for large MICS sites that have data from more than one sysplex in their performance data base.
- C Add the MICSLEV guidance variable to allow users to specify their change level of MICS. This variable is required since MICS does not retain information describing the installed MICS change level.
- C Correct MICS variables with OS/390 Version 1 Release 3.
- C Add code to account for changes in MXG 16.04.
- C Correct MICS coding errors with MICS Change RMF6380.
- C Change all CPExpert coding references from &PDBLIB to &WLMLIB. This change was required for users who retained Goal Mode data in a separate SAS library.
- C Add the operating system level and MXG version (if MXG performance data base) to the CPExpert output listing information.
- C Modify the local page data set analysis to perform some test regardless of whether a performance problem existed with service class periods.

- C Add a user option to control whether CPEXpert more dramatically separates analysis results for service class periods that missed their performance goal.
- C Correct code based on errors reported by users.

CPEXpert Release 8.1:

The main changes to the WLM Component for CPEXpert Release 8.1 are:

- C Update the Component to support OS/390 Version 2 Release 5.
- C Add support for MVS Goal Mode information residing in a CA-MICS performance data base. Thanks to **Gerd Krohm** (Westdeutsche Landesbank, Düsseldorf, GERMANY) and **Bryant Osborn** (NationsBank, Richmond, Virginia) for providing CA-MICS test data so the WLM Component could be enhanced to support CA-MICS.
- C Add code that will recognize and discard certain erroneous data in SMF/RMF records.
- C Correct code based on errors reported by users.