



Product Update Bulletin 2010-2

This product update forwards changes to both software and documentation. The software update is Release 20.2 of CPEXPERT. The release number indicates that it is the second release of 2010.

With Release 20.2, CPEXPERT has been updated to: (1) support z/OS Version 1 Release 12; (2) support IBM's new zEnterprise System (z196) processors, (3) provide additional analysis and features in the WLM Component; (4) provide additional analysis in the CICS Component, (5) provide additional analysis in the WebSphere MQ Component; (6) provide updated documentation on CD; and (7) correct errors that have been reported.

- **Support z/OS Version 1 Release 12 (z/OS V1R12).** z/OS V1R12 was made Generally Available (GA) by IBM in September 2010. Since Computer Management Sciences is a Partner in Development with IBM, I normally can provide support for new IBM releases within 30 days of General Availability of the new IBM release.
 - All CPEXPERT components have been updated to provide support for z/OS V1R12.
 - All CPEXPERT documentation has been updated with references to applicable z/OS V1R12 documents from IBM.
- **Support z/Enterprise System (z196) processors.** zEnterprise System (z196) was made Generally Available (GA) by IBM in September 2010.
 - All relevant CPEXPERT components have been updated to provide support for z/Enterprise System (z196) processors.
 - All relevant CPEXPERT documentation has been updated with references to applicable z/Enterprise System (z196) documents from IBM.
- **Updates to the WLM Component.** The following rules and features have been added to the WLM Component:
 - **Added new rules.** The following rules have been added to the WLM Component:
 - Rule WLM770 (*SMF records were lost because the log stream was full*) reports that the log stream used by SMF was full and SMF records were lost. This finding applies only with z/OS Version 1 Release 12 (V1R12) and subsequent versions of z/OS.

- Rule WLM472 (*SMF records were dropped by SMF flood facility filter*) reports that SMF records were dropped from writing to the SMF log stream because SMF filtering logic had detected a “flood” condition of the records. As a result of the flood condition, the SMF record types were lost. This finding applies only with z/OS Version 1 Release 12 (V1R12) and subsequent versions of z/OS.
- **Modified rules.** The following WLM Component rules¹ have been modified:
 - Rule WLM535 (*Significant zAAP-eligible work executed on a CP*) reports that a significant amount of zAAP-eligible work executed on a central processor (CP) rather than executing on zAAP. The default guidance causes CPEXpert to produce Rule WLM535 when more than 10% of total zAAP-eligible work executed on a central processor. If the system has very little zAAP-eligible work, the guidance based on 10% of total zAAP-eligible work executing on a central processor would not be meaningful. The new **WLM535G1** guidance variable can be used to suppress Rule WLM535 when less than the specified percent of central processor time is used by zAAP-eligible work.
 - Rule WLM575 (*Significant zIIP-eligible work executed on a CP*) reports that a significant amount of zIIP-eligible work executed on a central processor (CP) rather than executing on zIIP. The default guidance causes CPEXpert to produce Rule WLM575 when more than 10% of total zIIP-eligible work executed on a central processor. If the system has very little zIIP-eligible work, the guidance based on 10% of total zIIP-eligible work executing on a central processor would not be meaningful. The new **WLM575G1** guidance variable can be used to suppress Rule WLM575 when less than the specified percent of central processor time is used by zIIP-eligible work.
 - Rule WLM651 (*Lock Contention was high for the indicated structure*) reports that lock contention for the indicated structure was higher than guidance provided by IBM for normal lock contention. IBM documents suggest that most CICS/DBCTL workloads should have less than 1% lock contention, and most IMS/DB2 workloads should have less than 2% lock contention. If there were few requests, the guidance based on 2% of the total requests experiencing lock contention would not be meaningful. The new **WLM651GD** guidance variable can be used to suppress Rule WLM651 when there was less than the specified request rate (the total number of lock-related requests per second).
 - Rule WLM651 (*False lock Contention was high for the indicated structure*) reports that false lock contention for the indicated structure was higher than guidance provided by IBM. If there were few requests, the guidance based on 0.5% of the total requests experiencing false lock contention would not be meaningful. The **WLM652GD** guidance variable can be used to suppress Rule WLM652 when there was less than the specified request rate (the total number of lock-related requests per second).

¹Thanks to **Rick Ralston** (Humana, KY) for suggesting these modifications.

- **Management Overview of CPEXpert findings.** One of the common problems with the WLM Component's analysis and reporting is that the output often is voluminous. This particularly is the case when CPEXpert is analyzing a relatively large number of systems, and CPEXpert is analyzing all of the Analysis Areas. Such voluminous output is excellent for detailed review by technical staff, but is not appropriate for management review.

An optional Management Overview² of the WLM Component findings is available with CPEXpert Release 20.2. This Management Overview is produced by default when the SAS ODS HTML feature of CPEXpert is enabled. Within the Management Overview section of the analysis results, CPEXpert produces a listing just of the rules that were produced, shown by each system being analyzed. Each rule has a link to the supporting CPEXpert pdf documentation, in case a manager wishes to read information about the problems that CPEXpert is reporting. The normal detailed CPEXpert report follows the Management Overview.

CPEXpert users also should remain aware that there is an optional "email feature" with each CPEXpert component. This email feature sends an email to designated addresses, reporting the specific CPEXpert rules that were produced, and showing the number of times each rule was produced.

- **Restricting enqueue analysis.** Code has been added to exclude from analysis specified Job Names, Major Resource Names, and Minor Resource Names.
- **Other Changes.** Other changes to the WLM Component with CPEXpert Release 20.2 were to correct errors reported by users.
- **Updates to the CICS Component.**
 - **Added new rule.** The following rule has been added to the CICS Component

Rule CIC145 (*Programs were defined with DATALOCATION(BELOW)*) reports that programs were defined with DATALOCATION(BELOW), and thus cannot adequately exploit storage above the 16MB Line. The programs can handle only 24-bit addresses for data, and must be given only data located below the 16MB Line. This finding applies only with CICS/TS for z/OS Release 4.1, because the Program Definition Statistics were not available until this release of CICS.
 - Other changes to the CICS Component with CPEXpert Release 20.2 were to correct errors reported by users.
- **Updates to the DB2 Component.** Changes to the DB2 Component with CPEXpert Release 20.2 were to correct minor errors reported by users.

²Thanks to Kelly Vogt (Humana,KY) for suggesting this Management Overview.

- **Updates to the DASD Component.** Code has been added to exclude from resource enqueue analysis specific Job Names, Major Resource Names, and Minor Resource Names. Other changes to the DASD Component with CPEXpert Release 20.2 were to correct errors reported by users.

- **Updates to the WebSphere MQ Component.** The following changes have been made to the WebSphere MQ Component:
 - **Added new rules.** The following rules have been added to the WMQ Component:
 - Rule WMQ174 (*High ratio of empty pages scanned to valid MQGET calls on queue*) reports that there was a high ratio of empty pages scanned to the number of valid MQGET calls issued for a non-indexed request/reply-to queue. This analysis is done only if SMF Type 116 records are available.
 - Rule WMQ174 (*High ratio of messages skipped to valid MQGET calls on queue*) reports that there was a high ratio of messages skipped to the number of valid MQGET calls issued, for a non-indexed request/reply-to queue. This analysis is done only if SMF Type 116 records are available.
 - **Updated documentation:**
 - References have been added for “Capacity Planning and Tuning for WebSphere z/OS MQ Version 7.0”.
 - References have been added, where appropriate, for “Using statistics and accounting in WebSphere MQ for z/OS Version 7.0.1, March 2010”.
 - **Other Changes.** Other changes to the WebSphere MQ Component with CPEXpert Release 20.2 were to correct errors reported by users.

- **Updated documentation on CD.** This release provides all updated documentation to reflect new or revised rules. The CPEXpert documentation is accessible via Adobe Acrobat Reader. A free version of Adobe Acrobat Reader is available at <http://www.adobe.com/products/acrobat/readstep2.html>.

- **Add a log of changes to code.** I’ve added a log of changes to the CPEXpert code for Release 20.2. Additionally, I’ve described additions or changes to USOURCE members in the CHANGES log. This log is titled CHANGES and shows each module changed (except when the change is minor). Interested users can review the CHANGES log to see what code changes have been made, and can easily identify new guidance variables. I’ve followed the MXG model for releases (that is, the CHANGES log shows changes in the new release, while the CHANGESS log is an accumulation of changes).

- **Add a log of errors reported.** I've added a log of all errors reported by users for CPEXpert Release 20.1. This error log is in the GENER201 module in SOURCE.

FTP download

CPEXpert Release 20.2 (both code and documentation) is available via ftp download from the CPEXpert ftp server. If you prefer this method of obtaining the update, please send an email to Don_Deese@cpexpert.com to obtain instructions for ftp download, obtain your user id, and obtain your password. **If you have requested ftp download in past, I will automatically send you the ftp download instructions.**

Installation

I suggest that you use the following steps to install Release 20.2;

- Create a new PDS titled "prefix.CPEXPERT.V202.SOURCE".
- Create a new PDS titled "prefix.CPEXPERT.V202.USOURCE".
- Install CPEXpert into the "prefix.CPEXPERT.V202.SOURCE" using the normal installation procedures described in the *CPEXpert Installation Guide*.
- Install CPEXpert into the "prefix.CPEXPERT.V202.USOURCE" using the normal installation procedures described in the *CPEXpert Installation Guide*. This step will cause the email macros to be loaded into USOURCE.
- Copy your **old** USOURCE members into "prefix.CPEXPERT.V202.USOURCE". This step should be done so you do not have to recreate all of your unique parameters³.
- If you elected to receive updates to CPEXpert on CD, the software is distributed on the CD that contains the CPEXpert user documentation.
 - **Installing CPEXpert from CD to MVS.** Copy the *source.202.ebc* file from cd:\software\ as binary, to CPEXPERT.TAPE.RELV202, allocated as DSORG=PS,RECFM=FB,LRECL=80,BLKSIZE=0,AVGREC=K,SPACE(80,(150,50)), DSN=CPEXPERT.RELV2022.IEBUPDTE. The *source.202.ebc* file is in standard IEBUPDTE format.

³The exception to this statement is if you chose to use the "yesterday" option in selecting data. The "yesterday" calculation is done by a PREVIOUS macro contained in USOURCE(GENGUIDE). The PREVIOUS macro is placed in USOURCE so you can select "yesterday" as the immediate previous day, or can define "yesterday" as any other previous day you chose. Placing the PREVIOUS macro in USOURCE(GENGUIDE) allows you to make such a modification, without your altering a SOURCE member. Consequently, if you copy your old USOURCE(GENGUIDE) member to CPEXPERT.V202.USOURCE, you may wish to append the PREVIOUS macro from your old USOURCE(GENGUIDE) into your new USOURCE(GENGUIDE).

Use the JCL described in Exhibit 2-1 of the *CPEXpert Installation Guide* to install the CPEXpert software. Copy your old USOURCE members as described above.

- **Installing CPEXpert from CD to PC:** Copy the cd:\software\source\ on the CD to prefix\cpexpert\rel202\source. Copy the cd:\software\usource\ on the CD to prefix.cpexpert\rel202\usource using the normal installation procedures as described in the *CPEXpert Installation Guide*. This step will cause the email macros to be loaded into usource. Copy your old usource members as described above. Make sure that you update your usource(genguide) member to specify **%LET SOURCE =user_directory;** statement to point to the new SOURCE directory.
- **Downloading via ftp:** If you elected to download updates from my ftp server, you can copy the *source.202.ebc* file to CPEXPERT.TAPE.RELV202, allocated as DSORG=PS,RECFM=FB,LRECL=80,BLKSIZE=0,AVGREC=K,SPACE(80,(150,50)),DSN=CPEXPERT.RELV202.IEBUPDTE. The *source.202.ebc* file is in standard IEBUPDTE format. The updated CPEXpert user documentation also will be available on the ftp site. It is your option whether you wish to download only the manuals, or also download the individual rule documents. If you wish to download the individual rule documents, they will be available as pdf files in *Individual_Rule_Documentation.zip* on the ftp site.
- If you have implemented the CPEXpert option to produce output to the SAS Output Delivery System (ODS) and if you have exercised the LINKPDF option so you can “click” on a rule in the html output to see the documentation, **please remember to load the new individual rule documentation onto your system.**
- If you chose to implement the xxxHTML option (e.g., WLMHTML) to provide your own SAS ODS HTML statement parameters, please place your own macros into USOURCE and concatenate the USOURCE pds ahead of the SOURCE pds.
- If you chose to implement the CPEXpert email option, please update the xxxEMAIL modules in USOURCE to reflect your unique email requirements.

Thanks

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

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Don Williams(University of North Carolina Hospitals, NC)

Please send me an email 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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