



Product Update Bulletin 2015-1

This product update forwards changes to both software and documentation. The software update is Release 25.1 of CPEXPERT. The release number indicates that it is the first release of 2015. With Release 25.1, CPEXPERT has been updated to: (1) support IBM's new z13 mainframe server, (2) provide additional analysis and features in the WLM Component; (3) provide updated documentation; and (4) correct errors that have been reported.

NOTES:

- 1 - CPEXPERT Release 25.1 primarily deals with IBM's new z13. You do not need to install Release 25.1 unless you are using z13. You can, of course, download revised CPEXPERT documentation for the WLM Component if you are interested in learning more about z13 features (particularly, the simultaneous multithreading [SMT] features).
- 2 - You need to have MXG 33.05 or later versions of MXG installed if you execute CPEXPERT Release 25.1 since MXG 33.05 provides required z13 data in SAS files.

- **Support IBM's z13.** IBM's z13 mainframe server was announced by IBM in January 2015.
 - All relevant CPEXPERT components have been updated to provide support for z13 mainframe server.
 - All relevant CPEXPERT documentation has been updated with references to applicable z13 mainframe server documents from IBM.
- **Provide additional analysis in the WLM Component.** With CPEXPERT Release 25.1, new rules have been added, and a new optional report has been added.

New Rules. The following rules have been added to the WLM component::

Rule WLM280 (*Top "n" jobs using CPU in subsystem*) reports that¹ certain jobs executing in a subsystem used the most CPU. The finding can be used to identify the top "n" jobs within a specific subsystem and job category that used the most CPU resources.

Rule WLM909 (*SMF Type 113 records were not available*) reports that SMF Type 113 records were not available for analysis. IBM introduced the **CPU Measurement Facility (MF)** with the System z10. The CPU MF is an integrated hardware monitor consisting of two facilities: the *CPU Measurement Counter Facility* and the *CPU Measurement Sampling Facility*. IBM software records measurements taken by the CPU MF in SMF

¹Thanks to **Harald Seifert** (HUK-Coburg, Germany) for suggesting this rule.

Type 113 records. IBM now strongly recommends that the CPU Measurement Facility be used continuously to collect SMF type 113 records for all your systems. IBM now states² "Capturing CPU MF data is an Industry "Best Practice". With z13, the CPU Measurement Facility is *active regardless of whether the data is recorded to SMF*.

Rule WLM950 (*SMT MT-2 Mode was not effective for zIIP logical core(s) in LPAR*) reports that the simultaneous multithreading (SMT) IEAOPTxx parameter **MT_ZIIP_MODE=2** specification with z13 was not effective for the zIIP logical core(s) in the LPAR. The MT_ZIIP_MODE=2 specification controls the Multithreading Mode to enable up to two concurrent active threads executing in a logical core. Under some conditions, having multiple threads active in a logical core yields poor performance for the workload executing in the LPAR. Essentially, the Rule WLM950 finding means that the average zIIP logical core performance with multithreading was less than the performance of the average zIIP logical core would have been without multithreading enabled.

The main changes to the **CICS Component** with CPEXpert Release 25.1 were to correct errors reported by users.

- **Updated documentation.** This release provides 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://get.adobe.com/reader/>.

- **Add a log of changes to code.** A log of changes to the CPEXpert code for Release 24.1 has been included, and additions or changes to USOURCE members are included 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. CPEXpert follows 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).

FTP download

CPEXpert Release 25.1 (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, the ftp download instructions will automatically be sent to you.**

²"2015 CPU MF Update", John Burg (IBM Corporation), SHARE March 2015, Seattle

Installation

I suggest that you use the following steps to install Release 25.1:

- Create a new PDS titled "prefix.CPEXPERT.V251.SOURCE".
- Create a new PDS titled "prefix.CPEXPERT.V251.USOURCE".
- Install CPEXpert into the "prefix.CPEXPERT.V251.SOURCE" using the normal installation procedures described in the *CPEXpert Installation Guide*.
- Install CPEXpert into the "prefix.CPEXPERT.V251.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.V251.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.251.ebc* file from cd:\software\ as binary, to CPEXPERT.TAPE.RELV251, allocated as DSORG=PS,RECFM=FB,LRECL=80,BLKSIZE=0,AVGREC=K,SPACE(80,(150,50)), DSN=CPEXPERT.RELV251.IEBUPDTE. The *source.251.ebc* file is in standard IEBUPDTE format.

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\rel251\source. Copy the cd:\software\usource\ on the CD to prefix.cpexpert\rel251\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.251.ebc* file to CPEXPERT.TAPE.RELV251, allocated as DSORG=PS,RECFM=FB,LRECL=80,BLKSIZE=0,AVGREC=K,SPACE(80,(150,50)), DSN=CPEXPERT.RELV251.IEBUPDTE. The *source.251.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 altering a SOURCE member. Consequently, if you copy your old USOURCE(GENGUIDE) member to CPEXPERT.V251.USOURCE, you may wish to append the PREVIOUS macro from your old USOURCE(GENGUIDE) into your new USOURCE(GENGUIDE).

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 the *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 proposed new features, graciously sent me test data, suggested documentation changes since the last Update Bulletin, or discovered errors:

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Harald Seifert (HUK-Coburg, Germany)
Daniel Ternosky, Contractor" (Social Security Administration)
Michael P. "MP" Welch (Bank of America)

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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