



Product Update Bulletin 2014-1

This product update forwards changes to both software and documentation. The software update is Release 24.1 of CPEXPERT. The release number indicates that it is the first release of 2014. With Release 24.1, CPEXPERT has been updated to: (1) provide changes to the WLM Component, (2) provide changes to the CICS Component, (3) provide changes to the DASD Component, (4) provide updated documentation; and (5) correct errors that have been reported.

- **Changes to the WLM component.** The following changes have been made to the WLM Component:
 - **Added new rule.** The following rule has been added to the WLM Component:
 - **Rule WLM096** (*Interrupt delay time was significant percent of DASD response*) reports that interrupt delay time was a significant percent of DASD I/O response time experienced by the LPAR. This finding is based on data that is available only with zEC12, and with APAR OA37160 and APAR OA39993 applied. Among other considerations, this analysis reports that excessive interrupt delay time could be caused by an insufficient share of CEC capacity assigned to the LPAR; could be caused by an inadequate number of logical processors assigned to the LPAR; or could be caused by an inadequate number of a logical processor enabled by z/OS to handle interrupt processing.
 - **Modified rule.** The following WLM Component rule has been modified:
 - **Rule WLM080** The output from Rule WLM080 has improved¹ with CPEXPERT Release 24.1, resulting in a concise and more useful output. With previous releases of CPEXPERT, the output from Rule WLM080 showed each job that was initiated when the job classes assigned to the service class conflicted between JES initiators and the WLM initiators, and the time that the job was started. Unfortunately, this approach generated a voluminous and unmanageable amount of output when CPEXPERT analyzed data from large computer sites where hundreds or even thousands of jobs might be involved with conflicting JES and WLM initiators.
 - **Other Changes.** Other changes to the WLM Component were to correct errors reported by users.

¹Thanks to Tom Crutcher (Humana, Inc. KY) for suggesting this improved reporting.

- **Changes to the CICS component.** The following changes have been made to the CICS Component:
 - **Added new rules.** The following rules have been added to the CICS Component:
 - **Rule CIC630** (*Buffer Management Facility entered Accelerated Mode*) reports that Buffer Management Facility (BMF) algorithm entered Accelerated Mode. For the 31-bit buffer pool, the BMF algorithm entered Accelerated Mode because the 31-bit buffer total size was greater than 120% and less than two times the value of *RLS_MAX_POOL_SIZE*. For the 64-bit buffer pool, the BMF algorithm entered Accelerated Mode because the total 64-bit buffer pool size was greater than 90% and less than 100% of *RLSAboveTheBarMaxPoolSize* value.

This finding applies only when VSAM record-level sharing (RLS) is used by CICS. This analysis is done based on SMF Type 42 (Subtype 19: *VSAM RLS local buffer manager LRU statistics*). These statistics are available in an MXG performance data base, as the TYPE42X1 file.
 - **Rule CIC631** (*Buffer Management Facility entered "Panic" Mode*) reports that the Buffer Management Facility (BMF) algorithm entered "Panic" Mode. For the 31-bit buffer pool, The BMF algorithm enters Panic mode when the 31-bit buffer pool total size was greater than two times the *RLS_MAX_POOL_SIZE* value, or 1728 MB. For the 64-bit buffer pool, the BMF algorithm entered "Panic" Mode when the 64-bit buffer pool size was greater than the *RLSAboveTheBarMaxPoolSize* value.

This finding applies only when VSAM record-level sharing (RLS) is used by CICS. This analysis is done based on SMF Type 42 (Subtype 19: *VSAM RLS local buffer manager LRU statistics*). These statistics are available in an MXG performance data base, as the TYPE42X1 file.
 - **Other Changes.** Other changes to the CICS Component were to correct errors reported by users.
- **Changes to the DASD component.** The following changes have been made to the DASD Component:
 - **Added new rules.** The following rules² have been added to the DASD Component:
 - **Rule DAS165** (*Interrupt Delay Time was major cause of I/O delay*) reports that the Interrupt Delay Time was the major cause of delay in DASD response for the device.
 - **Rule DAS265** (*Interrupt Delay Time was major cause of I/O delay-Loved One*) reports that the Interrupt Delay Time was the major cause of delay in DASD response to "loved one" work for the device.

² These finding apply only if the environment is for zEC12 and appropriate APARs have been installed. Please note that Interrupt Delay time is not included in Device Response Time as reported by RMF.

- **Modified rules.** The following DASD Component rules have been modified by including a column titled "IDT" showing Interrupt Delay Time. This column will be included in the report if the environment is for zEC12 and appropriate APARs have been installed. Interrupt Delay Time is **not** included in the I/O Response time (RESP) value as reported by RMF.
- **Rule DAS000** (*Sysplex performance characteristics of significant volumes*).
- **Rule DAS050** (*Performance characteristics of significant volumes*).
- **Rule DAS055** (*Performance characteristics of significant volumes, from the perspective of the "loved one" workload*).
- **Rule DAS100** (*Volume with worst overall performance - detailed analysis*).
- **Rule DAS102** (*Volume with next worst overall performance - detailed analysis*).
- **Rule DAS200** (*Volume with worst overall performance from the perspective of the critical workload*).
- **Rule DAS 202** (*Volume with next worst overall performance from the perspective of the critical workload*).
- **Modified rules.** The following DASD Component rules also have been modified by including Interrupt Delay Time³ as a factor in the analysis of major causes of I/O delay experienced by applications accessing the volumes:
 - **Rule DAS100** (*Volume with worst overall performance - detailed analysis*).
 - **Rule DAS102** (*Volume with next worst overall performance - detailed analysis*).
 - **Rule DAS200** (*Volume with worst overall performance from the perspective of the critical workload*).
 - **Rule DAS 202** (*Volume with next worst overall performance from the perspective of the critical workload*).
- **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

³ "INT DELAY TIME" will be shown in the MAJOR PROBLEM column if Interrupt Delay Time is a major cause of I/O delay.

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 CHANGES log is an accumulation of changes).

FTP download

CPEXpert Release 24.1 (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.**

Installation

I suggest that you use the following steps to install Release 24.1:

- Create a new PDS titled "prefix.CPEXPERT.V241.SOURCE".
- Create a new PDS titled "prefix.CPEXPERT.V241.USOURCE".
- Install CPEXpert into the "prefix.CPEXPERT.V241.SOURCE" using the normal installation procedures described in the *CPEXpert Installation Guide*.
- Install CPEXpert into the "prefix.CPEXPERT.V241.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.V241.USOURCE". This step should be done so you do not have to recreate all of your unique parameters⁴.
- 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.241.ebc* file from cd:\software\ as binary, to CPEXPERT.TAPE.RELV241, allocated as DSORG=PS,RECFM=FB,LRECL=80,BLKSIZE=0,AVGREC=K,SPACE(80,(150,50)), DSN=CPEXPERT.RELV241.IEBUPDTE. The *source.241.ebc* file is in standard IEBUPDTE format.

⁴The 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.V241.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\rel241\source. Copy the cd:\software\usource\ on the CD to prefix.cpexpert\rel241\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.241.ebc* file to CPEXPRT.TAPE.RELV241, allocated as DSORG=PS,RECFM=FB,LRECL=80,BLKSIZE=0,AVGREC=K,SPACE(80,(150,50)), DSN=CPEXPRT.RELV241.IEBUPDTE. The *source.241.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 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:

Scott Barry (SBBWorks, Inc, FL)
Jim Barton (Department of Veterans Affairs, TX)
Tom Crutcher (Humana, KY)
Barry Merrill (Merrill Consultants, TX)
Rick Ralston (Humana, KY)
Harald Seifert (HUK-Coburg, Germany)

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

Computer Management Sciences, Inc.
634 Lakeview Drive
Hartfield, Virginia 23071-3113
(804) 776-7109
www.cpexpert.com
Don_Deese@cpexpert.com