IBM z Processor Capacity Reference News

Click here to go to change history

IBM z Processor Capacity Reference (IBM zPCR) is a product of IBM Capacity Planning Support Tools (IBM CPS Tools), part of the IBM Washington Systems Center (IBM WSC), located in Herndon, Virginia. The tool is available to IBM Employees, IBM Business Partners, and IBM Clients. **IBM zPCR** can be obtained the following way:

- IBM Employees: **https://supportcontent.ibm.com/support/pages/node/6354531**
- IBM Business Partners: contact **cpstools@us.ibm.com**
- IBM Clients: **https://www.ibm.com/support/pages/node/6354029**

Support Contact

Support concerning IBM zPCR function, usability, satisfaction, etc. is available as follows:

- Email: **zpcr@us.ibm.com**

Registration

Registration is necessary to use IBM zPCR. You will be prompted the first time that IBM zPCR is initialized. The same registration process is required for each of the other IBM CPS Tools. The purpose of registration is:

1. Maintain an email contact should important information relative to IBM zPCR needs to be disseminated.
2. Understand usage for the purpose of justifying resources needed to maintain the tool.

Registration via internet requires access to a URL. In certain instances, installation firewalls may need to be updated to allow internet access, per the table below.

IBM CPS Tools Registration URL
https://cps-registration.mn91mph658q.us-south.codeengine.appdomain.cloud/

If registration via internet fails, an e-mail registration process is available.

Java Runtime

IBM zPCR requires the IBM Java runtime environment. The IBM JRE supporting this tool is independent of any other installed Java environment. There is no way to configure this tool to use any Java other than the IBM JRE.

IBM Employees Obtain materials from the IBM Intranet website specified above.

Windows users obtain the necessary IBM JRE (Semeru 21) by downloading/installing **IBM zPCR**, available as **zPCRInstallWithJava.exe** (~74 MB). This install package includes the IBM JRE.

MacOS users obtain **IBM zPCR** using the install package **zPCR-ALL-mac.pkg** (~71 MB).

IBM Business Partners Obtain materials from a controlled access Box folder.

Windows users obtain the necessary IBM JRE (Semeru 21) by downloading/installing **IBM zPCR**, available as **zPCRInstallWithJava.exe** (~74 MB). This install package includes the IBM JRE.

MacOS users obtain **IBM zPCR** using the install package **zPCR-ALL-mac.pkg** (~71 MB).

IBM Clients Obtain materials from the IBM Internet website specified above.

Windows users obtain the necessary IBM JRE (Semeru 21) by downloading/installing **IBM zPCR**, available as **zPCRInstallWithJava.exe** (~74 MB). This install package includes the IBM JRE.

MacOS users obtain **IBM zPCR** using the install package **zPCR-ALL-mac.pkg** (~71 MB).

Note: When other Java runtime environments have been installed and configured with Java security enabled, a fresh install of IBM CPS Tools Java may fail to execute properly. This has been observed in a very small number of IBM CPS Tools Java installations. Should this situation occur, a potential solution is to:

1) Uninstall the other Java
2) Uninstall IBM zPCR (will also uninstall IBM CPS Tools Java)
3) Re-install IBM zPCR
4) Re-install the other Java

Installation Tips, Usage Notes, and Problem Solutions

1. The **IBM zPCR** tool and its supporting Java are intended to be installed to their own program folders. The default assignments are subfolders under **C:\CPSTOOLS**, which may be changed at install time. **Do not install to *"C:\Program Files"***, since various user files are written to several install subfolders.
2. The current development environment for **IBM zPCR** is Windows 11. **IBM zPCR** has been successfully installed and run under Windows 10, 8 and 7. However, reported problems can be addressed only if they can be recreated under Windows 11.
3. Users no longer require Window's ***Administrator*** authority to install or run IBM CPS Tools. A tool can only be run on the userID to which it was installed.
4. For the IBM Java runtime environment, a minimum 1 GB of memory is recommended in order to run smoothly.
5. A monitor resolution of at least 1280x1024 is required; higher is extremely desirable. At the minimum resolution, some windows may require the entire vertical or horizontal dimension (see next item).
6. The Windows task bar may prevent some windows from being entirely visible. This situation can be corrected by going to Windows task bar properties and checking ***Auto hide the taskbar***.
7. Windows desktop configured to use large fonts (i.e., ***Display Text size 150%***) may cause certain IBM zPCR windows to render poorly. We believe that the problem windows have been corrected. Please inform the owners at the IBM zPCR support ID if any such problem persists.

Documentation and Education

Available from your IBM CPS Tools distribution site:

- ***IBM zPCR User's Guide*** (PDF)
- ***IBM zPCR Demonstration*** (3 short videos)
- ***IBM zPCR Familiarization Exercise*** (PDF)
- ***LPAR Concepts*** (video)
- ***Introduction to IBM's LSPR*** (PDF visuals and voice recording)

Included with the IBM zPCR package distribution materials:

- ***IBM zPCR Online Help*** (User's Guide without screen captures)
- ***LSPR FAQ*** (PDF) discusses assumptions for the current LSPR tables
- ***LSPR Workloads*** (PDF) discusses LSPR workload categories and how to choose
- ***QuickStart Guide*** (PDF) provides step-by-step instructions for defining LPAR configurations and making capacity comparisons thereof.

Disclaimer

The performance data contained in this tool was derived by IBM in a controlled environment. A Client's actual performance results may vary significantly. Accordingly, IBM provides no representations or assurances that a client will obtain the same or similar results.

IBM zPCR News

Current Version / Recent Change History

Version 9.7.5 (10/28/2025)

- ***IBM Java***: A newer version of the IBM Semeru 64-bit runtime environment is included with the version 9.7.5 install package. Therefore, you will be required to uninstall a previous IBM zPCR version before installing **IBM zPCR 9.7.5**.
- ***LPAR Configuration Capacity Planning*** function:
  - Added a new informational dialog which is displayed when the RCP drawer contention percentage increases significantly since this can impact RCP pool capacity. RCP drawer contention occurs when GP/zIIP RCPs and IFL/ICF RCPs are on the same CPC drawer.
  - Improved usability of the **LCP Alternatives** window by only showing EDF/RMF Unparked LCP values greater than zero and always showing Unparked LCP values even if they are the same as User Assigned values. This allows the user to assign the Unparked LCP values after changing the User Assigned values or using the Optimal LCP values.
  - Loading EDFs from a guest under z/VM or from a zPDT environment is no longer supported since EDFs from these environments are missing critical information required for capacity planning.
- **Corrections and Improvements:**
  - Exception handling has been enhanced to notify users when an error file has been generated.
- **Current EDF support:**
  - z/OS - **CP3KEXTR version 4.39** available on 10/28/2025
  - z/VM - **CP3KVMXT version 2.9k**, available on 10/28/2025
- ***Documentation***:
  - The ***IBM zPCR User's Guide*** and ***Online Help*** have been updated.
  - The ***zPCR Familiarization Exercise*** has been updated. It loads a z15 configuration from EDF and then sizes a reasonable IBM z17 upgrade. The document can be found on the zPCR download page. The z15 EDF, included with zPCR, can be found in the ***EDF Files*** folder.

Version 9.7.4 (07/22/2025)

- ***LPAR Configuration Capacity Planning*** function:
  - SCP: ***z/OS-3.2*** support added for z17, z16, and z15
  - Fixed problem with the Host Capacity Comparison Summary and Host Capacity Comparison by Pool reports showing incorrect results for Total capacity when using the Single-CP view for LPAR configurations which have one or more "Not IPL'd" partitions.
  - Fixed problem loading EDF files with a ".txt" file extension.
- **Corrections:**
  - Fixed problem restoring all default preferences on Preferences window.
  - Fixed problem with zAAP/zIIP Capacity Estimator initialization.
- **Current EDF support:**
  - z/OS - **CP3KEXTR version 4.38** available on 06/17/2025
  - z/VM - **CP3KVMXT version 2.9j**, available on 06/17/2025
- ***Documentation***:
  - The ***IBM zPCR User's Guide*** and ***Online Help*** have been updated.
  - The ***IBM LSPR Workloads Document*** has been updated.
  - The ***IBM zPCR External Study File Layout*** document has been updated.

IBM zPCR News

Version 9.7.3 (05/06/2025)

- The ***LinuxONE Emperor 5 (9175-ML1)*** processor family has been added, with 208 IFL models and 1 General Purpose model. Various drawer configurations provide up to 208 real CPs, which can be configured as IFL engines. The processor designation is 9175-7xx for full-speed IFL models.
- ***LPAR Configuration Capacity Planning*** function:
  - The ***LinuxONE Emperor 5 (9175-ML1)*** may be defined as the LPAR host processor. Real CPs may be defined as IFLs (maximum 208) and optionally 1 GP.
  - Fixed problem loading zPCR study files that contain LPAR configurations for LinuxONE with SSC partitions.
- **Current EDF support:**
  - z/OS - **CP3KEXTR version 4.37** available on 01/07/2025
  - z/VM - **CP3KVMXT version 2.9i**, available on 12/13/2024
- ***Documentation***:
  - The ***IBM zPCR User's Guide*** and ***Online Help*** have been updated.
  - The ***IBM LSPR Workloads Document*** has been updated.
  - The ***LSPR_ZPCR_FAQ Document*** has been updated.
  - The ***IBM zPCR External Study File Layout*** document has been updated. Tags now accept IBM LinuxONE Emperor 5 (9175-ML1) designations.

IBM zPCR News

Version 9.7.2 (04/08/2025)

- ***IBM Java***: A newer version of the IBM Semeru 64-bit runtime environment is included with the version 9.7.2 install package. Therefore, you will be required to uninstall a previous IBM zPCR version before installing **IBM zPCR 9.7.2**.
- The ***IBM z17 (9175-ME1)*** processor family has been added, with 337 General Purpose models (208 full-speed and 129 sub-capacity) and 208 IFL models. Real CP maximum settings, based on number of drawers, are 43, 90, 136, 183, and 208. Real CPs may be configured as General Purpose (maximum of 43 on /400, /500, and /600 speeds), zIIP, IFL, or ICF.
- **LSPR capacity data is based on z/OS-3.1**
  - The ***LSPR Multi-Image Table*** includes all IBM Z processor families and models.
  - The ***LSPR Single-Image Table*** includes all IBM Z processor families and models for up to 30 real CPs (i.e., only reasonable single-image configurations are displayed).
  - For z10EC/BC and later processors, z/OS LSPR data is represented with HiperDispatch on.
  - IBM z17 does not support ***Power Saving Mode***.
  - z13 and later processors support ***Simultaneous Multi-Threading*** (***SMT***): LSPR table for IFL capacity table can be displayed with an estimated ***SMT Benefit***, which can be set by the user.
  - CFCC data is not displayed in any LSPR table but is included for the purpose of sizing partitions running it. CFCC Level 26 is assumed for IBM z17 processor models.
- ***LPAR Configuration Capacity Planning*** function:
  - The ***IBM z17 (91751-ME1)*** may be defined as the LPAR host processor. Real GP, zIIP, IFL, and ICF CPs may be configured up to the maximum allowed.
  - **System Recovery Boost (SRB)** is supported for z15 and later processors. If SRB was active during a captured EDF (or RMF) interval, windows will include relevant information.
  - ***SMT Benefit*** - ***SMT*** is supported on zIIP and IFL logical CPs for z13 and later processors. SMT is supported by z/OS-2.1 (or later), z/VM-6.3 (or later), and Linux.
  - ***Secure Service Container (SSC)*** may be defined as the SCP (and workload) for IFL and GP partitions.
- **Corrections and Changes:**
  - Added support to enable SMT for SSC IFL partitions
  - Fixed problem loading RMF CPU Activity Report for z/OS 3.1
- **Current EDF support:**
  - z/OS - **CP3KEXTR version 4.37** available on 01/07/2025
  - z/VM - **CP3KVMXT version 2.9i**, available on 12/13/2024
- ***Documentation***:
  - The ***IBM zPCR User's Guide*** and ***Online Help*** have been updated with z17 (9175) details
  - The ***IBM LSPR Workloads Document*** has been updated with z17 (9175) details.
  - The ***IBM zPCR External Study File Layout*** document has been updated. Tags now accept IBM z17 9175-ME1 designations.

IBM zPCR News

Version 9.6.8 (12/18/2024)

- ***LPAR Configuration Capacity Planning*** function:
  - The Optimize SHR LCPs function has been updated to use a new improved algorithm, based on best practices, which replaces the Moderate and Minimal setting options with a single Optimal setting.
  - LSPR Workload selection for z/OS partitions no longer considers zIIPs.
    - **Note:** All LPAR configurations with CPU MF data, which were saved in a study file using a version of zPCR prior to 9.6.8, must be re-built from the EDF(s) for correct LSPR workload selection.
- Corrections and Changes:
  - Re-designed startup splash screen
  - Miscellaneous bug fixes
- Current EDF support:
  - z/OS - **CP3KEXTR version 4.36** available on 07/19/2024
  - z/VM - **CP3KVMXT version 2.9i**, available on 12/13/2024
- ***Documentation***:
  - The ***IBM zPCR User's Guide*** and ***Online Help*** have been updated.

Version 9.6.7 (09/20/2024)

- ***LPAR Configuration Capacity Planning*** function:
  - SCP: **z/VM 7.4** support added for z16 and z15
  - Partition pool colors have been changed to be consistent with pool colors used by other IBM CPS Tools.
- Corrections and Changes:
  - Minor colorization improvements to HTML output for several reports.
- Current EDF support:
  - z/OS - **CP3KEXTR version 4.36** available on 07/19/2024.
  - z/VM - **CP3KVMXT version 2.9h**, available on 06/21/2024.
- ***Documentation***:
  - The ***IBM zPCR User's Guide*** and ***Online Help*** have been updated.
  - The ***LSPR Workloads*** document has been updated for **z/VM 7.4**.

IBM zPCR News

Version 9.6.6 (07/16/2024)

- ***IBM Java***: A newer version of the IBM Java is included with the 9.6.6 install package. Therefore, you will be required to uninstall any previous version of IBM **zPCR** before installing IBM **zPCR 9.6.6**.
- ***LPAR Configuration Capacity Planning*** function:
  - The z16 ***Topology Report*** window had been enhanced to allow displaying all partitions on specific drawer(s). This window has also been enhanced to improve the usage of space.
  - The RNI formula has been updated for z16 and LinuxONE 4.
- Corrections and Changes:
  - Formerly, the z16 ***Topology Report*** window failed to display all defined partitions when switching to "***Show Partitions by Pool***" from ***Partition Detail Report*** window.
- Current EDF support:
  - z/OS - **CP3KEXTR version 4.35** available on 05/14/2024.
  - z/VM - **CP3KVMXT version 2.9h**, available on 06/21/2024.
- ***Documentation***:
  - The ***IBM zPCR User's Guide*** and ***Online Help*** have been updated.
  - The ***LSPR Workloads*** document is updated with the slightly revised ***z16 RNI formula***.

Version 9.6.5 (04/12/2024)

- ***Packaging*** and ***Installation***: **IBM zPCR 9.6.5** is delivered as a single install package for Windows, identical for **IBM Clients**, **IBM Business Partners**, and **IBM Employees**. This change simplifies the process of building and testing install packages.

  IBM Java: A newer version of the IBM Java is included with the 9.6.5 install package. Therefore, you will be required to uninstall the previous IBM zPCR version before installing IBM **zPCR 9.6.5**.
- ***LSPR Table*** view: On the ***LSPR Table Control*** window, the **Selected Families** group box is now limited to only include recent processor families. To view older families, select **All Families** under **Processors Displayed**.

  The **Selected Family** check box default settings may be assigned on the ***Preferences*** window.
- ***LPAR Configuration Capacity Planning*** function:
  - **EDF** and **RMF** input: When multiple files are read, if the CEC IDs are different, the resulting dialog will now identify the file considered as the Master.
  - **Measured SMT Benefit**: Using EDF or RMF input, when a zIIP or IFL partition's utilization is less than 20% or when a partition's measured SMT benefit is greater than 90%, the SMT benefit is considered as being unreliable. While transferring the LPAR configuration to zPCR, a dialog will identify such cases and the default **Estimated SMT** value will be assigned instead While viewing the ***SMT Benefit*** window, the ability to assign the **Measured SMT** benefit is provided.
- Corrections and Changes:
  - ***Control Panel*** window: Corrected problem when the LPAR host was modified, the 2nd part of the LPAR configuration name was not being updated accordingly.
  - ***LPAR Host and Partition Configuration*** window: Corrected abend problem when copying partitions from a previous zPCR multi-configuration study file.
  - ***Partition Detail Report*** window: Corrected Capacity columns lineup on CSV output.
  - ***zAAP/zIIP Loading*** window: Corrected minor inconsistency of HTML output with actual window.
- Current EDF support:
  - z/OS - **CP3KEXTR version 4.34** available on 11/28/2023.
  - z/VM - **CP3KVMXT version 2.9g**, available on 09/26/2023.
- ***Documentation***:
  - The ***IBM zPCR User's Guide*** and ***Online Help*** have been updated.

IBM zPCR News

Version 9.6.4 (01/23/2024)

- ***LPAR Configuration Capacity Planning*** function:
  - For the z16 3931(Max200)/700, a change was made to match the way RCPs per drawer are assigned when the total RCPs used is less than 192. This change compensates for the way the RCP count per drawer actually occurs.
  - ***Partition Detail Report*** window: Changes and corrections.
    - When "Not-IPL'd" partitions were defined they were incorrectly excluded in the partition count in the **Capacity Summary by Pool** table. Same for the **Configuration Summary** table on the ***Control Panel*** window.
    - Certain national language number formatting variations caused the window and zPCR to fail.
    - Inconsistent behavior when Including partitions with LCPs exceeding maximum drawer size.
    - A notice now appears for partitions whose LCP count approaches 10% of the largest drawer RCP count. When applicable, the same notice will appear on the ***Partition Definition*** window.
    - Minor correction for CSV output.
  - Current EDF support:
    - z/OS - **CP3KEXTR version 4.34** available on 11/28/2023.
    - z/VM - **CP3KVMXT version 2.9g**, available on 09/27/2023.
- ***Documentation***:
  - The ***zPCR User's Guide*** and ***Online Help*** have been updated.
  - IBM copyright information has been updated for all documentation.

Version 9.6.3 (12/11/2023)

- ***LPAR Configuration Capacity Planning*** function:
  - An estimate for ***Reserve Capacity***, when present, is now reported on the ***Partition Detail Report*** window.

    Reserve Capacity is defined as that for inactive partitions (i.e., **SCP = Not-IPL'd**) and/or installed real CPs that are in excess of what the active partitions can exploit. When this condition exist, additional columns appear on the ***Partition Detail Report*** window for (1) **Configured Capacity** (the traditionally reported value), (2) **Reserve Capacity**, and (3) **Total Capacity**.

    A section has been added to the **zPCR User's Guide** discussing Reserve Capacity.
  - Changes:
    - Corrected a problem that prevented z/OS-2.5 from being defined to a z13.
    - Consolidated notes that were repetitive in nature to a single note on several windows.
    - ***Partition Detail Report*** window: The **Calibrate Capacity** button has been moved to the menu bar under **Edit**.
  - Current EDF support:
    - z/OS - **CP3KEXTR version 4.34** available on 11/28/2023.
    - z/VM - **CP3KVMXT version 2.9g**, available on 09/27/2023.
- ***Documentation***:
  - The ***zPCR User's Guide*** and ***Online Help*** have been updated.
  - IBM copyright information has been added to all documentation.

IBM zPCR News

Version 9.6.2 (10/10/2023)

- ***zPCR Name*** has been changed to **IBM z Processor Capacity Reference (zPCR)**. This name will appear on the Logo panel and on related zPCR documentation. The logo icon has also been updated.
- ***zPCR version***: This and subsequent versions of zPCR are implementing a new naming convention. What would previously have been named **zPCR version 9.6b** is now **zPCR version 9.6.2**.
- ***IBM Java*** has been updated to Java V17 (previous version was Java V8 SR8). This change will be transparent to the user since the new Java is included as part of the install. zPCR behavior should remain consistent with previous versions.
- SCP: ***z/OS-3.1*** support added for z16, z15, and z14.
- ***Enhancements***
  - The **Distribution of RCPs** chart has been enhanced to show the count of **GP/zAAP/zIIP** and **IFL/ICF** RCP assignments for each drawer (or book). This chart can be accessed from the ***Partition Detail Report*** window. Click the **Show Distribution of RCPs Graph** toolbar icon or, from the menu bar, **Graph→Distribution of RCPs**. This enhancement should help in understanding the zPCR drawer/book contention estimation.
- ***LPAR Configuration Capacity Planning*** function:
  - When real CPs are unused or **Not IPL'd** partitions are defined capacity results will differ slightly from those of previous zPCR versions. Not IPL'd represents partitions with zero utilization. Certain calculations concerning partitioning overhead are now ignored for these situations.
  - Current EDF support:
    - z/OS - **CP3KEXTR version 4.31** available on 07/20/2023
    - z/VM - **CP3KVMXT version 2.9g**, available on 09/27/2023
- ***Documentation***:
  - The ***zPCR User's Guide*** and ***Online Help*** have been updated.
  - IBM copyright information has been added to all documentation.

Version 9.6a (06/26/2023)

- ***Enhancement***: The format of the **LPAR configuration name** on the ***Control Panel*** window has been updated, and is now displayed with two distinct levels. This update will make it easier to recognize the content of each configuration.
  - **1st level**: The default text can be set to any description desired. Renaming must be done from the ***Control Panel*** window in the same way as done in the past. The configuration icon and this text will appear on all subsequent zPCR windows.
  - **2nd level**: Text is automatically generated by zPCR as a basic description of the LPAR host processor model including information concerning the CPs of each type configured. This text will only appear on the ***Control Panel*** window. It is set when an LPAR configuration is defined manually, via EDF, via RMF, or when the LPAR host is modified.

  The 1st level name will always be saved with a study file. The 2nd level name is automatically generated when the study is loaded.
  - When reading a study file that was generated prior to zPCR version 96a, the LPAR configuration name will be assigned as the1st level.
  - When reading a zPCR version 9.6a study file into version 9.6 or prior, the 2nd level name will be lost.
- ***Changes*** and ***Corrections***:
  - ***Define Partitions*** window (GP, IFL, or ICF)*:* When a partition was added when no real CPs were available, the configuration became invalid. This most likely would happen when the CPs were dedicated, making CPs unable to be shared. Now the new partition will be defined with its included check box unchecked and with a dialog with explanation.
  - ***Partition Detail Report*** window: Sometimes the **Topology Report** button is not enabled when expected. When the mouse is on the disabled button, flyover text explaining the reason will appear. Usually the reason is that the LPAR configuration had been changed.
  - ***Utilized Capacity Report*** window, while open, taking certain actions concerning other LPAR configurations could cause a failure. This has been corrected.
  - ***Preferences***: Changing of the **Selected Families z16 (3932)** check box was not being preserved between zPCR invocations.
- ***LPAR Configuration Capacity Planning*** function:
  - Current EDF support:
    - z/OS - **CP3KEXTR version 4.30** available on 06/13/2023
    - z/VM - **CP3KVMXT version 2.9e**, available on 05/01/2023
- ***Documentation***:
  - The ***zPCR User's Guide*** and ***Online Help*** have been updated.

IBM zPCR News

Version 9.6 (04/04/2023)

- The ***IBM z16 (3932-A02)*** processor family has been added, with 156 General Purpose models (26 speed settings) and up to 68 IFL models. A single-drawer configuration provides a maximum of 32 real CPs; a 2-drawer configuration provides a maximum of 68 real CPs. CPs may be configured as General Purpose (maximum of 6), zIIP, IFL, or ICF.

  The ***3932-A02*** single frame and ***3932-AGZ*** client rack mount model may be similarly configured.

- The ***LinuxONE Rockhopper 4 (3932-LA2)*** processor family has been added. A single-drawer configuration provides a maximum of 32 real CPs; a 2-drawer configuration provides a maximum of 68 real CPs. CPs may be configured as IFLs and optionally 1 General Purpose.

  The ***3932-LA2*** single frame and ***3932-AGL*** client rack mount model may be similarly configured.

- **LSPR data is based on z/OS-2.4**
  - The ***LSPR Multi-Image Table*** includes all IBM Z processor families and models. The ***LSPR Single-Image Table*** includes all IBM Z processor families and models for up to 30 CPs (i.e., only reasonable single-image configurations are displayed).
  - For all z10 and later processors, z/OS LSPR data is represented with HiperDispatch turned on. This means that capacity results for defined LPAR configurations on these processor families also are assumed to represent HiperDispatch turned on.
  - z16, z15, z14, and z13 ***Simultaneous Multi-Threading*** (***SMT***): LSPR table IFL capacity can be displayed with an estimated ***SMT Benefit***. The ***SMT Benefit*** for IFLs can be set by the user.
  - CFCC data is not displayed in any LSPR table, but is included for the purpose of sizing partitions running it. CFCC Level 25 is assumed for z16 processor models.
- ***LPAR Configuration Capacity Planning*** function:
  - The ***IBM Z z16 3932-A02*** and ***3932-AGZ*** may be defined as the LPAR host processor. Real GP (limited to 6), zIIP, IFL, and ICF CPs may be configured up to the maximum allowed (68).
  - The ***LinuxONE Rockhopper 4 3932-LA2*** and ***3932-AGL*** may be defined as the LPAR host processor. Real CPs may be defined as IFLs (maximum 68) and optionally 1 GP.
  - ***SCP version requirement for 3932***: z/OS-2.2 or later or z/VM-7.2 or later
  - ***SMT Benefit*** - ***Simultaneous Multi Threading*** (***SMT***) is supported on z16, z15, z14, and z13 processors for zIIP and IFL CPs. SMT for zIIP CPs requires z/OS-2.1 or later. SMT for IFL CPs requires z/VM-6.3 or later. Contemporary versions of Linux and KVM also support SMT for IFL CPs.
  - ***Secure Service Container***: ***SSC*** may be defined as the SCP (and workload) for IFL and GP partitions. SSC is intended to replace zAware and zACI.
- ***Changes*** and ***Corrections***:
  - The limitation for the number of **zIIP CPs allowed** relative to the number of GPs installed is removed for the z16-A01 and z16-A02/AGZ. The dialog asking the user to treat excess zIIPs as an exception will no longer appear for z16 LPAR hosts.
  - **Measured SMT benefit** values are considered unreliable when partition utilization is less than 20%. Such values are now always set to the default estimated SMT benefit and the option to disable SMT has been removed. There are other scenarios where the measured SMT Benefit value is limited to a maximum value or rounded to zero and for all these scenarios the option to disable SMT has also been removed. The user can disable SMT manually, if desired.
  - Corrected problem when reading **z16 RMF data**.
- ***Documentation***:
  - The ***zPCR User's Guide*** and ***Online Help*** have been updated with z16 3932 details.
  - The ***LSPR Workloads Document*** has been updated with z16 3932 details.
  - The ***zPCR External Study File Layout*** document has been updated. Tags now accept IBM Z z16 3932-A02 /LA2 designations and LinuxONE 3932-AL2/AGL designations.

Version 9.5f (03/10/2023)

- ***LPAR Configuration Capacity Planning*** function:
  - ***Control Panel*** window:
    - The **LPAR Configuration Name** is automatically generated at the time the LPAR host is defined (EDF, RMF, or manual input). The name is based on the processor model with the number of CPs of each type defined. "**A**" indicates zAAP CPs; "I" indicates zIIP CPs; "**F**" indicates IFL CPs; "**C**" indicates ICF CPs. When there are duplicate names a repetition index indicator will be appended.
    - Subsequently, the configuration may be manually renamed using the method previously available. Note that whenever the LPAR host or its CP counts are changed, a new name is automatically generated.
  - ***Corrections***:
    - ***CFCC ITRs*** for z16 general purpose CPs have been revised slightly (use of GP CPs for CFCC is rare, useful only for testing). CFCC ITRs for all other processor models were correct.
    - Subsequently, an issue was found affecting all IBM Z processor models concerning CFCC ITRs for more than 16 RCPs. While CFCC supports a maximum of 16 LCPs in a partition, zPCR requires ITRs for all CPs that might reside in the ICF CP pool. This change only affects configurations where the total of ICF real CPs used exceeds 16. This change should normally result in only minor CFCC capacity differences from those of previous zPCR versions. Capacity results for other partition types are not affected.
    - While generating a zPCR **LPAR configuration from EDF** or **RMF**, for partitions that are excluded automatically, capacity values on the ***Partition Detail Report*** window were incorrect. Once the excluded partition are included, capacity values were correct.
    - Minor text corrections for CSV output.
- The ***zPCR User's Guide*** and ***Online Help*** are updated.

IBM zPCR News

Version 9.5e (12/02/2022)

- ***LPAR Configuration Capacity Planning*** function:
  - ***EDF*** or ***RMF*** input:
    - The **LPAR Configuration name** will be generated when input is from EDF or RMF. If the same EDF/RMF is used for multiple configurations, a repetition index indicator will be appended. The partition names can always be renamed if desired.
    - The length of the selected interval will now appear in the configuration description.
    - If any partition(s) exceed the size of the largest LPAR host drawer, a dialog will appear with those partition names. An exception box is provided to allow those partitions to be automatically included when ported into zPCR. If not checked, each of these partitions need to be manually included later.
    - The ***EDF Interval Selection*** window now includes the **Topology Changed** column whenever the host is a z16 and topology data is present. A check mark will appear for intervals where the topology changed.
  - ***Topology Report*** window usability enhancements
    - Number of partitions in view has been increased and the window can be re-sized to increase or decrease the number of partitions and drawers in the view.
    - Window size is scaled to screen dimensions to improve rendering and prevent window from exceeding screen size.
  - EDF support for ***IBM z16 Topology Report*** requires:
    - For z/OS - **CP3KEXTR version 4.26** available on 11/18/2022
    - For z/VM - **CP3KVMXT version 2.9d**, available on 10/31//2022
- Window management: On a most windows when changes have been made, clicking the upper left corner X will now provide a dialog and a means to continue without losing the changes.
- The ***zPCR User's Guide*** and ***Online Help*** are updated.

Version 9.5d (09/13/2022)

- The **LinuxONE Emperor 4** (3931-LA1) processor family has been added. There are 200 IFL models and 1 General Purpose model. Various drawer configurations provide up to 200 real CPs, which can be configured as IFL CPs and optionally, one GP CP. The processor designation is 3931-7xx for full-speed IFL models and 3931-401 for the GP model.
- ***LPAR Configuration Capacity Planning*** function:
  - The ***LinuxONE Emperor 4 (3931-LA1)*** may be defined as the LPAR host processor. Real CPs may be defined as IFLs (maximum 200) and optionally 1 GP.
  - Support added for z/VM-7.3
  - ***Partition Capacity Comparison*** window: z/OS and z/VM SCPs are always specified with a version, used solely for the purpose of enforcing configuration rules. In cases where the versions differ between LPAR configurations, the SCP will display with "**" in lieu of the version.
  - Improvements for the ***IBM z16 Topology Report*** window:
  - EDF support for ***IBM z16 Topology Report*** requires:

    For z/OS - **CP3KEXTR version 4.24**, available on 08/17/2022

    For z/VM - **CP3KVMXTversion 2.9b**, available on 06/01/2022
- The ***zPCR User's Guide*** and ***Online Help*** have been updated with **LinuxONE Emperor 4** detail.
- The ***LSPR Workloads Document*** has been updated with **LinuxONE Emperor 4** model detail.

IBM zPCR News

Version 9.5c (07/27/2022)

- ***zPCR Function***
  - The ***Advanced-Mode Control Panel*** window is renamed to ***Control Panel*** window. All of zPCR's function is accessible via this ***Control Panel*** window.
  - The ***LSPR Single-Image ITRR Table*** was formerly only accessible via the ***Function Selection*** window. Now it can be viewed by setting a temporary override to the ***LSPR Multi-Image ITRR Table*** on the ***Control Panel*** window.
- ***Sample Study Files***: Two new Sample zPCR study files replace those previously included with the tool. They use more recent IBM Z hardware for examples. Both are used for User Guide examples.
  - **Sample zPCR Study - Basic Usage** has a single LPAR configuration defined to demonstrated the definition of the host and of partitions.
  - **Sample zPCR Study – Advanced Usage** includes multiple LPAR configurations used to demonstrate capacity comparison reports and transferring partitions between configurations.
  - In addition **Sample zAAP Estimator Study** has been updated.
- Corrected a zPCR lockout problem when loading multiple EDFs where the CECIDs do not match.
- ***User's Guide*** and ***Online Help***: All discussion concerning **Basic-Mode** and **Advanced-Mode** is replaced based on use of the new ***Control Panel*** window. Window examples have been revised using the new sample study files.
- The ***zPCR Familiarization Exercise*** has been updated. It loads a z14 configuration from EDF and then sizes a reasonable IBM z16 upgrade. The document can be found on the zPCR download page. The z14 EDF, included with zPCR, can be found in the ***EDF Files*** folder.

Version 9.5b (06/10/2022)

- ***LPAR Configuration Capacity Planning*** function:
  - ***EDF input with CPU MF data***: The RNI calculation was corrupted in zPCR version 9.5a. As a result the workload category chosen for a partition could be incorrect. This problem has now been corrected.
  - ***EDF input*** from an IFL-only processor: Corrected a problem that prevented the EDF from loading.
  - ***Partition Names***: Upper case is now fully enforced.
  - ***LCP Alternatives*** window: The **Undo Pending Changes** button was not restoring SMT values. This has been corrected.
  - ***IBM z16 Topology*** report
    - With EDF input, the selection interval now displays checkmark if Topology changed during the interval.
    - Changes to any partition's definition will disable the ***Topology*** window. If the original metrics are restored, the ***Topology*** window will be re-enabled.
    - The ***Topology*** window provides an indication if the topology changed during the interval.
    - CSV output has been added.

Version 9.5a (04/28/2022)

- ***LPAR Configuration Capacity Planning*** function:
  - A new ***Topology*** window is available (IBM z16 only). It requires that IBM z16 z/OS-2.3 (or later) SMF or z/VM-7.1 (or later) Monitor data be used to generate an EDF for input to zPCR. When available, a **Topology** button will appear on the ***Partition Detail Report*** window, with which to generate the window. The elements of the Topology report are documented in the zPCR User's Guide and online help. **Note:** For z/OS, CP3KEXTR version 4.24 is required and for z/VM, CP3KVMXT version 2.9b or later is required to generate an EDF that supports the new Topology window.
  - ***Partition Detail Report*** window: It is recommended that a partition's logical CP count not exceed the number of real CPs in a book/drawer. For z/OS partitions the sum of GP and associated zIIP logical CPs is now considered. When the recommendation is exceeded, both the GP and zIIP partition are excluded. An attempt to include them can be allowed as an exception.
  - ***Capacity Comparison*** and ***Copy/Move*** windows: Message box information concerning SMT being active was appearing when it was not applicable. This has been corrected.
- ***EDF*** input: The IBM z16 RNI formula has been updated.
- The ***zPCR User's Guide*** and Online Help have been updated.
- The ***LSPR Workloads*** document is updated with the latest IBM z16 RNI formula.

IBM zPCR News

Version 9.5 (04/05/2022)

- The newly announced ***IBM z16 (3931-A01)*** processor family has been added, with 317 General Purpose models (200 full-speed and 117 slugged) and 200 IFL models. Real CP maximum settings, based on number of drawers, are 39, 82, 125, 168, and 200. Real CPs may be configured as General Purpose (maximum of 39 on /400, /500, and /600 speeds), zIIP, IFL, or ICF.
- **LSPR capacity data is now based on z/OS-2.4**
  - The ***LSPR Multi-Image Table*** includes all IBM Z processor families, GP and IFL models.
  - The ***LSPR Single-Image Table*** includes all IBM Z processor families, GP and IFL models for up to 30 real CPs (i.e., only reasonable single-image configurations are displayed).
  - For z10EC/BC and later processors, z/OS LSPR data is represented with HiperDispatch turned on. This means that capacity results for defined LPAR configurations on these processor families also are assumed to represent HiperDispatch turned on.
  - IBM z16 processors run at ***Full Capacity*** *only*; There is no ***Power Saving Mode***.
  - IBM z16, z15, z14, and z13 ***Simultaneous Multi-Threading*** (***SMT***): LSPR table IFL capacity table can be displayed with an estimated ***SMT Benefit***. The ***SMT Benefit*** for IFLs can be set by the user.
  - CFCC data is not displayed in any LSPR table, but is included for the purpose of sizing partitions running it. CFCC Level 25 is assumed for IBM z16 processor models.
- ***LPAR Configuration Capacity Planning*** function:
  - ***IBM z16 (3931-A01)*** processor models may be defined as an LPAR host processor. Real GP, zIIP, IFL, and ICF CPs may be configured up to the maximum allowed.
  - **System Recovery Boost (SRB)** is supported for IBM z16 and z15 only. If SRB was active during a captured EDF (or RMF) interval, windows will include relevant information.
  - ***SMT Benefit*** - ***Simultaneous Multi Threading*** (***SMT***) is supported on zIIP and IFL logical CPs for the IBM z16. SMT is supported by z/OS-2.2 (or later) and z/VM-6.4 (or later).
  - ***Secure Service Container***: ***SSC*** may be defined as the SCP (and workload) for IFL and GP partitions. SSC is intended to replace zAware and zACI.
- **HTML Output**: Corrected a problem where ***Weight Percentage*** values for zAAP. zIIP, IFL, and ICF partitions were incorrect (HTML output only).
- The ***zPCR User's Guide*** and related online help have been updated.
- The ***LSPR Workloads Document*** and related online help have been updated.
- **Note**: Several other zPCR improvements were made prior to version 9.5.