



Advanced Technical Skills (ATS) North America

zPCR Capacity Sizing Lab

SHARE - Sessions 13097 / 12674

February 7, 2013

John Burg

Materials created by John Fitch and Jim Shaw

IBM



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zPCR Capacity Sizing Labs

■ Part 1 - Intro and Overview

- zPCR Introduction
- Includes Advanced Mode Update
- What's new up through zPCR V8.1 in Back Up

■ Part 2 – Hands-on Lab

- 1 Exercise to demonstrate the use of Advanced Mode functions in zPCR
 - 6 Tasks
 - 2 Additional Analysis to Try
- Use as a refresher



Advanced Technical Skills (ATS) North America

zPCR Capacity Sizing Lab – Part 1 Introduction and Overview

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**Advanced
Technical
Skills**

TECHNICAL SALES
NORTH AMERICA

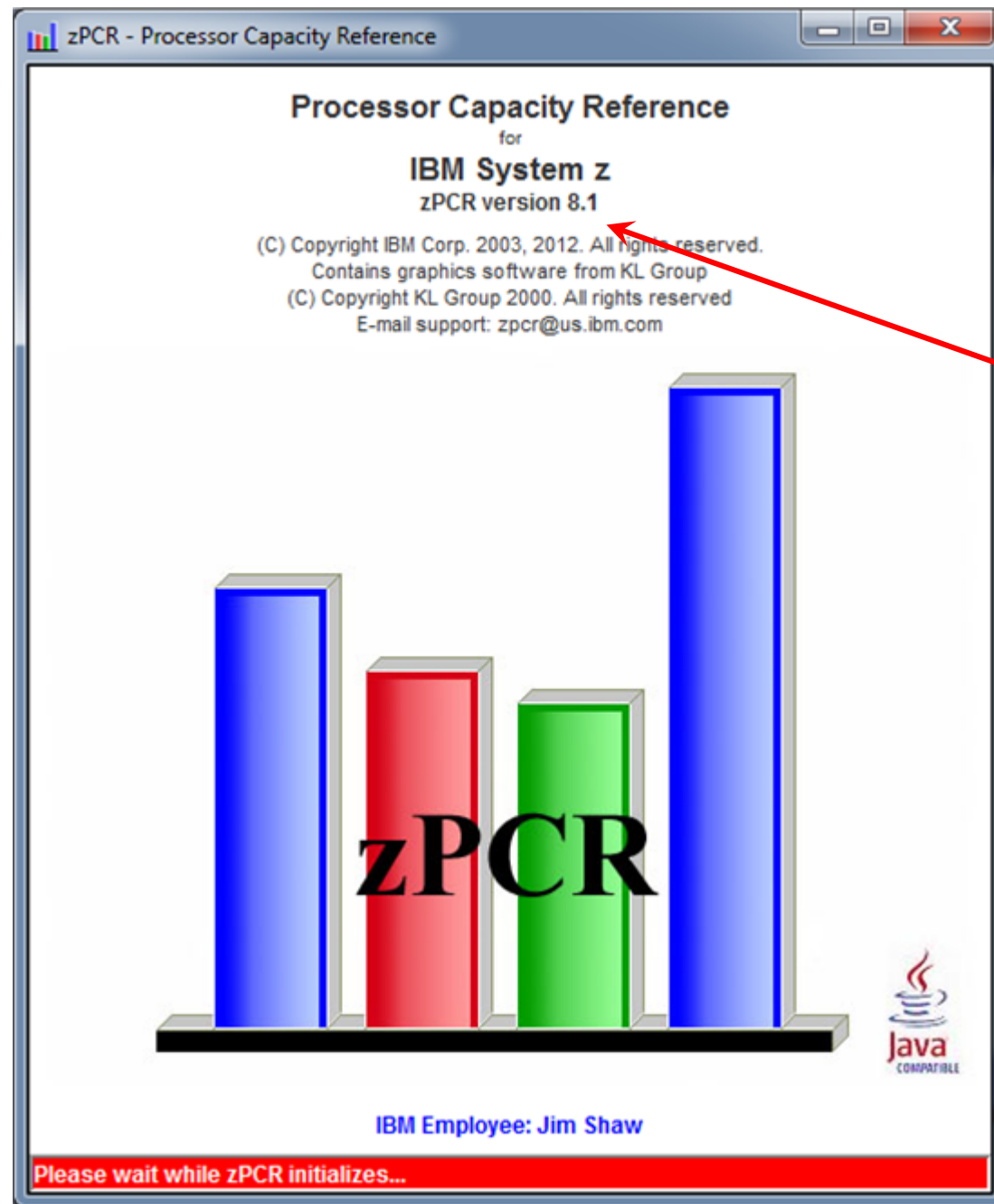
Agenda

- **Introducing zPCR**
- **LSPR Background**
- **MIPS Tables vs. zPCR LPAR Configuration Capacity Planning**
- **zPCR Basic / Advanced Mode**
- **zPCR Preferences**
- **zPCR Execution Flow**
- **EDF Files**
- **zPCR Output**
- **Where to get more Information**
- **Summary**

Introducing zPCR

- **Provides capacity relationships for System z processors, considering**
 - LPAR configurations
 - SCP/workload environment
 - Use of specialty CPs (zAAP, zIIP, IFL, and ICF)
- **Based on IBM Large Systems Performance Reference (LSPR)**
- **The IBM tool to properly size mainframe upgrades**
 - Expected accuracy of $\pm 5\%$
- **A PC based tool written in Java for Windows XP/Win 7**
 - “As Is”, no charge tool available from the web
- **New Processor Announcements available in zPCR for:**
 - IBM Account Teams - at Announcement
 - Customers - generally within 30 days after Announcement

zPCR Logo Window



Version
Identification

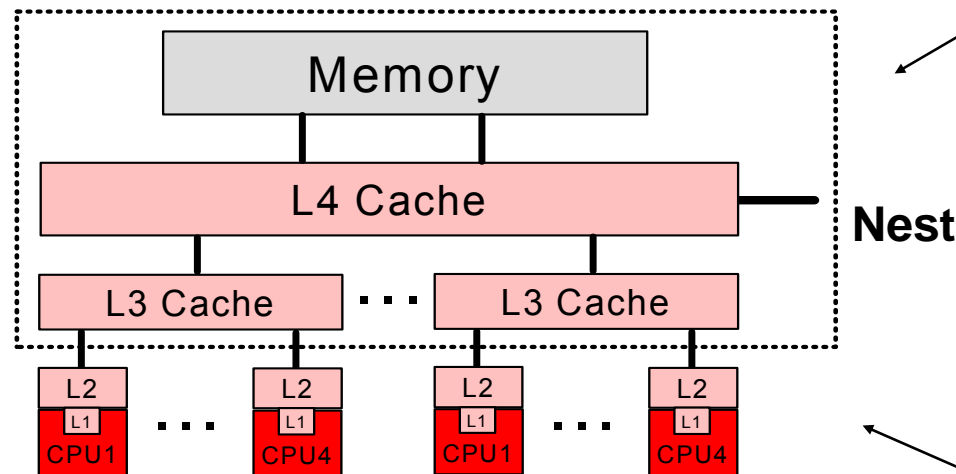
New Day Dawning in System z Capacity Planning

Processor Design

- CPU
- Memory Hierarchy (Nest)

Hypervisor (PR/SM)

- Amount of virtualization



Operating System

- Virtualization at address space level

Workload Characteristics

- Instructions
- Dispatch Profile
- I/O Rate

Introduction to LSPR

- **A set of representative SCP/workload environments**
 - SCPs: z/OS, z/VM, and Linux on System z
 - Workload categories: Low ←Relative Nest Intensity→ High
 - A methodology focused on processor capacity
 - No significant external constraints
 - Equivalent (reasonably high, e.g. $\geq 90\%$) processor utilization
- **A metric to communicate the results**
 - ITR: Internal Throughput Rate
 - Transactions or Jobs per processor busy second
- **Information stored on the web**
 - <https://www.ibm.com/servers/resourceLink/lib03060.nsf/pages/lsprindex?OpenDocument>

LSPR Benchmarks

- LSPR data is built from a set of benchmarks running representative workloads
- Over time, LSPR benchmarks are changed to reflect changes in processor architecture, operating system capabilities, and new patterns for production workloads
 - **LSPR tables are labeled based on the z/OS operating system level used at time of the benchmark**
- Cannot directly compare relative processor capacity across different versions of LSPR benchmarks

LSPR Workload Categories

- Various combinations of workload primitives are measured on which the new workload categories are based
 - Applications include CICS, DB2, IMS, OSAM, VSAM, WebSphere, COBOL, utilities
- **Low** (relative nest intensity)
 - Workload curve representing light use of the memory hierarchy
 - Similar to past high scaling workload primitives
- **Average** (relative nest intensity)
 - Workload curve expected to represent the majority of customer workloads
 - Similar to the past LoLo-mix curve
- **High** (relative nest intensity)
 - Workload curve representing heavy use of the memory hierarchy
 - Similar to the past DI-mix curve
- zPCR extends published categories
 - **Low-Avg**
 - 50% Low and 50% Average
 - **Avg-High**
 - 50% Average and 50% High

LSPR Tables

- Multi-image (MI) Processor Capacity Ratio table
 - Median complex LPAR configuration for each model based on customer profiles
 - Most representative for vast majority of customers
 - Same workload assumed in every partition
 - z/OS only
 - Used for “high level” sizing, e.g. “MIPS Tables”
 - Used to develop the MSU rating

MIPS Tables vs zPCR

■ MIPS Tables

- Adequate for Business Planning
 - High level sizing for hardware and software budget planning
 - Based on “averages”
- Must be referenced to a specific set of LSPR benchmarks or invalid

■ zPCR Sizing - LPAR Configuration Capacity Planning

- Detailed Capacity Sizing based on:
 - Specific LPAR configuration (number, weights, and logical processors)
 - Specific SCP/workload mix
 - Specific use of specialty engines (zAAP, zIIP, IFL, and ICF)
- Built around concept of a Reference CPU

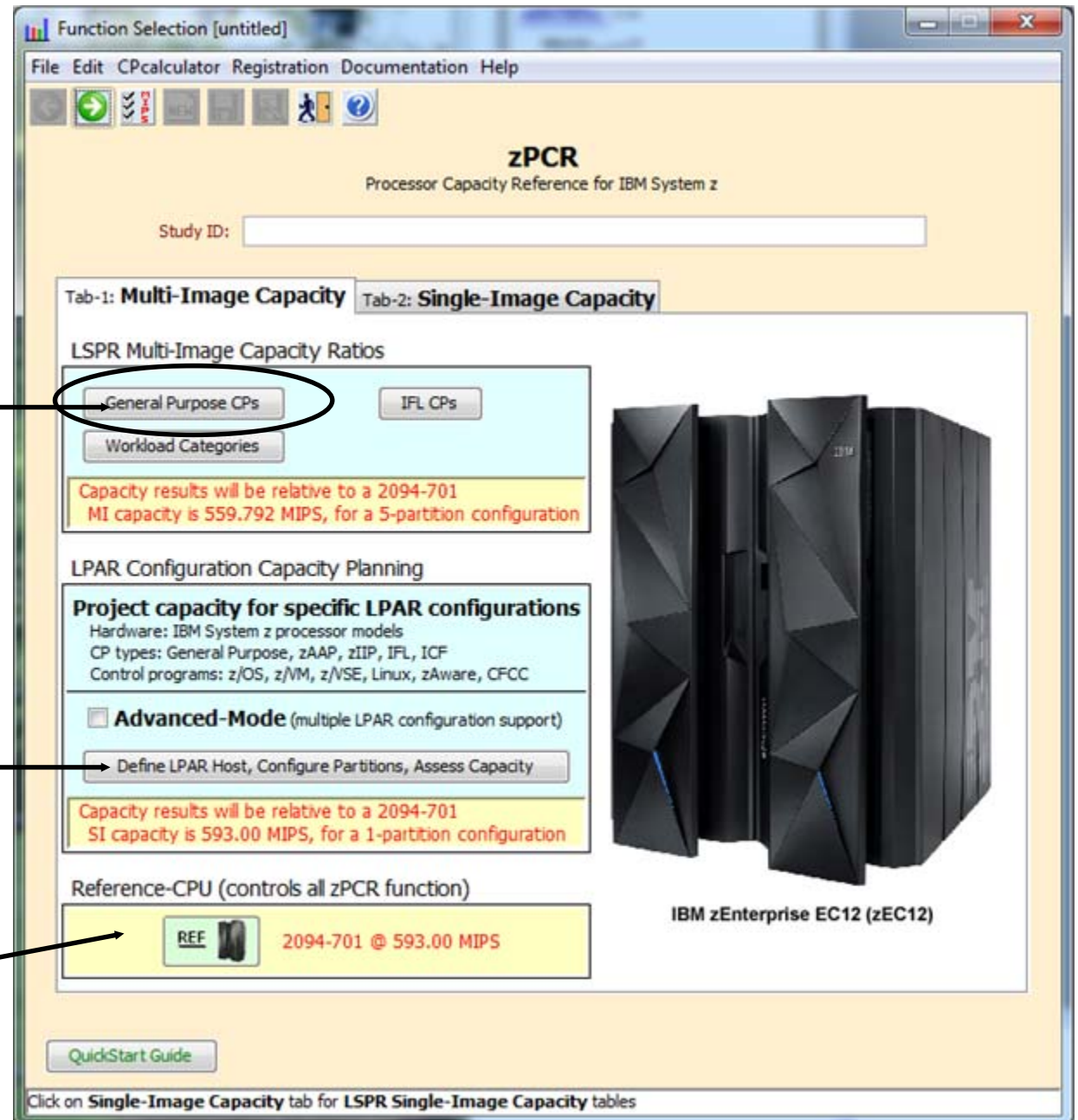
zPCR Home Page

MIPS Table

LSPR Multi-Image

zPCR LPAR
Configuration
Capacity Planning

Setting the
Reference
Processor



zPCR Basic Mode and Advanced Mode

■ zPCR can be run in 2 Modes:

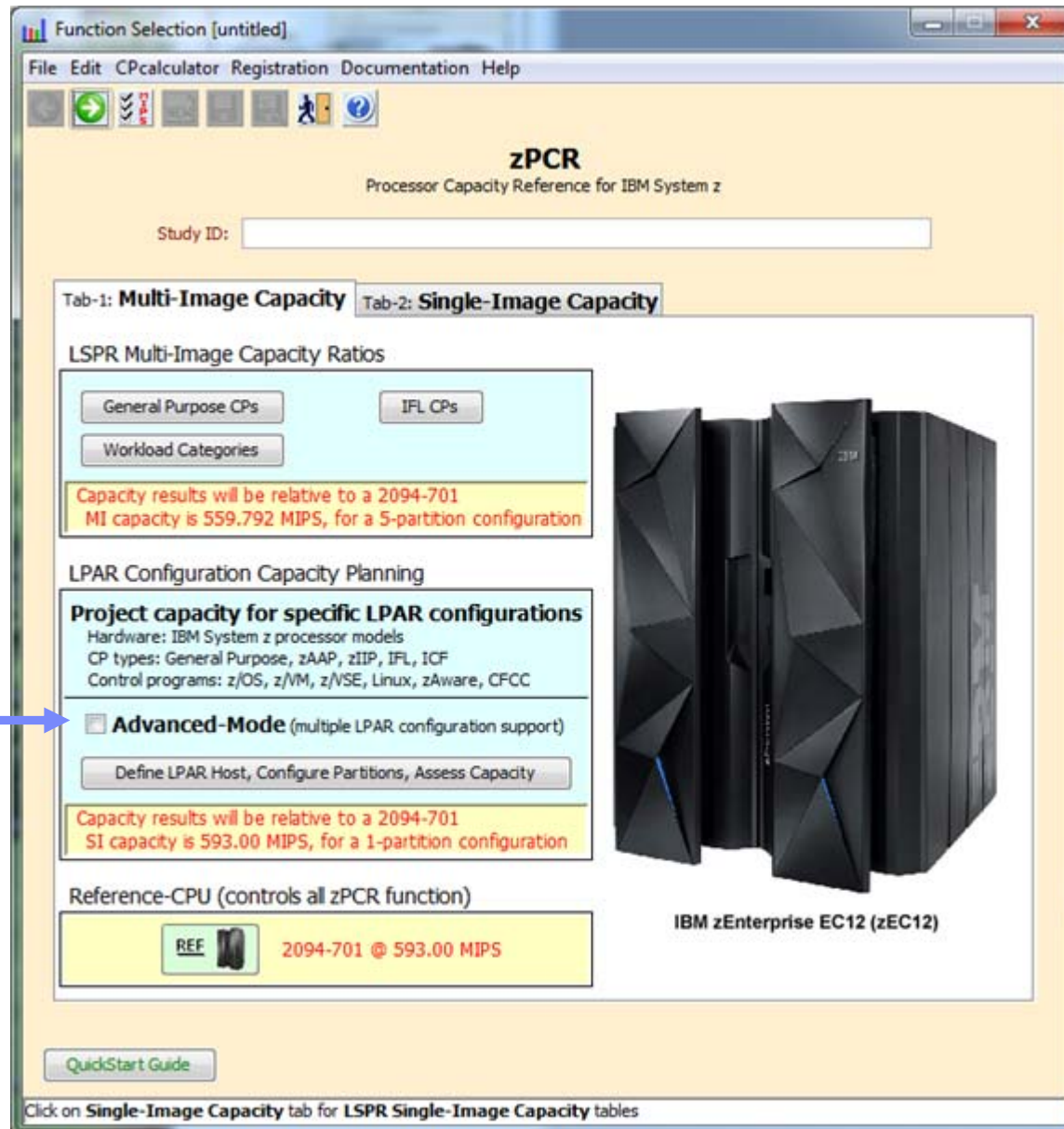
— Basic Mode

- Operates on 1 processor configuration at a time

— Advanced Mode

- Operates up to 7 processor configurations at a time
- Shows Capacity Comparisons between 2 LPAR configurations
- More efficient than running zPCR multiple times
 - Manually comparing the results
- Recommended Mode

Introducing zPCR– Advanced Mode



zPCR Advanced Mode

- **Provides Capacity Comparisons between 2 processor configurations**
 - The “Configuration #1” Vs (“Configuration #2, Configuration #3...Configuration #7)
 - More efficient than running zPCR multiple times and manually comparing the results
 - Ability to drag & drop RMF partition reports, zPCR files and EDF* files onto “Current” & “Alternate”
- **Recommended when comparing capacity changes including:**
 - Changing the LPAR host processor family
 - Changing the LPAR host processor’s CP configuration
 - Changing the way that one or more partitions are defined, (e.g. weights, LCPs, SEs)
 - Adding one or more new partitions
 - Deleting one or more current partitions
- **For Capacity Comparisons to be useful, configurations being compared should both contain some or all of the same partitions**
 - (i.e., in terms of partition type, name, SCP, and workload)

* Note: EDF (Enterprise Data Files) are new with zPCR 7.x and are created using CP3KEXTR for z/OS and CP3KVMEXT for z/VM

Advanced Mode Function

- **Multiple processor configurations**
 - Up to seven can be defined
- **Several additional functions are available**
 - *LPAR Host / Partition Comparison Reports*
 - Compares capacity results between LPAR configurations
 - *Margin of Error Consideration*
 - Shows the effect on capacity when $\pm 5\%$ margin-of-error is applied
 - *Optimize SHR LCPs*
 - Optimizes LCPs
 - *LPAR Host Capacity Summary*
 - Summarizes MIPS by pool type for Current and all Alternates
- **All capacity values based on a single Reference-CPU setting**
 - 1-way processors only

Reference CPU and Typical

Reference Processor

- Used to scale the capacity all of the LSPR processors relative to this processor
 - Must be set to any IBM System z 1-way model (GCP model)

“Typical”

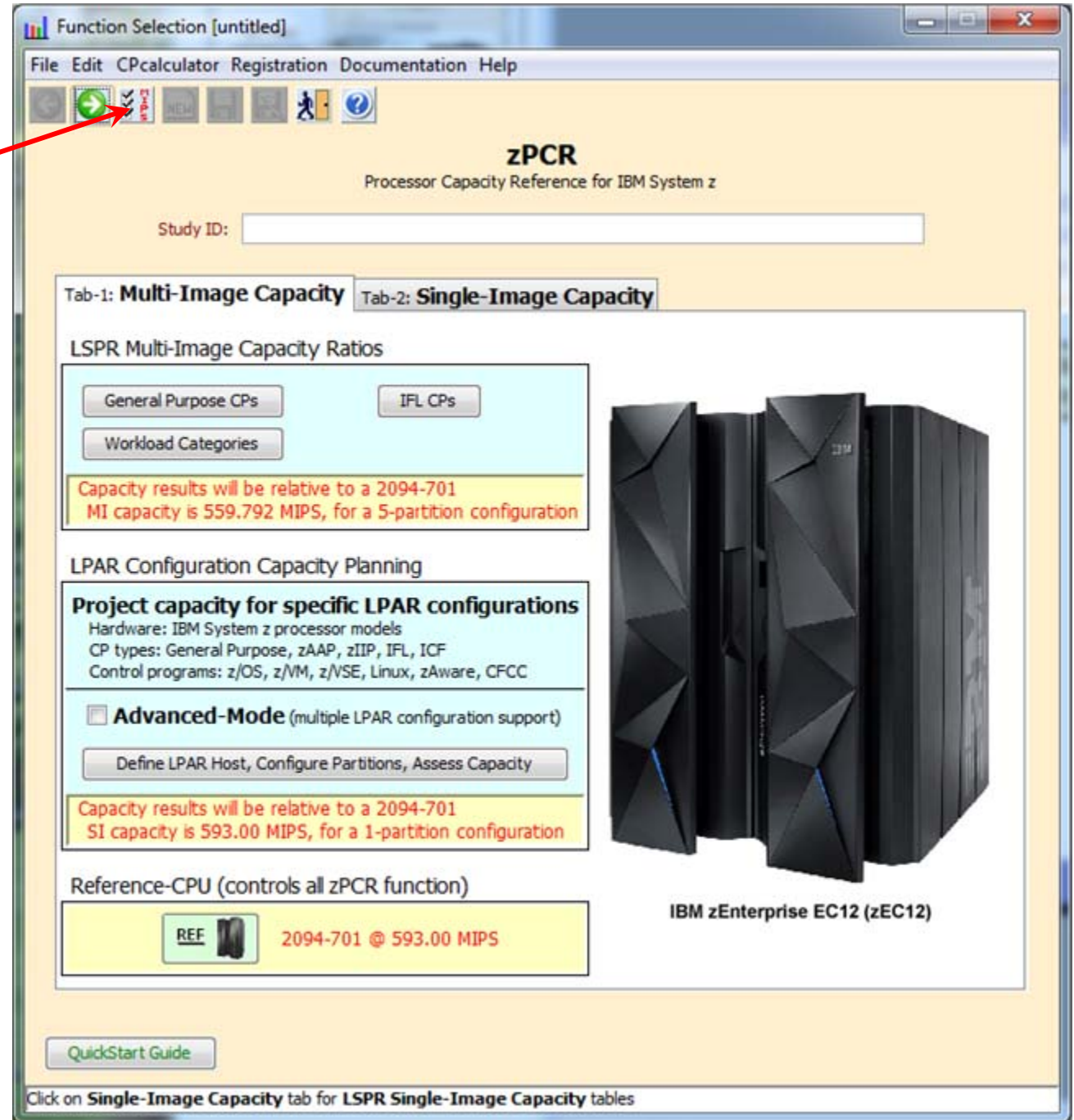
- 2094-701
 - 593 MIPS
- IBM recommended and widely accepted in the Industry

It is critical all capacity being compared be obtained using a consistent **Reference-CPU** metric

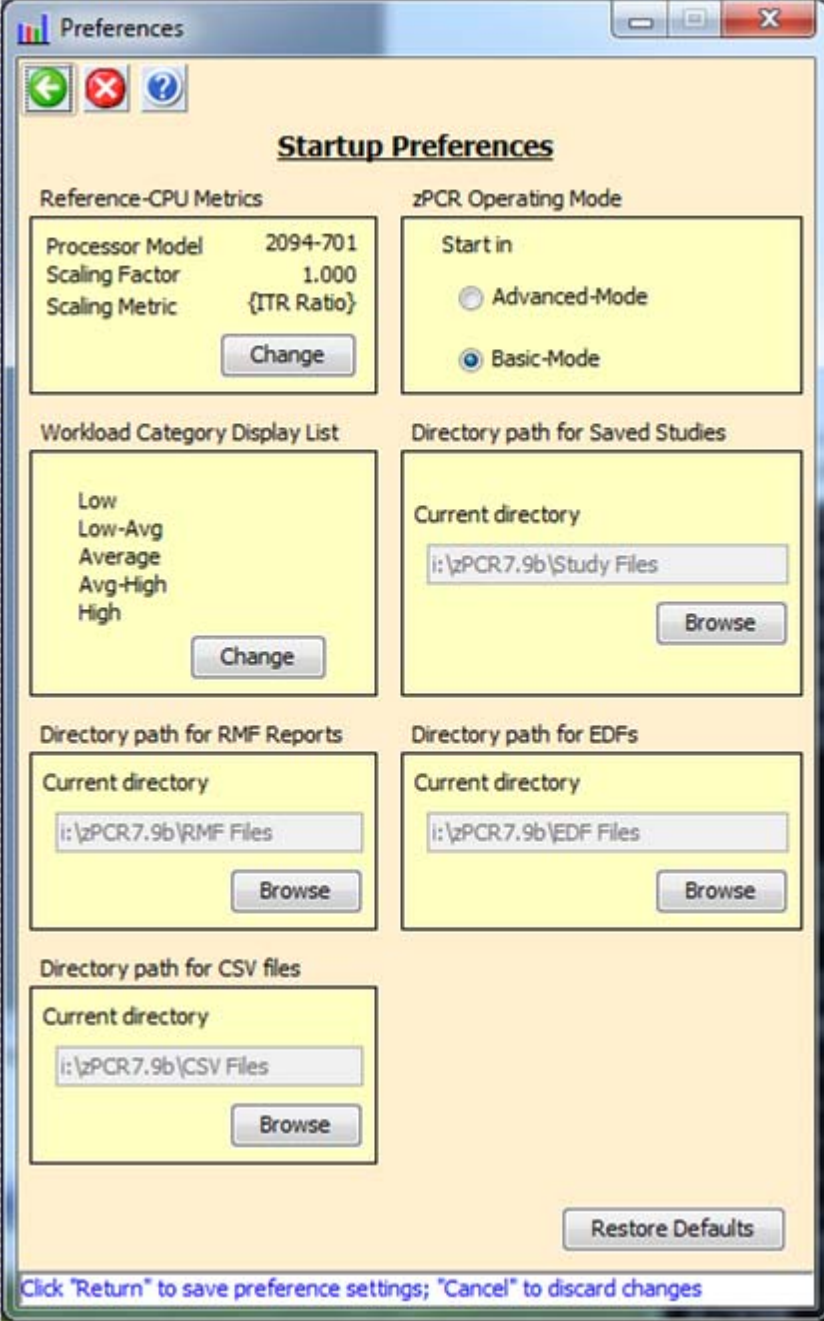
	Reference-CPU	zPCR Comparison Reports			
					Relative Capacity Difference
	2094-701	z196 708	zEC12 708		
Relative Capacity	1.00	13.61	16.97		1.25
MIPS	593	8,072	10,063	(1,991 MIPS)	1.25

zPCR Function Selection Window

Set "Startup" preferences



Default zPCR Startup Preferences



The screenshot shows the 'Preferences' dialog box with the 'Startup Preferences' tab selected. The dialog is divided into several sections for configuring the software's startup and file management settings.

Startup Preferences

Reference-CPU Metrics

Processor Model	2094-701
Scaling Factor	1.000
Scaling Metric	{ITR Ratio}

zPCR Operating Mode

Start in

☐ Advanced-Mode

☒ Basic-Mode

Workload Category Display List

Low
Low-Avg
Average
Avg-High
High

Directory path for Saved Studies

Current directory
i:\zPCR7.9b\Study Files

Directory path for RMF Reports

Current directory
i:\zPCR7.9b\RMF Files

Directory path for EDFs

Current directory
i:\zPCR7.9b\EDF Files

Directory path for CSV files

Current directory
i:\zPCR7.9b\CSV Files

Click "Return" to save preference settings; "Cancel" to discard changes

Recommended zPCR Startup Preferences

Preferences

Startup Preferences

Reference-CPU Metrics

Processor Model	2094-701
Scaling Factor	593.00
Scaling Metric	MIPS

Change

zPCR Operating Mode

Start in

☒ Advanced-Mode

☐ Basic-Mode

Workload Category Display List

Low
Low-Avg
Average
Avg-High
High

Change

Directory path for Saved Studies

Current directory

i:\zPCR7.9b\Study Files

Browse

Directory path for RMF Reports

Current directory

i:\zPCR7.9b\RMF Files

Browse

Directory path for EDFs

Current directory

i:\zPCR7.9b\EDF Files

Browse

Directory path for CSV files

Current directory

i:\zPCR7.9b\CSV Files

Browse

Restore Defaults

Click "Return" to save preference settings; "Cancel" to discard changes

Set "Advanced Mode" as the default when starting zPCR

Set "Reference-CPU" Metrics to "Typical" as the default

Reference CPU continued...

■ Reference Processor Window

- The **Reference-CPU** window is accessed primarily from the **Function Selection** window by clicking the **Reference-CPU** button

Select "Typical"

The screenshot shows the 'Reference-CPU' window with the following content:

- Reference-CPU**
zPCR Global Setting
Only 1-way GP processor models are allowed
Study ID: Not specified
- Processor Model and Capacity Assumption**
 - Family: z9 EC/700
 - Model: 2094-701
 - Scaling-Factor: 593.00
 - Scaling-Metric: MIPS
- Some Alternative Settings**
 - Typical** (highlighted with a red arrow)
 - Startup
 - Default
- ☐ Update zPCR Startup Preferences on Return
- Capacity results will be relative to a 2094-701
SI capacity is 593.00 MIPS, for a 1-partition configuration
MI capacity is 559.792 MIPS, for a 5-partition configuration

zPCR Function Selection Window

Function Selection [untitled]

File Edit CPcalculator Registration Documentation Help

zPCR
Processor Capacity Reference for IBM System z

Study ID:

Tab-1: **Multi-Image Capacity** Tab-2: **Single-Image Capacity**

LSPR Multi-Image Capacity Ratios

General Purpose CPs IFL CPs

Workload Categories

Capacity results will be relative to a 2094-701
MI capacity is 559.792 MIPS, for a 5-partition configuration

LPAR Configuration Capacity Planning


Project capacity for specific LPAR configurations
Hardware: IBM System z processor models
CP types: General Purpose, zAAP, zIIP, IFL, ICF
Control programs: z/OS, z/VM, z/VSE, Linux, zAware, CFCC

☒ **Advanced-Mode** (multiple LPAR configuration support)

Enter Advanced-Mode


Capacity results will be relative to a 2094-701
SI capacity is 593.00 MIPS, for a 1-partition configuration

Reference-CPU (controls all zPCR function)

REF  2094-701 @ 593.00 MIPS

QuickStart Guide

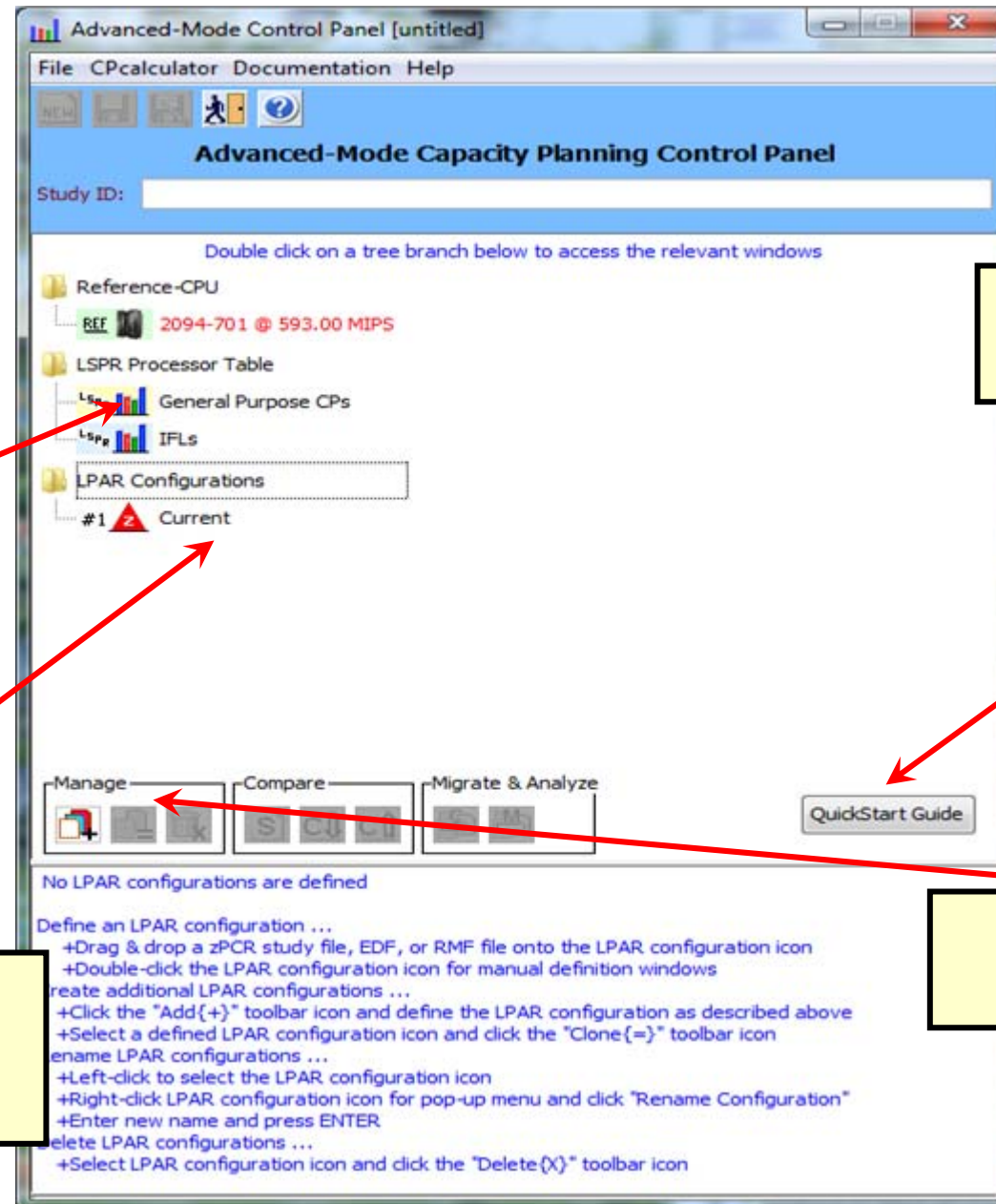
Click on **Single-Image Capacity** tab for LSPR Single-Image Capacity tables



IBM zEnterprise EC12 (zEC12)

Select "Advanced-Mode" check box and press "Enter Advanced-Mode"

zPCR Advanced-Mode Capacity Planning Control Panel



View "QuickStart" Guide

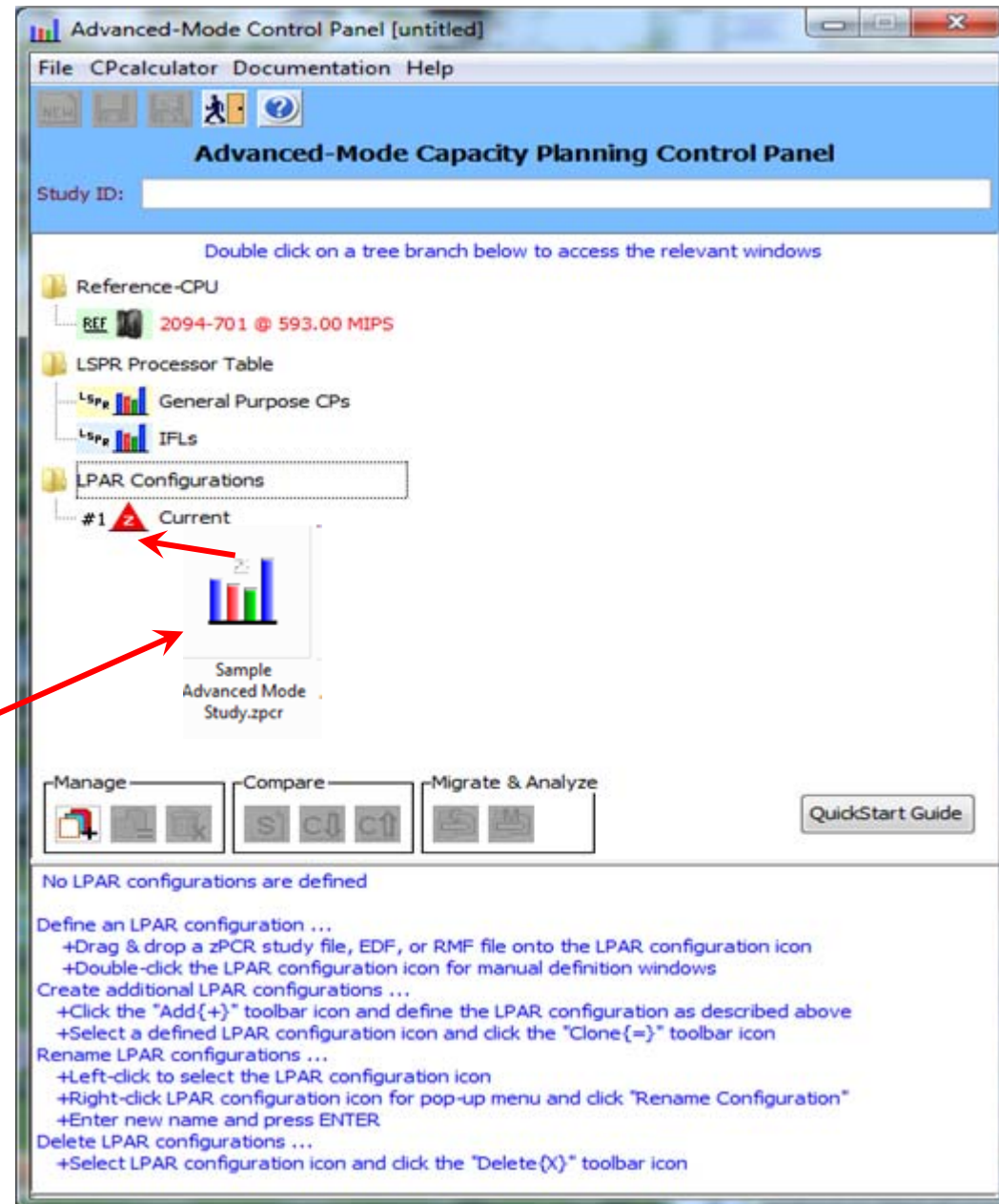
View Multi-Image LSPR table

LPAR Configurations
Right "click" to rename
up to 20 characters

Manage Multiple
Configurations

You may drag and drop zPCR study files, RMF reports or EDFs onto the LPAR Configurations planning area or use the file drop down to load zPCR study files.

zPCR Advanced-Mode Capacity Loading a file via Drag and Drop



Browse Windows Explorer to find the file then "drag" it to the zPCR Advanced Mode" window and "drop" it on Current

zPCR Advanced-Mode Capacity Renaming the configuration step 1

Advanced-Mode Control Panel [E:\...Sample Advanced Mode Study.zpcr]

File CPcalculator Documentation Help

Advanced-Mode Capacity Planning Control Panel

Study ID: Sample zPCR Study

Double click on a tree branch below to access the relevant windows

- Reference-CPU
 - REF 2094-701 @ 593.00 MIPS
- LSPR Processor Table
 - LSPR General Purpose CPs
 - LSPR IFLs
- LPAR Configurations
 - #1 **Current** Rename Configuration

Manage Compare Migrate & Analyze

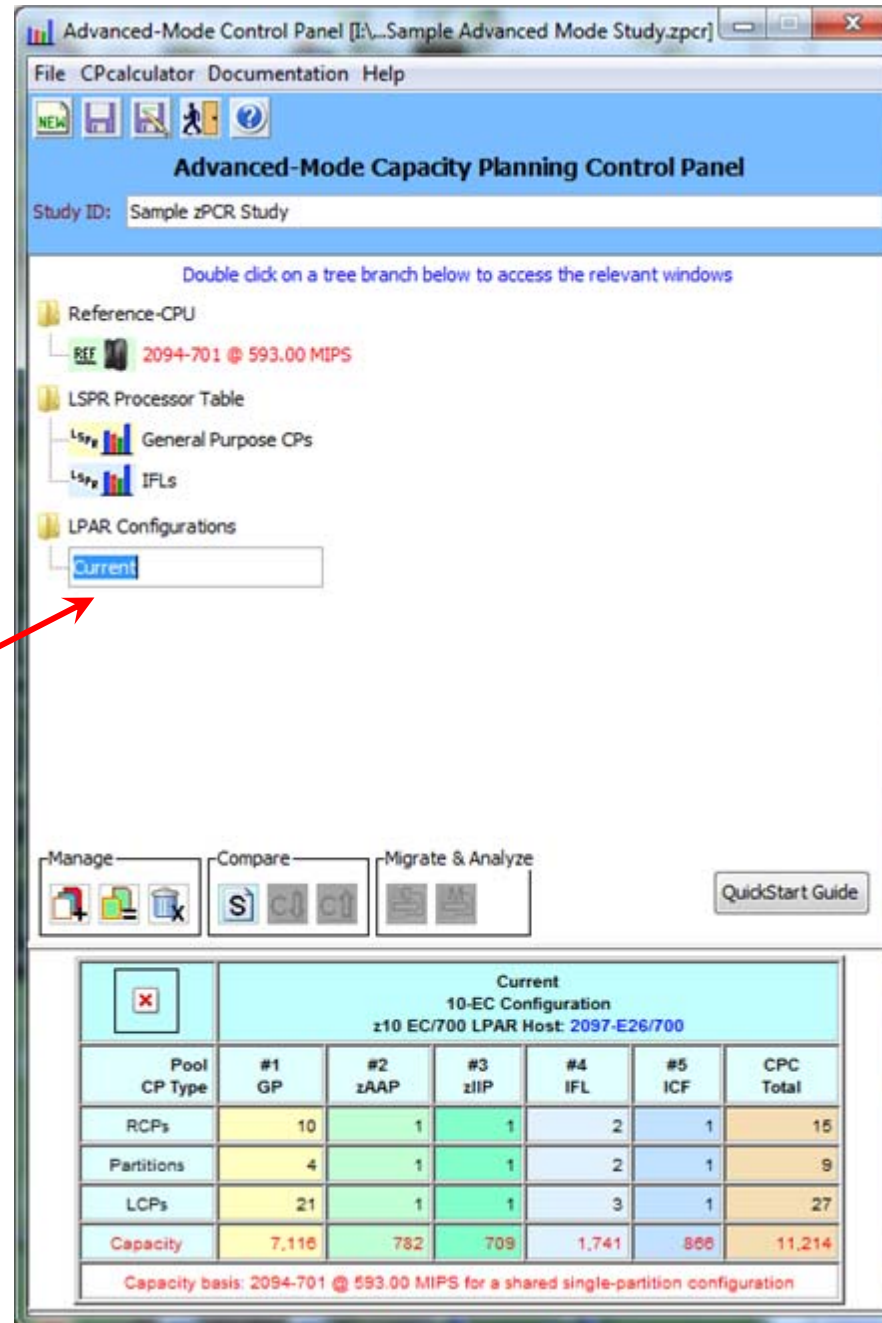
QuickStart Guide

Current 10-EC Configuration z10 EC/700 LPAR Host: 2097-E26/700						
Pool CP Type	#1 GP	#2 zAAP	#3 zIIP	#4 IFL	#5 ICF	CPC Total
RCPs	10	1	1	2	1	15
Partitions	4	1	1	2	1	9
LCPs	21	1	1	3	1	27
Capacity	7,116	782	709	1,741	868	11,214

Capacity basis: 2094-701 @ 593.00 MIPS for a shared single-partition configuration

Select "Current",
Right Click, Click on
"Rename
Configuration"

zPCR Advanced-Mode Capacity Renaming the configuration step 2



Type over “Current”
with “z10-2097 E26”
and Press Enter

zPCR Advanced-Mode Capacity Planning Control Panel

Configuration Renamed

Configuration Summary

Advanced-Mode Control Panel [F:\...Sample Advanced Mode Study.zp...]

File CPcalculator Documentation Help

Advanced-Mode Capacity Planning Control Panel

Study ID: Sample zPCR Study

Double click on a tree branch below to access the relevant windows

- Reference-CPU
 - REF 2094-701 @ 593.00 MIPS
- LSPR Processor Table
 - LSPR General Purpose CPs
 - LSPR IFLs
- LPAR Configurations
 - #1 z10 2097-E26

Manage Compare Migrate & Analyze

QuickStart Guide

#1	z10 2097-E26 10-EC Configuration z10 EC/700 LPAR Host: 2097-E26/700					
Pool CP Type	#1 GP	#2 zAAP	#3 zIIP	#4 IFL	#5 ICF	CPC Total
RCPs	10	1	1	2	1	15
Partitions	4	1	1	2	1	9
LCPs	21	1	1	3	1	27
Capacity	7,116	782	709	1,741	868	11,214

Capacity basis: 2094-701 @ 593.00 MIPS for a shared single-partition configuration

zPCR Advanced-Mode Capacity Planning Control Panel

1 Select
2 then Click on Clone

Advanced-Mode Control Panel [F:\sharelab.zpcr]

File CPcalculator Documentation Help

Advanced-Mode Capacity Planning Control Panel

Study ID: Sample zPCR Study

Double click on a tree branch below to access the relevant windows

- Reference-CPU
 - REF 2094-701 @ 593.00 MIPS
- LSPR Processor Table
 - LSPR General Purpose CPs
 - LSPR IFLs
- LPAR Configurations
 - #1 z10 2097-E26

Manage Compare Migrate & Analyze

QuickStart Guide

z10 2097-E26 10-EC Configuration z10 EC/700 LPAR Host: 2097-E26/700						
Pool	#1 GP	#2 zAAP	#3 zIIP	#4 IFL	#5 ICF	CPC Total
RCPs	10	1	1	2	1	15
Partitions	4	1	1	2	1	9
LCPs	21	1	1	3	1	27
Capacity	7,116	782	709	1,741	806	11,214

Capacity basis: 2094-701 @ 593.00 MIPS for a shared single-partition configuration

zPCR Advanced-Mode Capacity Planning Control Panel

1) Select 2 Configurations then
2) Click on Comparison Report

Note “Down Arrow” compares Bottom Configuration (#3) Relative to Top Configuration (#1)

“Up Arrow” compares Top Configuration (#1) Relative to Bottom Configuration (#3)

The screenshot shows the 'Advanced-Mode Capacity Planning Control Panel' window. The 'Study ID' is 'Sample zPCR Study'. The tree view on the left shows the following structure:

- Reference-CPU
 - REF 2094-701 @ 593.00 MIPS
- LSPR Processor Table
 - General Purpose CPs
 - IFLs
- LPAR Configurations
 - #1 z10 2097-E26
 - #2 z10 2097-E40
 - #3 z196 2817-M15

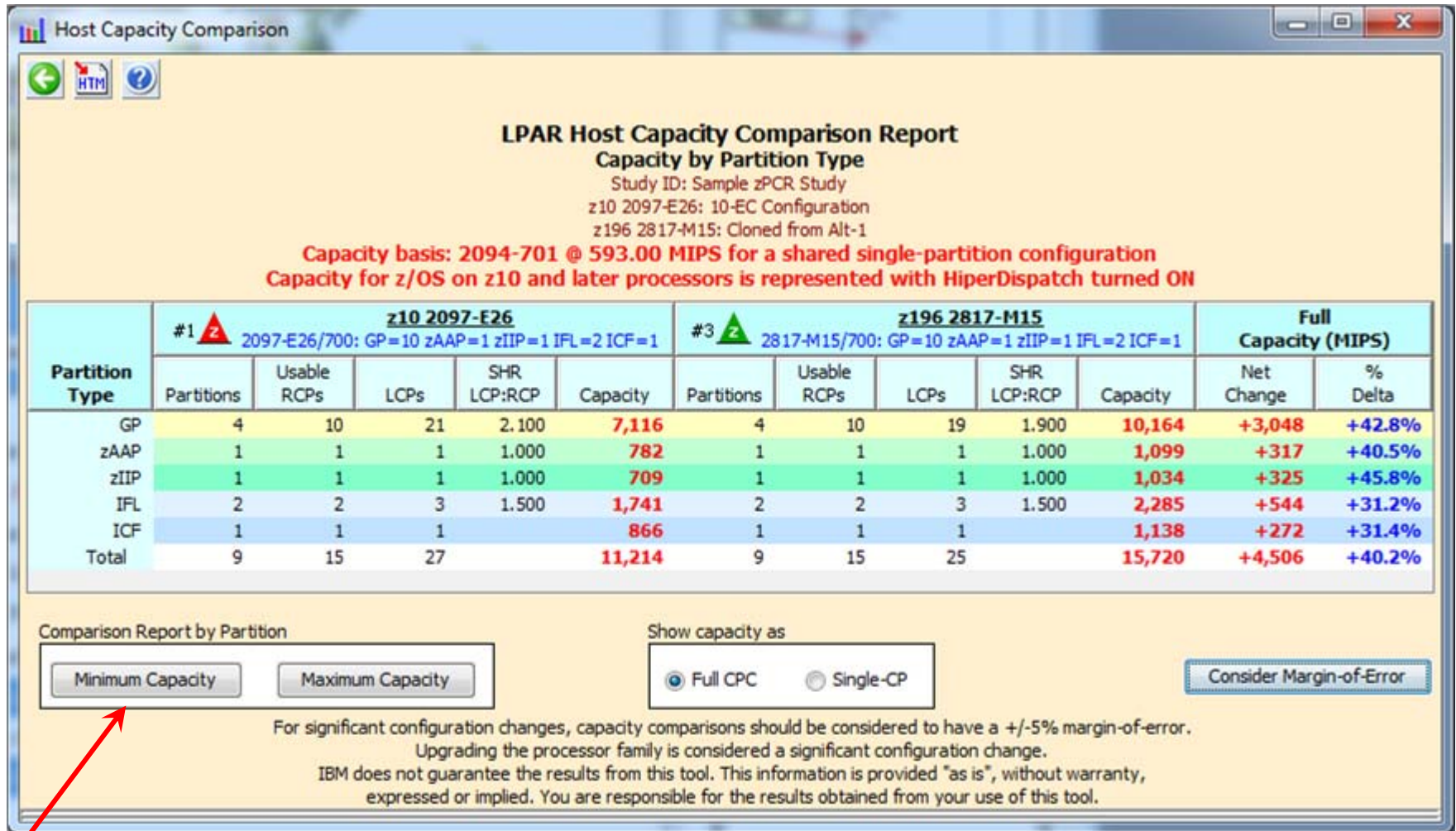
At the bottom, there are three buttons: 'Manage', 'Compare', and 'Migrate & Analyze'. The 'Compare' button has three sub-buttons: a 'Down Arrow' (S), a 'Compare' (C), and an 'Up Arrow' (C). The 'QuickStart Guide' button is also present.

The comparison table below shows the results of comparing configuration #1 (z10 2097-E26) against configuration #3 (z196 2817-M15).

Pool CP Type	#1 GP	#2 zAAP	#3 zIIP	#4 IFL	#5 ICF	CPC Total
RCPs	10	1	1	2	1	15
Partitions	4	1	1	2	1	9
LCPs	21	1	1	3	1	27
Capacity	7,116	782	709	1,741	886	11,214

Capacity basis: 2094-701 @ 593.00 MIPS for a shared single-partition configuration

Host Capacity Comparison Report



Click "Minimum Capacity" to get Partition Capacity Comparison Report

Minimum Capacity is Partition Capacity when weights are being enforced

Partition Minimum Capacity Comparison Report

Partition Capacity Comparison

Partition Capacity Comparison Report
Based on Partition Minimum Capacity
Study ID: Sample zPCR Study
z10 2097-E26: 10-EC Configuration
z196 2817-M15: Cloned from Alt-1

Capacity basis: 2094-701 @ 593.00 MIPS for a shared single-partition configuration
Capacity for z/OS on z10 and later processors is represented with HiperDispatch turned ON

Partition Identification List of All Included Partitions With Unique ID Metrics				#1 z10 2097-E26 2097-E26/700: GP=10 zAAP=1 zIIP=1 IFL=2 ICF=1							#3 z196 2817-M15 2817-M15/700: GP=10 zAAP=1 zIIP=1 IFL=2 ICF=1							Full Capacity (MIPS)	
Type	Name	SCP	Workload	Partition Definition				Minimum Capacity	Partition Definition				Minimum Capacity	Net Change	% Delta				
				LP#	Mode	LCPs	Weight%	CAP		LP#	Mode	LCPs	Weight	Weight%	CAP				
GP	LP-01	z/OS-1.9*	Average	1	SHR	10	53.23%	3,865		1	SHR	8	700	53.23%		5,500	+1,635	+42.3%	
GP	LP-02	z/OS-1.9*	Average	2	SHR	6	30.42%	2,207		2	SHR	6	400	30.42%		3,121	+914	+41.4%	
zAAP	LP-02	z/OS-1.9*	Average		SHR	1	100.00%	782			SHR	1	400	100.00%		1,099	+317	+40.5%	
GP	LP-03	z/OS-1.9*	High	3	SHR	4	15.21%	968		3	SHR	4	200	15.21%		1,433	+465	+48.0%	
zIIP	LP-03	z/OS-1.9*	High		SHR	1	100.00%	709			SHR	1	200	100.00%		1,034	+325	+45.8%	
GP	LP-04	z/VM	High/LV	4	SHR	1	1.14%	76	✓	4	SHR	1	15	1.14%	✓	110	+34	+44.7%	
ICF	LP-07	CFCC	CFCC	5	DED	1	n/a	866		5	DED	1	n/a			1,138	+272	+31.4%	
IFL	LP-05	Linux	Average/L	6	SHR	2	88.89%	1,547		6	SHR	2	200	88.89%		2,031	+484	+31.3%	
IFL	LP-06	Linux	Average/L	7	SHR	1	11.11%	193		7	SHR	1	25	11.11%		254	+61	+31.6%	

Change Controls

Commit Changes Undo Changes Optimize SHR LCPs Consider Margin-of-Error

For significant configuration changes, capacity comparisons should be considered to have a +/-5% margin-of-error.
Upgrading the processor family is considered a significant configuration change.
IBM does not guarantee the results from this tool. This information is provided "as is", without warranty,
expressed or implied. You are responsible for the results obtained from your use of this tool.

Input fields have white background; Single-click a "selection field" for drop-down list; Double click a "key-in field" to open.

zPCR Margin of Error

- **A new processor capacity expectation should normally be considered as having a margin of error of up to +5% or - 5%**
 - The full $\pm 5\%$ margin of error should be considered when:
 - The LPAR host processor family is changed
 - Very significant changes are made to the LPAR host CP configuration
 - Significant changes are made to the partition configuration
 - The margin of error is due to factors that include variability in workload/instruction mix and processor utilization
 - When changes are minor, the margin-of-error should be less

Partition Capacity Comparison Report

Partition Capacity Comparison Report
Based on Partition Minimum Capacity

Study ID: Sample zPCR Study
z10 2097-E26: 10-EC Configuration
z196 2817-M15: Cloned from Alt-1

Capacity basis: 2094-701 @ 593.00 MIPS for a shared single-partition configuration
Capacity for z/OS on z10 and later processors is represented with HiperDispatch turned ON

Partition Identification List of All Included Partitions With Unique ID Metrics				#1 z10 2097-E26 2097-E26/700: GP=10 zAAP=1 zIIP=1 IFL=2 ICF=1						#3 z196 2817-M15 2817-M15/700: GP=10 zAAP=1 zIIP=1 IFL=2 ICF=1						Full Capacity (MIPS)		
				Partition Definition					Minimum Capacity	Partition Definition					Minimum Capacity	Net Change	% Delta	
Type	Name	SCP	Workload	LP#	Mode	LCPs	Weight%	CAP		LP#	Mode	LCPs	Weight	Weight%	CAP			
GP	LP-01	z/OS-1.9*	Average	1	SHR	10	53.23%	3,865		1	SHR	8	700	53.23%		5,500	+1,635	+42.3%
GP	LP-02	z/OS-1.9*	Average	2	SHR	6	30.42%	2,207		2	SHR	6	400	30.42%		3,121	+914	+41.4%
zAAP	LP-02	z/OS-1.9*	Average		SHR	1	100.00%	782			SHR	1	400	100.00%		1,099	+317	+40.5%
GP	LP-03	z/OS-1.9*	High	3	SHR	4	15.21%	968		3	SHR	4	200	15.21%		1,433	+465	+48.0%
zIIP	LP-03	z/OS-1.9*	High		SHR	1	100.00%	709			SHR	1	200	100.00%		1,034	+325	+45.8%
GP	LP-04	z/VM	High/LV	4	SHR	1	1.14%	76	✓	4	SHR	1	15	1.14%	✓	110	+34	+44.7%
ICF	LP-07	CFCC	CFCC	5	DED	1	n/a	866		5	DED	1	n/a			1,138	+272	+31.4%
IFL	LP-05	Linux	Average/L	6	SHR	2	88.89%	1,547		6	SHR	2	200	88.89%		2,031	+484	+31.3%
IFL	LP-06	Linux	Average/L	7	SHR	1	11.11%	193		7	SHR	1	25	11.11%		254	+61	+31.6%

Change Controls

Commit Changes Undo Changes Optimize SHR LCPs

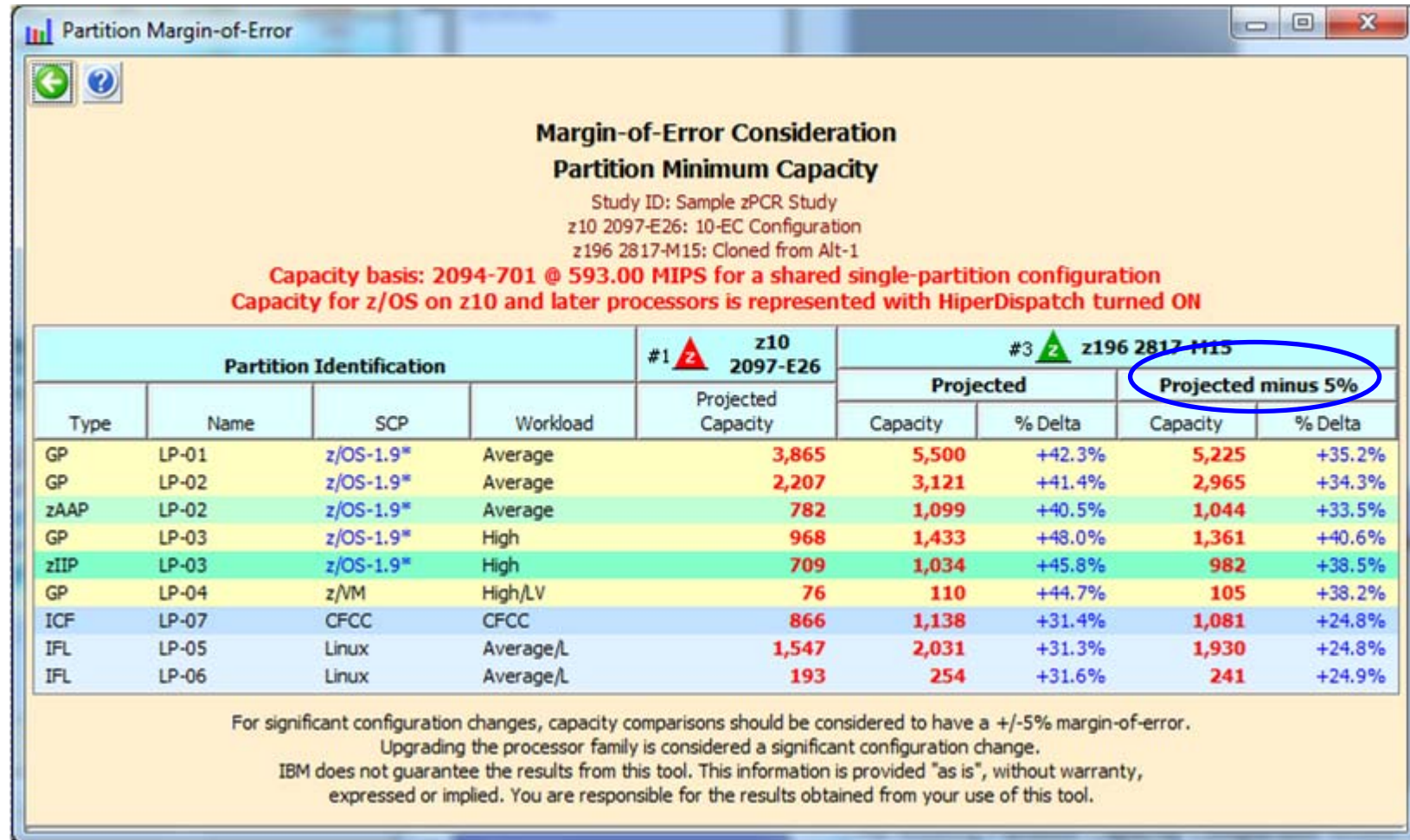
Consider Margin-of-Error

For significant configuration changes, capacity comparisons should be considered to have a +/-5% margin-of-error.
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Input fields have white background; Single-click a "selection field" for drop-down list; Double click a "key-in field" to open.

Margin-of-Error

Margin of Error Report



Optimize Shared Logical Processors

- **When migrating to a new processor evaluate the weights & logical processors needed**
 - If Hard Capping partitions, evaluate amount of capacity required to be guaranteed
- **Operating System impact on Logical Processors needs to be reviewed**
- **Level of optimization for LCP Count Assignment can be chosen as follows**
 - **Moderate:**
 - When the weight percent indicates number of logical CPs greater than or equal to 2.6
 - The exact number of logical CPs plus 1 (rounded up to the nearest whole number) will be assigned
 - When the weight percent indicates number of logical CPs should be less than 2.6
 - the exact number of logical CPs (rounded up to the nearest whole number) will be assigned
 - **Minimum:**
 - The weight percent is used to determine the exact number of logical CPs (rounded up to the nearest whole number) will be assigned

Partition Capacity Comparison Report

Partition Capacity Comparison

Partition Capacity Comparison Report

Based on Partition Minimum Capacity

Study ID: Sample zPCR Study
z10 2097-E26: 10-EC Configuration
z196 2817-M15: Cloned from Alt-1

Capacity basis: 2094-701 @ 593.00 MIPS for a shared single-partition configuration
Capacity for z/OS on z10 and later processors is represented with HiperDispatch turned ON

Partition Identification List of All Included Partitions With Unique ID Metrics				#1 z10 2097-E26 2097-E26/700: GP=10 zAAP=1 zIIP=1 IFL=2 ICF=1						#3 z196 2817-M15 2817-M15/700: GP=10 zAAP=1 zIIP=1 IFL=2 ICF=1						Full Capacity (MIPS)		
				Partition Definition					Minimum Capacity	Partition Definition					Minimum Capacity	Net Change	% Delta	
Type	Name	SCP	Workload	LP#	Mode	LCPs	Weight%	CAP		LP#	Mode	LCPs	Weight	Weight%	CAP			
GP	LP-01	z/OS-1.9*	Average	1	SHR	10	53.23%	3,865		1	SHR	8	700	53.23%		5,500	+1,635	+42.3%
GP	LP-02	z/OS-1.9*	Average	2	SHR	6	30.42%	2,207		2	SHR	6	400	30.42%		3,121	+914	+41.4%
zAAP	LP-02	z/OS-1.9*	Average		SHR	1	100.00%	782			SHR	1	400	100.00%		1,099	+317	+40.5%
GP	LP-03	z/OS-1.9*	High	3	SHR	4	15.21%	968		3	SHR	4	200	15.21%		1,433	+465	+48.0%
zIIP	LP-03	z/OS-1.9*	High		SHR	1	100.00%	709			SHR	1	200	100.00%		1,034	+325	+45.8%
GP	LP-04	z/VM	High/LV	4	SHR	1	1.14%	76	✓	4	SHR	1	15	1.14%	✓	110	+34	+44.7%
ICF	LP-07	CFCC	CFCC	5	DED	1	n/a	866		5	DED	1	n/a			1,138	+272	+31.4%
IFL	LP-05	Linux	Average/L	6	SHR	2	88.89%	1,547		6	SHR	2	200	88.89%		2,031	+484	+31.3%
IFL	LP-06	Linux	Average/L	7	SHR	1	11.11%	193		7	SHR	1	25	11.11%		254	+61	+31.6%

Change Controls

Commit Changes
Undo Changes
Optimize SHR LCPs

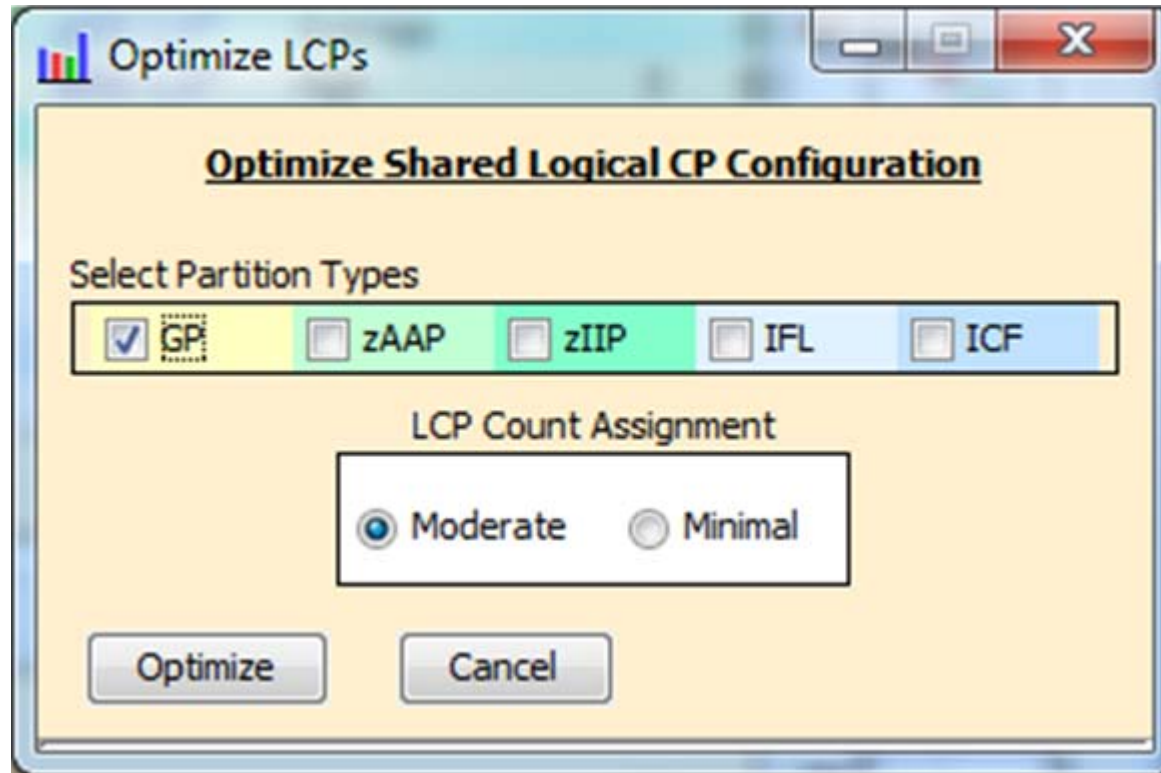
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"Optimize" SHR LCPs

Optimize Share LCP Configuration



Commit the Changes

Partition Capacity Comparison Report
Based on Partition Minimum Capacity

Study ID: Sample zPCR Study
z10 2097-E26: 10-EC Configuration
z196 2817-M15: Cloned from Alt-1

Capacity basis: 2094-701 @ 593.00 MIPS for a shared single-partition configuration
Capacity for z/OS on z10 and later processors is represented with HiperDispatch turned ON

Partition Identification List of All Included Partitions With Unique ID Metrics				#1 z10 2097-E26 2097-E26/700: GP=10 zAAP=1 zIIP=1 IFL=2 ICF=1						#3 z196 2817-M15 2817-M15/700: GP=10 zAAP=1 zIIP=1 IFL=2 ICF=1						Full Capacity (MIPS)		
				Partition Definition					Minimum Capacity	Partition Definition					Minimum Capacity	Net Change	% Delta	
Type	Name	SCP	Workload	LP #	Mode	LCPs	Weight%	CAP		LP #	Mode	LCPs	Weight	Weight%	CAP			
GP	LP-01	z/OS-1.9*	Average	1	SHR	10	53.23%	3,865		1	SHR	7	700	53.23%		5,570	+1,705	+44.1%
GP	LP-02	z/OS-1.9*	Average	2	SHR	6	30.42%	2,207		2	SHR	5	400	30.42%		3,157	+950	+43.0%
zAAP	LP-02	z/OS-1.9*	Average		SHR	1	100.00%	782			SHR	1	400	100.00%		1,114	+332	+42.5%
GP	LP-03	z/OS-1.9*	High	3	SHR	4	15.21%	968		3	SHR	2	200	15.21%		1,412	+444	+45.9%
zIIP	LP-03	z/OS-1.9*	High		SHR	1	100.00%	709			SHR	1	200	100.00%		1,074	+365	+51.5%
GP	LP-04	z/VM	High/LV	4	SHR	1	1.14%	76	✓	4	SHR	1	15	1.14%	✓	111	+35	+46.1%
ICF	LP-07	CFCC	CFCC	5	DED	1	n/a	866		5	DED	1	n/a			1,138	+272	+31.4%
IFL	LP-05	Linux	Average/L	6	SHR	2	88.89%	1,547		6	SHR	2	200	88.89%		2,033	+486	+31.4%
IFL	LP-06	Linux	Average/L	7	SHR	1	11.11%	193		7	SHR	1	25	11.11%		254	+61	+31.6%

Change Controls

Commit Changes Undo Changes Optimize SHR LCPs

Consider Margin-of-Error

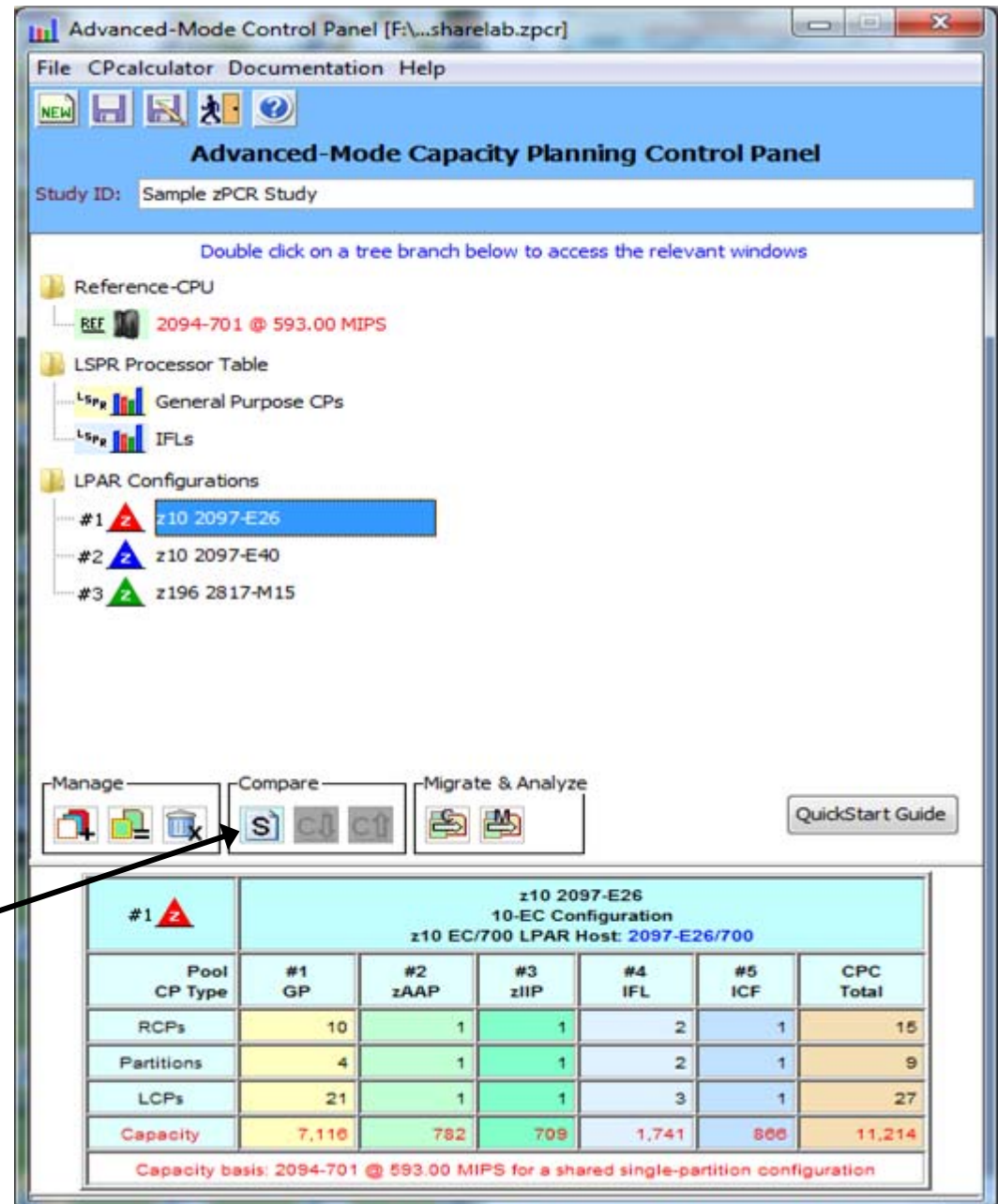
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Input fields have white background. Single-click a "selection field" for drop-down list; Double click a "key-in field" to open.

Commit, Undo Changes, or
change by hand (any white area)

Show Host Capacity Summary

- Click on the **Host Capacity Summary** icon  to view the report.



Advanced-Mode Control Panel [F:\...sharelab.zpcr]

File CPcalculator Documentation Help

NEW [Icons]

Advanced-Mode Capacity Planning Control Panel

Study ID: Sample zPCR Study

Double click on a tree branch below to access the relevant windows

- Reference-CPU
 - REF 2094-701 @ 593.00 MIPS
- LSPR Processor Table
 - General Purpose CPs
 - IFLs
- LPAR Configurations
 - #1 z10 2097-E26
 - #2 z10 2097-E40
 - #3 z196 2817-M15

Manage [Icons] Compare [Icons] Migrate & Analyze [Icons] QuickStart Guide

z10 2097-E26 10-EC Configuration z10 EC/700 LPAR Host: 2097-E26/700						
Pool CP Type	#1 GP	#2 zAAP	#3 zIIP	#4 IFL	#5 ICF	CPC Total
RCPs	10	1	1	2	1	15
Partitions	4	1	1	2	1	9
LCPs	21	1	1	3	1	27
Capacity	7,116	782	709	1,741	866	11,214

Capacity basis: 2094-701 @ 593.00 MIPS for a shared single-partition configuration

Click Host Capacity Summary

Host Capacity Summary

- For each defined LPAR configuration, its icon and name are provided, along with the processor model information and number of real CPs configured to each pool
 - To display the description field of any LPAR configuration, place the mouse pointer anywhere on that row
- Click on the **Return** to take you back at the **Advanced-Mode Control Panel**

Host Capacity Summary

LPAR Host Capacity Summary Report
Study ID: Sample zPCR Study

Capacity basis: 2094-701 @ 593.00 MIPS for a shared single-partition configuration
Capacity for z/OS on z10 and later processors is represented with HiperDispatch turned ON

LPAR Configuration		Full CPC Capacity (based on usable RCP count)					
Identity	Hardware	GP	zAAP	zIIP	IFL	ICF	Total
#1	z10 2097-E26 2097-E26/700: GP=10 zAAP=1 zIIP=1 IFL=2 ICF=1	7,116	782	709	1,741	866	11,214
#2	z10 2097-E40 2817-M15/700: GP=10 zAAP=1 zIIP=1 IFL=2 ICF=1	10,164	1,099	1,034	2,285	1,138	15,720
#3	z196 2817-M15 2817-M15/700: GP=10 zAAP=1 zIIP=1 IFL=2 ICF=1	10,250	1,114	1,074	2,287	1,138	15,863

Content Control

☐ Show Capacity Deltas

☒ Based on "z10 2097-E26"

☐ Incremental

Show capacity as

☒ Full CPC

☐ Single-CP

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Position mouse on LPAR configuration to display description

Advanced-Mode Control Panel [F:\...sharelab.zpcr]

File CPcalculator Documentation Help

Advanced-Mode Capacity Planning Control Panel

Study ID: Sample zPCR Study

Double click on a tree branch below to access the relevant windows

- Reference-CPU
 - REF 2094-701 @ 593.00 MIPS
- LSPR Processor Table
 - General Purpose CPs
 - IFLs
- LPAR Configurations
 - #1 z10 2097-E26
 - #2 z10 2097-E40
 - #3 z196 2817-M15

Manage Compare Migrate & Analyze QuickStart Guide

z10 2097-E26 10-EC Configuration z10 EC/700 LPAR Host: 2097-E26/700						
Pool CP Type	#1 GP	#2 zAAP	#3 zIIP	#4 IFL	#5 ICF	CPC Total
RCPs	10	1	1	2	1	15
Partitions	4	1	1	2	1	9
LCPs	21	1	1	3	1	27
Capacity	7,116	782	709	1,741	866	11,214

Capacity basis: 2094-701 @ 593.00 MIPS for a shared single-partition configuration

Exit zPCR

Save Study

3 Ways to Input Data into zPCR

- **1 – Manually**
 - For “what if” when no processor/system exists

- **2 – RMF**
 - When processor/system exists

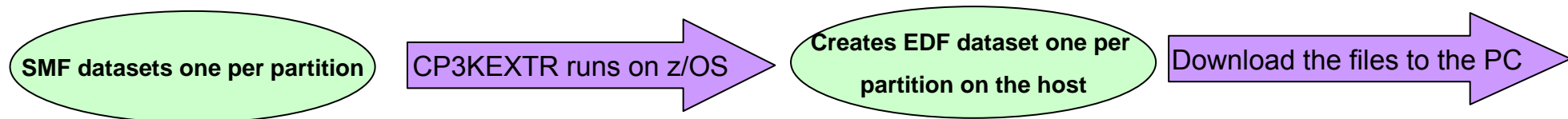
- **3 - EDF File**
 - When processor/system exists
 - Recommended because of CPU MF input

EDF Input for zPCR

z/OS

Turn on CPU MF to start SMF 113 recording (primary partitions)

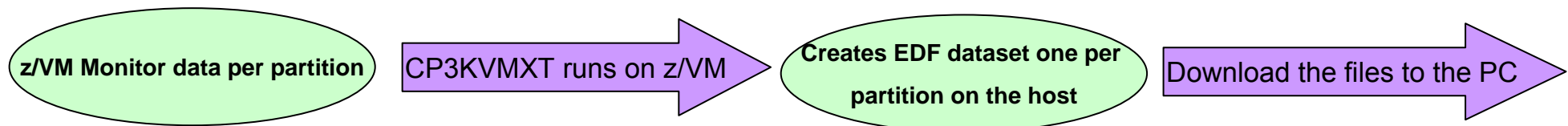
Post process SMF data with CP3KEXTR to produce EDF



z/VM

Enable Monitor to record CPU MF data (primary partitions)

Post process Monitor data with CP3KVMXT to produce EDF



z/OS EDF Input

z/OS on System z

Turn on CPU MF to start SMF 113 recording (primary partitions)

Post process SMF data with CP3KEXTR to produce EDF

Get zPCR CP3KEXTR here: <http://www.ibm.com/support/techdocs/atsmastr.nsf/WebIndex/PRS4229>

Windows PC with zPCR installed

Download EDF (1 per partition) to PC

In zPCR, Get Host and Partitions from EDF

Load EDF(s)

Select (or drag) Processor Partitions simultaneously ←

Gets CPU MF and
Parked Engines
for all partitions
at the same time

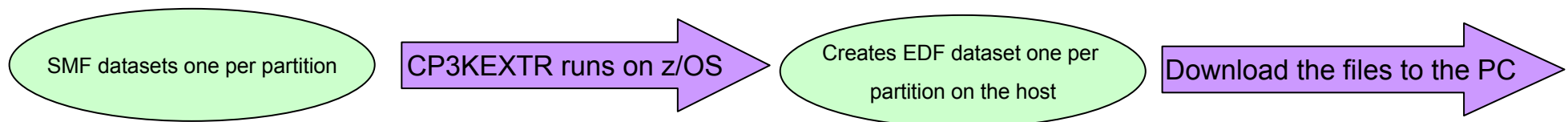
Select a representative interval

Show LPAR Host and its partition configuration

Create LPAR Configuration

Partitions with SMF 113s will assign “CPU MF” workload

Partitions with SMF 74s will show “DASD I/O” workload



Load the EDF files into zPCR

Get host and partitions
from EDF file

LPAR Host and Partition Configuration [untitled]

LPAR Configuration Capacity Planning
Based on LSPR Data for IBM System z Processors
Study ID: Not specified

Description:

LPAR Host Processor		
Processor	Family	
Processor	Model	
Speed	Setting	
Books	Configured	
Books	Unused	
Maximum	CPs	
Maximum	Partitions	
CP Type	Assigned	Unused
GP		
zAAP		
zIIP		
IFL		
ICF		
Total		

Logical Partition Configuration				
CP Pool	Partition Mode	No. of Real CPs	No. of Logical Partitions	LCP:RCP Ratio

Define LPAR Host Processor

Create Host and Partitions From

Define Partitions

Copy Partitions From

Capacity Reports

Load the EDF files into zPCR – Select an Interval

Select an interval

DASD I/O data available

Sort on GP Pool Utilization

EDF Interval Selection

EDF File Name: I:\zpcr\UGSample.edf

Relative Interval Number	CPC ID	GP Processor Model	Date	Time	Interval Length	Number of Active Partitions	Available Data		Pool 1 GP Pool Utilization
							CPU-MF	DASD	
3.	CECAAAA	2097-713	2010-09-27	11:00:00	01:00:00	4	✓	✓	58.32%
2.	CECAAAA	2097-713	2010-09-27	10:00:00	01:00:00	4	✓	✓	55.56%
6.	CECAAAA	2097-713	2010-09-27	14:00:00	01:00:00	4	✓	✓	52.73%
4.	CECAAAA	2097-713	2010-09-27	12:00:00	01:00:00	4	✓	✓	52.14%
7.	CECAAAA	2097-713	2010-09-27	15:00:00	01:00:00	4	✓	✓	50.64%
5.	CECAAAA	2097-713	2010-09-27	13:00:00	01:00:00	4	✓	✓	49.95%
8.	CECAAAA	2097-713	2010-09-27	16:00:00	01:00:00	4	✓	✓	40.30%
15.	CECAAAA	2097-713	2010-09-27	23:00:00	00:45:00	4	✓	✓	32.37%
9.	CECAAAA	2097-713	2010-09-27	17:00:00	01:00:00	4	✓	✓	29.83%
11.	CECAAAA	2097-713	2010-09-27	19:00:00	01:00:00	4	✓	✓	28.48%

Table View

☐ Show All Pools Number of intervals: 15

Load EDF Show Partitions

Click on a row to select interval for which zPCR partition definitions are to be created

CPU MF (SMF 113) data available

LPAR Configuration from EDF for Chosen Interval

Click "Create LPAR Configuration"

LPAR Configuration from EDF

z/OS SMF Data Set Name: Sample.SMF.FILE
 Extract Version: CP3KEXTR08/11/10
 EDF File Name: I:\zpcr\UGSample.edf
 Interval #3: Date=2010-09-27 Time=11:00:00 Length=01:00:00
 CPC ID: CECAAAA; GP Processor Model = 2097-713
 z10-EC Host = 2097-E26/700 with 13 CPs: GP=13

Create Active Study

LPAR Host as specified above
 Partition Configuration as specified below

Copy LP	Partition Identification						Partition Configuration					Additional Info		Workload Assignment Metrics						
	Active	No.	Type	Name	SCP	Assigned Workload	Mode	LCPs	Weight	Weight %	CAP			RNI	Physical Utilization	DASD I/O Rate/Sec	Workload Choice		Method Used	
												CPU-MF	DASD I/O							
<input checked="" type="checkbox"/>	✓	1	GP	LP-01	z/OS-1.11	Average	SHR	13.0	845	84.5%		✓	2.0	0.80	44.33%	4,610.8	Average	Average	CPU-MF	
<input checked="" type="checkbox"/>	✓	2	GP	LP-02	z/OS-1.11	Average	SHR	5.0	120	12.0%					12.86%				Default	
<input checked="" type="checkbox"/>	✓	3	GP	LP-03	z/OS-1.11	Average	SHR	2.0	25	2.5%					0.69%				Default	
<input checked="" type="checkbox"/>	✓	4	GP	LP-04	z/OS-1.11	Average	SHR	2.0	10	1.0%					0.11%				Default	

☒ Remove Parked LCPs from Partition LCP Count

Select All

Select Active

Remove All

Choose Another EDF Interval

DASD I/O Method
Workload Selection Assistant

Create LPAR Configuration

Note: One or more partitions have "Parked" LCPs. The LCP count for HyperDispatch partitions should be reduced by the number of "Parked" LCPs

Click on "Copy LP" checkbox to select partitions to be copied to the active study

Output Options

- **Types**
 - CSV
 - HTML

- **Processed by**
 - Spreadsheets (HTML and CSV)
 - Word Processors (HTML)
 - Browsers (HTML)

Output Results

Output to
HTML file

Output to
CSV file

Partition Detail Report

Graph CPcalculator Documentation

HTM CSV

Partition Detail Report
Based on LSPR Data for IBM System z Processors
Study ID: Sample zPCR Study

#1 z10 2097-E26
Description: 10-EC Configuration

z10 EC/700 Host = 2097-E26/700 with 15 CPs: GP=10 zAAP=1 zIIP=1 IFL=2 ICF=1
9 Active Partitions: GP=4 zAAP=1 zIIP=1 IFL=2 ICF=1
Capacity basis: 2094-701 @ 593.00 MIPS for a shared single-partition configuration
Capacity for z/OS on z10 and later processors is represented with HiperDispatch turned ON

Include	Partition Identification					Partition Configuration					Partition Capacity	
	No.	Type	Name	SCP	Workload	Mode	LCPs	Weight	Weight %	CAP	Minimum	Maximum
<input checked="" type="checkbox"/>	1	GP	LP-01	z/OS-1.9*	Average	SHR	10	700	53.23%		3,865	7,261
<input checked="" type="checkbox"/>	2	GP	LP-02	z/OS-1.9*	Average	SHR	6	400	30.42%		2,207	4,353
<input checked="" type="checkbox"/>		zAAP	LP-02	z/OS-1.9*	Average	SHR	1	400	100.00%		782	782
<input checked="" type="checkbox"/>	3	GP	LP-03	z/OS-1.9*	High	SHR	4	200	15.21%		968	2,547
<input checked="" type="checkbox"/>		zIIP	LP-03	z/OS-1.9*	High	SHR	1	200	100.00%		709	709
<input checked="" type="checkbox"/>	4	GP	LP-04	z/VM	High/LV	SHR	1	15	1.14%	<input checked="" type="checkbox"/>	76	76
<input checked="" type="checkbox"/>	5	IFL	LP-05	Linux	Average/L	SHR	2	200	88.89%		1,547	1,741
<input checked="" type="checkbox"/>	6	IFL	LP-06	Linux	Average/L	SHR	1	25	11.11%		193	870
<input checked="" type="checkbox"/>	7	ICF	LP-07	CFCC	CFCC	DED	1	n/a			866	866

Table View Controls

Display zAAP/zIIP/IFL Partitions
☒ With Associated GP ☐ Separate by Pool

Show GP Pool Specialty Pools
☒ All Partitions ☒ GP ☒ zAAP ☒ zIIP
☐ Includes Only ☒ IFL ☒ ICF

Capacity Summary by Pool

CP Pool	RCPs	Partitions	LCPs	SHR LCP:RCP	Capacity
GP	10	4	21	2.100	7,116
zAAP	1	1	1	1.000	782
zIIP	1	1	1	1.000	709
IFL	2	2	3	1.500	1,741
ICF	1	1	1	All DED	866
Totals	15	9	27		11,214

Host Summary Modify SCP/Workload LCP Alternatives zAAP/zIIP Loading Calibrate Capacity

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Single Spot on the Web to Get More Information

- zPCR Getting Started Page
<http://www.ibm.com/support/techdocs/atsmastr.nsf/WebIndex/PRS1381>
 - Contains:
 - Downloadable Code
 - zPCR Users Guide
 - External File Layout documentation
 - Links to both CP3KEXTR and CP3KVMXT
 - Link to enabling CPU MF information
 - Technical Support Information
 - Training materials in .avi format (voice over foils)
 - zPCR Demonstration
 - 5 sections (wmv files)
 - > Fundamentals
 - > LPAR planning (basic and Advanced mode)
 - Education Exercises
 - 1 Advanced Mode Exercise for z10 to z196
 - Special Notices and FAQs
- Q&A and defect support are available through email: zpcr@us.ibm.com

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The screenshot shows the IBM Techdocs website. At the top is the IBM logo and a navigation bar with links: Home, Solutions, Services, Products, Support & downloads, and My IBM. A search bar is located to the right of the navigation bar. Below the navigation bar, a welcome message reads "Welcome Kathy Walsh [Not you?] [IBM Sign in]". The main content area is titled "Techdocs - the Technical Sales Library". On the left side, there is a "Techdocs Library" sidebar with a list of categories: Flashes, Presentations & tools, Technotes & tips, FAQs, White papers, Solution scenario profiles, Customer support plans, Sizings, Auxiliary Material, Search Techdocs, and Techdocs feedback. Below this sidebar is a "Related links" section with links to "Redbook publications" and "IBM Software Support Handbook". The main content area features a large image of a person working on a laptop. To the right of the image, there are three boxes: "New to Techdocs?" with a link to "Learn more", "Returning to Techdocs?" with a link to "Latest updates", and "Need Technical Support?" with a link to "Support & downloads". Below the image, a paragraph describes the site's purpose: "This site provides access to the Technical Sales Support organization's technical information databases. It gives you access to the most current installation, planning and technical support information available from IBM pre-sales support, and is constantly updated. You can browse or search these databases by date, document number, product, platform, keywords, etc." Below this paragraph, a section titled "New to Techdocs?" provides a link to a "detailed introduction". Further down, a search section allows users to search the full Techdocs database or a specific category. It includes a search bar, a "for:" dropdown, a "Hits:" dropdown set to "50", an "Order by:" dropdown set to "relevance", and an "Include docs updated:" dropdown set to "any time". There are also checkboxes for "Allow word variants" and "Fuzzy" search, a "Search" button, and a "Help for Search" link. At the bottom, a section titled "Also available:" links to "Advanced search".

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Techdocs - the Technical Sales Library

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Related links

- Redbook publications
- IBM Software Support Handbook

This site provides access to the Technical Sales Support organization's technical information databases. It gives you access to the most current installation, planning and technical support information available from IBM pre-sales support, and is constantly updated. You can browse or search these databases by date, document number, product, platform, keywords, etc.

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System z Social Media

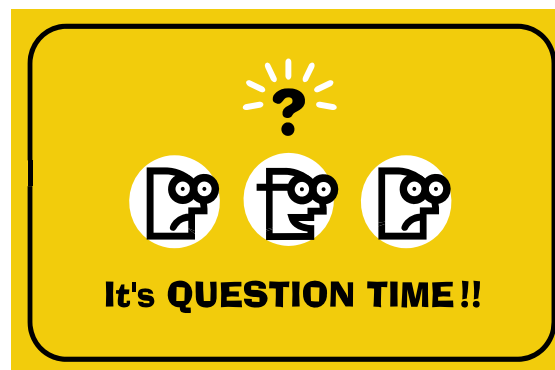
- System z official Twitter handle:
 - ▶ [@ibm_system_z](https://twitter.com/ibm_system_z)
- Top Facebook pages related to System z:
 - ▶ [Systemz Mainframe](#)
 - ▶ [IBM System z on Campus](#)
 - ▶ [IBM Mainframe Professionals](#)
 - ▶ [Millennial Mainframer](#)
- Top LinkedIn Groups related to System z:
 - ▶ [Mainframe Experts Network](#)
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 - ▶ [System z Advocates](#)
 - ▶ [Cloud Mainframe Computing](#)
- YouTube
 - ▶ [IBM System z](#)



- Leading Blogs related to System z:
 - ▶ [Evangelizing Mainframe \(Destination z blog\)](#)
 - ▶ [Mainframe Performance Topics](#)
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Summary

- **zPCR models your unique Processor configuration**
 - Based on LPARS, weights, # of logical processors, workload mix and Specialty Engines
- **Built upon LSPR benchmarks**
- **Using zPCR is Easy**
- **Use zPCR to correctly size your processor**



Back Up

In Advanced-Mode, some zPCR functions are not available

- **You cannot return to the Function Selection window**
- **Basic-mode study files cannot be created**
 - Studies will be saved in Advanced-Mode format
- **The MI Reference-CPU cannot be set independently of the Reference-CPU**
 - While viewing the Multi-image table you may set a “temporary” Reference-CPU.

Acknowledgements

- **Many people contributed to this presentation including:**

John Fitch

Gary King

Jim Shaw

Brad Snyder

Kathy Walsh

What is new in zPCR V8.1...

- The **IBM zEnterprise EC12 (zEC12)** processor family has been added, with 161 General Purpose models and 101 IFL models. Various book configurations provide up to 101 real CPs, which can be configured as General Purpose, zAAP, zIIP, IFL, or ICF engines. The processor designation is 2827-XXX.
- • **LSPR data for z/OS is now based on z/OS-1.13** (formerly z/OS-1.11)
 - For zEC12, z196, z114, and z10 processors, z/OS LSPR data represents HiperDispatch turned on. This means that capacity results for defined LPAR configurations on these processor families also are assumed to represent HiperDispatch turned on.
 - zEC12 and z196 processors can be sized at *Full Capacity* (default) or in *Power Saving Mode*. In the LSPR tables, capacity values and MSU ratings for either can be displayed.
 - CFCC data is not displayed in any LSPR table, but is included for the purpose of sizing partitions running it. CFCC v18 capacity data now represents z196 as well as zEC12.
- **LSPR Capacity Ratio tables**
 - The *LSPR Multi-Image Table* includes all IBM System z processor families and models, for up to 101 General Purpose CPs or 101 IFLs.
 - The *LSPR Single-Image Table* includes all IBM System z processor families and models for up to 99 CPs (the maximum supported by z/OS). The tables for Linux and z/VM have been removed, since there were significant restrictions on the number of CPs that could be shown.

What is new in zPCR V8.1 continued...

- ***LPAR Configuration Capacity Planning*** function.
 - Adjustment to some algorithms and tables has occurred, for the purpose of more accurately projecting partitioned capacity. This change along with the LSPR change of moving to z/OS-1.13 will likely have some effect on capacity results from those of previous zPCR versions..
 - The zPCR restriction of 32 logical CPs for Linux partitions has been removed. Any legitimate Linux LCP configuration (GP or IFL) up to 101-way can now be defined.
 - On the *LPAR Host Summary* window, the estimates for *LPAR Management Time* have been revised downward to better represent that of contemporary processors.
 - *zAware* can now be configured to an IFL or GP partition as an additional SCP type.
- **Capacity results from zPCR v8.1 should not be compared to those of previous zPCR versions**
 - Capacity comparisons should always be made using the same zPCR version
 - Such comparisons will remain substantially unchanged regardless of the version being used.

What is new in zPCR C V7.9b...

- **LPAR Configuration Capacity Planning** function:
 - zPCR algorithms for multi-book configurations have been updated.
 - Partition capacity results for multi-book systems will be higher than those from previous zPCR versions.
 - The largest improvements will be seen on 4-book processors, 2 and 3 book processors improvements will be less
- **Advanced-Mode** – The number of LPAR configurations defined has been increased from 6 to 7
- **LSPR Capacity Ratio tables** now default to showing all 5 LSPR workload categories
- **EDF** input for z/VM partitions:
 - CPU-MF counter data from z/VM is now recognized by zPCR
 - Will be used to make the workload assignment for the partition.
- **RNI calculation** – Minor change for z196 and z114 processors
- **Capacity results from zPCR v7.9b should not be compared to those of previous zPCR versions**
 - Capacity comparisons should always be made using the same zPCR version
 - Such comparisons will remain substantially unchanged regardless of the version being used.



Advanced Technical Skills (ATS) North America

zPCR Capacity Sizing Lab – Part 2 Hands-on Lab

SHARE - Session 12674

February 7, 2013



John Burg

Brad Snyder

Materials created by John Fitch and Jim Shaw

IBM



Agenda

- Lab Exercise Introduction
- Lab Exercise

Overview of Lab Exercise

■ XYZ Corporation Background

- Currently has System z196
 - 2817-707 (7 way GCPs)
 - Customer views it as having 7,127 MIPS from last zPCR
 - Machine averages 100% busy during peak

■ Plan being developed to replace with zEC12

- Must have at least 20%+ additional capacity
 - at least 8,553 MIPS
- Prefer a 2827-7xx but would consider a sub-capacity 2827-6xx

Lab Exercise – Tasks to Complete

- Task 1 – Load EDF containing the latest RMF/SMF data
 - Including SMF 113s
- Task 2 – Rename the configuration
- Task 3 - Save the current study in Advanced-Mode
 - e.g. task2.zpcr
- Task 4 - Find an appropriate zEC12 700 replacement processor
- Task 5 - Model the intended zEC12 LPAR host using Advanced Mode
- Task 6 - Review the Capacity results and save the Study
 - Use a different file name than Task 3, e.g. task6.zpcr

- Additional Analysis To Try
 - A. Model a zEC12 600 as an alternative
 - B. Add 1 IFL partition running Linux for System z under z/VM to zEC12 700

The purpose of this lab is to enable familiarization and skill in executing zPCR Advanced Mode, and it may not necessarily reflect capacity sizing best practices