



Advanced Technical Skills (ATS) North America

zPCR Capacity Sizing Lab

SHARE - Sessions 10885 / 10880

March 15, 2012

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 with C V7.7
- Includes Advanced Mode Update
- What's new in zPCR V7.7a

■ Part 2 – Hands-on Lab

- 1 Exercise to demonstrate the use of Advanced Mode functions in zPCR
 - 6 Tasks
 - 2 optional specialty engine considerations
- Use as a refresher



Advanced Technical Skills (ATS) North America

zPCR Capacity Sizing Lab – Part 1 Introduction and Overview

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Agenda

- **Introducing zPCR**
- **LSPR Background**
- **MIPS Tables Vs. zPCR LPAR Configuration Capacity Planning**
- **zPCR Basic Mode**
- **zPCR Advanced Mode**
- **Update on zPCR C V7.7a**
- **Where to get more Information**
- **Summary**

Introducing zPCR

- **Provides capacity relationships for System z processors, considering**
 - LPAR configuration
 - 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**
 - Available to customers since 10/2005
 - “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

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
 - Current LSPR workload categories: Low, Average, High
 - zPCR extends published categories
 - Low-Avg
 - Avg-High
 - A methodology focused on processor capacity
 - No significant external constraints
 - Equivalent (reasonably high, e.g. $\geq 95\%$) 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/lspindex?OpenDocument>

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

RNI-based LSPR Workload Decision Table

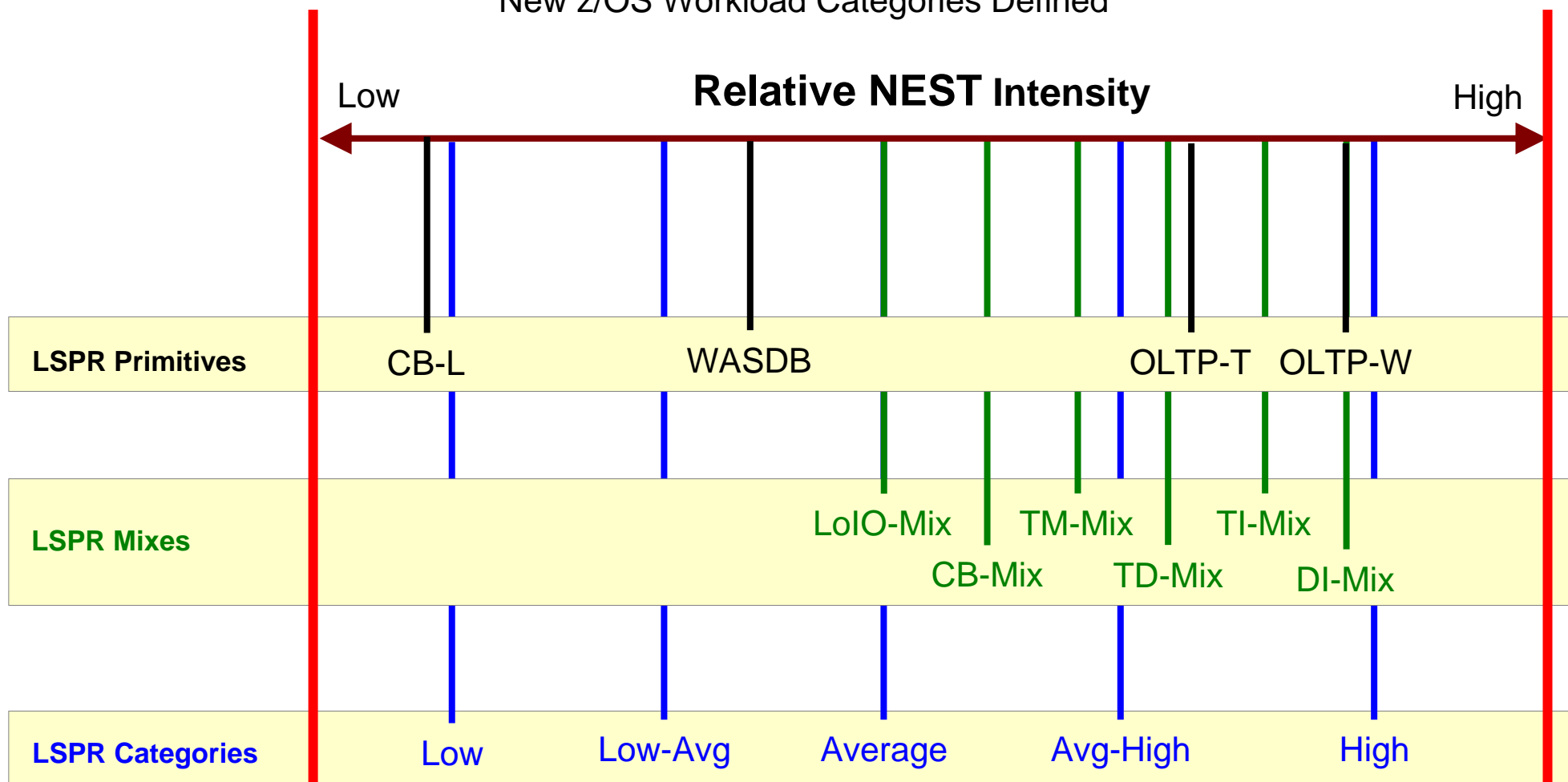
L1MP	RNI	LSPR Workload Match
<3%	≥ 0.75	AVERAGE
	< 0.75	LOW
3% to 6%	> 1.0	HIGH
	0.6 to 1.0	AVERAGE
	< 0.6	LOW
$> 6\%$	≥ 0.75	HIGH
	< 0.75	AVERAGE

Notes: applies to z10, z196 and z114 CPU MF data
table may change based on feedback

zPCR Workload Characterization for z/OS

“Scope of Work” Definition Change

New z/OS Workload Categories Defined



Use zPCR's Workload Selection Assistant to choose appropriate workload category

Automated with EDF input into zPCR

Note: Workload selection is automated in zCP3000

LSPR Data

- 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
- Cannot directly compare relative processor capacity across different versions of LSPR benchmarks

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
 - Used to develop the MSU rating
- Single-image (SI) Processor Capacity Ratio table
 - One z/OS partition equal in size to N-way of model (limit to max CPs supported by SCP version)
 - Representative for truly single image z/OS cases
 - Used as the base for zPCR LPAR Configuration Capacity Planning

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

What is new in zPCR C V7.7a

Available since February 22, 2012

■ **LPAR Configurations from EDF**

- Workload Assignment for z/OS partitions:
 - When **CPU MF (SMF 113s)** data is captured, it will now be used to assign the workload category
 - no longer the former **CPU-MF Hint**.
 - Or if just the **DASD I/O Rate (SMF 74s) data** is captured, it will be used to assign the workload category
 - Else all remaining partitions (z/OS or otherwise) will be assigned the default workload category for that SCP.
 - Where **DASD I/O Rate** is known, manual input will provide a more appropriate workload category selection.
- A **Remove Parked LCPs from Partition LCP Count** checkbox is now provided.
 - If checked (the default), all parked z/OS LCPs will be removed when the configuration is transferred into zPCR
 - Utilize for HD=YES partitions
- When generating **EDF** for input for zPCR, be sure that the most recent version of the CP3KEXTR program is being used.
 - <http://www.ibm.com/support/techdocs/atmastr.nsf/WebIndex/PRS4229>

■ **LPAR configurations from RMF**

- Workload Assignment
 - For all partitions, the default workload category for that SCP will be assigned.
 - For z/OS partitions where DASD I/O Rate may be known, manual input will provide a more appropriate workload category selection.
- A **Remove Parked LCPs from Partition LCP Count** checkbox is now provided. If checked (the default), all parked z/OS LCPs will be removed when the configuration is transferred into zPCR.
 - Utilize for HD=YES partitions
 - For RMF 1.10 and higher

What is new in zPCR C V7.7a ...

■ **Advanced-Mode:**

- A new *Migrate & Analyze* function has been added.
 - The user selects the LPAR configuration that is the target for migrations and clicks the toolbar icon.
 - The **Copy Partitions: Receiving LPAR Configuration** window is opened.
 - The LPAR configurations from which partitions are to be copied is then selected.
 - As additional partitions are copied to the **Receiving Configuration, Minimum Capacity** values are recomputed and compared to the original values for the entire configuration.
 - > Changes to the original partitions can also be made.
 - Useful for consolidation of LPARs

■ **LPAR Configuration Capacity Planning** function

- Metrics driving algorithms for **CFCC** have been changed, based on recent **CFCC** benchmarks.
- This change should result in somewhat improved CFCC capacity results for all processor families
 - Particularly z196 and z114 processors.

What is new in zPCR C V7.7 ...

- **Host Capacity Summary** window (**Advanced-Mode**) enhancement:
 - A new checkbox is provided to add table rows presenting the capacity percent deltas between LPAR configurations.
 - The deltas can all be relative to the 1st LPAR configuration,
 - or calculated incrementally, progressing through each LPAR configuration..

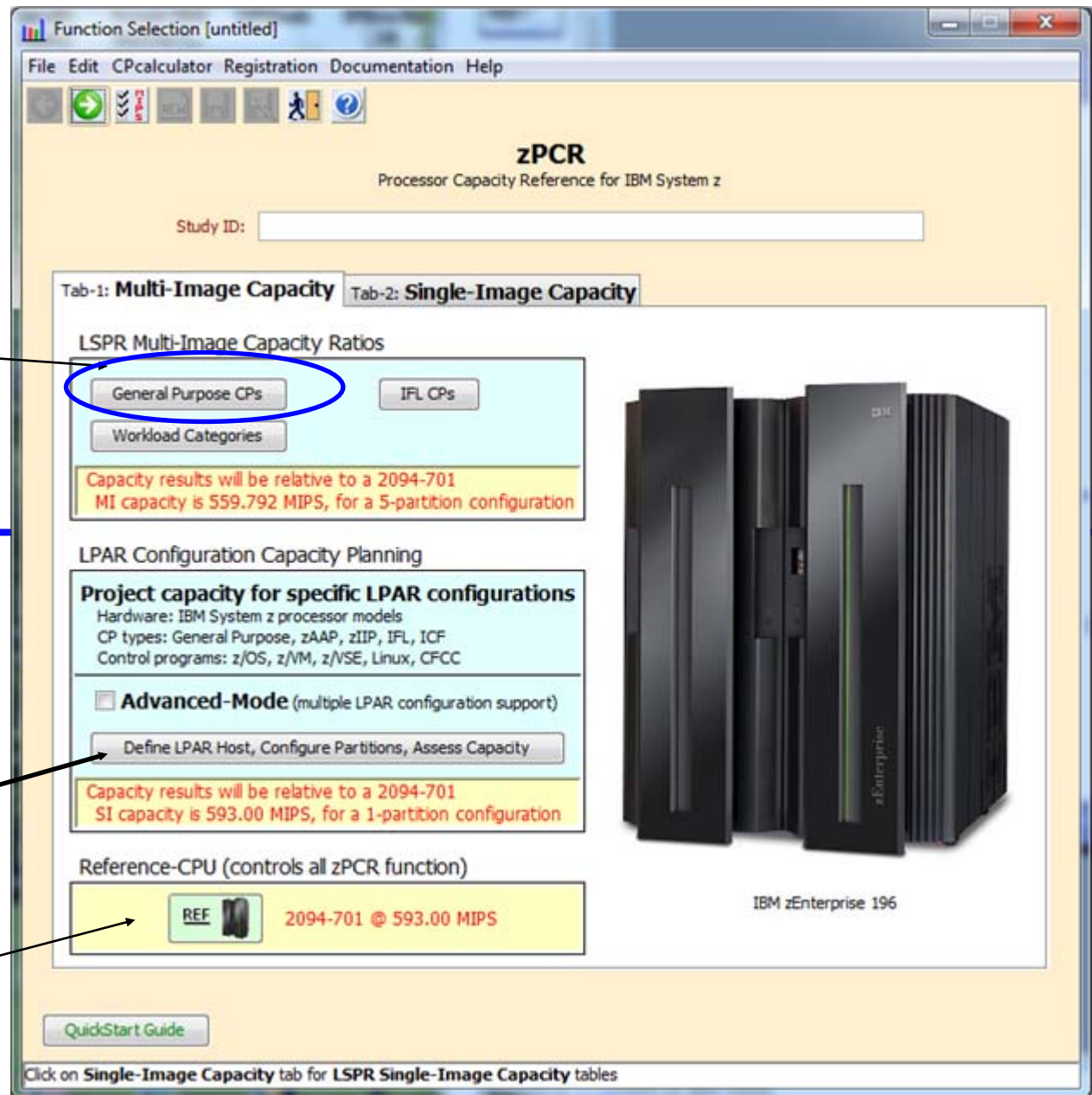
zPCR 7.7 “Basic Mode” Capacity Sizing Tool

MIPS Table

LSPR Multi-Image

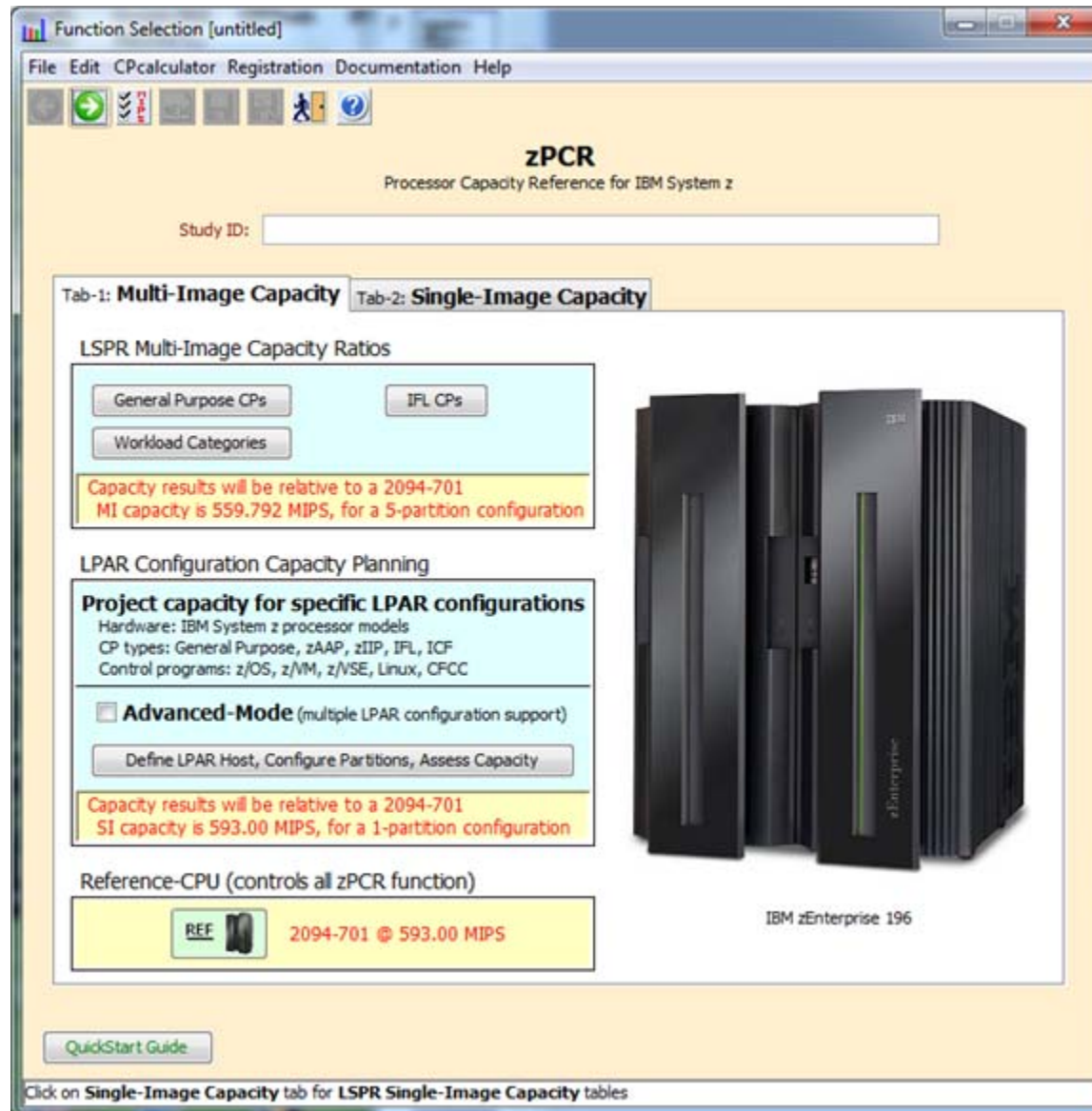
**zPCR LPAR
Configuration
Capacity Planning**

**Built on LSPR
Single-Image
MIPS Table**



Introducing zPCR C V7.7a – Advanced Mode

Available for Customers since February 22, 2012



zPCR Advanced Mode

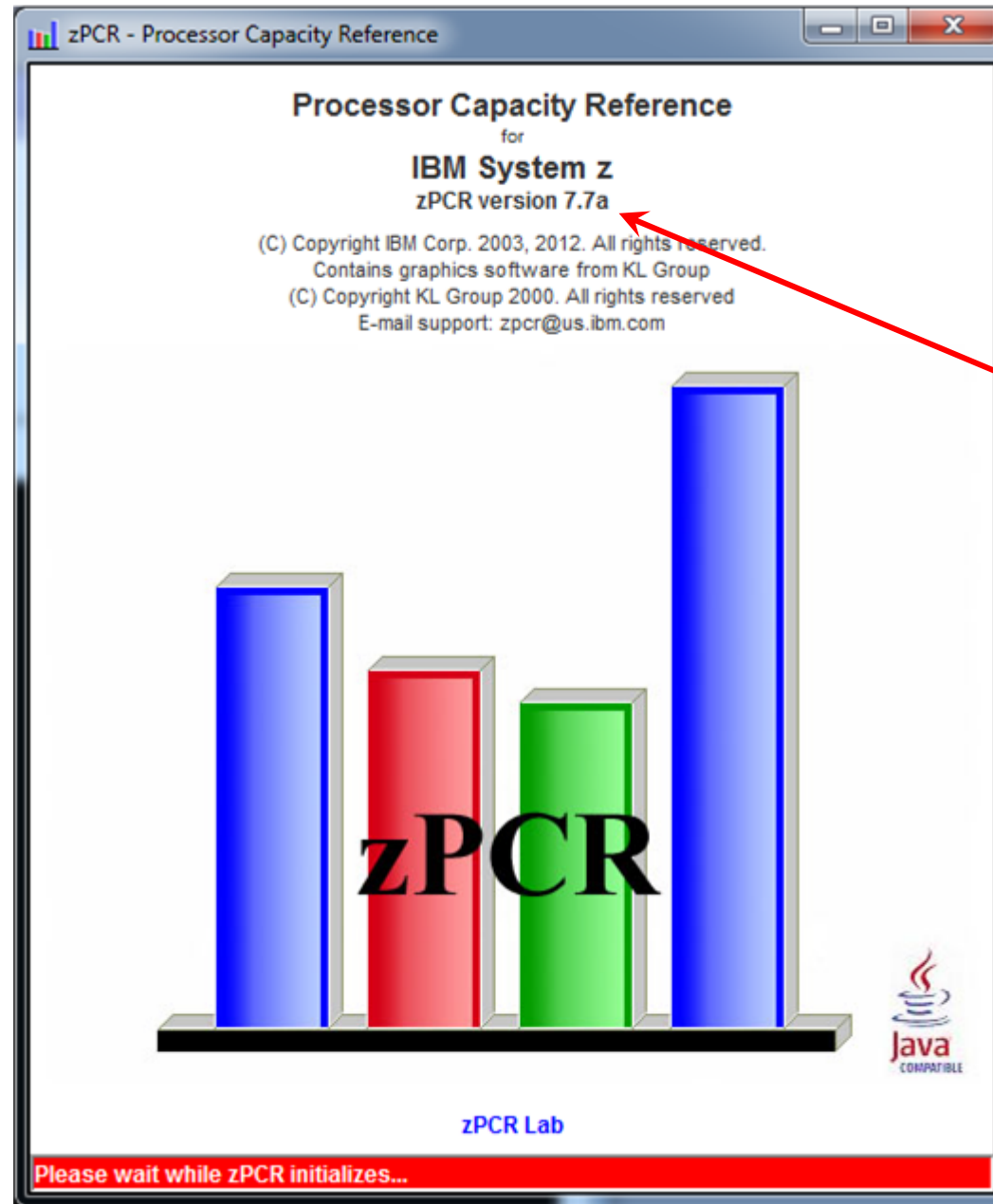
- **Provides Capacity Comparisons between 2 LPAR configurations**
 - The “Current” Vs “Alternate” (Alt-1, Alt-2, Alt-3, Alt-4, Alt-5)
 - User can rename these to what ever they wish up to 20 characters
 - More efficient than running zPCR multiple times and manually comparing the results
 - Ability to drag & drop RMF partition reports, zPCR files and *EDF files onto “Current” & “Alternate”
- **Is recommended when comparing capacity changes that include:**
 - 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

Summary of Advanced Mode function

- **Multiple LPAR configurations (currently limited to six) can be defined**
- **Several additional windows and functions are available**
 - *LPAR Host / Partition Comparison Reports*- To compare capacity results between LPAR configurations
 - *Margin of Error Consideration* - To show the effect on capacity when $\pm 5\%$ margin-of-error is applied
 - *Optimize SHR LCPs* – To optimize LCPs
 - *LPAR Host Capacity Summary* – To show summary of MIPS by pool type for Current and all Alternates
- **All capacity values are based on a single Reference-CPU setting**
 - The MI and SI tables will be viewed using Reference-CPU settings that are consistent between them
 - The MI Reference-CPU setting is based on the Reference-CPU setting as specified in the LSPR FAQ
 - 1-way processors only
- **The Reference-CPU can be calibrated for the first LPAR configuration only to produce a desired capacity result**
- **The Workloads window, used to customize the MI table view, must be accessed from either of the LSPR Processor Capacity Ratios tables,**
 - since the Function Selection window is no longer accessible

zPCR Logo Window



Version
Identification

zPCR Function Selection Window

Set "Startup" preferences

Select "Advanced-Mode" check box

Press Enter
Advanced-Mode

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, CFCC

☒ **Advanced-Mode** (multiple LPAR configuration support)
Define LPAR Host, Configure Partitions, Assess Capacity

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 196

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
Average
High

Change

Directory path for Saved Studies

Current directory

I:\zpcr

Browse

Directory path for RMF Reports

Current directory

i:\zpcr

Browse

Directory path for EDFs

Current directory

I:\zpcr

Browse

Directory path for CSV files

Current directory

I:\zpcr\csv

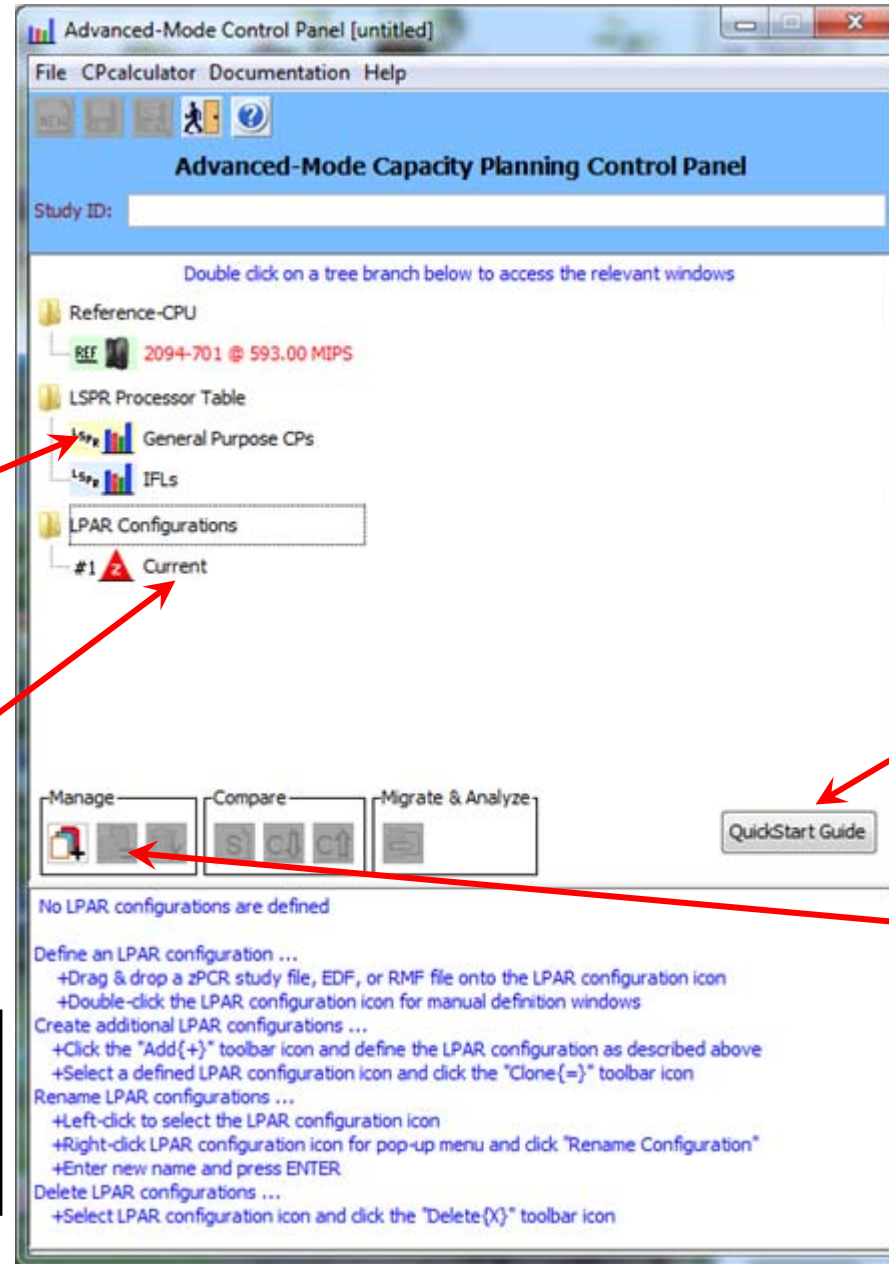
Browse

Restore Defaults

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

Set "Advanced Mode" as the default when starting zPCR

zPCR Advanced-Mode Capacity Planning Control Panel



View Multi-Image LSPR table

View "QuickStart" Guide

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 Planning Control Panel

Configuration Renamed

Configuration Summary

Advanced-Mode Control Panel [I:\...Sample Advanced Mode Study.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
 - LSPR General Purpose CPs
 - LSPR IFLs
- LPAR Configurations
 - #1 z10 2097-E26

Manage Compare Migrate & Analyze [Icons]

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	7,072	778	705	1,760	828	11,143

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

zPCR Advanced-Mode Capacity Planning Control Panel

Comparison Report

Advanced-Mode Control Panel [I:\...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 z10 2097-E26
 - #2 Proposed z196 2817-M

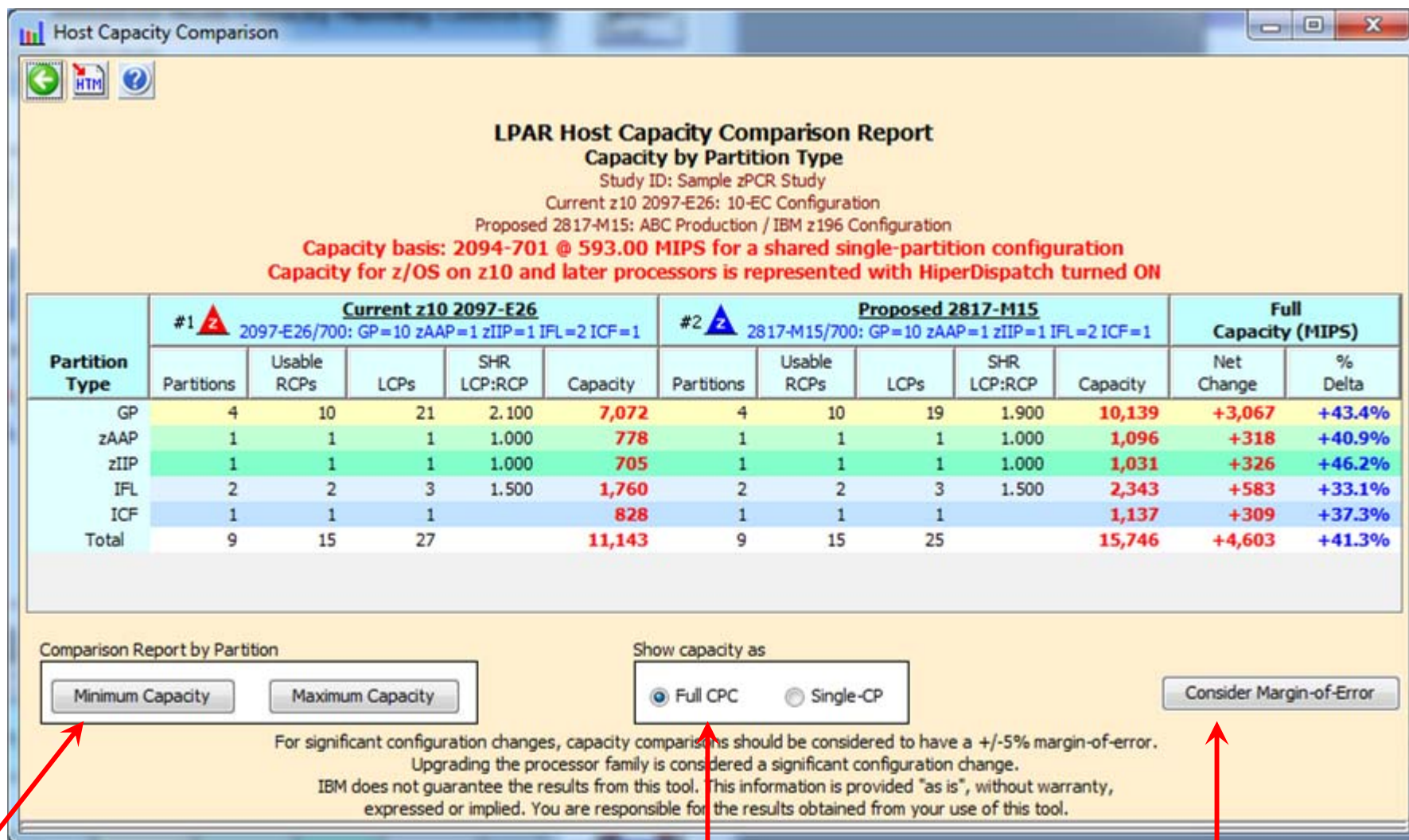
Manage Compare Migrate & Analyze

QuickStart Guide

#1	Current 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	7,072	778	705	1,760	828	11,143

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

Host Capacity Comparison Report

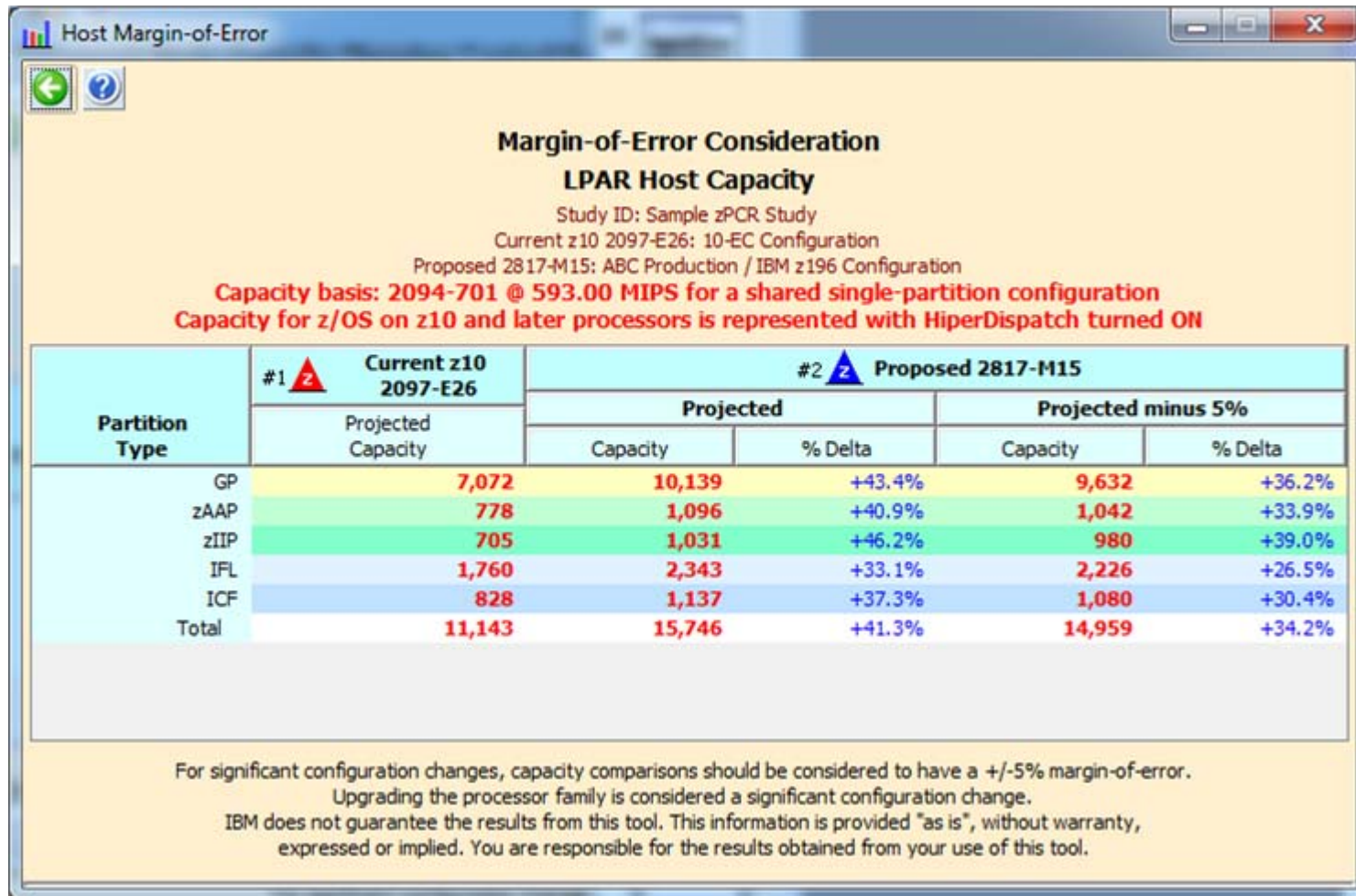


Comparison Report
by Partition

Show **Full** or
Single-CP capacity

Margin-of-Error

Margin-of-Error Report



Partition Capacity Comparison Report

Partition Capacity Comparison Report
Based on Partition Minimum Capacity

Study ID: Sample zPCR Study
Current z10 2097-E26: 10-EC Configuration
Proposed 2817-M15: ABC Production / IBM z196 Configuration

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 Current z10 2097-E26 2097-E26/700: GP=10 zAAP=1 zIIP=1 IFL=2 ICF=1						#2 Proposed 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%			
GP	LP-01	z/OS-1.9*	Average	1	SHR	10	53.23%	3,841	1	SHR	8	700	53.23%		5,487	+1,646	+42.9%
GP	LP-02	z/OS-1.9*	Average	2	SHR	6	30.42%	2,193	2	SHR	6	400	30.42%		3,113	+920	+42.0%
zAAP	LP-02	z/OS-1.9*	Average		SHR	1	100.00%	778		SHR	1	400	100.00%		1,096	+318	+40.9%
GP	LP-03	z/OS-1.9*	High	3	SHR	4	15.21%	962	3	SHR	4	200	15.21%		1,429	+467	+48.5%
zIIP	LP-03	z/OS-1.9*	High		SHR	1	100.00%	705		SHR	1	200	100.00%		1,031	+326	+46.2%
GP	LP-04	z/VM	High/LV	4	SHR	1	1.14%	75	4	SHR	1	15	1.14%	<input checked="" type="checkbox"/>	110	+35	+46.7%
IFL	LP-05	Linux	Low/L	5	SHR	2	88.89%	1,564	5	SHR	2	200	88.89%		2,082	+518	+33.1%
IFL	LP-06	Linux	Low/L	6	SHR	1	11.11%	195	6	SHR	1	25	11.11%		260	+65	+33.3%
ICF	LP-07	CFCC	CFCC	7	DED	1	n/a	828	7	DED	1	n/a			1,137	+309	+37.3%

Change Controls

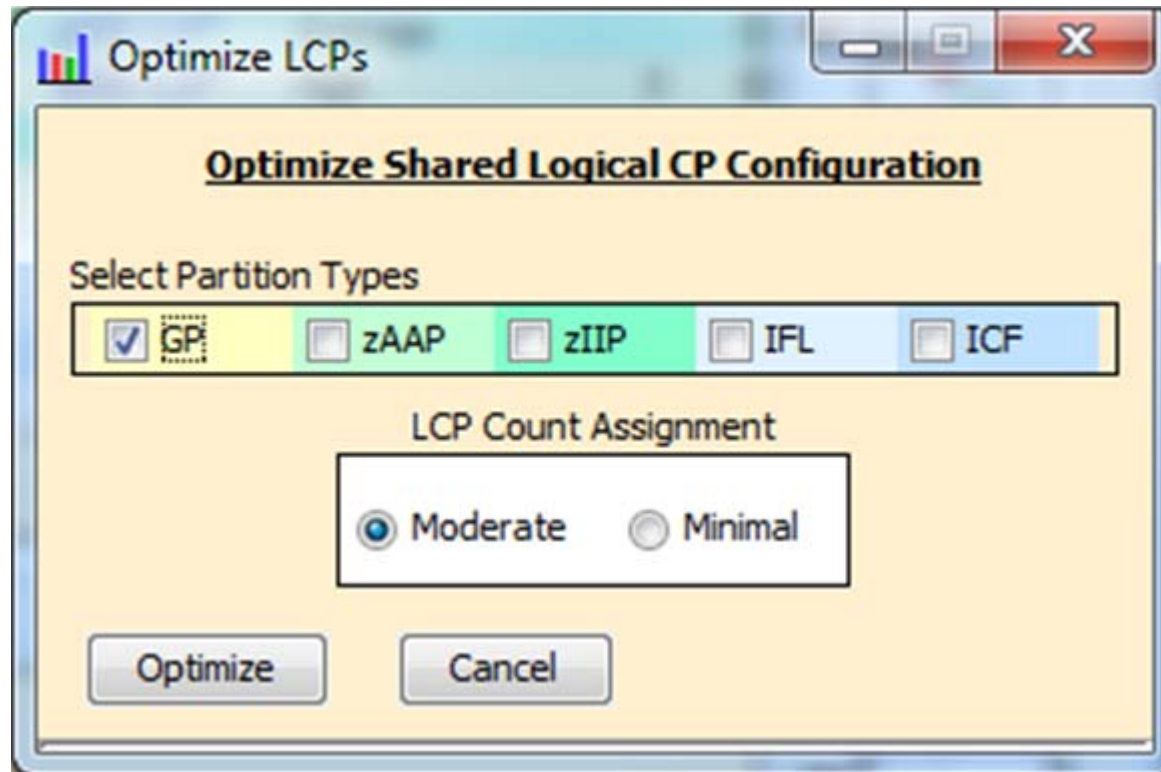
For significant configuration changes, capacity comparisons should be considered to have a +/-5% margin-of-error.
Upgrading the processor family is considered a significant configuration change.
IBM does not guarantee the results from this tool. This information is provided "as is", without warranty,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

"Optimize" SHR LCPs

Margin-of-Error

Optimize Share LCP Configuration



Commit the Changes

Partition Capacity Comparison Report
Based on Partition Minimum Capacity

Study ID: Sample zPCR Study
Current z10 2097-E26: 10-EC Configuration
Proposed 2817-M15: ABC Production / IBM z196 Configuration

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 Current z10 2097-E26 2097-E26/700: GP=10 zAAP=1 zIIP=1 IFL=2 ICF=1						#2 Proposed 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%			
GP	LP-01	z/OS-1.9*	Average	1	SHR	10	53.23%	3,841	1	SHR	7	700	53.23%		5,556	+1,715	+44.6%
GP	LP-02	z/OS-1.9*	Average	2	SHR	6	30.42%	2,193	2	SHR	5	400	30.42%		3,149	+956	+43.6%
zAAP	LP-02	z/OS-1.9*	Average		SHR	1	100.00%	778		SHR	1	400	100.00%		1,111	+333	+42.8%
GP	LP-03	z/OS-1.9*	High	3	SHR	4	15.21%	962	3	SHR	2	200	15.21%		1,408	+446	+46.4%
zIIP	LP-03	z/OS-1.9*	High		SHR	1	100.00%	705		SHR	1	200	100.00%		1,071	+366	+51.9%
GP	LP-04	z/VM	High/LV	4	SHR	1	1.14%	75		SHR	1	15	1.14%	<input checked="" type="checkbox"/>	111	+36	+48.0%
IFL	LP-05	Linux	Low/L	5	SHR	2	88.89%	1,564	5	SHR	2	200	88.89%		2,084	+520	+33.2%
IFL	LP-06	Linux	Low/L	6	SHR	1	11.11%	195	6	SHR	1	25	11.11%		260	+65	+33.3%
ICF	LP-07	CFCC	CFCC	7	DED	1	n/a	828	7	DED	1	n/a			1,137	+309	+37.3%

Change Controls

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.

Commit or Undo
Changes

Add additional partitions from RMF

Advanced-Mode Control Panel [I:\...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 z10 2097-E26
 - #2 Proposed 2817-M15

Manage Compare Migrate & Analyze

QuickStart Guide

Proposed 2817-M15 ABC Production / IBM z196 Configuration z196/700 LPAR Host: 2817-M15/700						
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	19	1	1	3	1	25
Capacity	10,139	1,098	1,031	2,343	1,137	15,746


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

Select "RMF" report and drag it onto the "Proposed 2817-M15" configuration

RMF Interval Selection

RMF Interval Selection

RMF Partition Data Report Intervals

#2  Proposed 2817-M15 (ABC Production / IBM z196 Configuration)

RMF report file: I:\zpcr\RMF-Shipping\RMFSample z9.txt

Relative Interval Number	System ID	GP Processor Model	Date	Time	Interval Length	Number of Active Partitions	Pool 1 GP Pool Utilization
1.	SYSA	2094-718	09/22/2008	07.59.00	000.59.59	7	67.37%
2.	SYSA	2094-718	09/23/2008	07.59.00	000.59.59	7	77.24%
3.	SYSA	2094-718	09/24/2008	07.59.00	000.59.59	7	63.34%
4.	SYSA	2094-718	09/25/2008	07.59.00	000.59.59	7	62.06%
5.	SYSA	2094-718	09/26/2008	07.59.00	000.59.59	7	63.78%
6.	SYSA	2094-718	09/29/2008	07.59.00	001.00.00	7	67.22%
7.	SYSA	2094-718	09/30/2008	07.59.00	000.59.59	7	62.37%
8.	SYSA	2094-718	10/01/2008	07.59.00	000.59.59	7	61.57%

Table View

☐ Show All Pools Number of intervals: 10

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

Select an interval

“Proposed 2817-M15”
configuration

Get specific partitions from RMF

Select the partitions to be added. Note zAAP/zIIP partitions will always follow the GP partition.

Copy Partitions from RMF

RMF Report File: I:\zpcr\RMF-Shipping\RMFSample z9.txt
Interval #5: Date=09/26/2008 Time=07.59.00 Length=000.59.59
System ID: SYSA; GP Processor Model = 2094-718
z9-EC Host = 2094-S38/700 with 29 CPs: GP=18 zAAP=11

Copy Partitions to Active Study
#2 Proposed 2817-M15 (ABC Production / IBM z196 Configuration)
z196/700 Host = 2817-M15/700 configured with 15 CPs: GP=10 zAAP=1 zIIP=1 IFL=2 ICF=1
Partition Configuration as specified below

Copy LP	Partition Identification						Partition Configuration				CAP	Additional Info		Workload Assignment Metrics			
	Active	No.	Type	Name	SCP	Assigned Workload	Mode	LCPs	Weight	Weight %		HD Active	LCPs Parked	Physical Utilization	DASD I/O Rate/Sec	DASD I/O Workload	Method Used
<input type="checkbox"/>	✓	1	GP	SYSA	z/OS-1.11	Average	SHR	5.0	63	6.3%				4.23%			Default
<input type="checkbox"/>	✓		zAAP	SYSA	z/OS-1.11	Average	SHR	4	10	33.3%				3.04%			
<input type="checkbox"/>	✓	2	GP	PROD1	z/OS-1.11	Average	SHR	17.8	655	65.5%				44.84%			Default
<input type="checkbox"/>	✓		zAAP	PROD1	z/OS-1.11	Average	SHR	11	10	33.3%				21.35%			
<input type="checkbox"/>	✓	3	GP	PROD2	z/OS-1.11	Average	SHR	8.0	260	26.0%				12.81%			Default
<input type="checkbox"/>	✓		zAAP	PROD2	z/OS-1.11	Average	SHR	6	10	33.3%				6.71%			
<input checked="" type="checkbox"/>	✓	4	GP	TESTB	z/OS-1.11	Average	SHR	5.0	22	2.2%				1.11%			Default

☐ Remove Parked LCPs from Partition LCP Count

Select All Select Active Remove All Chose Another RMF Interval

Copy Partitions

Workload Selection Assistant

Note: IRD is determined to be active for at least one z/OS partition. The LCPs for those partitions will be removed from the active study.
Click on "Copy LP" checkbox to select partitions to be copied to the active study

Determine the Workload

Determine the appropriate SCP/workloads

Workload assigned from the "Method" used

Copy partitions to zPCR

Copy Partitions from RMF

RMF Report File: I:\zpcr\RMF-Shipping\RMF-Sample z9.txt
Interval #5: Date=09/26/2008 Time=07:59:00 Length=000.59.59
System ID: SYSA; GP Processor Model = 2094-718
z9-EC Host = 2094-S38/700 with 29 CPs: GP=18 zAAP=11

Copy Partitions to Active Study

#2 Proposed 2817-M15 (ABC Production / IBM z196 Configuration)

z196/700 Host = 2817-M15/700 configured with 15 CPs: GP=10 zAAP=1 zIIP=1 IFL=2 ICF=1
Partition Configuration as specified below

Partition Identification							Partition Configuration				Additional Info		Workload Assignment Metrics				
Copy LP	Active	No.	Type	Name	SCP	Assigned Workload	Mode	LCPs	Weight	Weight %	CAP	HD Active	LCPs Parked	Physical Utilization	DASD I/O Rate/Sec	DASD I/O Workload	Method Used
<input type="checkbox"/>	<input checked="" type="checkbox"/>	1	GP	SYSA	z/OS-1.11	Average	SHR	5.0	63	6.3%				4.23%			Default
<input type="checkbox"/>	<input checked="" type="checkbox"/>		zAAP	SYSA	z/OS-1.11	Average	SHR	4	10	33.3%				3.04%			
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2	GP	PROD1	z/OS-1.11	Average	SHR	17.8	655	65.5%				44.84%	5,500	Average	DASD I/O
<input type="checkbox"/>	<input checked="" type="checkbox"/>		zAAP	PROD1	z/OS-1.11	Average	SHR	11	10	33.3%				21.33%			
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3	GP	PROD2	z/OS-1.11	Average	SHR	8.0	260	26.0%				12.81%			Default
<input type="checkbox"/>	<input checked="" type="checkbox"/>		zAAP	PROD2	z/OS-1.11	Average	SHR	6	10	33.3%				6.71%			
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	4	GP	TESTB	z/OS-1.11	Average	SHR	5.0	22	2.2%				1.11%			Default

☐ Remove Parked LCPs from Partition LCP Count

Select All Select Active Remove All Chose Another RMF Interval

Copy Partitions

Note: IRD is determined to be active for... to the nearest whole number.

Click on "Copy LP" checkbox to select

Workload Selection Assistant

Enter DASD I/Os per Second from RMF Workload Activity Report

Method used is either "Default" or DASD I/O

Detail report with additional partitions added

Added partition from RMF

Partition Detail Report
Based on LSPR Data for IBM System z Processors
Study ID: Sample zPCR Study
#2 Proposed 2817-M15
Description: ABC Production / IBM z196 Configuration
z196/700 Host = 2817-M15/700 with 15 CPs: GP=10 zAAP=1 zIIP=1 IFL=2 ICF=1
10 Active Partitions: GP=5 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	8	700	52.36%		5,319	8,128
<input checked="" type="checkbox"/>	2	GP	LP-02	z/OS-1.9*	Average	SHR	6	400	29.92%		3,018	6,053
<input checked="" type="checkbox"/>		zAAP	LP-02	z/OS-1.9*	Average	SHR	1	400	100.00%		1,096	1,096
<input checked="" type="checkbox"/>	3	GP	LP-03	z/OS-1.9*	High	SHR	4	200	14.96%		1,384	3,701
<input checked="" type="checkbox"/>		zIIP	LP-03	z/OS-1.9*	High	SHR	1	200	100.00%		1,031	1,031
<input checked="" type="checkbox"/>	4	GP	LP-04	z/VM	High/LV	SHR	1	15	1.12%	<input checked="" type="checkbox"/>	107	107
<input checked="" type="checkbox"/>	5	GP	TESTB	z/OS-1.11	Average	SHR	5	22	1.65%		171	5,181
<input checked="" type="checkbox"/>	6	IFL	LP-05	Linux	Low/L	SHR	2	200	88.89%		2,083	2,343
<input checked="" type="checkbox"/>	7	IFL	LP-06	Linux	Low/L	SHR	1	25	11.11%		260	1,171
<input checked="" type="checkbox"/>	8	ICF	LP-07	CFCC	CFCC	DED	1	n/a			1,138	1,138

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	5	24	2.400	9,999
zAAP	1	1	1	1.000	1,096
zIIP	1	1	1	1.000	1,031
IFL	2	2	3	1.500	2,343
ICF	1	1	1	All DED	1,138
Totals	15	10	30		15,607

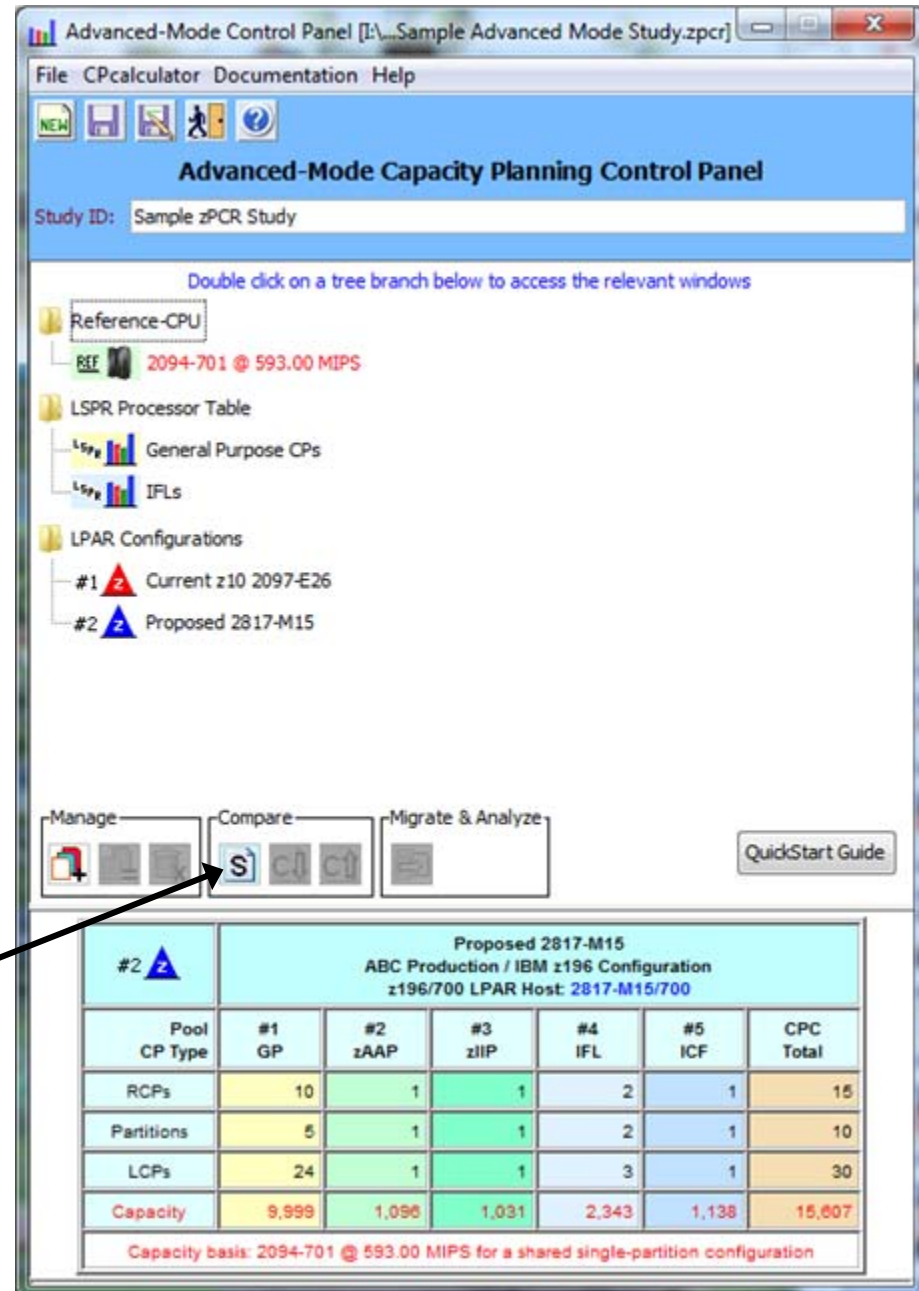
Host Summary Modify SCP/Workload LCP Alternatives zAAP/zIIP Loading

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.

Show Host Capacity Summary

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



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 Current z10 2097-E26
 - #2 Proposed 2817-M15

Manage Compare Migrate & Analyze

QuickStart Guide

Proposed 2817-M15 ABC Production / IBM z196 Configuration z196/700 LPAR Host: 2817-M15/700						
Pool CP Type	#1 GP	#2 zAAP	#3 zIIP	#4 IFL	#5 ICF	CPC Total
RCPs	10	1	1	2	1	15
Partitions	5	1	1	2	1	10
LCPs	24	1	1	3	1	30
Capacity	9,999	1,096	1,031	2,343	1,138	15,607

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

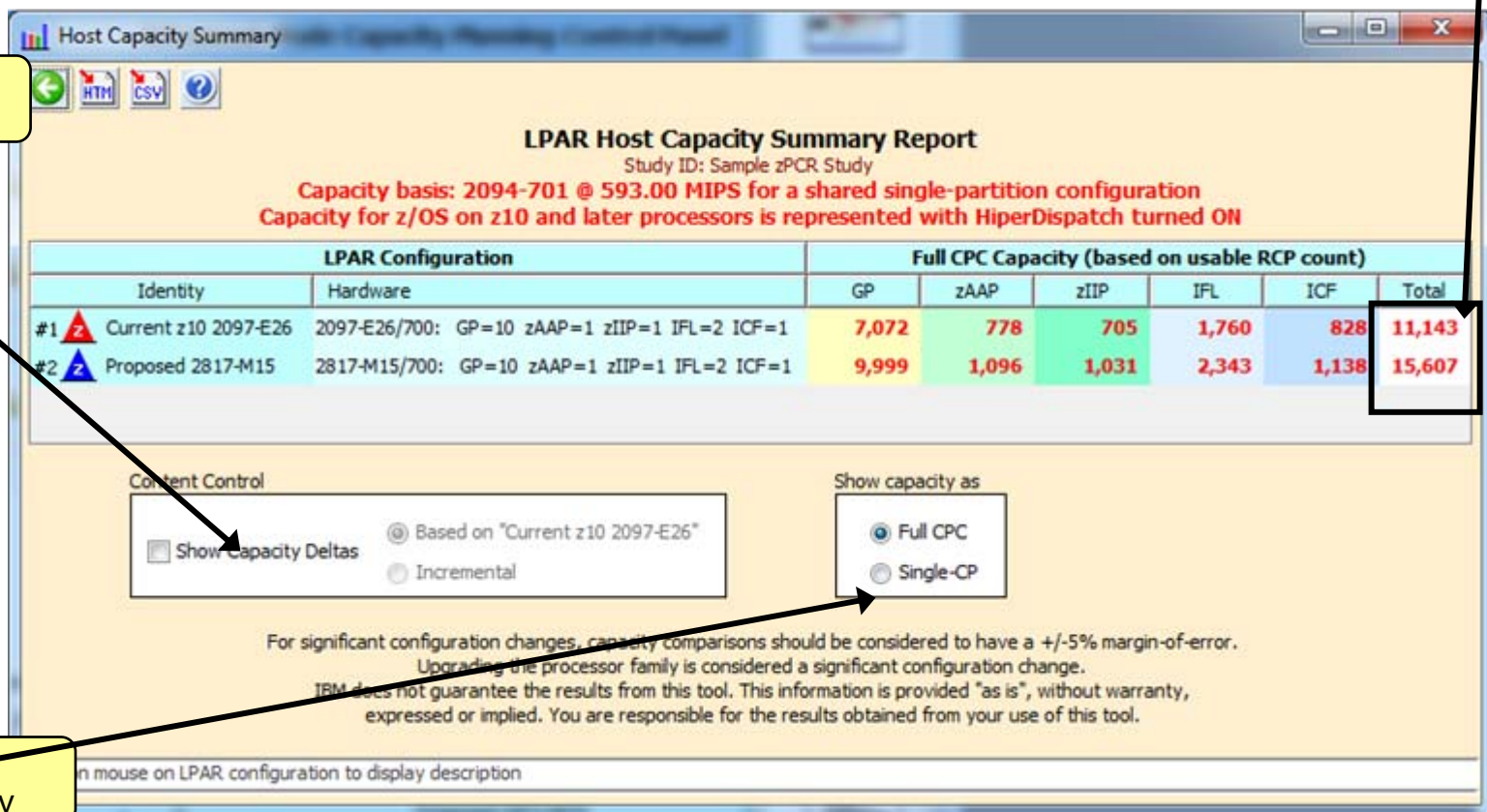
Click Host Capacity
Summary

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.
- Capacity projections may be cycled between **Full** capacity and **Single-CP** capacity using the radio buttons. This is useful for revealing relative engine speed when comparing LPAR configurations where the host family is changed.
- Click on the **Return** to take you back at the **Advanced-Mode Control Panel**.

Sum of the capacity values

Show Capacity Deltas



Show Full or Single-CP capacity

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 z10 2097-E26
 - #2 Proposed 2817-M15

Manage Compare Migrate & Analyze

QuickStart Guide

Proposed 2817-M15 ABC Production / IBM z196 Configuration z196/700 LPAR Host: 2817-M15/700						
Pool CP Type	#1 GP	#2 zAAP	#3 zIIP	#4 IFL	#5 ICF	CPC Total
RCPs	10	1	1	2	1	15
Partitions	5	1	1	2	1	10
LCPs	24	1	1	3	1	30
Capacity	9,999	1,098	1,031	2,343	1,138	15,607

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

Exit zPCR

Save Study

EDF Input for zPCR

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

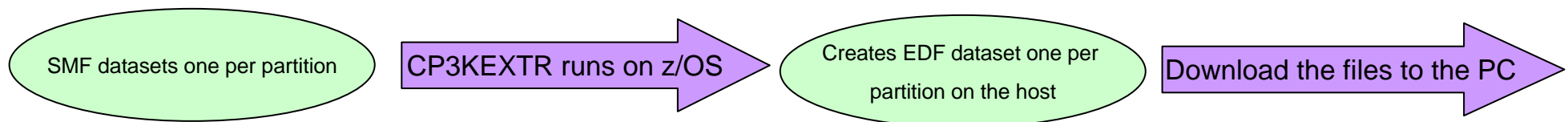
Load EDF(s)

Select a representative interval

Show LPAR Host and its partition configuration

Create LPAR Configuration

- Partition workloads assigned based on DASD I/O or default
- Partitions with SMF 113 data will show “CPU MF” 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: Enter description here

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	CPs	LCP:RCP Ratio

Define LPAR Host Processor

Specify Host

Create Host and Partitions From

EDF RMF

Define Partitions

GP IFL ICF

Copy Partitions From

EDF RMF zPCR Study

Capacity Reports

Host Summary Partition Detail Partition Utilized Capacity

Load the EDF files into zPCR

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

Important Considerations when getting LPAR configuration metrics

2 Parked Engines for the partition in this interval

DASD I/Os per second from RMF 74s

Remove parked engines

"RNI" for the partition

HiperDispatch active for the partition

Pass the mouse over the "RNI" to reveal the actual metrics used

LPAR Configuration from EDF
 z/OS SMF Data Set Name: Sample SMF FILE
 Extract Version: CP3KEXT
 EDF File Name: I:\zpcr\UGS
 Interval #3: Date=2010-09-27 Time=11:00:00
 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

Partition Identification							Partition Configuration					Additional Info		Workload Assignment Metrics					
Copy LP	Active	No.	Type	Name	SCP	Assigned Workload	Mode	LCPs	Weight	Weight %	CAP	HD Active	LCPs Parked	RNI	Physical Utilization	DASD I/O Rate/Sec	Workload Choice		Method Used
																	CPU-MF	DASD I/O	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1	GP	LP-01	z/OS-1.11	Average	SHR	13.0	845	84.5%		<input checked="" type="checkbox"/>	2.0	0.80	44.33%	4,610.8	Average	Average	CPU-MF
<input checked="" type="checkbox"/>	<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"/>	<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"/>	<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

Create LPAR Configuration

Note: One or more partitions have "Parked" LCPs. The LCP count for HiperDispatch partitions is based on the number of LCPs that are active. Click on "Copy LP" checkbox to select partitions to be copied to the active study.

DASD I/O Method Workload Selection Assistant

Additional Functions

Asses the impact of different LCP configurations

Partition Detail Report [untitled]

Graph CPcalculator Documentation

Partition Detail Report
Based on LSPR Data for IBM System z Processors
Study ID: Not specified
Description: Created from EDF I:\...UGSample.edf interval # 3
C/700 Host = 2097-E26/700 with 13 CPs: GP=13
4 Active Partitions: GP=4
094-701 @ 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-1.11	Average	SHR	11	845	84.50%	<input type="checkbox"/>	7,812.8	7,823.5
<input checked="" type="checkbox"/>	2	GP	LP-02	z/OS-1.11	Average	SHR	5	120	12.00%	<input type="checkbox"/>	1,158.4	3,712.8
<input checked="" type="checkbox"/>	3	GP	LP-03	z/OS-1.11	Average	SHR	2	25	2.50%	<input type="checkbox"/>	243.5	1,498.2
<input checked="" type="checkbox"/>	4	GP	LP-04	z/OS-1.11	Average	SHR	2	10	1.00%	<input type="checkbox"/>	97.4	1,498.2

Table View Controls

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

Show ☒ All Partitions ☐ Includes Only

GP Pool ☒ GP

Specialty Pools ☐ zAAP ☐ zIIP ☐ IFL ☐ ICF

Capacity Summary by Pool

CP Pool	RCPs	Partitions	LCPs	SHR LCP:RCP	Capacity
GP	13	4	20	1.538	9,312.1
zAAP	None				n/a
zIIP	None				n/a
IFL	None				n/a
ICF	None				n/a
Totals	13	4	20		9,312.1

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

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.

Asses the impact of different LCP Configurations

Commit changes

LCP Assignment Alternatives

Shared Partition LCP Count Alternatives
 Study ID: Not specified
 Description: Created from EDF I:\...UGSample.edf interval # 3
z10 EC/700 Host = 2097-E26/700 with 13 CPs: GP=13
4 Active Partitions: GP=4

Partition Identification							LCP Setting Alternatives			
No.	Type	Name	SCP	Workload	Mode	Weight%	EDF/RMF Unparked	Weight Based		User Assigned
								Moderate	Minimal	
1	GP	LP-01	z/OS-1.11	Average	SHR	84.50%	11	12	11	11
2	GP	LP-02	z/OS-1.11	Average	SHR	12.00%	5	2	2	5
3	GP	LP-03	z/OS-1.11	Average	SHR	2.50%	2	1	1	2
4	GP	LP-04	z/OS-1.11	Average	SHR	1.00%	2	1	1	2

Commit LCP Settings

Cancel

LCP Setting Alternatives

Unparked Moderate Minimal User

Partition Detail Report window is displaying capacity for Original shared LCP counts.

Apply "Parked" engines when available

Asses the impact of adjusting the LCPs based on weight

Migrate Partitions from an other configuration

Select "Receiving" configuration

Migrate partitions from existing configurations or create a new configuration

Advanced-Mode Control Panel [I:\...example2.zpcr]

File CPcalculator Documentation Help

Advanced-Mode Capacity Planning Control Panel

Study ID:

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 Current
 - #2 Alt-1
 - #3 Alt-2

Manage Compare Migrate & Analyze




QuickStart Guide

Alt-1 Cloned from Current z196/600 LPAR Host: 2817-M15/600						
Pool CP Type	#1 GP	#2 zAAP	#3 zIIP	#4 IFL	#5 ICF	CPC Total
RCPs	6	4	0	0	1	11
Partitions	6	4	0	0	2	12
LCPs	15	10	0	0	2	27
Capacity	3,956	4,183			1,140	9,280


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

Receiving LPAR configuration

Copy Partitions: Receiving LPAR Configuration

#1  #2  #3 

Receiving LPAR Configuration

#2  Alt-1
Description: Cloned from Current

z196/600 Host = 2817-M15/600 with 11 CPs: GP=6 zAAP=4 ICF=1
12 Active Partitions: GP=6 zAAP=4 ICF=2
 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

From LPAR Config	Partition Identification							Partition Configuration				Partition Capacity			
	Include	No.	Type	Name	SCP	Workload	Mode	LCPs	Weight	Weight %	CAP	Original Minimum	Modified Minimum	Net Change	% Delta
<input checked="" type="checkbox"/>	1	GP	SYSB	z/OS-1.11	Average	SHR	5	365	63.26%			2,502	2,502		
<input checked="" type="checkbox"/>		zAAP	SYSB	z/OS-1.11	Average	SHR	3	400	41.07%			1,680	1,680		
<input checked="" type="checkbox"/>	2	GP	TESTCICS	z/OS-1.11	Average	SHR	2	20	3.47%			137	137		
<input checked="" type="checkbox"/>		zAAP	TESTCICS	z/OS-1.11	Average	SHR	2	20	2.05%			86	86		
<input checked="" type="checkbox"/>	3	GP	PROD1	z/OS-1.11	Average	SHR	5	122	21.14%			836	836		
<input checked="" type="checkbox"/>		zAAP	PROD1	z/OS-1.11	Average	SHR	3	105	10.78%			441	441		
<input checked="" type="checkbox"/>	4	GP	TEST1	z/OS-1.11	Average	SHR	1	20	3.47%			146	146		
<input checked="" type="checkbox"/>	5	GP	TEST2	z/OS-1.11	Average	SHR	1	20	3.47%			146	146		
<input checked="" type="checkbox"/>	6	GP	PROD2	z/OS-1.11	Average	SHR	1	30	5.20%			200	200		
<input checked="" type="checkbox"/>		zAAP	PROD2	z/OS-1.11	Average	SHR	2	449	46.10%			1,976	1,976		
<input checked="" type="checkbox"/>	7	ICF	CF0001	CFCC	CFCC	SHR	1	30	50.00%			570	570		
<input checked="" type="checkbox"/>	8	ICF	CF0002	CFCC	CFCC	SHR	1	30	50.00%			570	570		

Capacity Summary by Pool

CP Pool	RCPs	Original Configuration				Modified Configuration				% Delta			
		Partitions	LCPs	SHR LCP:RCP	Capacity	Partitions	LCPs	SHR LCP:RCP	Capacity	Partitions	LCPs	SHR LCP:RCP	Capacity
GP	6	6	15	2.500	3,966	6	15	2.500	3,966				
					1,183	4	10	2.500	4,183				
					n/a				n/a				
					n/a				n/a				
					1,140	2	2	2.000	1,140				
					9,290	12	27		9,290				

Input fields have white background; Single-click a "selection field" for drop-down list; Double click a "key-in field" to open.
 Using the LPAR configuration icons at the top of this window, select the configuration from which the partitions are to be migrated.

Select the "Contributing" configuration.
 You may select each available
 configuration one at a time.

Contributing LPAR configuration

Select the partitions that you wish to copy to the “Receiving” configuration.

Copy Partitions: Contributing LPAR Configuration

Contributing LPAR Configuration

Current
Description: Created from RMF D:\...RMFSample z10 E26.txt interval #5
2097-E26/700 Host = 2097-E26/700 with 14 CPs: GP=7 zAAP=4 zIIP=1 IFL=1 ICF=1
16 Active Partitions: GP=7 zAAP=4 zIIP=2 IFL=1 ICF=2
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

Copy LP	Partition Identification						Partition Configuration					Minimum Capacity
	Include	No.	Type	Name	SCP	Workload	Mode	LCPs	Weight	Weight %	CAP	
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	1	GP	SYSB	z/OS-1.11	Average	SHR	5	365	33.18%		1,583
<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		zAAP	SYSB	z/OS-1.11	Average	SHR	3	400	41.07%		1,162
<input type="checkbox"/>	<input checked="" type="checkbox"/>	2	GP	TESTCICS	z/OS-1.11	Average	SHR	2	20	1.82%		86
<input type="checkbox"/>	<input checked="" type="checkbox"/>		zAAP	TESTCICS	z/OS-1.11	Average	SHR	2	20	2.05%		60
<input type="checkbox"/>	<input checked="" type="checkbox"/>	3	GP	PROD1	z/OS-1.11	Average	SHR	5	122	11.09%		529
<input type="checkbox"/>	<input checked="" type="checkbox"/>		zAAP	PROD1	z/OS-1.11	Average	SHR	3	105	10.78%		305
<input type="checkbox"/>	<input checked="" type="checkbox"/>	4	GP	TEST1	z/OS-1.11	Average	SHR	7	20	1.82%		93
<input type="checkbox"/>	<input checked="" type="checkbox"/>	5	GP	TEST2	z/OS-1.11	Average	SHR	1	20	1.82%		95
<input type="checkbox"/>	<input checked="" type="checkbox"/>	6	GP	PROD2	z/OS-1.11	Average	SHR	7	453	41.18%		2,014
<input type="checkbox"/>	<input checked="" type="checkbox"/>		zAAP	PROD2	z/OS-1.11	Average	SHR	2	449	46.10%		1,261
<input type="checkbox"/>	<input checked="" type="checkbox"/>		zIIP	PROD2	z/OS-1.11	Average	SHR	1	453	81.92%		621
<input type="checkbox"/>	<input checked="" type="checkbox"/>	7	GP	LP-10	z/OS-1.11	Average	SHR	1	100	9.09%		430
<input type="checkbox"/>	<input checked="" type="checkbox"/>		zIIP	LP-10	z/OS-1.11	Average	SHR	1	100	18.08%		151
<input type="checkbox"/>	<input checked="" type="checkbox"/>	8	IFL	LP-09	z/VM	High/LV	SHR	1	100	100.00%		819
<input type="checkbox"/>	<input checked="" type="checkbox"/>	9	ICF	CF0001	CFCC	CFCC	SHR	1	30	50.00%		409
<input type="checkbox"/>	<input checked="" type="checkbox"/>	10	ICF	CF0002	CFCC	CFCC	SHR	1	30	50.00%		409

Capacity Summary by Pool

CP Pool	RCPs	Partitions	LCPs	SHR LCP:RCP	Capacity
GP	7	7	28	4.000	4,829
zAAP	4	4	10	2.500	2,788
zIIP	1	2	2	2.000	771
IFL	1	1	1	1.000	819
ICF	1	2	2	2.000	818
Totals	14	16	43		10,025

Copy Partitions Unselect

Select partitions to be copied; Single-click "Copy LP" to select partitions to be copied.

“Copy” selected partitions.

Note: “Contributing” and “Receiving” windows will be displayed side by side.

Updated "Receiving" configuration

Delta and Net change fields are updated to reflect the impact on the receiving configuration.

"Duplicate" partitions will have a "+" added to their name.

Copy Partitions: Receiving LPAR Configuration

the receiving configuration.

e a "+" added

Receiving LPAR Configuration

#2 Alt-1

Description: Cloned from Current

z196/600 Host = 2817-M15/600 with 11 CPs: GP=6 zAAP=4 ICF=1

14 Active Partitions: GP=7 zAAP=5 ICF=2

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

From LPAR Config	Partition Identification						Partition Configuration					Partition Capacity			
	Include	No.	Type	Name	SCP	Workload	Mode	LCPs	Weight	Weight %	CAP	Original Minimum	Modified Minimum	Net Change	% Delta
<input checked="" type="checkbox"/>			zAAP	SYSB	z/OS-1.11	Average	SHR	3	400	29.11%		1,680	1,175	-505	-30.1%
<input checked="" type="checkbox"/>	2		GP	TESTCICS	z/OS-1.11	Average	SHR	2	20	2.12%		137	83	-54	-39.7%
<input checked="" type="checkbox"/>			zAAP	TESTCICS	z/OS-1.11	Average	SHR	2	20	1.46%		86	60	-26	-30.1%
<input checked="" type="checkbox"/>	3		GP	PROD1	z/OS-1.11	Average	SHR	5	122	12.95%		836	504	-332	-39.7%
<input checked="" type="checkbox"/>			zAAP	PROD1	z/OS-1.11	Average	SHR	3	105	7.64%		441	308	-133	-30.1%
<input checked="" type="checkbox"/>	4		GP	TEST1	z/OS-1.11	Average	SHR	1	20	2.12%		146	88	-58	-39.7%
<input checked="" type="checkbox"/>	5		GP	TEST2	z/OS-1.11	Average	SHR	1	20	2.12%		146	88	-58	-39.7%
<input checked="" type="checkbox"/>	6		GP	PROD2	z/OS-1.11	Average	SHR	1	30	3.18%		200	120	-79	-39.7%
<input checked="" type="checkbox"/>			zAAP	PROD2	z/OS-1.11	Average	SHR	2	449	32.68%		1,976	1,382	-594	-30.1%
<input checked="" type="checkbox"/>	7		GP	SYSB+	z/OS-1.11	Average	SHR	5	365	38.75%		1,583	1,508	-75	-4.7%
<input checked="" type="checkbox"/>			zAAP	SYSB+	z/OS-1.11	Average	SHR	3	400	29.11%		1,162	1,175	+13	+1.1%
<input checked="" type="checkbox"/>	8		ICF	CF0001	CFCC	CFCC	SHR	1	30	50.00%		570	569	-1	-0.1%

ight or rk.

Pools	Original Configuration				Modified Configuration				% Delta			
	Partitions	LCPs	SHR LCP:RCP	Capacity	Partitions	LCPs	SHR LCP:RCP	Capacity	Partitions	LCPs	SHR LCP:RCP	Capacity
GP	6	6	15	2,500	7	20	3,333	3,899	+16.7%	+33.3%		-2%
zAAP	4	4	10	2,500	5	13	3,250	4,100	+25.0%	+60.0%		-2%
zIIP	None			n/a				n/a				
IFL	None			n/a				n/a				
ICF	1	2	2	2,000	2	2	2,000	1,139	0.0%	0.0%	0.0%	-0%
Totals	11	12	27	9,290	14	35		9,138	+16.7%	+29.5%		-2%

Commit

Undo

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

Using the LPAR configuration icons at the top of this window, select the configuration from which the partitions are to be migrated.

You may also update any weight or LCPs to rebalance the work.

Commit and Undo changes.

Percent delta impacts are shown for the various pools.

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
 - 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

IBM System z Capacity Planning in a nutshell

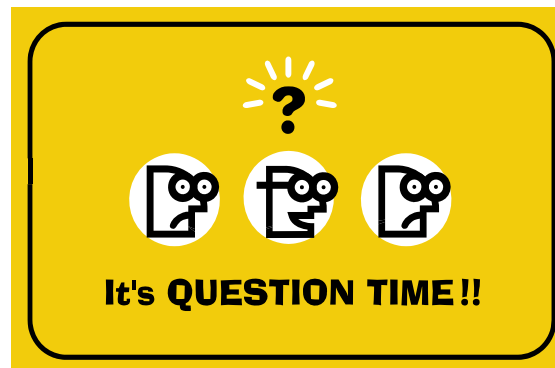


Don't use "single-number tables" for capacity comparisons!

Use zPCR to model before and after configurations

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**



Acknowledgements

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

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Kathy Walsh

Thank You
for attending!

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.



Advanced Technical Skills (ATS) North America

zPCR Capacity Sizing Lab – Part 2 Hands-on Lab

SHARE - Session 10880

March 15, 2012

John Burg

Materials created by John Fitch and Jim Shaw

IBM

**Advanced
Technical
Skills**

TECHNICAL SALES
NORTH AMERICA

Agenda

- Lab Exercise Introduction
- Lab Exercise

Overview of Lab Exercise

■ **XYZ Corporation Background**

- Currently has System z10 EC
 - 2097-707 (7 way GCPs)
 - Customer views it as having 5100 MIPS
 - Machine averages 92% busy during peak

■ **Plan being developed to replace with z196**

- Must have at least 20%+ additional capacity
 - at least 6150 MIPS

Lab Exercise – Tasks to Complete

- Task 1 - Create a model of the current LPAR Configuration
- Task 2 - Calibrate the model to XYZ Company's capacity designation
- Task 3 - Save the current study in Advanced-Mode
- Task 4 - Find an appropriate z196 replacement processor
- Task 5 - Model the intended LPAR host using Advanced Mode
- Task 6 - Review the Capacity results and save the Study
- Additional
 - Model 1 IFL in the proposed configuration
 - Model 1 zIIP in the proposed configuration
- Review Rename function

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