



Advanced Technical Skills (ATS) North America

## zPCR Capacity Sizing Lab – Part 2 Hands-on Lab

### SHARE - Session 10880

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John Burg

Materials created by John Fitch and Jim Shaw

IBM



## **zPCR Capacity Sizing Lab – Part 2 Hands On Lab Exercise**

John Burg

### **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 0.9440, 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 1.000, for a 1-partition configuration

**Reference-CPU (controls all zPCR function)**

REF 2094-701 @ 1.000 {ITR Ratio}

IBM zEnterprise 196

QuickStart Guide

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

## Objective

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You will use **zPCR** (in Advanced Mode) to define a customer's current LPAR configuration and then project the capacity expectation for an upgrade to newer technology. The capacity results will then be used to determine if the upgrade model is adequate to support all of the work, and to determine if the amount of CP resource available to each partition is adequate to support that partition's workload with the anticipated growth applied.

## Problem

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XYZ Corporation currently has a **z10 2097-707** (7-way processor) installed, which they view as having **5,100 MIPS** of usable capacity, (so we will need to calibrate zPCR to this view). The 2097-707 is currently averaging **92% busy** during peak processing periods. The workload environment includes multiple logical partitions, all running on General Purpose CPs, as shown in the table below.

Partition	LP-mode	LCPs	Busy	Weight	Capped	Workload Category
1 Batch	Share	3	15%	150	No	z/OS-1.11 Average
2 CICS-1	Share	7	35%	350	No	z/OS-1.11 Avg-High
3 CICS-2	Share	3	10%	100	No	z/OS-1.11 Avg-High
4 CICS-3	Share	2	10%	100	No	z/OS-1.11 Avg-High
5 IMS	Share	4	20%	200	No	z/OS-1.11 Avg-High
6 Test	Share	2	2%	20	Yes	z/VM High/LV

A plan is being developed to **replace the z10 2097-707 with a newer technology zEnterprise 196 processor**. The specific model chosen must provide **20%+ additional capacity**, or at least **6,150 MIPS**. The current partitions are to be moved to the new processor with the partitions and their workloads as being run today. You already have a zPCR study file containing the configuration from the last time you did an upgrade.

## ***Tasks***

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Here are the 6 tasks that comprise this zPCR familiarization exercise, addressing the problem described above.

- **Task 1** - Load 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 (e.g. task2.zpcr)
- **Task 4** - Find an appropriate Enterprise 196 (z196) replacement processor
- **Task 5** - Model the intended z196 LPAR host
- **Task 6** - Review the Capacity results and save the Study (use a different file name than Task 3, e.g. task6.zpcr)
- **Additional**
  - Model 1 IFL in the proposed configuration
  - Model 1 zIIP in the proposed configuration



Note: When instructed to **Return** the  icon should be used

## Task 1: Load a model of the current LPAR configuration

In this task you will load the current LPAR configuration into zPCR from the file supplied.

Note: **zPCR**'s default Reference-CPU setting is the 2094-701 rated at 1.00. When this study was saved, the Reference-CPU was set to a 2094-701 rated at 593 MIPS, so we need to restore the **zPCR** Reference-CPU to that setting.

### Analysis Steps

1. Start **zPCR**. After the Logo window stages, you will be viewing the **Function Selection** window, on the **Multi-Image Capacity** tab.
2. Select the **Advanced-Mode** check box if it is not already checked
3. Click the **Enter Advanced-Mode** button
4. On the **Advanced-Mode Control Panel** window, double click on the **Reference-CPU** icon  , currently tagged with "**2094-701 @ 1.000 (ITR Ratio)**". The **Reference-CPU** window will appear.
  - a) Click **Typical** to set the Reference-CPU to the 2094-701 rated at 593 MIPS.
  - b) Click **Return**
5. Open Windows Explorer (by clicking on "Start", "All Programs", "Accessories", "Windows Explorer"). Then using Windows Explorer (under My Computer/Local Disk (C:)) select to the CPSTOOLS/zPCR directory, where the **Task 1.zpcr** file is located and visible. You'll probably want to size the Windows Explorer window down, so that it can be visible with zPCR active.
6. Drag the "**Task 1.zpcr**" study file from the "**zPCR**" subdirectory underneath or on top of the "**Current**" icon #1 .

# zPCR Capacity Sizing Lab Exercise

## Advanced-Mode Control Panel Window



Task 1.zpcr

Advanced-Mode Control Panel [I:\...Task 1.zpcr]
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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

Manage

Compare


Migrate

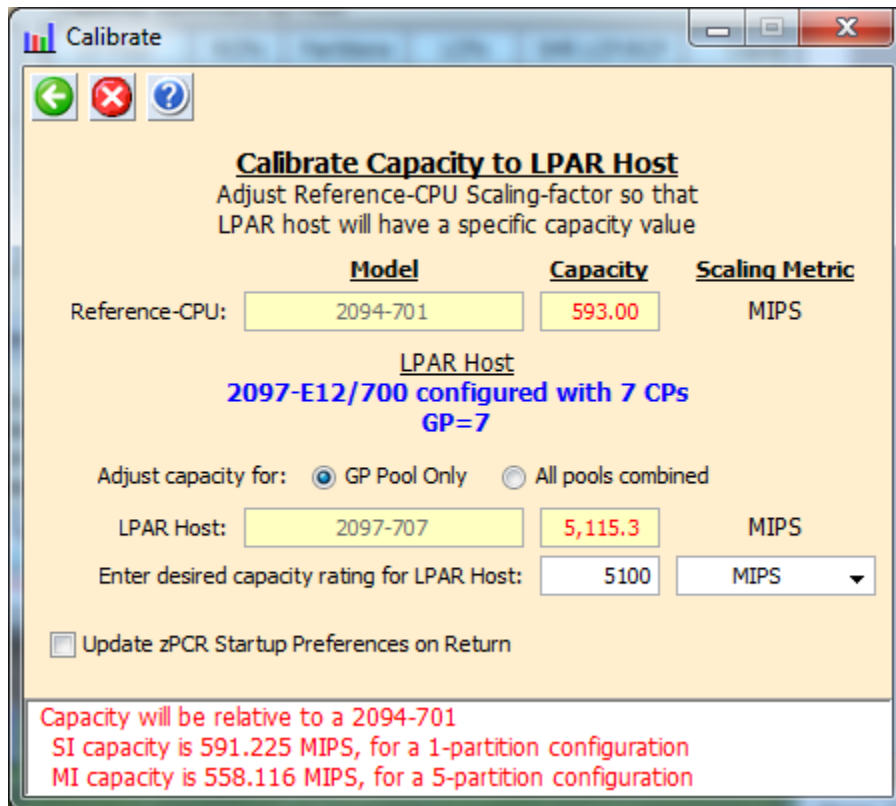
#1	Current Loaded from Basic Mode Study D:\...Task 1.zpcr z10-EC LPAR Host: 2097-E12/700					
Pool CP Type	#1 GP	#2 zAAP	#3 zIIP	#4 IFL	#5 ICF	CPC Total
RCPs	7	0	0	0	0	7
Partitions	6	0	0	0	0	6
LCPs	21	0	0	0	0	21
Capacity	5,115.3					5,115.3
Capacity basis: 2094-701 @ 593.00 MIPS for a shared single-partition configuration						

## Task 2: Calibrate the model to XYZ Company's capacity designation

Review the capacity assessment and alter the *Reference-CPU* scaling-factor such that the company's capacity designation is provided in the results.

### Analysis Steps

1. Refer to the "Rename a Configuration" at the end of this document to rename the configurations as shown in the lab
2. Using the directions above to relabel "Current" to "Current z10 2097-707"
3. Double-click on the **Current z10 2097-707** LPAR configuration icon #1  to open the **LPAR Host and Partition Configuration** window for the **Current z10 2097-707** LPAR configuration.
4. Click **Partition Detail** in the **Capacity Reports Groupbox** to open the **Partition Detail Report** window. This window will reveal the total GP capacity available as **5,115.3 MIPS**. The XYZ Company believes that the total GP capacity of this machine for their environment is **5,100 MIPS**. We will adjust the Reference-CPU scaling factor so that the GP capacity result will be **5,100 MIPS**.
5. Click **Calibrate Capacity** to open the **Calibrate** window.
6. Key in **5100** in the **Enter desired capacity rating for LPAR Host** entry field and press **Enter**.



**Calibrate Capacity to LPAR Host**  
Adjust Reference-CPU Scaling-factor so that LPAR host will have a specific capacity value

	Model	Capacity	Scaling Metric
Reference-CPU:	2094-701	593.00	MIPS
<b>LPAR Host</b>			
<b>2097-E12/700 configured with 7 CPs</b>			
<b>GP=7</b>			
Adjust capacity for:	<input checked="" type="radio"/> GP Pool Only <input type="radio"/> All pools combined		
LPAR Host:	2097-707	5,115.3	MIPS
Enter desired capacity rating for LPAR Host:	5100	MIPS	▼

Update zPCR Startup Preferences on Return

Capacity will be relative to a 2094-701  
SI capacity is 591.225 MIPS, for a 1-partition configuration  
MI capacity is 558.116 MIPS, for a 5-partition configuration

7. Click **Return**

# zPCR Capacity Sizing Lab Exercise

Partition Detail Report
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Graph CPcalculator Documentation

**Partition Detail Report**  
 Based on LSPR Data for IBM System z Processors  
 Study ID: Not specified

#1 ▲ Current z10 2097-707  
 Description: Loaded from Basic Mode Study D:\...Task 1.zpcr  
**z10-EC Host = 2097-E12/700 with 7 CPs: GP=7**  
**6 Active Partitions: GP=6**  
Capacity basis: 2094-701 @ 591.225 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	Batch	z/OS-1.11	Average	SHR	3	150	16.30%	<input type="checkbox"/>	888.2	2,334.7
<input checked="" type="checkbox"/>	2	GP	CICS-1	z/OS-1.11	Avg-High	SHR	7	350	38.04%	<input type="checkbox"/>	1,888.8	4,964.9
<input checked="" type="checkbox"/>	3	GP	CICS-2	z/OS-1.11	Avg-High	SHR	3	100	10.87%	<input type="checkbox"/>	554.6	2,186.8
<input checked="" type="checkbox"/>	4	GP	CICS-3	z/OS-1.11	Avg-High	SHR	2	100	10.87%	<input type="checkbox"/>	554.4	1,457.2
<input checked="" type="checkbox"/>	5	GP	IMS	z/OS-1.11	Avg-High	SHR	4	200	21.74%	<input type="checkbox"/>	1,109.8	2,917.1
<input checked="" type="checkbox"/>	6	GP	Test	z/VM	High/LV	SHR	2	20	2.17%	<input checked="" type="checkbox"/>	104.2	104.2

**Table View Controls**

Display zAAP/zIIP/IFL Partitions

With Associated GP    Separate by Pool

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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	7	6	21	3.000	5,100.0
zAAP	None				n/a
zIIP	None				n/a
IFL	None				n/a
ICF	None				n/a
Totals	7	6	21		5,100.0

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 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.



**Task 3: Save the study**

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**Analysis Steps**

1. Click **Return** twice to close the LPAR configuration windows.
2. From the menu-bar on the ***Advanced-Mode Control Panel*** window, click **File**→**Save as**, to save your LPAR definitions for the current LPAR host processor. (e.g. task2.zpcr)


Note: the former basic-mode study file has now been converted to an “**Advanced Mode**” study file.

#### Task 4: Find an appropriate replacement processor

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Browsing the **z/OS-1.11 Multi-Image LSPR Capacity Ratios** table, find the IBM z196 processor that can provide the required capacity increment using the z/OS Average workload

##### Analysis Steps

1. From the Advanced-Mode window, double click on **General Purpose CPs**  to open the **LSPR Multi-Image Processor Capacity Ratios** table.
2. Find an IBM zEnterprise 196 processor that can provide the required **6,150 MIPS**. (tip right click for a list of the Families, then select via scroll to IBM, then select z196/700)  
For the purposes of this exercise, choose the **2817-706**, which appears to have just a bit more capacity than we require, (e.g. **6,251** for Average etc) **Remember that capacity values in the multi-image table represent typical (or average) partition configurations, and therefore can only generalize on capacity.**
3. Click **Return** to go back to the **Advanced-Mode Control Panel** window.

# zPCR Capacity Sizing Lab Exercise

LSPR Capacity Ratios
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File Workload Graph Help

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HTM
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z/OS-1.11 LSPR Data (07/12/2011)

### LSPR Multi-Image Capacity Ratios

#### General Purpose CPs

Values are applicable for z/OS; representative of z/VM and Linux  
Capacity basis: 2094-701 @ 558.116 MIPS for a typical multi-partition configuration  
Capacity for z/OS on z10 and later processors is represented with HiperDispatch turned ON

Processor	Features	Flag	MSU	Low	Average	High
zEnterprise 196/700						
2817-615	15W	=	1,084	9,742	8,891	8,169
2817-701	1W	=	150	1,195	1,202	1,151
2817-702	2W	=	281	2,325	2,272	2,117
2817-703	3W	=	408	3,431	3,311	3,055
2817-704	4W	=	531	4,513	4,320	3,964
2817-705	5W	=	650	5,575	5,300	4,847
2817-706	6W	=	766	6,617	6,251	5,704
2817-707	7W	=	879	7,639	7,175	6,537
2817-708	8W	=	988	8,641	8,072	7,345
2817-709	9W	=	1,091	9,625	8,943	8,130
2817-710	10W	=	1,191	10,590	9,788	8,892
2817-711	11W	=	1,286	11,536	10,609	9,632
2817-712	12W	=	1,381	12,465	11,407	10,351
2817-713	13W	=	1,473	13,376	12,181	11,049
2817-714	14W	=	1,562	14,269	12,932	11,726
2817-715	15W	=	1,648	15,146	13,662	12,384
2817-716	16W	=	1,731	16,006	14,371	13,023
2817-717	17W	=	1,816	16,861	15,076	13,659
2817-718	18W	=	1,899	17,710	15,778	14,293
2817-719	19W	=	1,983	18,555	16,476	14,924
2817-720	20W	=	2,064	19,395	17,171	15,553
2817-721	21W	=	2,144	20,229	17,862	16,179
2817-722	22W	=	2,224	21,059	18,550	16,802
2817-723	23W	=	2,306	21,883	19,234	17,423

**Processors**

In entire table: 747

In this view: 636

Currently selected: 1

**Table View**

Families & Models	z196 Power
<input checked="" type="radio"/> Subset	<input type="radio"/> All
<input type="radio"/> Selected	<input checked="" type="radio"/> Full
	<input type="radio"/> Saving

Provisional Reference-CPU
Processor Families
Workloads




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.

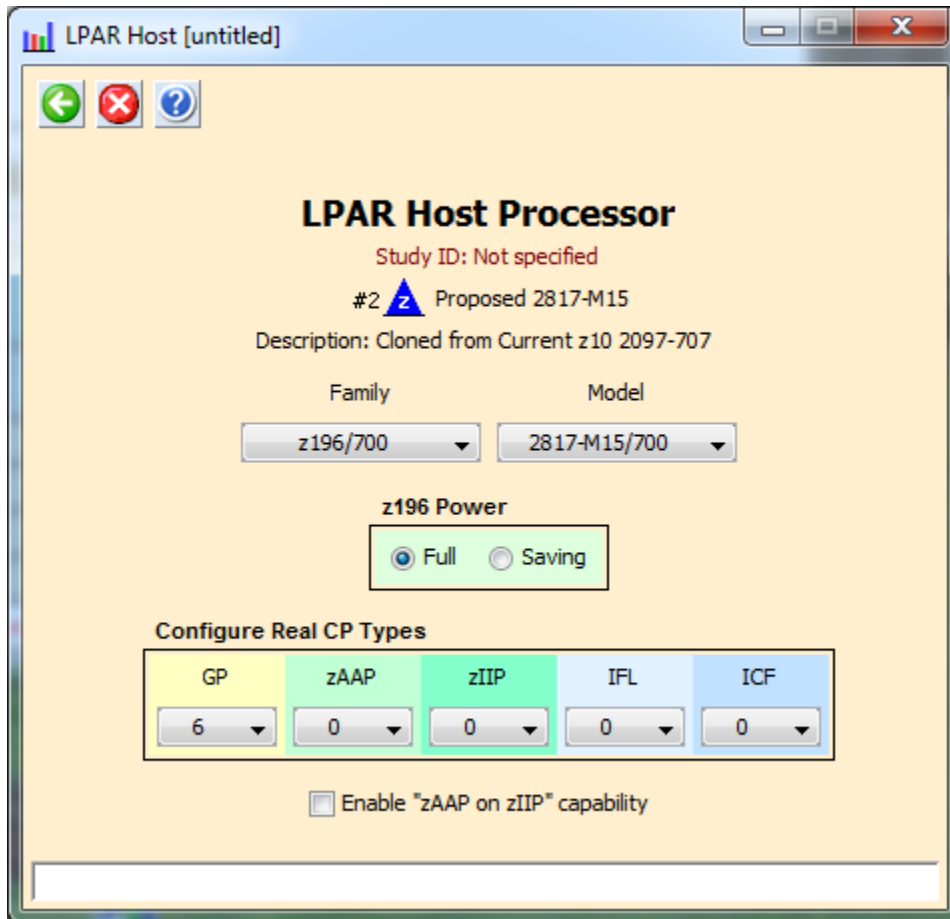
**Global Reference-CPU is active;** double click any processor row to set it as a Provisional Reference-CPU  
Select multiple processors with **Ctrl+LeftClick** or **Shift+LeftClick**; For flag explanation, position mouse on indicator

**Task 5: Model the intended LPAR host**

Using the current LPAR configuration as a starting point, we will transfer it to the new IBM zEnterprise 196 processor, making any necessary adjustments to the partition definitions.

**Analysis Steps**

1. Single-click the **Current z10 2097-707** icon on the **Advanced-Mode Control Panel** window to select it.
2. Click the **Clone**  toolbar button. A second LPAR configuration is created as an exact copy of the first. It is icon #2 , Rename it to **Proposed 2817-M15**
3. Double-click the **Proposed 2817-M15** icon #2  to open the **LPAR Host and Partition Configuration** window for the **Proposed 2817-M15** LPAR configuration.
4. Click **Specify Host** to open the **LPAR Host** window.
  - a) Set the **Family** to be **z196/700**.
  - b) Set the **Model** to **2817-M15/700** (this model has a maximum total of 15 configurable CPs).
  - c) Leave z196 Power checked to Full
  - d) Set **General Purpose CPs** to 6 (seen as a 2817-706). There are no other CP types planned at this time.



# zPCR Capacity Sizing Lab Exercise

e) Click **Return**.

5. Click **Partition Detail** in the **Capacity Reports** group box.

Partition Detail Report
Graph CPcalculator Documentation

### Partition Detail Report

Based on LSPR Data for IBM System z Processors  
 Study ID: Not specified  
 #2 ▲ Proposed 2817-M15  
 Description: Cloned from Current z10 2097-707  
**z196/700 Host = 2817-M15/700 with 6 CPs: GP=6**  
**5 Active Partitions: GP=5**  
Capacity basis: 2094-701 @ 591.225 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	Batch	z/OS-1.11	Average	SHR	3	150	26.32%	<input type="checkbox"/>	1,726.6	3,280.5
<input type="checkbox"/>		GP	CICS-1	z/OS-1.11	Avg-High	SHR	7	350		<input type="checkbox"/>		
<input checked="" type="checkbox"/>	2	GP	CICS-2	z/OS-1.11	Avg-High	SHR	3	100	17.54%	<input type="checkbox"/>	1,099.1	3,132.5
<input checked="" type="checkbox"/>	3	GP	CICS-3	z/OS-1.11	Avg-High	SHR	2	100	17.54%	<input type="checkbox"/>	1,098.6	2,087.4
<input checked="" type="checkbox"/>	4	GP	IMS	z/OS-1.11	Avg-High	SHR	4	200	35.09%	<input type="checkbox"/>	2,199.3	4,178.7
<input checked="" type="checkbox"/>	5	GP	Test	z/VM	High/LV	SHR	2	20	3.51%	<input checked="" type="checkbox"/>	210.2	210.2

**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	6	5	14	2.333	6,333.9
zAAP	None				n/a
zIIP	None				n/a
IFL	None				n/a
ICF	None				n/a
Totals	6	5	14		6,333.9

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

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Note: 1 defined partitions are excluded from consideration in the results  
 Input fields have white background; Single-click a "selection field" for drop-down list; Double click a "key-in field" to open.

## zPCR Capacity Sizing Lab Exercise

8. Correct **CICS-1** partition in error
  - a. Set the **LCPs** to **6** (the maximum allowed on a 2817-706).
  - b. Check the **Include** box

Graph CPcalculator Documentation

### Partition Detail Report

Based on LSPR Data for IBM System z Processors  
Study ID: Not specified

#2 ▲ Proposed 2817-M15  
Description: Cloned from Current z10 2097-707

**z196/700 Host = 2817-M15/700 with 6 CPs: GP=6**  
**6 Active Partitions: GP=6**

Capacity basis: 2094-701 @ 591.225 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	Batch	z/OS-1.11	Average	SHR	3	150	16.30%	<input type="checkbox"/>	1,050.5	3,221.5
<input checked="" type="checkbox"/>	2	GP	CICS-1	z/OS-1.11	Avg-High	SHR	6	350	38.04%	<input type="checkbox"/>	2,303.7	6,055.4
<input checked="" type="checkbox"/>	3	GP	CICS-2	z/OS-1.11	Avg-High	SHR	3	100	10.87%	<input type="checkbox"/>	668.1	3,073.5
<input checked="" type="checkbox"/>	4	GP	CICS-3	z/OS-1.11	Avg-High	SHR	2	100	10.87%	<input type="checkbox"/>	667.8	2,048.0
<input checked="" type="checkbox"/>	5	GP	IMS	z/OS-1.11	Avg-High	SHR	4	200	21.74%	<input type="checkbox"/>	1,336.9	4,099.9
<input checked="" type="checkbox"/>	6	GP	Test	z/VM	High/LV	SHR	2	20	2.17%	<input checked="" type="checkbox"/>	127.7	127.7

**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	6	6	20	3.333		6,154.8
zAAP	None					n/a
zIIP	None					n/a
IFL	None					n/a
ICF	None					n/a
Totals	6	6	20			6,154.8

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

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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.

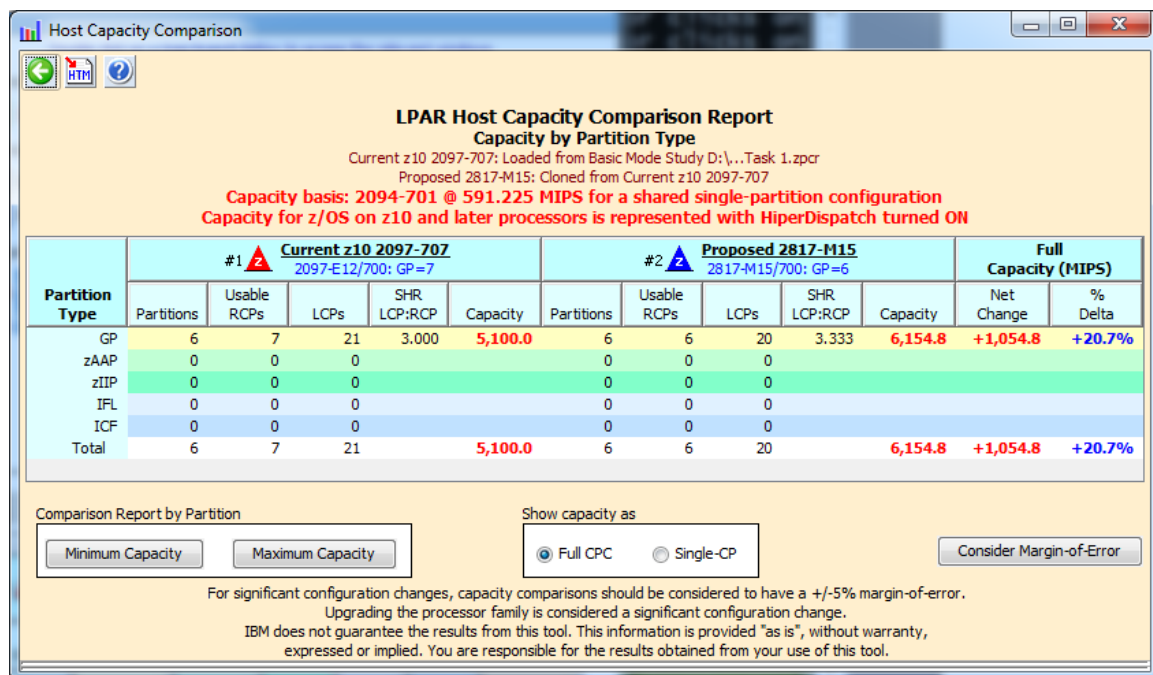
## zPCR Capacity Sizing Lab Exercise

### Task 6: Review capacity results and save the study

Using the capacity results for this new LPAR host, determine if we realized the desired 20% capacity increase (**6,150 MIPS**), for the overall host and for each individual partition.

#### Analysis Steps



1. On the **Detail Report** window, the overall effective capacity for the 2817-706 is **6,154.8 MIPS** for this LPAR configuration. The effective capacity for the 2097-707 was **5,100 MIPS**. (see page 8)
2. Click two **Return** buttons to close the LPAR configuration windows.
3. On the **Advanced-Mode Control Panel** window, select the two configurations (hold the **ctrl** key and click on both) and click the **Compare**  tool bar icon. The **Host Capacity Comparison** window presents a processor oriented summary of the two LPAR host configurations. The first LPAR configuration is shown on the left, and the second is shown on the right. The partition types are listed in separate rows; the metrics presented are their combined values representing the number of partitions, the number of RCPs, the number of LCPs and the resulting capacity.



**LPAR Host Capacity Comparison Report**  
Capacity by Partition Type

Current z10 2097-707: Loaded from Basic Mode Study D:\...Task 1.zpcr  
Proposed 2817-M15: Cloned from Current z10 2097-707

Capacity basis: 2094-701 @ 591.225 MIPS for a shared single-partition configuration  
Capacity for z/OS on z10 and later processors is represented with HiperDispatch turned ON

Partition Type	#1  <b>Current z10 2097-707</b> 2097-E12/700: GP=7					#2  <b>Proposed 2817-M15</b> 2817-M15/700: GP=6					Full Capacity (MIPS)	
	Partitions	Usable RCPs	LCPs	SHR LCP:RCP	Capacity	Partitions	Usable RCPs	LCPs	SHR LCP:RCP	Capacity	Net Change	% Delta
GP	6	7	21	3.000	5,100.0	6	6	20	3.333	6,154.8	+1,054.8	+20.7%
zAAP	0	0	0			0	0	0				
zIIP	0	0	0			0	0	0				
IFL	0	0	0			0	0	0				
ICF	0	0	0			0	0	0				
<b>Total</b>	<b>6</b>	<b>7</b>	<b>21</b>		<b>5,100.0</b>	<b>6</b>	<b>6</b>	<b>20</b>		<b>6,154.8</b>	<b>+1,054.8</b>	<b>+20.7%</b>

Comparison Report by Partition:

Show capacity as:  Full CPC  Single-CP

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## zPCR Capacity Sizing Lab Exercise

Click **Minimum Capacity** in the **Comparison Report by Partition** group box. Note that most of the partitions see an increase of approximately 20% or more, but there is 1 of them that does not, Batch.

**Partition Capacity Comparison Report**  
Based on Partition Minimum Capacity  
Current z10 2097-707: Loaded from Basic Mode Study D:\...Task 1.zpcr  
Proposed 2817-M15: Cloned from Current z10 2097-707  
**Capacity basis: 2094-701 @ 591.225 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 <b>Current z10 2097-707</b> 2097-E12/700: GP=7						#2 <b>Proposed 2817-M15</b> 2817-M15/700: GP=6						Full Capacity (MIPS)		
				Partition Definition						Partition Definition						Minimum Capacity	Net Change	% Delta
Type	Name	SCP	Workload	LP#	Mode	LCPs	Weight%	CAP	Minimum Capacity	LP#	Mode	LCPs	Weight	Weight%	CAP	Minimum Capacity	Net Change	% Delta
GP	Batch	z/OS-1.11	Average	1	SHR	3	16.30%		888.2	1	SHR	3	150	16.30%		1,050.5	+162.3	+18.3%
GP	CICS-1	z/OS-1.11	Avg-High	2	SHR	7	38.04%		1,888.8	2	SHR	6	350	38.04%		2,303.7	+414.9	+22.0%
GP	CICS-2	z/OS-1.11	Avg-High	3	SHR	3	10.87%		554.6	3	SHR	3	100	10.87%		668.1	+113.5	+20.5%
GP	CICS-3	z/OS-1.11	Avg-High	4	SHR	2	10.87%		554.4	4	SHR	2	100	10.87%		667.8	+113.4	+20.5%
GP	IMS	z/OS-1.11	Avg-High	5	SHR	4	21.74%		1,109.8	5	SHR	4	200	21.74%		1,336.9	+227.1	+20.5%
GP	Test	z/VM	High/LV	6	SHR	2	2.17%	✓	104.2	6	SHR	2	20	2.17%	✓	127.7	+23.5	+22.6%

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.  
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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.

- Click **Optimize SHR LCPs** for GPs in the **Change Controls** group box to see if you can improve the results by reducing the number of LCPs assign to each partition to that required to accommodate its weight.

**Optimize Shared Logical CP Configuration**

Select Partition Types  
 GP  zAAP  zIIP  IFL  ICF

LCP Count Assignment  
 Moderate  Minimum



## zPCR Capacity Sizing Lab Exercise

- Click **Optimize** and use the default “Moderate” to see if you can improve the results by reducing the number of LCPs assign to each partition. Note: The weight percent is used to determine the exact number of LCPs (rounded up to the nearest whole number) to be assigned. You can see that all the partitions improved, and that Batch is now greater than 20%.

**Partition Capacity Comparison Report**  
 Based on Partition Minimum Capacity  
 Current z10 2097-707: Loaded from Basic Mode Study D:\...Task 1.zpcr  
 Proposed 2817-M15: Cloned from Current z10 2097-707  
**Capacity basis: 2094-701 @ 591.225 MIPS for a shared single-partition configuration**  
 Capacity for z/OS on z10 and later processors is represented with HiperDispatch turned ON

Partition Identification				#1 <span style="color: red;">▲</span> Current z10 2097-707						#2 <span style="color: blue;">▲</span> Proposed 2817-M15						Full Capacity (MIPS)		
List of All Included Partitions With Unique ID Metrics				2097-E12/700: GP=7						2817-M15/700: GP=6								
				Partition Definition				Partition Definition				Minimum Capacity		Net Change				
Type	Name	SCP	Workload	LP#	Mode	LCPs	Weight%	CAP	Minimum Capacity	LP#	Mode	LCPs	Weight	Weight%	CAP	Minimum Capacity	Net Change	% Delta
GP	Batch	z/OS-1.11	Average	1	SHR	3	16.30%	888.2		1	SHR	1	150	16.30%		1,072.3	+184.1	+20.7%
GP	CICS-1	z/OS-1.11	Avg-High	2	SHR	7	38.04%	1,888.8		2	SHR	3	350	38.04%		2,393.2	+504.4	+26.7%
GP	CICS-2	z/OS-1.11	Avg-High	3	SHR	3	10.87%	554.6		3	SHR	1	100	10.87%		683.1	+128.5	+23.2%
GP	CICS-3	z/OS-1.11	Avg-High	4	SHR	2	10.87%	554.4		4	SHR	1	100	10.87%		683.1	+128.7	+23.2%
GP	IMS	z/OS-1.11	Avg-High	5	SHR	4	21.74%	1,109.8		5	SHR	2	200	21.74%		1,366.9	+257.1	+23.2%
GP	Test	z/VM	High/LV	6	SHR	2	2.17%	104.2	✓	6	SHR	1	20	2.17%	✓	130.8	+26.6	+25.5%

Change Controls

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## zPCR Capacity Sizing Lab Exercise

6. Click **Consider Margin-of-Error**

The capacity expectation derived from **zPCR** for a new machine should normally be considered to have up to a  $\pm 5\%$  margin-of-error. The full  $\pm 5\%$  margin of error should be considered whenever the LPAR host processor family is changed, or when very significant changes are made to either the LPAR host CP configuration or to the partition configuration itself. At this point only the CICS-1 partition has met the 20% capacity increase when factoring in the -5% margin of error.

**Margin-of-Error Consideration**  
**Partition Minimum Capacity**  
 Current z10 2097-707: Loaded from Basic Mode Study D:\...Task 1.zpcr  
 Proposed 2817-M15: Cloned from Current z10 2097-707  
**Capacity basis: 2094-701 @ 591.225 MIPS for a shared single-partition configuration**  
**Capacity for z/OS on z10 and later processors is represented with HiperDispatch turned ON**

Partition Identification				#1 <b>Current z10 2097-707</b>	#2 <b>Proposed 2817-M15</b>			
				Projected Capacity	Projected		Projected minus 5%	
Type	Name	SCP	Workload	Capacity	Capacity	% Delta	Capacity	% Delta
GP	Batch	z/OS-1.11	Average	888.2	1,072.3	+20.7%	1,018.7	+14.7%
GP	CICS-1	z/OS-1.11	Avg-High	1,888.8	2,393.2	+26.7%	2,273.5	+20.4%
GP	CICS-2	z/OS-1.11	Avg-High	554.6	683.1	+23.2%	649.0	+17.0%
GP	CICS-3	z/OS-1.11	Avg-High	554.4	683.1	+23.2%	649.0	+17.1%
GP	IMS	z/OS-1.11	Avg-High	1,109.8	1,366.9	+23.2%	1,298.5	+17.0%
GP	Test	z/VM	High/LV	104.2	130.8	+25.5%	124.3	+19.3%

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## zPCR Capacity Sizing Lab Exercise

- First close the **Partition-Margin-of-Error** window. Then click **Commit** in the Change Controls group box to change the LPAR configuration to permanently include the modified metrics, (from the Optimize). Note that the **Host Capacity Comparison** window now shows we are delivering **6,329.4 MIPS**, which is more than the **6,150 MIPS** objective.

**LPAR Host Capacity Comparison Report**  
Capacity by Partition Type

Current z10 2097-707: Loaded from Basic Mode Study D:\...Task 1.zpcr  
Proposed 2817-M15: Cloned from Current z10 2097-707

**Capacity basis: 2094-701 @ 591.225 MIPS for a shared single-partition configuration**  
**Capacity for z/OS on z10 and later processors is represented with HiperDispatch turned ON**

Partition Type	#1 <b>Current z10 2097-707</b> 2097-E12/700: GP=7					#2 <b>Proposed 2817-M15</b> 2817-M15/700: GP=6					Full Capacity (MIPS)	
	Partitions	Usable RCPs	LCPs	SHR LCP:RCP	Capacity	Partitions	Usable RCPs	LCPs	SHR LCP:RCP	Capacity	Net Change	% Delta
GP	6	7	21	3.000	5,100.0	6	6	9	1.500	6,329.4	+1,229.4	+24.1%
zAAP	0	0	0			0	0	0				
zIIP	0	0	0			0	0	0				
IFL	0	0	0			0	0	0				
ICF	0	0	0			0	0	0				
<b>Total</b>	<b>6</b>	<b>7</b>	<b>21</b>		<b>5,100.0</b>	<b>6</b>	<b>6</b>	<b>9</b>		<b>6,329.4</b>	<b>+1,229.4</b>	<b>+24.1%</b>

Comparison Report by Partition:

Show capacity as:  Full CPC  Single-CP

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- Close all of the comparison windows by clicking the **Return** toolbar icon on the **Host Capacity Comparison** window.
- From the menu bar on the **Advanced-Mode Control Panel** window click **File→Save as**, and save the complete study which will include both LPAR configurations. (Use a different file name than in Task 3, e.g. "Task6.zpcr".)

**At this point we have met the 6,150 MIPS objective and 20% for each partition. If we want to meet the 20% with the -5% margin of error, there may be additional configuration options to handle this, so continue with the next 2 steps to determine if they can make an impact.**





## Additional analyses to try

### Add an IFL to the Configuration for the z/VM workload

---

**How might the addition of an IFL change the capacity picture?** z/VM (partition #6) could actually be running on an IFL rather than a General Purpose CP. You might experiment.

#### Analysis Steps

1. Single-click the **Proposed 2817-M15** icon  on the **Advanced-Mode Control Panel** window to select it.
2. Click the **Clone**  toolbar button. A third LPAR configuration is created as an exact copy of the second. Its icon , Rename it to **2817-M15 with IFL**.
3. Double-click the **2817-M15 with IFL**  icon to open the **LPAR Host and Partition Configuration** window for the **2817-M15 with IFL** LPAR configuration.
4. From the **LPAR Host and Partition Configuration** window, click **Specify Host**.
5. From the **LPAR Host** window, change the host to include 1 IFL CP in addition to the current 6 General Purpose CPs and click **Return**.
6. From the **LPAR Host and Partition Configuration** window, click **IFL** in the **Define Partitions** group box.
7. From the **LPAR Partition Definition** window, edit the partition name (from LP-07) by double-clicking the name field to open it and entering text to "Test2".
8. set the **Mode** to **DED** using the drop-down selection list provided.
9. click **Return**.
10. From the **LPAR Host and Partition Configuration** window, click **Partition Detail** in the **Capacity Reports** group box to open the **Partition Detail Report** window, revealing the updated capacity picture.

## zPCR Capacity Sizing Lab Exercise

- a) From the **Partition Detail Report** window, uncheck the **Include** box for partition #6, as this partition's workload is now represented with the IFL.

In this case, we cannot simply replace a General Purpose CP with an IFL, because the z/VM partition is consuming such a small portion of the available capacity. 6 General Purpose CPs are still required to provide the necessary capacity for the z/OS partitions. We have increased the GP MIPS from **6329 (page 19)** to **6363**, and all but the Batch partition have met the 20% growth when considering the -5% margin of error. You can see this on the next page, and when you compare #1 Vs #3 Minimum Capacity and Margin of Error.

Partition Detail Report
Graph CPcalculator Documentation

### Partition Detail Report

Based on LSPR Data for IBM System z Processors  
Study ID: Not specified

#3 ▲ 2817-M15 with IFL  
Description: Cloned from Proposed 2817-M15

**z196/700 Host = 2817-M15/700 with 7 CPs: GP=6 IFL=1**  
**6 Active Partitions: GP=5 IFL=1**

Capacity basis: 2094-701 @ 591.225 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	Batch	z/OS-1.11	Average	SHR	1	150	16.67%	<input type="checkbox"/>	1,101	1,101
<input checked="" type="checkbox"/>	2	GP	CICS-1	z/OS-1.11	Avg-High	SHR	3	350	38.89%	<input type="checkbox"/>	2,457	3,159
<input checked="" type="checkbox"/>	3	GP	CICS-2	z/OS-1.11	Avg-High	SHR	1	100	11.11%	<input type="checkbox"/>	701	1,052
<input checked="" type="checkbox"/>	4	GP	CICS-3	z/OS-1.11	Avg-High	SHR	1	100	11.11%	<input type="checkbox"/>	701	1,052
<input checked="" type="checkbox"/>	5	GP	IMS	z/OS-1.11	Avg-High	SHR	2	200	22.22%	<input type="checkbox"/>	1,403	2,105
<input type="checkbox"/>	6	GP	Test	z/VM	High/LV	SHR	1	20		<input checked="" type="checkbox"/>		
<input checked="" type="checkbox"/>	6	IFL	Test2	z/VM	High/LV	DED	1	n/a		<input type="checkbox"/>	1,199	1,199

#### 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	6	5	8	1.333	6,363
zAAP	None				n/a
zIIP	None				n/a
IFL	1	1	1	All DED	1,199
ICF	None				n/a
Totals	7	6	9		7,562


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

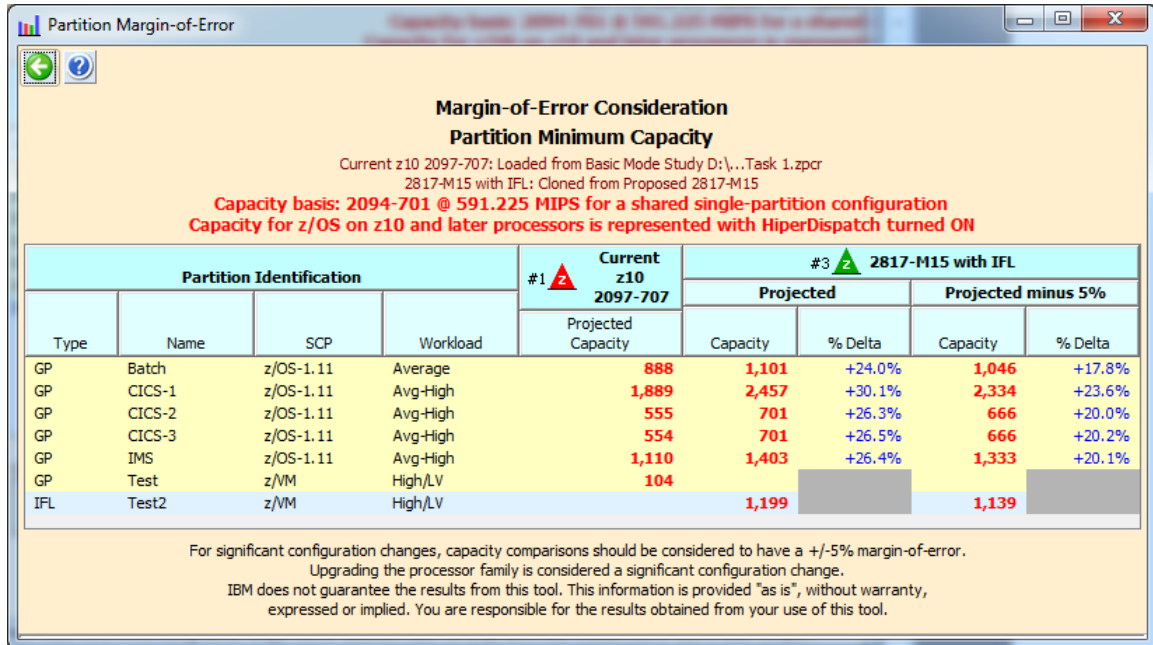
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Note: 1 defined partitions are excluded from consideration in the results  
Input fields have white background; Single-click a "selection field" for drop-down list; Double click a "key-in field" to open.



## zPCR Capacity Sizing Lab Exercise

### Consider the "Margin of Error"

1. Click two **Return** buttons to close the LPAR configuration windows.
2. On the **Advanced-Mode Control Panel** window, select the two configurations (#1 and #3 hold the cntl key and click on both) and click the **Compare**  tool bar icon.
3. Click on Minimum Capacity
4. Click on Consider Margin-of-Error



**Margin-of-Error Consideration**  
**Partition Minimum Capacity**  
 Current z10 2097-707: Loaded from Basic Mode Study D:\...Task 1.zpcr  
 2817-M15 with IFL: Cloned from Proposed 2817-M15  
**Capacity basis: 2094-701 @ 591.225 MIPS for a shared single-partition configuration**  
**Capacity for z/OS on z10 and later processors is represented with HiperDispatch turned ON**

Partition Identification				#1  <b>Current z10 2097-707</b>	#3  <b>2817-M15 with IFL</b>			
Type	Name	SCP	Workload	Projected Capacity	Projected		Projected minus 5%	
					Capacity	% Delta	Capacity	% Delta
GP	Batch	z/OS-1.11	Average	888	1,101	+24.0%	1,046	+17.8%
GP	CICS-1	z/OS-1.11	Avg-High	1,889	2,457	+30.1%	2,334	+23.6%
GP	CICS-2	z/OS-1.11	Avg-High	555	701	+26.3%	666	+20.0%
GP	CICS-3	z/OS-1.11	Avg-High	554	701	+26.5%	666	+20.2%
GP	IMS	z/OS-1.11	Avg-High	1,110	1,403	+26.4%	1,333	+20.1%
GP	Test	z/VM	High/LV	104				
IFL	Test2	z/VM	High/LV		1,199		1,139	

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So try the next Step to see if adding a zIIP to the configuration can help increase the capacity and meet all of the objectives.





Click three **Return** buttons to close the LPAR configuration windows

## Add a zIIP to the Configuration

---

**How might the addition of a zIIP change the capacity picture?** Assume partition #2 (CICS-1) is running a WebSphere application, and at least 50% of that workload could be run on zIIP LCPs. Alter the LPAR configuration to include and exploit the zIIP CPs.

### Analysis Steps

1. Single-click the **Proposed 2817-M15** icon  on the **Advanced-Mode Control Panel** window to select it.
2. Click the **Clone**  toolbar button. A fourth LPAR configuration is created as an exact copy of the second. Its icon , Rename it **2817-M15 with zIIP**
3. Double-click the **2817-M15 with zIIP**  icon to open the **LPAR Host and Partition Configuration** window for the **2817-M15 with zIIP** LPAR configuration.
4. Click **Specify Host** and change the LPAR host to include 1 zIIP CP in addition to the current 6 General Purpose CPs. **Click Return**
5. Click **GP / zIIP** (**Define Partitions** group box) and enable 1 zIIP LCP for partition #2 (CICS-1) by clicking on the z/OS zIIPs field. Close the zAAP and zIIP LCP notice. Then **Click Return**.

## zPCR Capacity Sizing Lab Exercise

- Click **Partition Detail** in the **Capacity Reports** group box, and review the capacity picture.

Partition Detail Report
Graph CPcalculator Documentation

### Partition Detail Report

Based on LSPR Data for IBM System z Processors  
Study ID: Not specified

#4 2817-M15 with zIIP  
Description: Cloned from Proposed 2817-M15

**z196/700 Host = 2817-M15/700 with 7 CPs; GP=6 zIIP=1**  
**7 Active Partitions: GP=6 zIIP=1**

**Capacity basis: 2094-701 @ 591.225 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	Batch	z/OS-1.11	Average	SHR	1	150	16.30%	<input type="checkbox"/>	1,073	1,097
<input checked="" type="checkbox"/>	2	GP	CICS-1	z/OS-1.11	Avg-High	SHR	3	350	38.04%	<input type="checkbox"/>	2,320	3,049
<input checked="" type="checkbox"/>		zIIP	CICS-1	z/OS-1.11	Avg-High	SHR	1	350	100.00%	<input type="checkbox"/>	1,106	1,106
<input checked="" type="checkbox"/>	3	GP	CICS-2	z/OS-1.11	Avg-High	SHR	1	100	10.87%	<input type="checkbox"/>	683	1,048
<input checked="" type="checkbox"/>	4	GP	CICS-3	z/OS-1.11	Avg-High	SHR	1	100	10.87%	<input type="checkbox"/>	683	1,048
<input checked="" type="checkbox"/>	5	GP	IMS	z/OS-1.11	Avg-High	SHR	2	200	21.74%	<input type="checkbox"/>	1,368	2,097
<input checked="" type="checkbox"/>	6	GP	Test	z/VM	High/LV	SHR	1	20	2.17%	<input checked="" type="checkbox"/>	131	131

**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	6	6	9	1.500	6,258
zAAP	None				n/a
zIIP	1	1	1	1.000	1,106
IFL	None				n/a
ICF	None				n/a
<b>Totals</b>	<b>7</b>	<b>7</b>	<b>10</b>		<b>7,364</b>




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

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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.





## zPCR Capacity Sizing Lab Exercise

- a) With the additional zIIP CP configured, the total capacity available has increased above our **6,150 MIPS** requirement, (**7,364** Total with **6,258** in GP). In this case, we could reduce the number of General Purpose CPs.
- b) Click **Return**
- c) Click **Specify Host** to open the **LPAR Host** window. Change the LPAR host configuration from 6 to 5 General Purpose CPs. Click **Return**
- d) Click **Partition Detail**. Note that adequate Total capacity remains (**6357** vs 6150 requirement). Click **Return** 2 times to get back to **Advanced-Mode Control Panel**
- e) Select both **Current z10 2097-707 #1**  and the **2817-M15 with zIIP #4**  configurations and then click **Compare**  icon on the **Advanced-Mode Control Panel** window.
- f) Click **Minimum Capacity**. Note that now all partitions are not seeing the required 20% capacity increase over the old 2097-707 configuration. Because a large part of partition #2's capacity requirement can now be satisfied by the zIIP LCPs, its weight for the General Purpose pool should be reduced to achieve a new balance.
- g) Try reducing partition #2's weight from **350** to **177**, by double clicking in the weight field to edit the field and hit enter. Now all partitions except #2 (CICS-1) see well over a 20% increase. Partition #2 originally needed **1,889 MIPS**, and with 20% growth, it would need **2,266 MIPS**. Since 50% of partition #2's workload can be offloaded to the zIIP LCPs, its General Purpose LCPs would only need **1,133 MIPS**. Does the modified LPAR configuration satisfy partition #2's capacity requirement? Yes, since Partition #2 is now at **1,214**.
- h) Notice that we have created a new problem Partition #1 (it's weight is now in red) is not receiving the new weight of 20.08. Previously it had been 16.30 before we made the last change.

**Partition Capacity Comparison Report**  
Based on Partition Minimum Capacity

Current z10 2097-707: Loaded from Basic Mode Study D:\...Task 1.zpcr  
2817-M15 with zIIP: Cloned from Proposed 2817-M15  
Capacity basis: 2094-701 @ 591.225 MIPS for a shared single-partition configuration  
Capacity for z/OS on z10 and later processors is represented with HiperDispatch turned ON

Partition Identification				#1  Current z10 2097-707							#4  2817-M15 with zIIP							Full Capacity (MIPS)	
List of All Included Partitions With Unique ID Metrics				2097-E12/700: GP=7							2817-M15/700: GP=5 zIIP=1								
Type	Name	SCP	Workload	LP#	Mode	LCPs	Weight%	CAP	Minimum Capacity	LP#	Mode	LCPs	Weight	Weight%	CAP	Minimum Capacity	Net Change	% Delta	
GP	Batch	z/OS-1.11	Average	1	SHR	3	16.30%		888	1	SHR	1	150	20.08%		1,104	+216	+24.3%	
GP	CICS-1	z/OS-1.11	Avg-High	2	SHR	7	38.04%		1,889	2	SHR	3	177	23.69%		1,214	-675	-35.7%	
zIIP	CICS-1	z/OS-1.11	Avg-High							*2	SHR	1	177	100.00%		1,106			
GP	CICS-2	z/OS-1.11	Avg-High	3	SHR	3	10.87%		555	3	SHR	1	100	13.39%		707	+152	+27.4%	
GP	CICS-3	z/OS-1.11	Avg-High	4	SHR	2	10.87%		554	4	SHR	1	100	13.39%		707	+153	+27.6%	
GP	IMS	z/OS-1.11	Avg-High	5	SHR	4	21.74%		1,110	5	SHR	2	200	26.77%		1,414	+304	+27.4%	
GP	Test	z/VM	High/LV	6	SHR	2	2.17%	✓	104	6	SHR	1	20	2.68%	✓	135	+31	+29.8%	

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.  
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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.

## zPCR Capacity Sizing Lab Exercise

- i) Click **Optimize SHR LCPs** (use “Moderate” and click Optimize) since we have changed the weight assigned to Partition # 2. Does the over all capacity increase? Yes from **6357 (page 25) to 6393**. Partition #2 CICS-1, went from **1,214 MIPS to 1,197** but it is still greater than **1,133 MIPS** requirement. We have now met all objectives

**Partition Capacity Comparison Report**  
Based on **Partition Minimum Capacity**  
Current z10 2097-707: Loaded from Basic Mode Study D:\...Task 1.zpcr  
2817-M15 with zIIP: Cloned from Proposed 2817-M15  
**Capacity basis: 2094-701 @ 591.225 MIPS for a shared single-partition configuration**  
**Capacity for z/OS on z10 and later processors is represented with HiperDispatch turned ON**

Partition Identification <small>List of All Included Partitions With Unique ID Metrics</small>				#1 <span style="color: red;">▲</span> <b>Current z10 2097-707</b> <small>2097-E12/700: GP=7</small>						#4 <span style="color: red;">▲</span> <b>2817-M15 with zIIP</b> <small>2817-M15/700: GP=5 zIIP=1</small>						Full Capacity (MIPS)		
				Partition Definition						Partition Definition								
Type	Name	SCP	Workload	LP#	Mode	LCPs	Weight%	CAP	Minimum Capacity	LP#	Mode	LCPs	Weight	Weight%	CAP	Minimum Capacity	Net Change	% Delta
GP	Batch	z/OS-1.11	Average	1	SHR	3	16.30%		888	1	SHR	2	150	20.08%		1,109	+221	+24.9%
GP	CICS-1	z/OS-1.11	Avg-High	2	SHR	7	38.04%		1,889	2	SHR	2	177	23.69%		1,197	-692	-36.6%
zIIP	CICS-1	z/OS-1.11	Avg-High							*2	SHR	1	177	100.00%		1,126		
GP	CICS-2	z/OS-1.11	Avg-High	3	SHR	3	10.87%		555	3	SHR	1	100	13.39%		706	+151	+27.2%
GP	CICS-3	z/OS-1.11	Avg-High	4	SHR	2	10.87%		554	4	SHR	1	100	13.39%		706	+152	+27.4%
GP	IMS	z/OS-1.11	Avg-High	5	SHR	4	21.74%		1,110	5	SHR	2	200	26.77%		1,413	+303	+27.3%
GP	Test	z/VM	High/LV	6	SHR	2	2.17%	✓	104	6	SHR	1	20	2.68%	✓	135	+31	+29.8%

Change Controls

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.

## zPCR Capacity Sizing Lab Exercise

- j) Click **Consider Margin-of-Error**. We also want to validate that all of the partitions have enough capacity to ensure they cover the -5% Margin-of-Error. We can see that all partitions are >20% delta on the projected minus 5% except Partition #1 which is below the 20% threshold at 18.6%. Partition #2, CICS-2, margin-of-Error is at **1,137 MIPS**, still above the needed **1,133 MIPS** requirement.

**Margin-of-Error Consideration**  
**Partition Minimum Capacity**

Current z10 2097-707: Loaded from Basic Mode Study D:\...Task 1.zpcr  
 2817-M15 with zIIP: Cloned from Proposed 2817-M15

Capacity basis: 2094-701 @ 591.225 MIPS for a shared single-partition configuration  
 Capacity for z/OS on z10 and later processors is represented with HiperDispatch turned ON

Partition Identification				#1 <b>Current z10 2097-707</b>	#4 <b>2817-M15 with zIIP</b>			
					Projected		Projected minus 5%	
Type	Name	SCP	Workload	Projected Capacity	Capacity	% Delta	Capacity	% Delta
GP	Batch	z/OS-1.11	Average	888	1,109	+24.9%	1,053	+18.6%
GP	CICS-1	z/OS-1.11	Avg-High	1,889	1,197	-36.6%	1,137	-39.8%
zIIP	CICS-1	z/OS-1.11	Avg-High		1,126		1,070	
GP	CICS-2	z/OS-1.11	Avg-High	555	706	+27.2%	671	+20.9%
GP	CICS-3	z/OS-1.11	Avg-High	554	706	+27.4%	671	+21.1%
GP	IMS	z/OS-1.11	Avg-High	1,110	1,413	+27.3%	1,343	+21.0%
GP	Test	z/NM	High/LV	104	135	+29.8%	129	+24.0%

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 expressed or implied. You are responsible for the results obtained from your use of this tool.

- k) Click **Return**

# zPCR Capacity Sizing Lab Exercise

l) Try increasing partition #1's weight from 150 to 153 .

**Partition Capacity Comparison**

**Partition Capacity Comparison Report**  
 Based on **Partition Minimum Capacity**  
 Current z10 2097-707: Loaded from Basic Mode Study Dr.\...Task 1.zpcr  
 2817-M15 with zIIP: Cloned from Proposed 2817-M15  
**Capacity basis: 2094-701 @ 591.225 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 <span style="color: red;">▲</span> <b>Current z10 2097-707</b> 2097-E12/700: GP=7					#4 <span style="color: red;">▲</span> <b>2817-M15 with zIIP</b> 2817-M15/700: GP=5 zIIP=1					Full Capacity (MIPS)				
				Partition Definition					Partition Definition									
Type	Name	SCP	Workload	LP#	Mode	LCPs	Weight%	CAP	Minimum Capacity	LP#	Mode	LCPs	Weight	Weight%	CAP	Minimum Capacity	Net Change	% Delta
GP	Batch	z/OS-1.11	Average	1	SHR	3	16.30%		888	1	SHR	2	153	20.40%		1,126	+238	+26.8%
GP	CICS-1	z/OS-1.11	Avg-High	2	SHR	7	38.04%		1,889	2	SHR	2	177	23.60%		1,192	-697	-36.9%
zIIP	CICS-1	z/OS-1.11	Avg-High							2	SHR	1	177	100.00%		1,126		
GP	CICS-2	z/OS-1.11	Avg-High	3	SHR	3	10.87%		555	3	SHR	1	100	13.33%		703	+148	+26.7%
GP	CICS-3	z/OS-1.11	Avg-High	4	SHR	2	10.87%		554	4	SHR	1	100	13.33%		703	+149	+26.9%
GP	IMS	z/OS-1.11	Avg-High	5	SHR	4	21.74%		1,110	5	SHR	2	200	26.67%		1,408	+298	+26.8%
GP	Test	z/VM	High/LV	6	SHR	2	2.17%	✓	104	6	SHR	1	20	2.67%	✓	135	+31	+29.8%

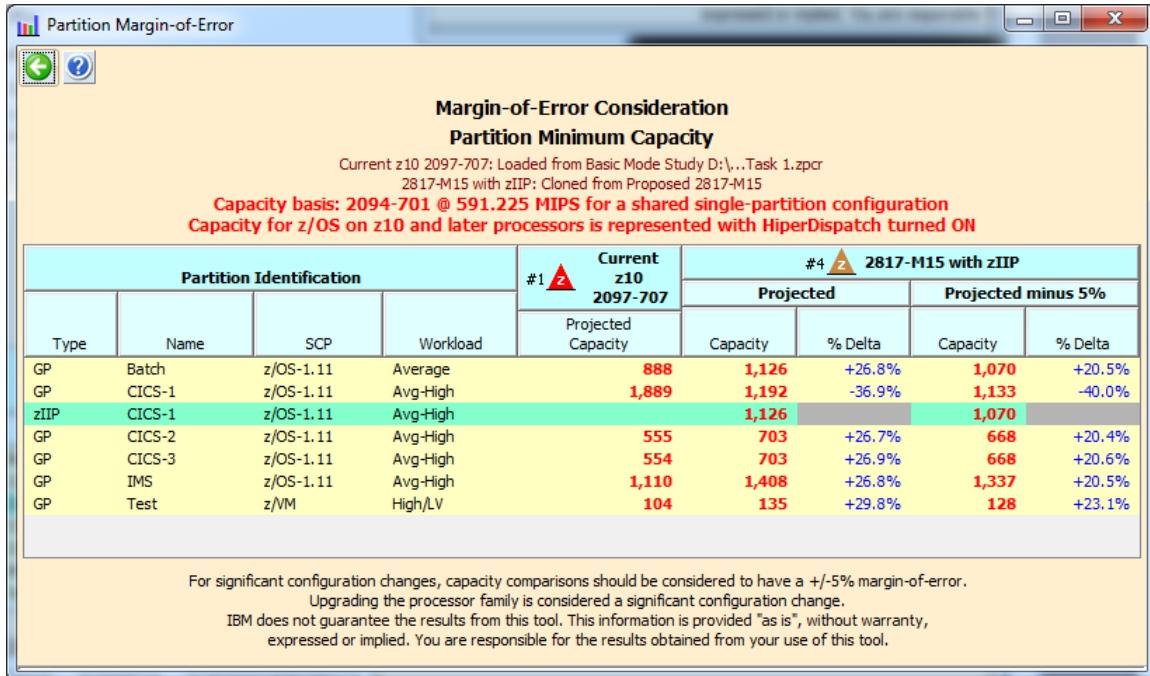
Change Controls



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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.

## zPCR Capacity Sizing Lab Exercise

- m) Click **Consider Margin-of-Error**. We also want to validate that all of the partitions have enough capacity to ensure they cover the -5% Margin-of-Error. We can see that all partitions are >20% delta on the projected minus 5%. Partition #2, CICS-2, margin-of-Error is at **1,133 MIPS**, meeting the needed **1,133 MIPS** requirement.



Partition Identification				#1  Current z10 2097-707	#4  2817-M15 with zIIP			
				Projected Capacity	Projected		Projected minus 5%	
Type	Name	SCP	Workload		Capacity	% Delta	Capacity	% Delta
GP	Batch	z/OS-1.11	Average	888	1,126	+26.8%	1,070	+20.5%
GP	CICS-1	z/OS-1.11	Avg-High	1,889	1,192	-36.9%	1,133	-40.0%
zIIP	CICS-1	z/OS-1.11	Avg-High		1,126		1,070	
GP	CICS-2	z/OS-1.11	Avg-High	555	703	+26.7%	668	+20.4%
GP	CICS-3	z/OS-1.11	Avg-High	554	703	+26.9%	668	+20.6%
GP	IMS	z/OS-1.11	Avg-High	1,110	1,408	+26.8%	1,337	+20.5%
GP	Test	z/VM	High/LV	104	135	+29.8%	128	+23.1%

Click one **Return** buttons to close the Partition Margin of Error

Click Commit

Click two **Return** buttons to close the windows

## zPCR Capacity Sizing Lab Exercise

n) From the Advanced-Mode Control Panel, click LPAR Host Capacity Summary Report



This report relates the capacity projections by partition type (CP pool) for each LPAR configuration that is defined. The sum of the individual pool capacity values is shown as a total for the entire CPC on the right.

Host Capacity Summary
⏪ ⏩ ✖

### LPAR Host Capacity Summary Report

Capacity basis: 2094-701 @ 591.225 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)					Total	
Identity	Hardware	GP	zAAP	zIIP	IFL	ICF		
#1	Current z10 2097-707	2097-E12/700: GP=7	5,100.0					5,100.0
#2	Proposed 2817-M15	2817-M15/700: GP=6	6,329.4					6,329.4
#3	2817-M15 with IFL	2817-M15/700: GP=6 IFL=1	6,363.1			1,199.4		7,562.5
#4	2817-M15 with zIIP	2817-M15/700: GP=5 zIIP=1	5,268.2		1,126.1			6,394.4

**Content Control**

Show Capacity Deltas

Based on "Current z10 2097-707"  
 Incremental

**Show capacity as**

Full CPC  
 Single-CP

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Position mouse on LPAR configuration to display description

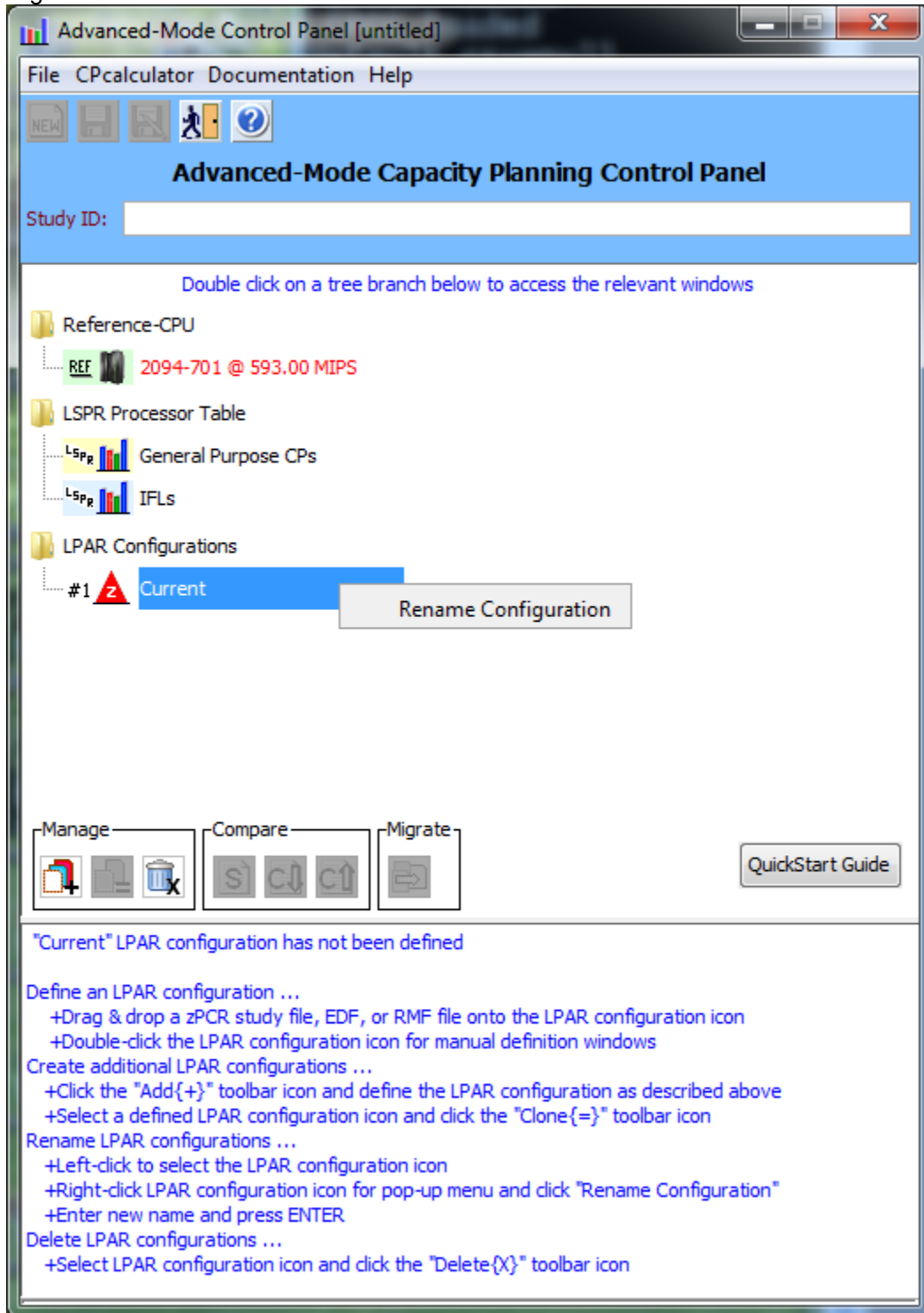
## Rename a Configuration

### Procedure

1. Single-click the **Current** icon on the *Advanced-Mode Control Panel* window to select it.

## zPCR Capacity Sizing Lab Exercise

2. Right click on the text field





## zPCR Capacity Sizing Lab Exercise

3. Key in the name that you wish to use and hit enter

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 z Current z10 2097-707

Manage      Compare      Migrate      QuickStart Guide

#1 z	Current z10 2097-707 Loaded from Basic Mode Study D:\...Task 1.zpcr z10-EC LPAR Host: 2097-E12/700					
Pool CP Type	#1 GP	#2 zAAP	#3 zIIP	#4 IFL	#5 ICF	CPC Total
RCPs	7	0	0	0	0	7
Partitions	6	0	0	0	0	6
LCPs	21	0	0	0	0	21
Capacity	5,115.3					5,115.3
Capacity basis: 2094-701 @ 593.00 MIPS for a shared single-partition configuration						