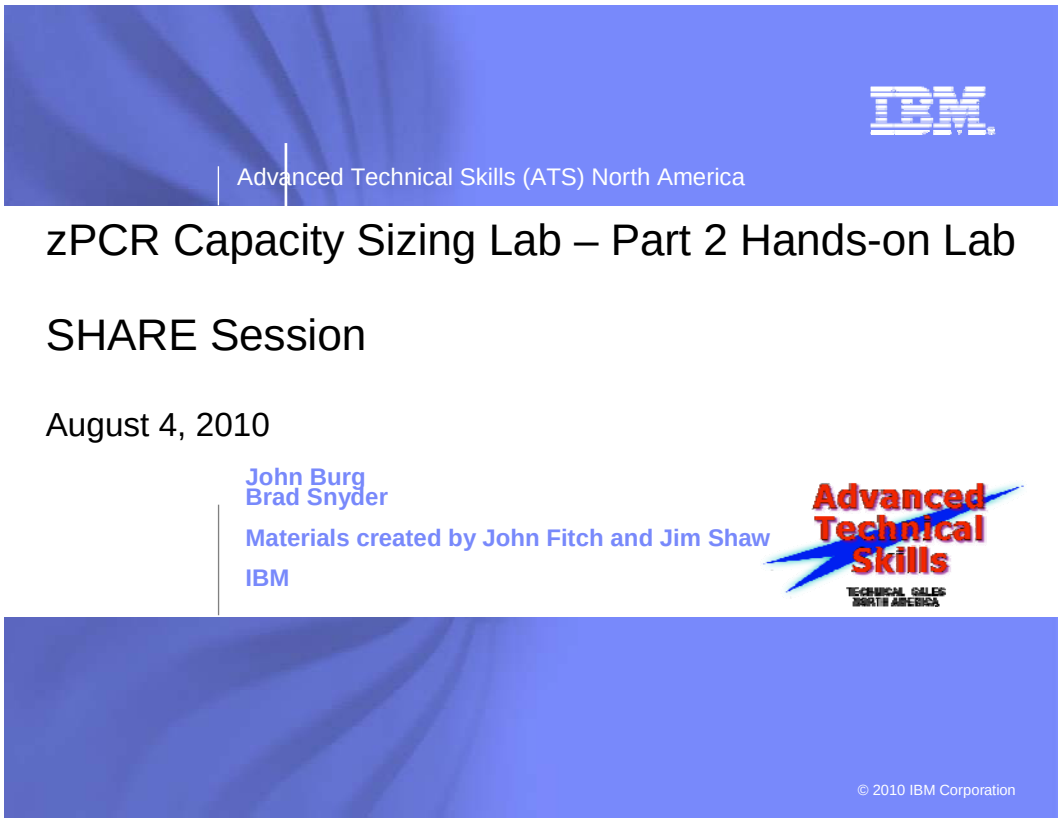
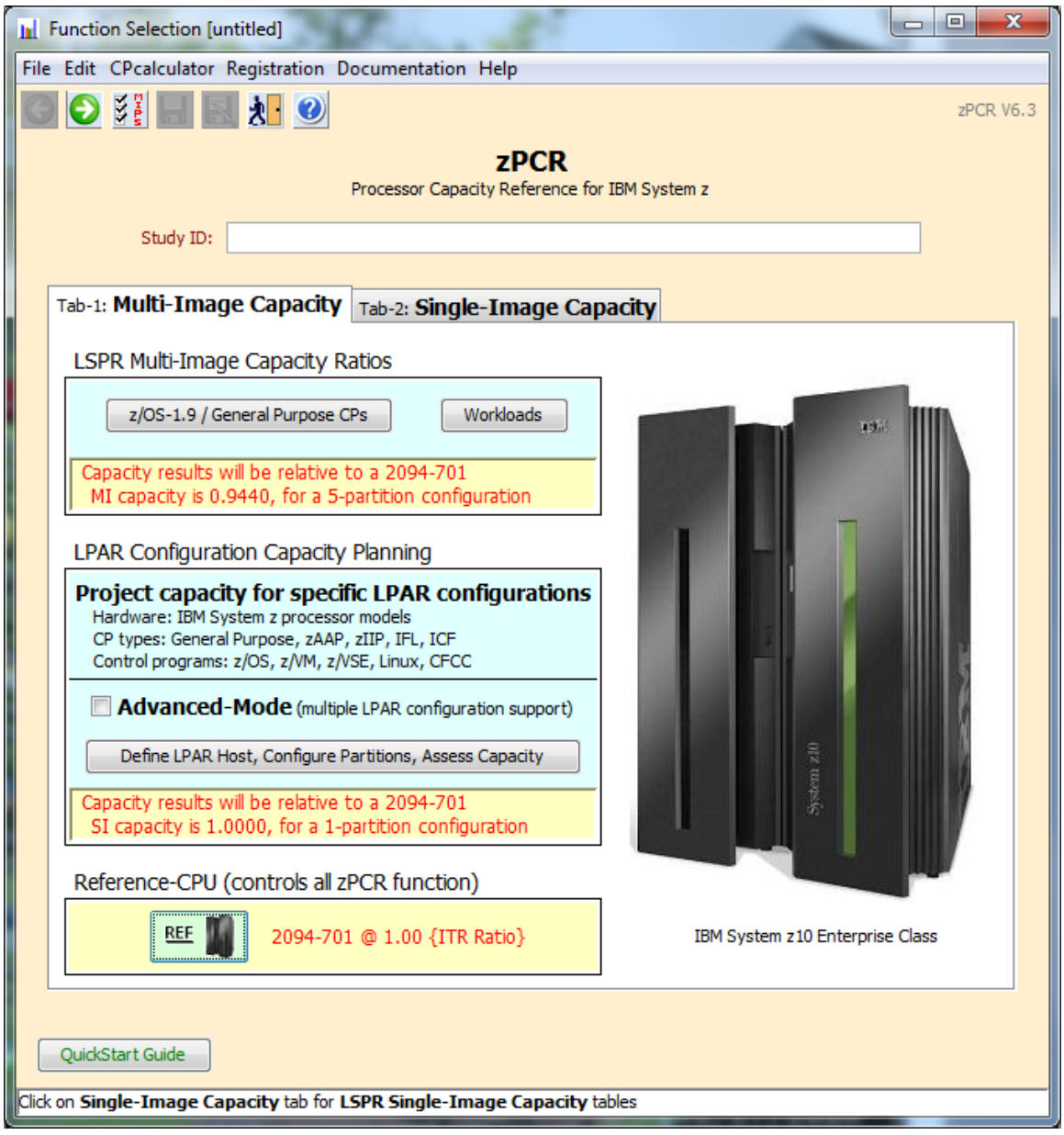


zPCR Capacity Sizing Lab – Part 2 Hands On Lab Exercise

John Burg
Brad Snyder

Function Selection Window



Objective

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

XYZ Corporation currently has a **z9 2094-707** (7-way processor) installed, which they view as having **3,500 MIPS** of usable capacity, (so we need to calibrate zPCR to this view). The 2094-707 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 Association
1	Batch	Share	3	15%	150	No	z/OS-1.9 LoIO-Mix
2	CICS-1	Share	7	35%	350	No	z/OS-1.9 TM-Mix
3	CICS-2	Share	3	10%	100	No	z/OS-1.9 TM-Mix
4	CICS-3	Share	2	10%	100	No	z/OS-1.9 TD-Mix
5	IMS	Share	4	20%	200	No	z/OS-1.9 TI-Mix
6	Test	Share	2	2%	20	Yes	Linux WASDB/L

A plan is being developed to **replace the z9 2094-707 with a newer technology System z10 EC processor**. The specific model chosen must provide **20% additional capacity**, or at least **4,200 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

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 z10 replacement processor
- **Task 5** - Model the intended z10 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 zAAP 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.

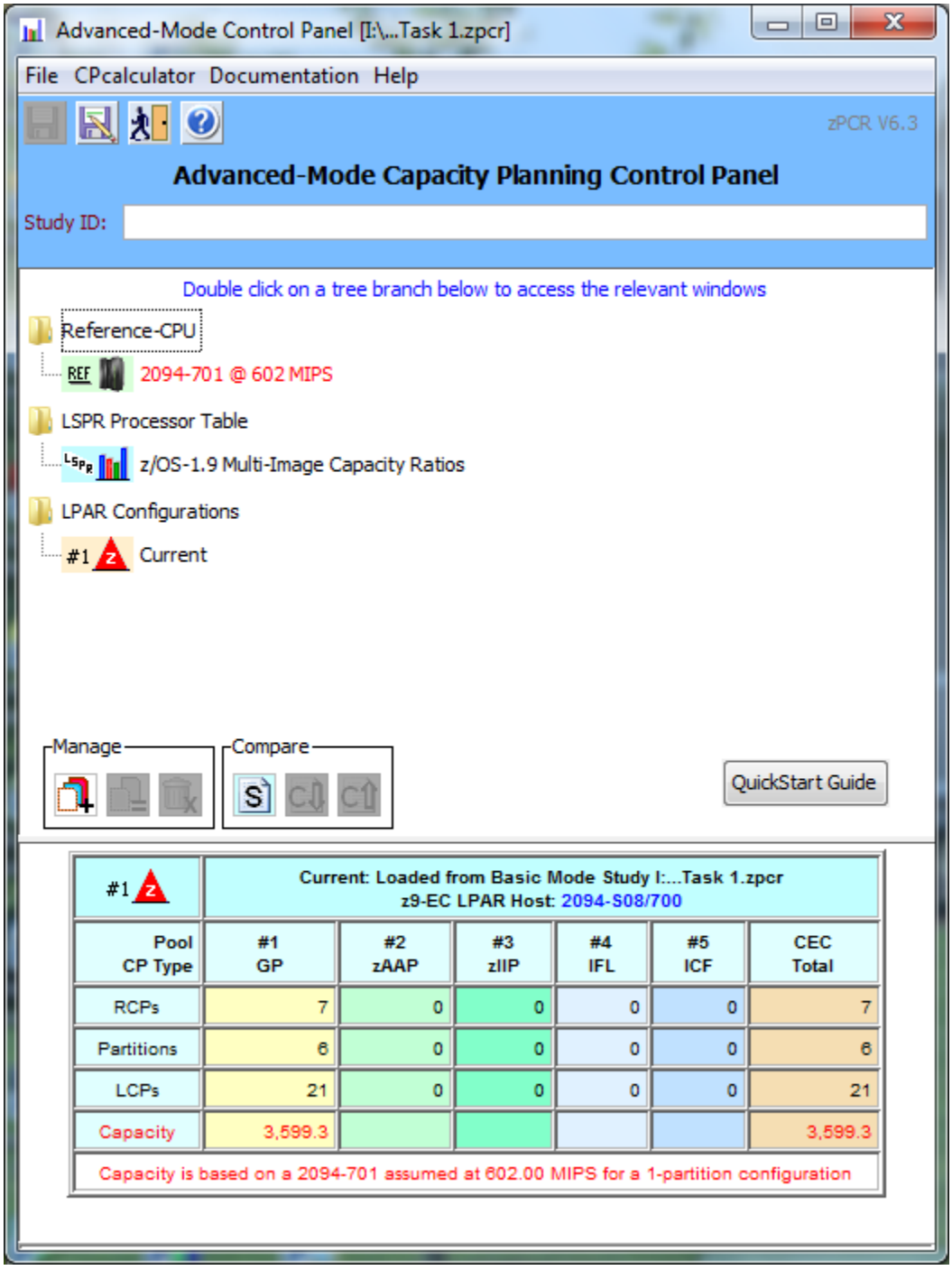
Note: **zPCR**'s default Reference-CPU setting is the 2094-701 rated at 1.00. When this study was saved, the Reference-CPU was set to a 2094-701 rated at 602 MIPS, so we need to restore the **zPCR** Reference-CPU to that setting.

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 @ 1.00 {ITR Ratio}**". The ***Reference-CPU*** window will appear.
   a) Click **Typical** to set the Reference-CPU to the 2094-701 rated at 602 MIPS.
   b) Click **Return**
5. Open Windows Explorer (by clicking on "Start", "All Programs", "Accessories", "Windows Explorer"). Then using Windows Explorer select to the CPSTOOLS/zpcr6.3c 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.
   a) Click **OK** to the message box which indicates that this file was created using zPCR v5.4. This was the last time the model had been updated.

Advanced-Mode Control Panel Window

Task 1.zpcr

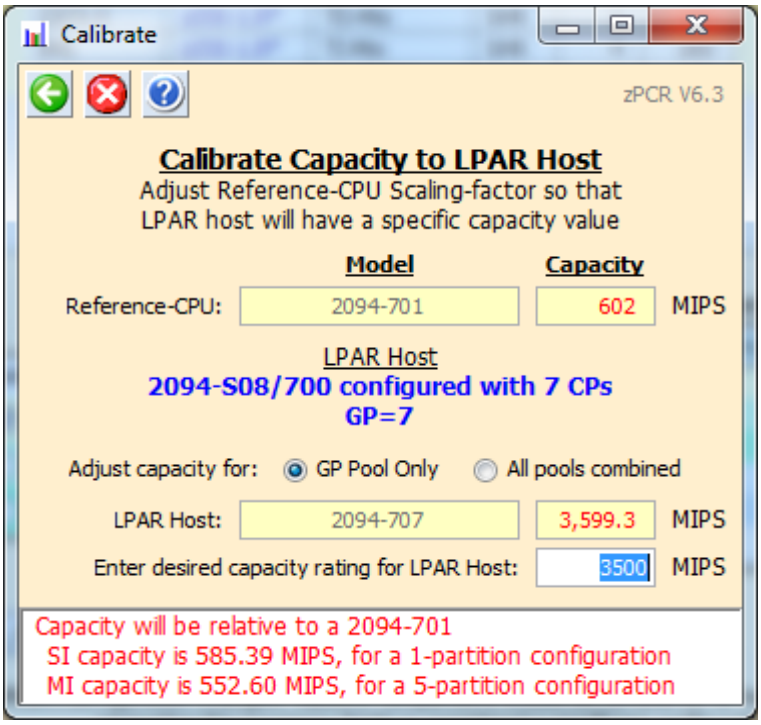


Task 2: **Calibrate the model to XYZ Company's capacity designation**

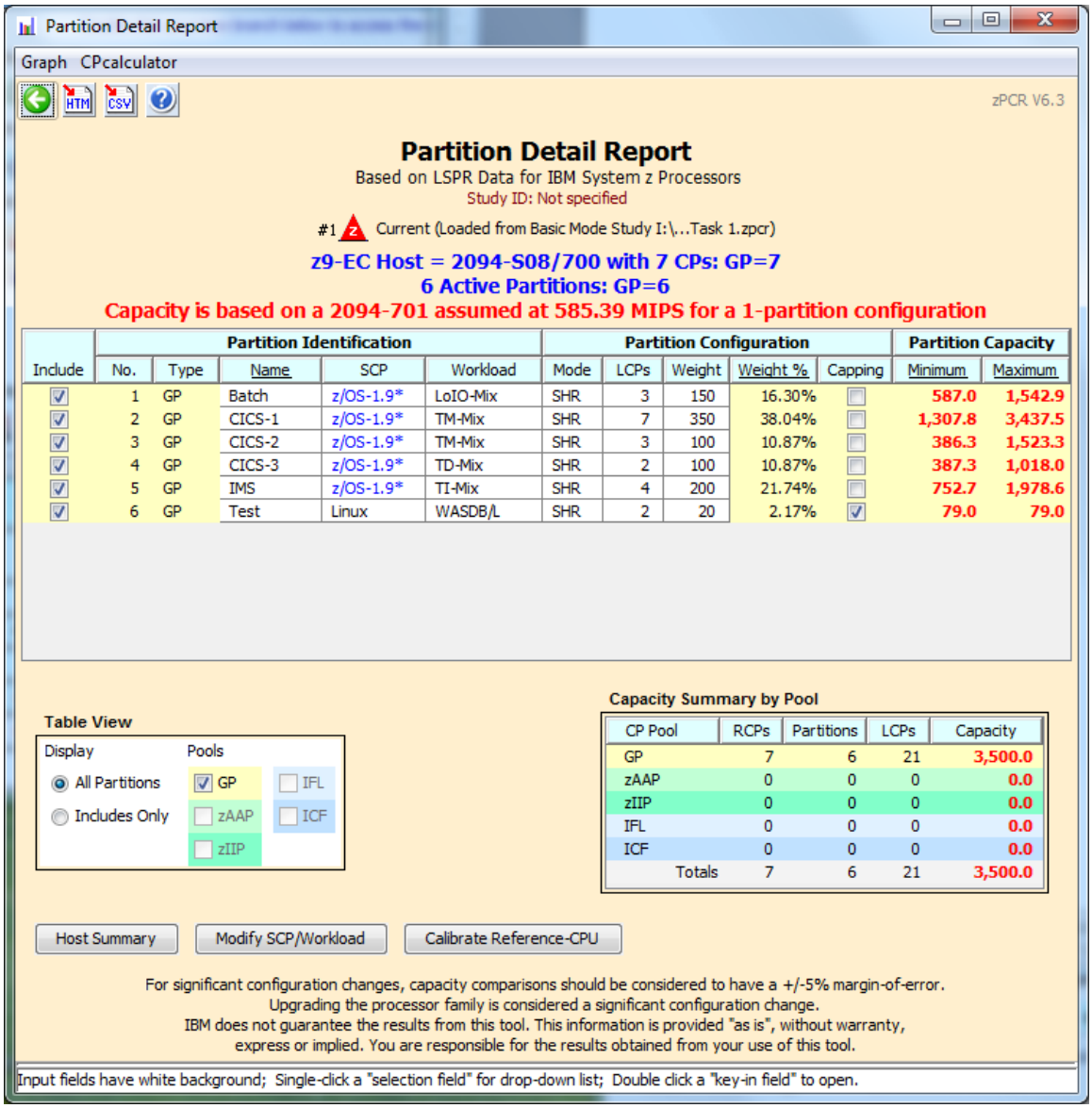
Review the capacity assessment and alter the ***Reference-CPU*** scaling-factor such that that the company's capacity designation is provided in the results.

Analysis Steps

1. Double-click on the **Current** LPAR configuration icon to open the ***LPAR Host and Partition Configuration*** window for the Current LPAR configuration.
2. 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 **3,599.39 MIPS**. The XYZ Company believes that the total GP capacity of this machine for their environment is **3,500 MIPS**. We will adjust the Reference-CPU scaling factor so that the GP capacity result will be **3,500 MIPS**.
3. Click **Calibrate Reference-CPU** to open the ***Calibrate*** window.
4. Key in **3500** in the ***Enter desired capacity rating for LPAR Host*** entry field and press **Enter**.



5. Click **Return**



Partition Detail Report

Graph CPcalculator

zPCR V6.3

Partition Detail Report

Based on LSPR Data for IBM System z Processors

Study ID: Not specified

#1 Current (Loaded from Basic Mode Study I:\...Task 1.zpcr)

z9-EC Host = 2094-S08/700 with 7 CPs: GP=7

6 Active Partitions: GP=6

Capacity is based on a 2094-701 assumed at 585.39 MIPS for a 1-partition configuration

Include	Partition Identification					Partition Configuration					Partition Capacity	
	No.	Type	Name	SCP	Workload	Mode	LCPs	Weight	Weight %	Capping	Minimum	Maximum
☑	1	GP	Batch	z/OS-1.9*	LoIO-Mix	SHR	3	150	16.30%	☐	587.0	1,542.9
☑	2	GP	CICS-1	z/OS-1.9*	TM-Mix	SHR	7	350	38.04%	☐	1,307.8	3,437.5
☑	3	GP	CICS-2	z/OS-1.9*	TM-Mix	SHR	3	100	10.87%	☐	386.3	1,523.3
☑	4	GP	CICS-3	z/OS-1.9*	TD-Mix	SHR	2	100	10.87%	☐	387.3	1,018.0
☑	5	GP	IMS	z/OS-1.9*	TI-Mix	SHR	4	200	21.74%	☐	752.7	1,978.6
☑	6	GP	Test	Linux	WASDB/L	SHR	2	20	2.17%	☑	79.0	79.0

Table View

Display: ◉ All Partitions ○ Includes Only

Pools: ☑ GP ☐ zAAP ☐ zIIP ☐ IFL ☐ ICF

Capacity Summary by Pool

CP Pool	RCPs	Partitions	LCPs	Capacity
GP	7	6	21	3,500.0
zAAP	0	0	0	0.0
zIIP	0	0	0	0.0
IFL	0	0	0	0.0
ICF	0	0	0	0.0
Totals	7	6	21	3,500.0

Host Summary | Modify SCP/Workload | Calibrate Reference-CPU

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,
express 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**

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.

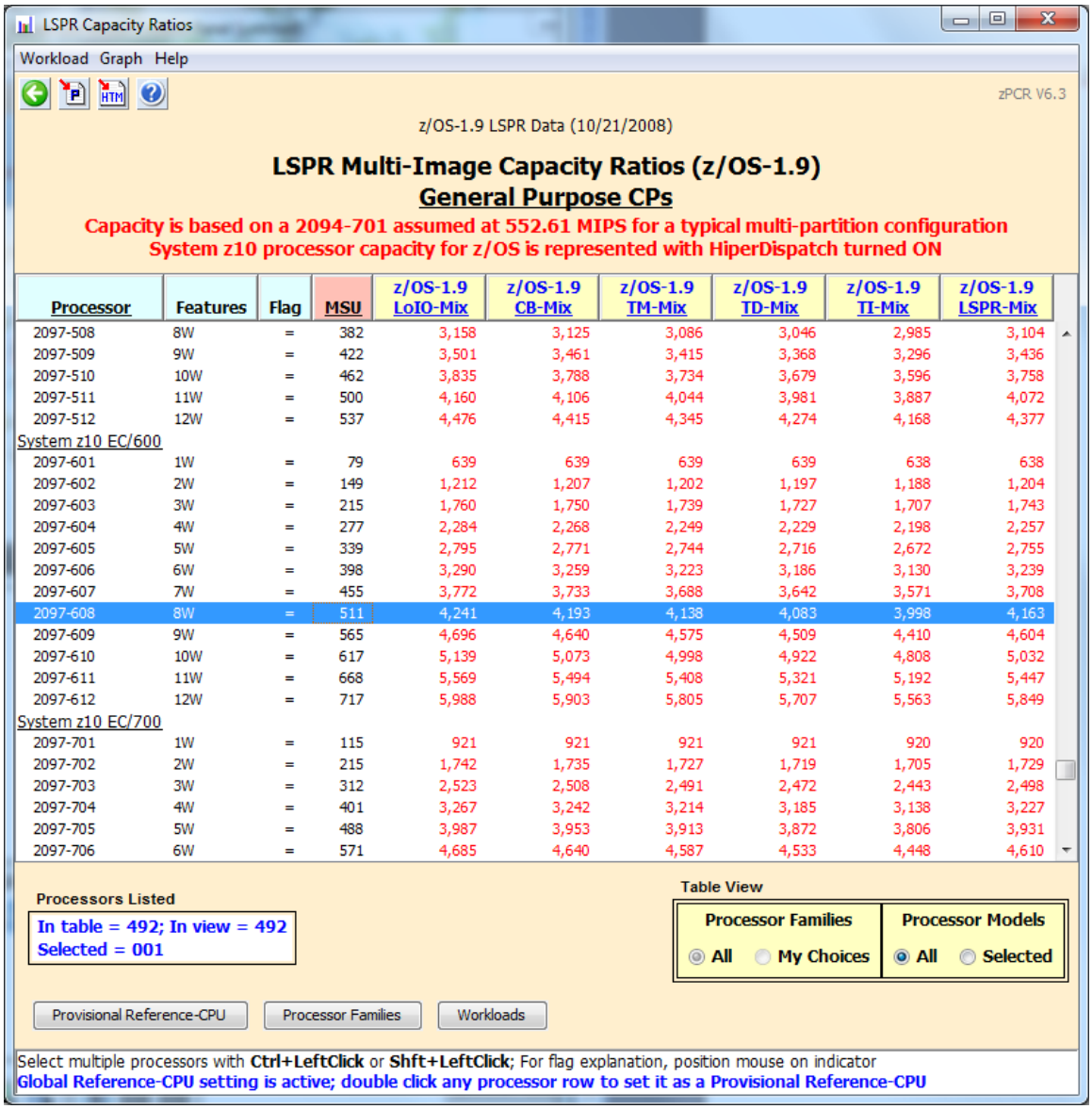
Task 4: **Find an appropriate replacement processor**

Browsing the ***z/OS-1.9 Multi-Image LSPR Capacity Ratios*** table, find the IBM System z10 processor that can provide the required capacity increment.

Analysis Steps

1. From the Advanced-Mode window, double click on **z/OS-1.9 *Multi-Image Capacity* Ratios** to open the ***LSPR Multi-Image Processor Capacity Ratios*** table.
2. Find an IBM System z10 EC processor that can provide the required **4,200 MIPS**. (tip right click for a list of the Families, then select z10 EC/600)

   For the purposes of this exercise, choose the **2097-608**, which appears to have just a bit less capacity than we require for most all of the LSPR workloads. (e.g. 4,163 for LSPR Mix etc) **Remember that capacity values in the multi-image table represent typical (or average) partition configurations, and are therefore can only generalize capacity**.
3. Click **Return** to go back to the ***Advanced-Mode Control Panel*** window.



LSPR Capacity Ratios

Workload Graph Help

zPCR V6.3

z/OS-1.9 LSPR Data (10/21/2008)

LSPR Multi-Image Capacity Ratios (z/OS-1.9)

General Purpose CPs

Capacity is based on a 2094-701 assumed at 552.61 MIPS for a typical multi-partition configuration
System z10 processor capacity for z/OS is represented with HiperDispatch turned ON

Processor	Features	Flag	MSU	z/OS-1.9 LoIO-Mix	z/OS-1.9 CB-Mix	z/OS-1.9 TM-Mix	z/OS-1.9 TD-Mix	z/OS-1.9 TI-Mix	z/OS-1.9 LSPR-Mix
2097-508	8W	=	382	3,158	3,125	3,086	3,046	2,985	3,104
2097-509	9W	=	422	3,501	3,461	3,415	3,368	3,296	3,436
2097-510	10W	=	462	3,835	3,788	3,734	3,679	3,596	3,758
2097-511	11W	=	500	4,160	4,106	4,044	3,981	3,887	4,072
2097-512	12W	=	537	4,476	4,415	4,345	4,274	4,168	4,377
System z10 EC/600									
2097-601	1W	=	79	639	639	639	639	638	638
2097-602	2W	=	149	1,212	1,207	1,202	1,197	1,188	1,204
2097-603	3W	=	215	1,760	1,750	1,739	1,727	1,707	1,743
2097-604	4W	=	277	2,284	2,268	2,249	2,229	2,198	2,257
2097-605	5W	=	339	2,795	2,771	2,744	2,716	2,672	2,755
2097-606	6W	=	398	3,290	3,259	3,223	3,186	3,130	3,239
2097-607	7W	=	455	3,772	3,733	3,688	3,642	3,571	3,708
2097-608	8W	=	511	4,241	4,193	4,138	4,083	3,998	4,163
2097-609	9W	=	565	4,696	4,640	4,575	4,509	4,410	4,604
2097-610	10W	=	617	5,139	5,073	4,998	4,922	4,808	5,032
2097-611	11W	=	668	5,569	5,494	5,408	5,321	5,192	5,447
2097-612	12W	=	717	5,988	5,903	5,805	5,707	5,563	5,849
System z10 EC/700									
2097-701	1W	=	115	921	921	921	921	920	920
2097-702	2W	=	215	1,742	1,735	1,727	1,719	1,705	1,729
2097-703	3W	=	312	2,523	2,508	2,491	2,472	2,443	2,498
2097-704	4W	=	401	3,267	3,242	3,214	3,185	3,138	3,227
2097-705	5W	=	488	3,987	3,953	3,913	3,872	3,806	3,931
2097-706	6W	=	571	4,685	4,640	4,587	4,533	4,448	4,610

Processors Listed

In table = 492; In view = 492
Selected = 001

Table View

Processor Families: All / My Choices

Processor Models: All / Selected

Provisional Reference-CPU | Processor Families | Workloads

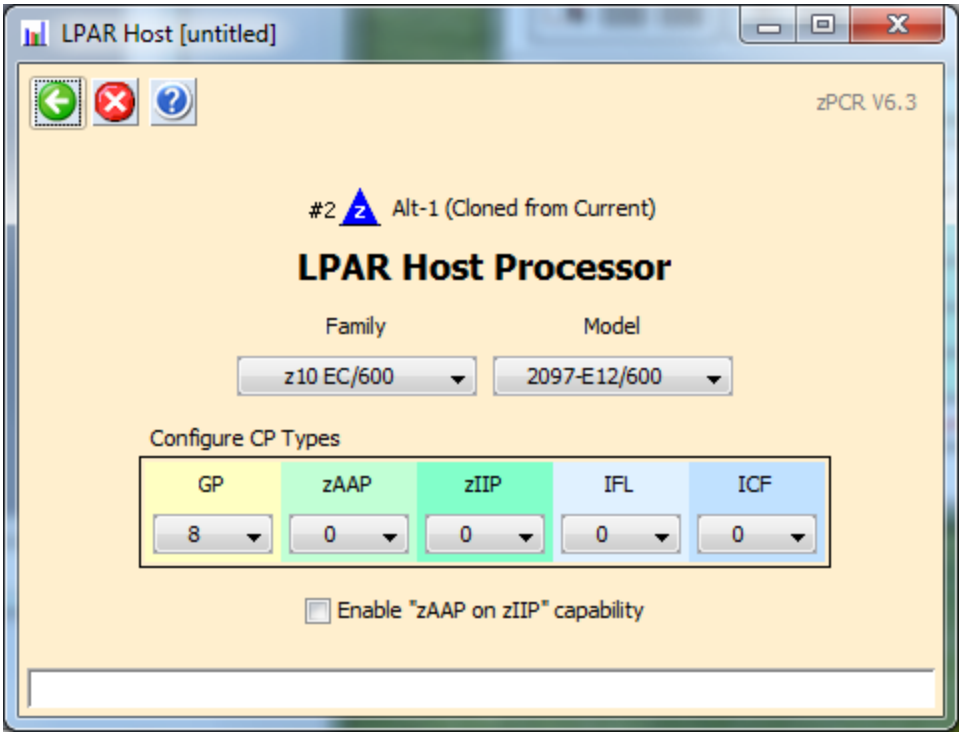
Select multiple processors with **Ctrl+LeftClick** or **Shft+LeftClick**; For flag explanation, position mouse on indicator
Global Reference-CPU setting is active; double click any processor row to set it as a Provisional Reference-CPU

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

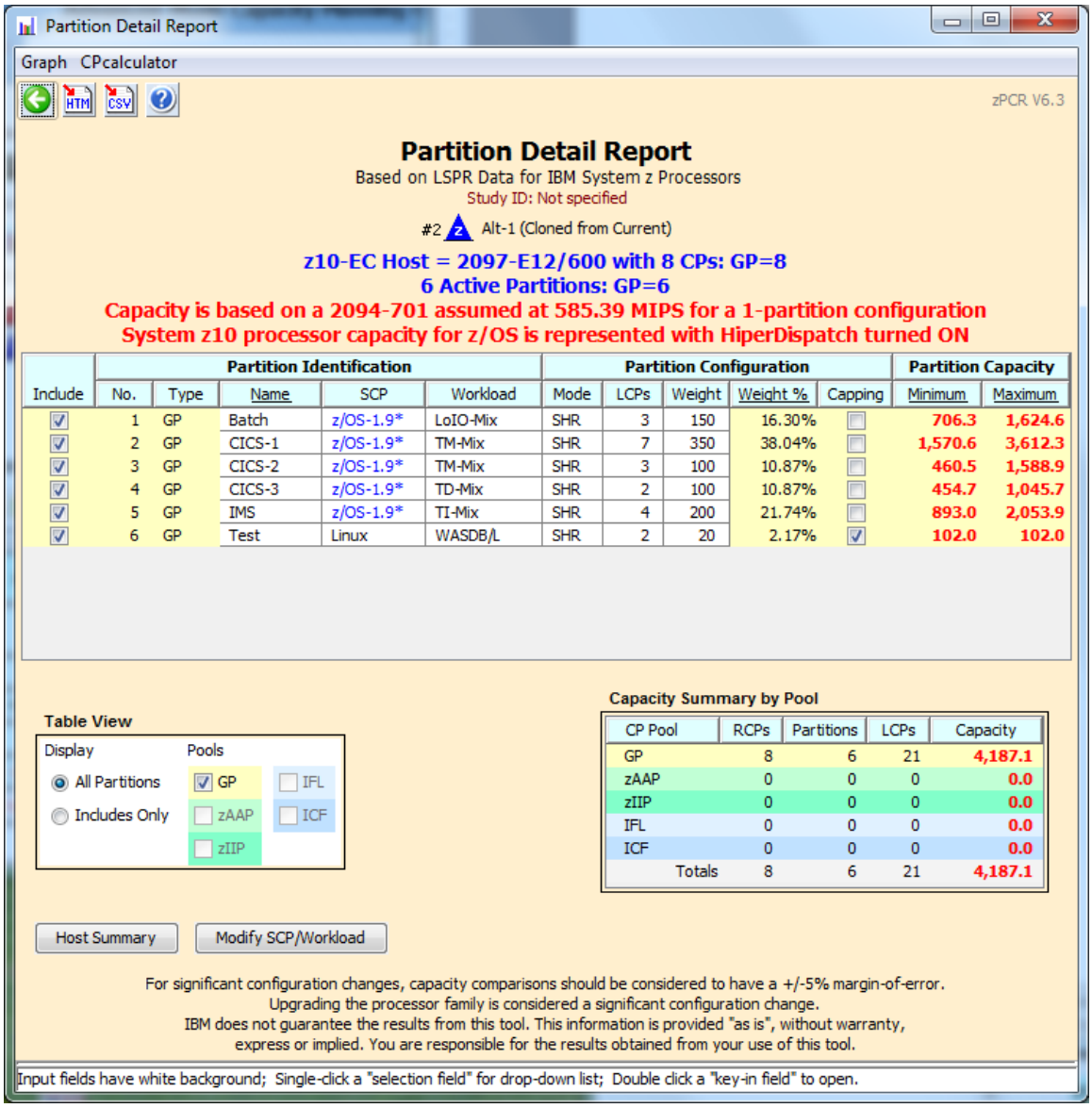
Using the current LPAR configuration as a starting point, we will transfer it to the new IBM System z10 processor, making any necessary adjustments to the partition definitions.

Analysis Steps

1. Single-click the **Current** 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. Its icon is labeled **Alt-1**
3. Double-click the **Alt-1** icon to open the ***LPAR Host and Partition Configuration*** window for the **Alternate** LPAR configuration.
4. Click **Specify Host** to open the ***LPAR Host*** window.
   a) Set the ***Family*** to be **z10 EC/600**.
   b) Set the ***Model*** to **2097-E12/600** (this model has a maximum total of 12 configurable CPs).
   c) Set ***General Purpose CPs*** to 8 (seen as a 2097-608). There are no other CP types planned at this time.
   d) Click **Return**.



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



Partition Detail Report

Graph CPcalculator

zPCR V6.3

Partition Detail Report

Based on LSPR Data for IBM System z Processors

Study ID: Not specified

#2 Alt-1 (Cloned from Current)

z10-EC Host = 2097-E12/600 with 8 CPs: GP=8

6 Active Partitions: GP=6

Capacity is based on a 2094-701 assumed at 585.39 MIPS for a 1-partition configuration

System z10 processor capacity for z/OS is represented with HiperDispatch turned ON

	Partition Identification					Partition Configuration					Partition Capacity	
Include	No.	Type	Name	SCP	Workload	Mode	LCPs	Weight	Weight %	Capping	Minimum	Maximum
☑	1	GP	Batch	z/OS-1.9*	LoIO-Mix	SHR	3	150	16.30%	☐	706.3	1,624.6
☑	2	GP	CICS-1	z/OS-1.9*	TM-Mix	SHR	7	350	38.04%	☐	1,570.6	3,612.3
☑	3	GP	CICS-2	z/OS-1.9*	TM-Mix	SHR	3	100	10.87%	☐	460.5	1,588.9
☑	4	GP	CICS-3	z/OS-1.9*	TD-Mix	SHR	2	100	10.87%	☐	454.7	1,045.7
☑	5	GP	IMS	z/OS-1.9*	TI-Mix	SHR	4	200	21.74%	☐	893.0	2,053.9
☑	6	GP	Test	Linux	WASDB/L	SHR	2	20	2.17%	☑	102.0	102.0

Table View

Display: ◉ All Partitions ○ Includes Only

Pools: ☑ GP ☐ zAAP ☐ zIIP ☐ IFL ☐ ICF

Capacity Summary by Pool

CP Pool	RCPs	Partitions	LCPs	Capacity
GP	8	6	21	4,187.1
zAAP	0	0	0	0.0
zIIP	0	0	0	0.0
IFL	0	0	0	0.0
ICF	0	0	0	0.0
Totals	8	6	21	4,187.1

Host Summary | Modify SCP/Workload

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

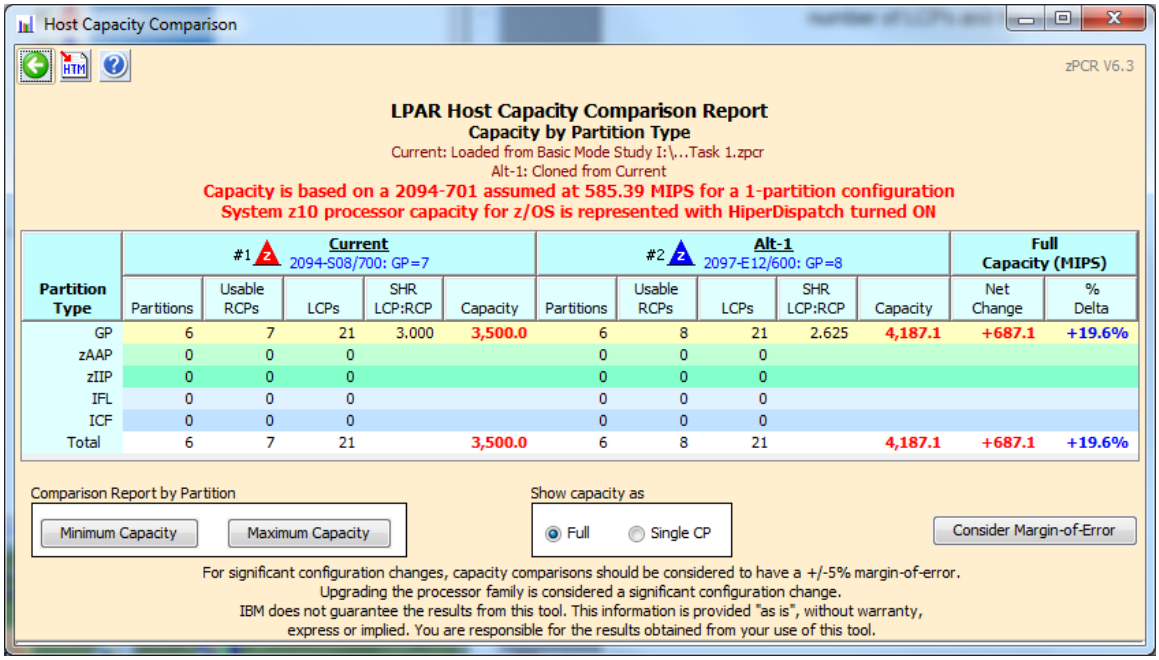
Input fields have white background; Single-click a "selection field" for drop-down list; Double click a "key-in field" to open.

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

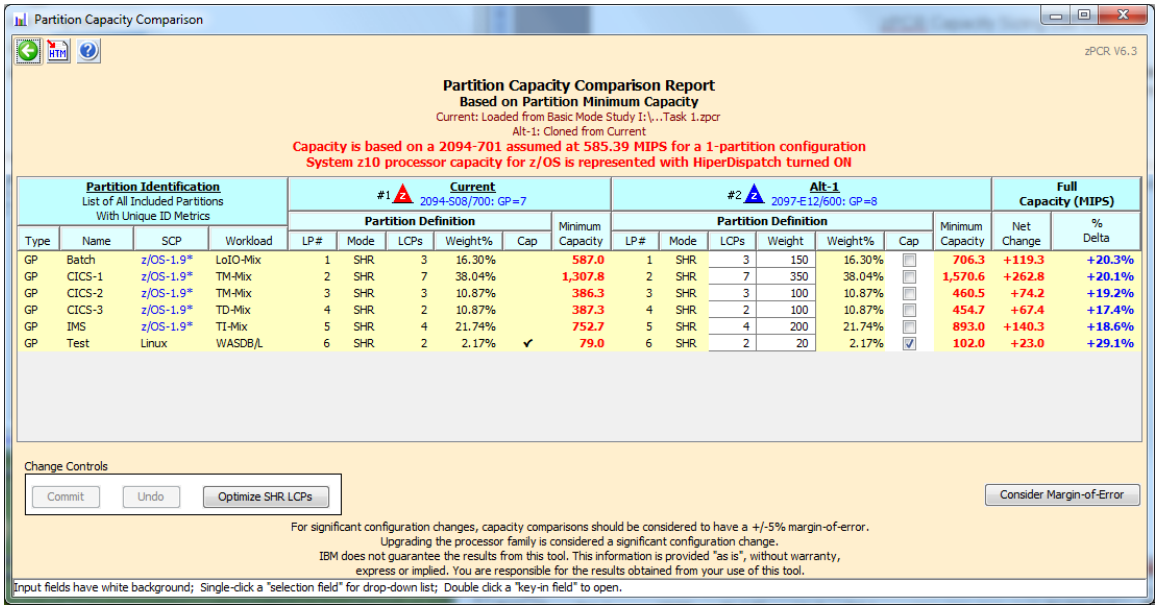
Using the capacity results for this new LPAR host, determine if we realized the desired 20% capacity increase (**4,200 MIPS**), for the overall host and for each individual partition.

Analysis Steps

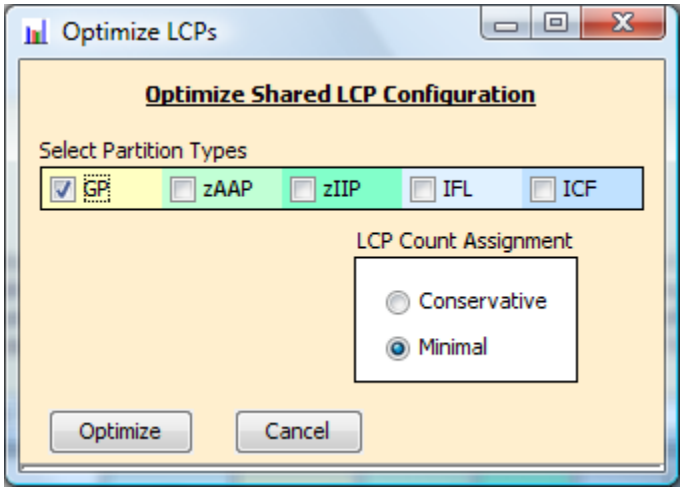
1. On the ***Detail Report*** window, the overall effective capacity for the 2097-608 is **4,187.1 MIPS** for this LPAR configuration. The effective capacity for the 2094-707 was **3,500 MIPS.** (see page 8)
2. Click two **Return** buttons to close the LPAR configuration windows.
3. On the ***Advanced-Mode Control Panel*** window, select the two configurations (hold the cntl 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.



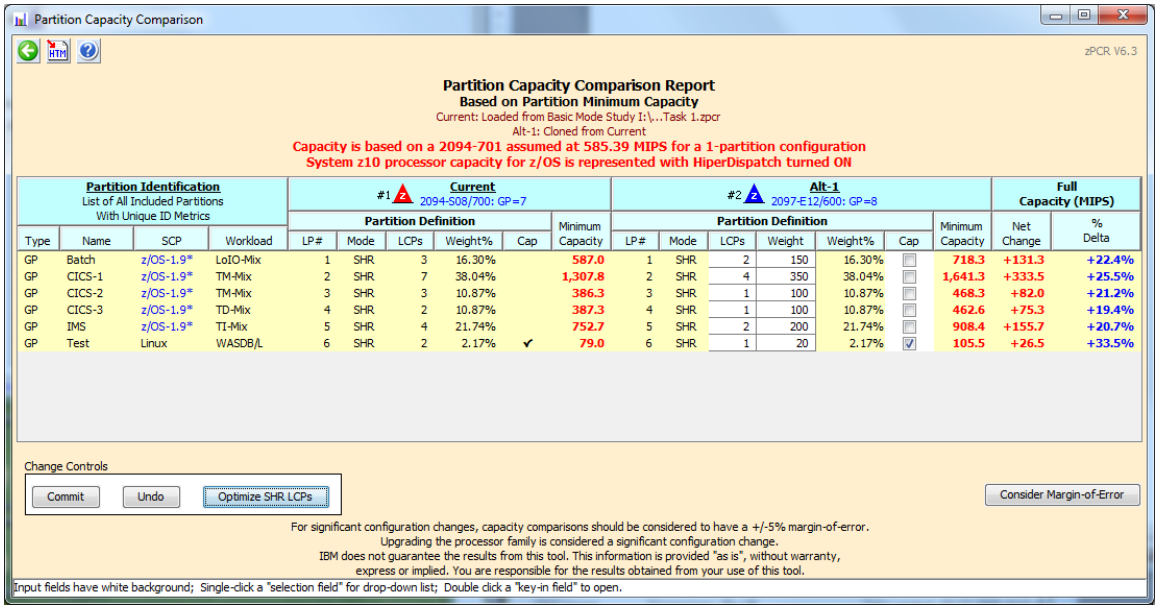
Click **Minimum Capacity** in the ***Comparison Report by Partition*** group box. Note that some of the partitions see an increase of approximately 20% or more, but there are a 3 of them that do not, (CICS-2, CICS-3 and IMS).



4. 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.



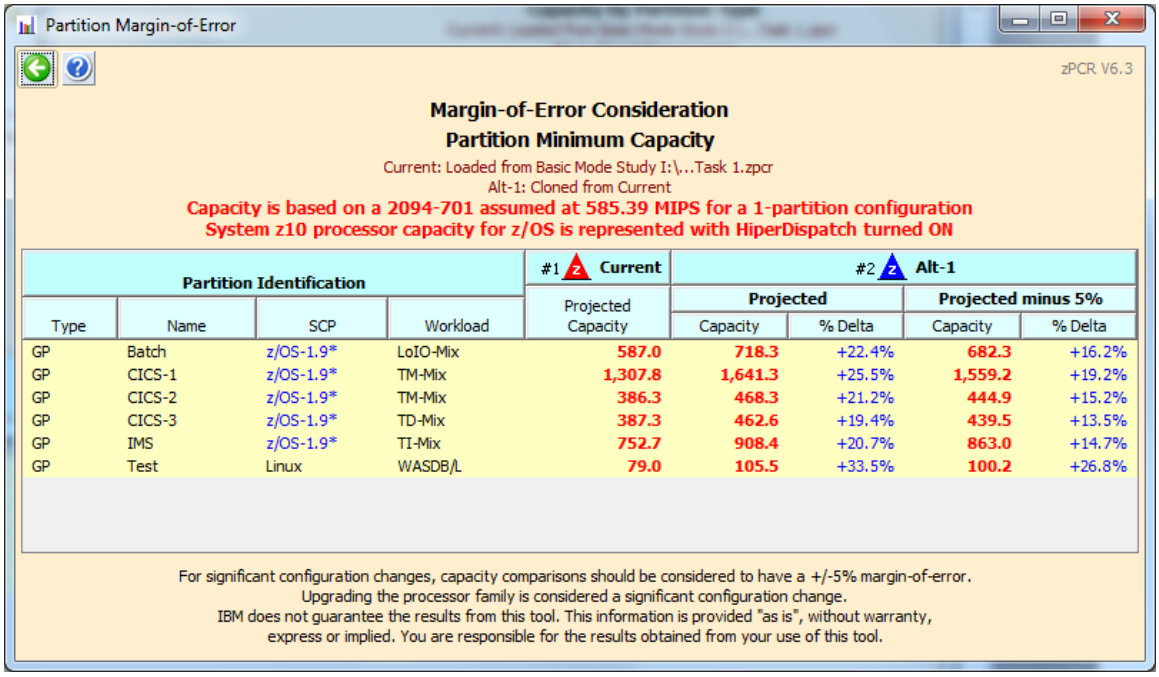
5. Click **Optimize** and use the default “minimal” to see if you can improve the results by reducing the number of LCPs assign to each partition. Note The weight percent is used to determine the exact number of LCPs (rounded up to the nearest whole number) to be assigned. We can see that CICS-3 did not make the 20% increase.



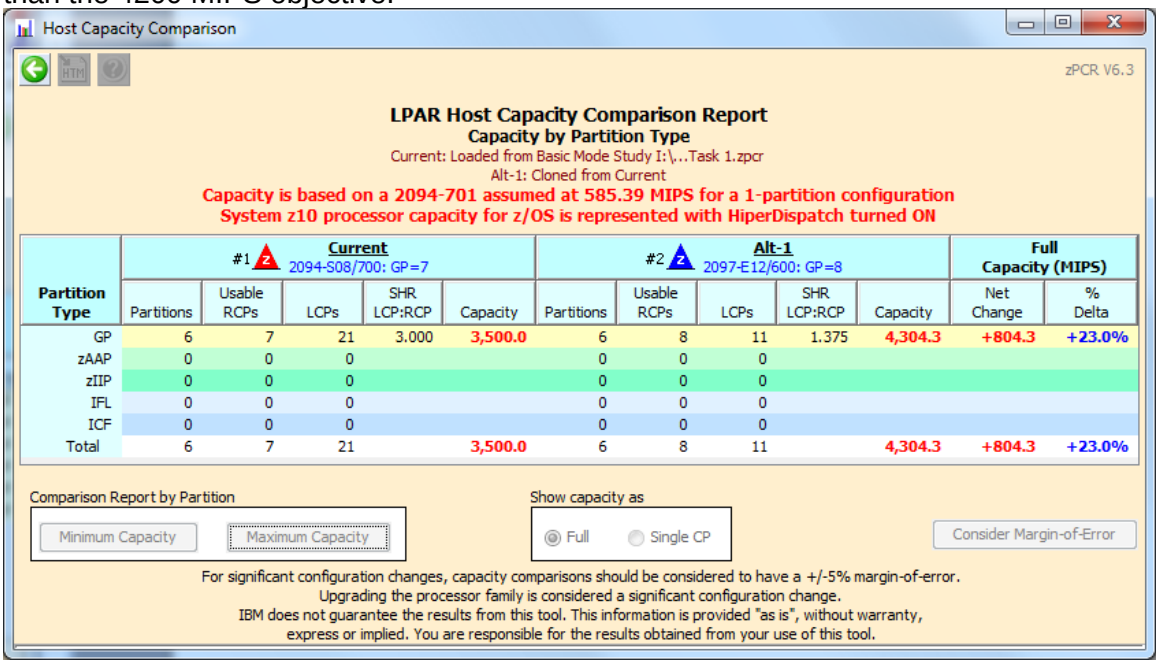
Partition Identification (List of All Included Partitions With Unique ID Metrics)				#1 Current 2094-S08/700: GP=7						#2 Alt-1 2097-E12/600: GP=8						Full Capacity (MIPS)	
				Partition Definition					Minimum Capacity	Partition Definition						Minimum Capacity	Net Change	% Delta
Type	Name	SCP	Workload	LP#	Mode	LCPs	Weight%	Cap		LP#	Mode	LCPs	Weight	Weight%	Cap			
GP	Batch	z/OS-1.9*	LoIO-Mix	1	SHR	3	16.30%		587.0	1	SHR	2	150	16.30%		718.3	+131.3	+22.4%
GP	CICS-1	z/OS-1.9*	TM-Mix	2	SHR	7	38.04%		1,307.8	2	SHR	4	350	38.04%		1,641.3	+333.5	+25.5%
GP	CICS-2	z/OS-1.9*	TM-Mix	3	SHR	3	10.87%		386.3	3	SHR	1	100	10.87%		468.3	+82.0	+21.2%
GP	CICS-3	z/OS-1.9*	TD-Mix	4	SHR	2	10.87%		387.3	4	SHR	1	100	10.87%		462.6	+75.3	+19.4%
GP	IMS	z/OS-1.9*	TI-Mix	5	SHR	4	21.74%		752.7	5	SHR	2	200	21.74%		908.4	+155.7	+20.7%
GP	Test	Linux	WASDB/L	6	SHR	2	2.17%	✔	79.0	6	SHR	1	20	2.17%	☑	105.5	+26.5	+33.5%

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 ±5% margin-of-error. The full ±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 Test partition has met the 20% capacity increase when factoring in the -5% margin of error.



7. 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 4304.3 MIPS, which is more than the 4200 MIPS objective.



8. Close all of the comparison windows by clicking the **Return** toolbar icon on the ***Host Capacity Comparison*** window.
9. 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 4200 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 Linux workload

Note: Reload your 2097-608 saved study (end of task 6) before starting this analysis. Either drag it onto the **Alt-1** icon or you'll need to exit zPCR, then invoke zPCR, Select FILE, then Select LOAD, and select the file saved at the end of Task 6. This will take you to the ***Advanced-Mode-Control-Panel.***

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

a) From the ***Advanced-Mode Control Panel*** window, double-click the **Alt-1** icon.

b) From the ***LPAR Host and Partition Configuration*** window, click **Specify Host**.

c) From the ***LPAR Host*** window, change the host to include 1 IFL CP in addition to the current 8 General Purpose CPs and click **Return**.

d) From the ***LPAR Host and Partition Configuration*** window, click **IFL** in the ***Define Partitions*** group box.

e) 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"

f) Set the ***SCP*** and ***Workload*** using the drop-down selection lists provided to "Linux" and "WASDB/L"

g) Set the ***Mode*** to **DED** using the drop-down selection list provided.

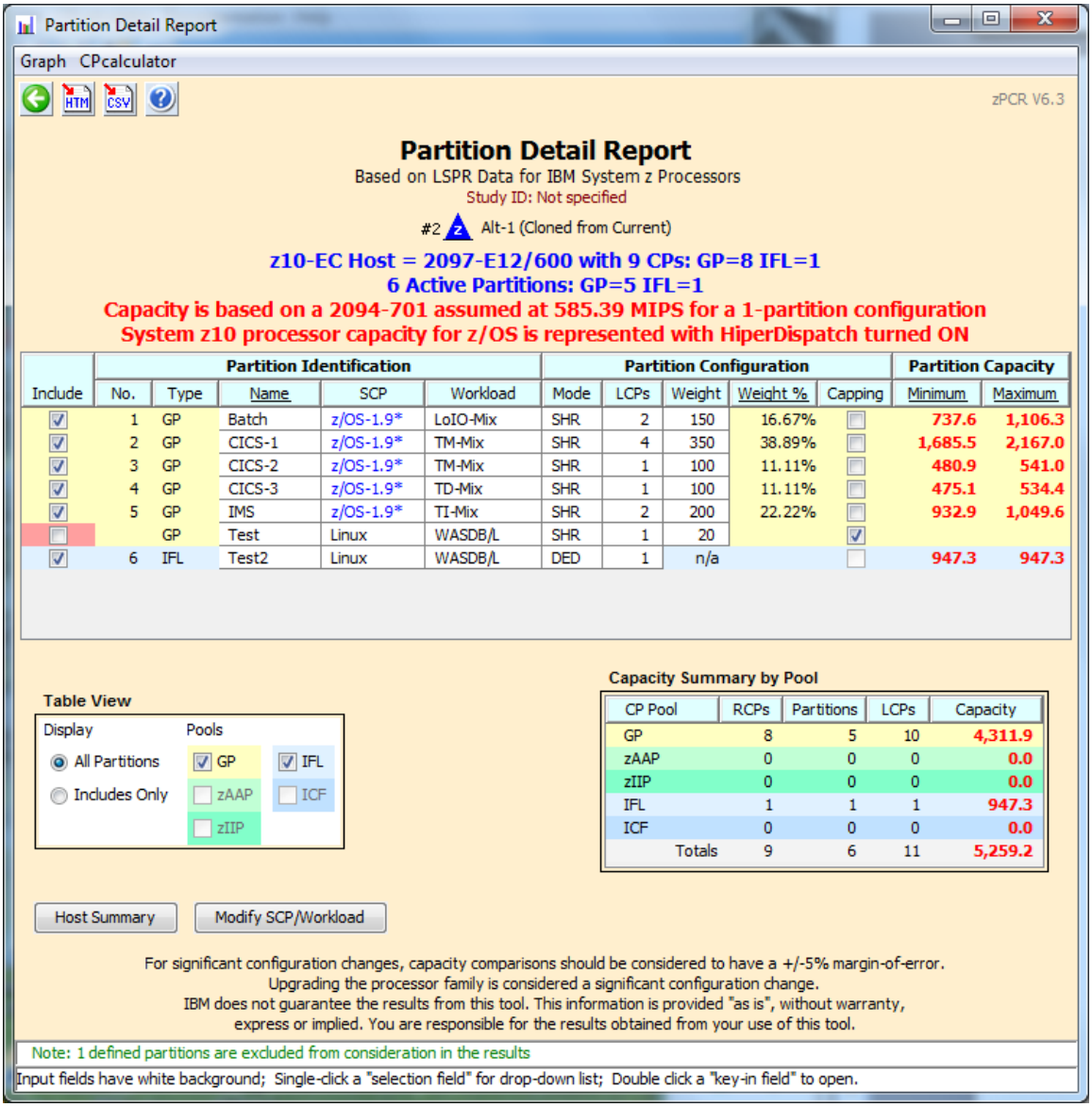
h) Set the ***LCPs*** using the drop-down selection list provided to "1".

i) Click **Return**.

j) 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.

k) From the ***LPAR Detailed 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 Linux partition is consuming such a small portion of the available capacity. 8 General Purpose CPs are still required to provide the necessary capacity for the z/OS partitions. We have increased the GP MIPS from 4304 to 4311, but only CICS-1 has met the 20% growth when considering the -5% margin of error.



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

Add a zAAP to the Configuration

Note: Reload your 2097-608 saved study (end of task 6) before starting this analysis. Either drag it onto the **Alternate** icon or Select FILE, then Select LOAD, and select the file saved at the end of Task 6.

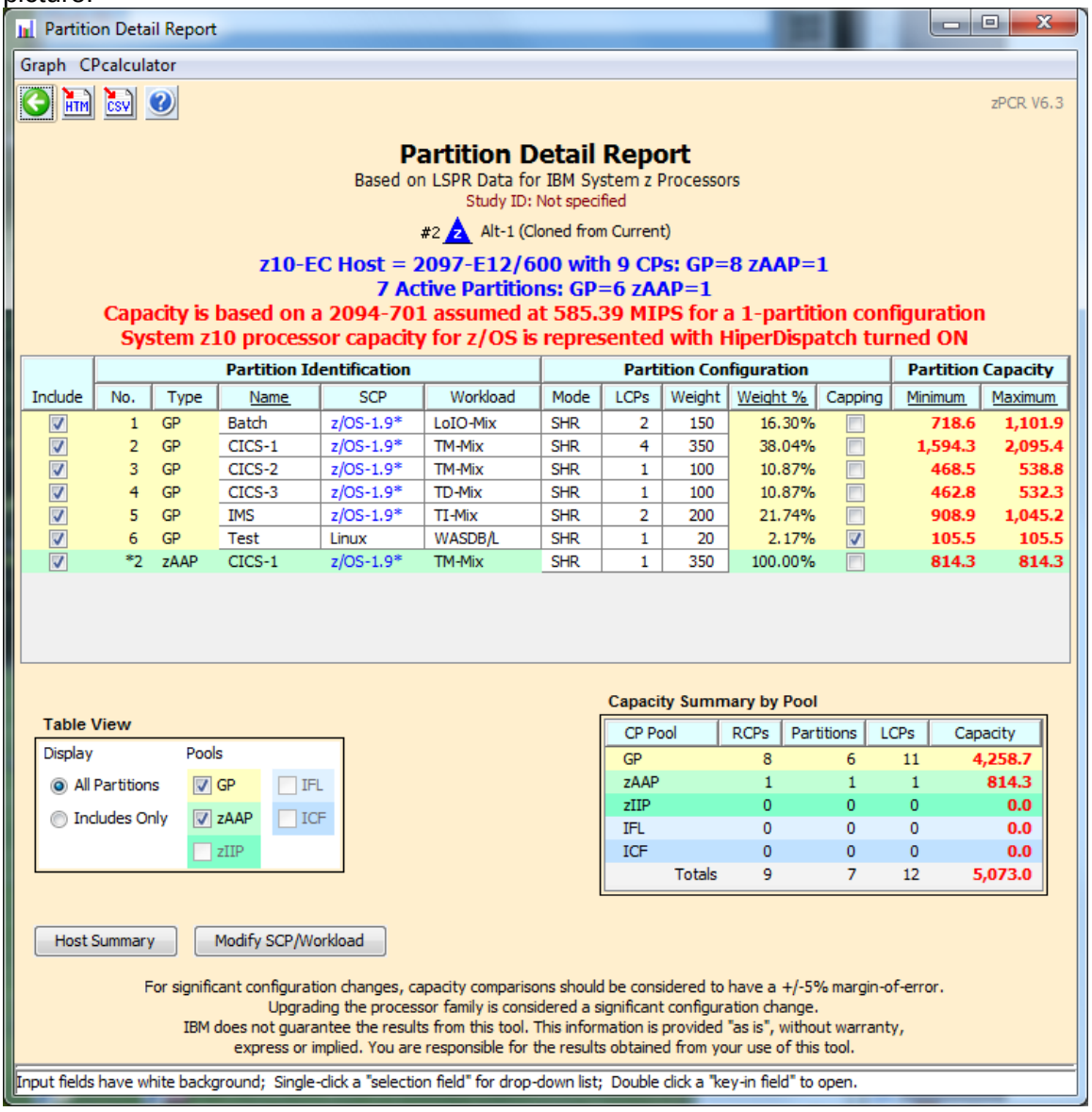
How might the addition of a zAAP change the capacity picture? Assume partition #2 is running a WebSphere application, and at least 50% of that workload could be run on zAAP LCPs. Alter the LPAR configuration to include and exploit the zAAP CPs.

a) From the ***Advanced-Mode Control Panel*** window, double-click the **Alternate** icon.

b) Click **Specify Host** and change the LPAR host to include 1 zAAP CPs in addition to the current 8 General Purpose CPs. **Click Return**

c) Click **GP / zAAP** (***Define Partitions*** group box) and enable 1 zAAP LCPs for partition #2 (CICS-1). (Note that zAAP LCPs can only be activated for partitions running z/OS-1.6 or higher). Close the zAAP and zIIP LCP notice. Then **Click Return**.

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



Partition Detail Report

Graph CPcalculator

zPCR V6.3

Partition Detail Report

Based on LSPR Data for IBM System z Processors

Study ID: Not specified

#2 Alt-1 (Cloned from Current)

z10-EC Host = 2097-E12/600 with 9 CPs: GP=8 zAAP=1

7 Active Partitions: GP=6 zAAP=1

Capacity is based on a 2094-701 assumed at 585.39 MIPS for a 1-partition configuration

System z10 processor capacity for z/OS is represented with HiperDispatch turned ON

	Partition Identification					Partition Configuration					Partition Capacity	
Include	No.	Type	Name	SCP	Workload	Mode	LCPs	Weight	Weight %	Capping	Minimum	Maximum
☑	1	GP	Batch	z/OS-1.9*	LoIO-Mix	SHR	2	150	16.30%	☐	718.6	1,101.9
☑	2	GP	CICS-1	z/OS-1.9*	TM-Mix	SHR	4	350	38.04%	☐	1,594.3	2,095.4
☑	3	GP	CICS-2	z/OS-1.9*	TM-Mix	SHR	1	100	10.87%	☐	468.5	538.8
☑	4	GP	CICS-3	z/OS-1.9*	TD-Mix	SHR	1	100	10.87%	☐	462.8	532.3
☑	5	GP	IMS	z/OS-1.9*	TI-Mix	SHR	2	200	21.74%	☐	908.9	1,045.2
☑	6	GP	Test	Linux	WASDB/L	SHR	1	20	2.17%	☑	105.5	105.5
☑	*2	zAAP	CICS-1	z/OS-1.9*	TM-Mix	SHR	1	350	100.00%	☐	814.3	814.3

Table View

Display: All Partitions / Includes Only

Pools: GP, zAAP, zIIP, IFL, ICF

Capacity Summary by Pool

CP Pool	RCPs	Partitions	LCPs	Capacity
GP	8	6	11	4,258.7
zAAP	1	1	1	814.3
zIIP	0	0	0	0.0
IFL	0	0	0	0.0
ICF	0	0	0	0.0
Totals	9	7	12	5,073.0

Host Summary | Modify SCP/Workload

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,
express 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.

e) With the additional zAAP CP configured, the total capacity available has increased well above our **4,200 MIPS** requirement, (5,073 Total with 4258.7 in GP). In this case, we could reduce the number of General Purpose CPs.

f) Click **Return**

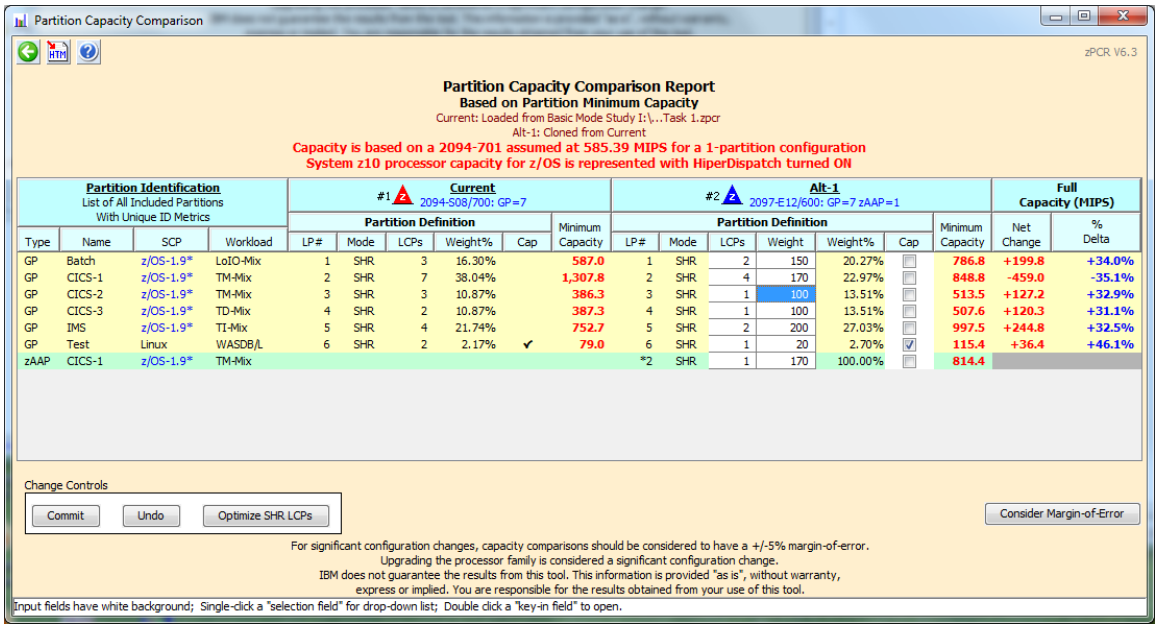
g) Change the LPAR host configuration from 8 to 7 General Purpose CPs. Click **Return**

h) Click **Partition Detail**. Note that more than adequate Total capacity remains. Click **Return** 2 times to get back to **Advanced-Mode Control Panel**

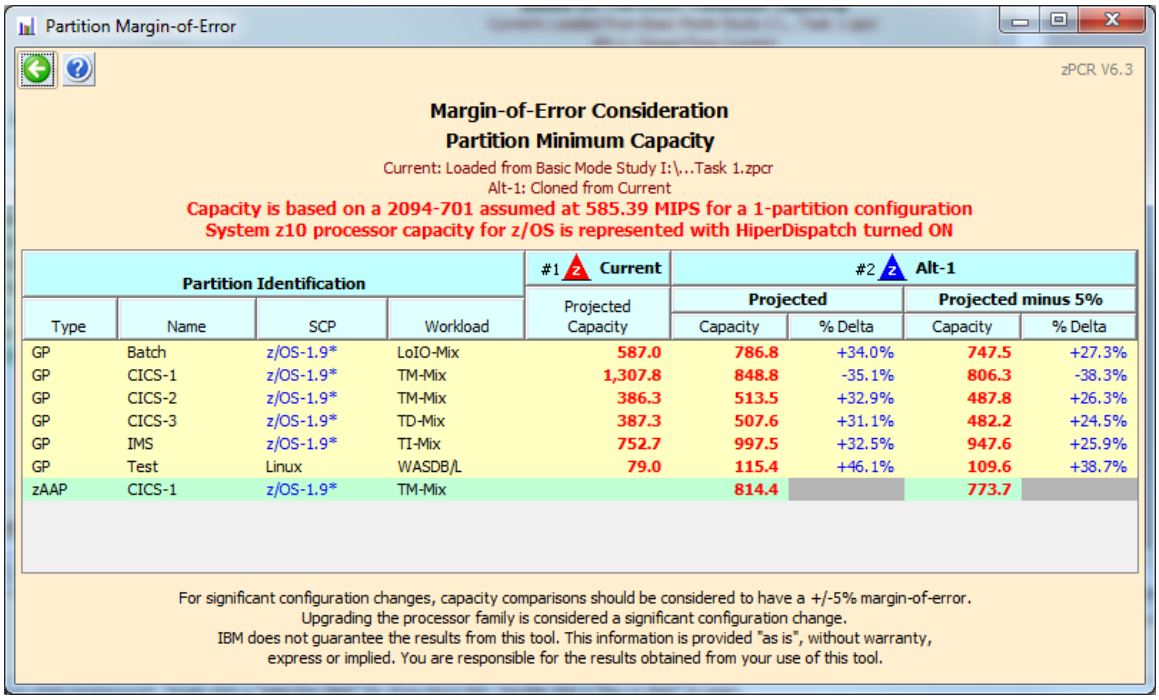
i) Select both configurations and then click **Compare**  icon on the ***Advanced-Mode Control Panel*** window.

j) Click **Minimum Capacity**. Note that now most partitions are not seeing the required 20% capacity increase over the old 2094-707 configuration. Because a large part of partition #2's capacity requirement can now be satisfied by the zAAP LCPs, its weight for the General Purpose pool should be reduced to achieve a new balance.

k) Try reducing partition #2's weight from **350** to 170. Now all partitions except #2 see well over a 20% increase. Partition #2 originally needed **1,307 MIPS**, and with 20% growth, it would need **1,568 MIPS**. Since 50% of partition #2's workload can be offloaded to the zAAP LCPs, its General Purpose LCPs would only need **784 MIPS**. Does the modified LPAR configuration satisfy partition #2's capacity requirement? Yes, since Partition #2 is now at 848.8.

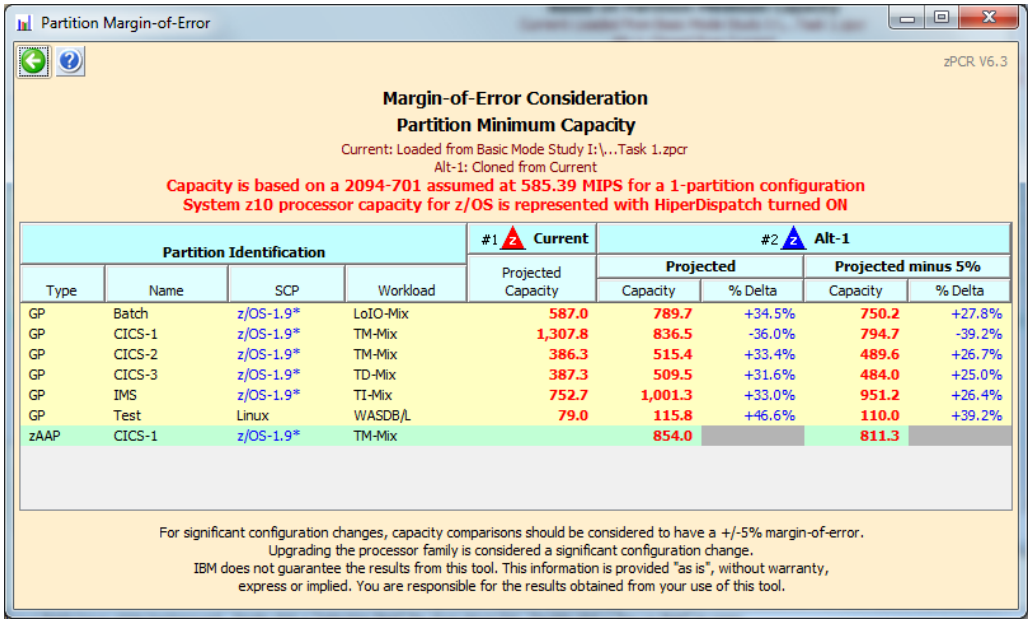


l) Click **Consider Margin-of-Error.** We also want to validate that all of the partition have enough capacity to ensure they cover the -5% Margin-of-Error. We can see that all partitions are >20% delta on the projected minus 5%. Partition #2, CICS-2, margin-of-Error is at 806.3 MIPS, still above the needed 784 MIPS requirement.



Partition Identification				#1 Current	#2 Alt-1			
				Projected Capacity	Projected		Projected minus 5%	
Type	Name	SCP	Workload		Capacity	% Delta	Capacity	% Delta
GP	Batch	z/OS-1.9*	LoIO-Mix	587.0	786.8	+34.0%	747.5	+27.3%
GP	CICS-1	z/OS-1.9*	TM-Mix	1,307.8	848.8	-35.1%	806.3	-38.3%
GP	CICS-2	z/OS-1.9*	TM-Mix	386.3	513.5	+32.9%	487.8	+26.3%
GP	CICS-3	z/OS-1.9*	TD-Mix	387.3	507.6	+31.1%	482.2	+24.5%
GP	IMS	z/OS-1.9*	TI-Mix	752.7	997.5	+32.5%	947.6	+25.9%
GP	Test	Linux	WASDB/L	79.0	115.4	+46.1%	109.6	+38.7%
zAAP	CICS-1	z/OS-1.9*	TM-Mix		814.4		773.7	

m) Finally, go back and **Optimize SHR LCPs** since we have changed the weight assigned to Partition # 2. Does the over all capacity increase? Yes from 4354.7 to 4391. All partitions increase, except for CICS-1, at from 806.3 MIPS to 794.7 but it is still greater than 784 MIPS requirement. We have now met all objectives.



Partition Identification				#1 Current	#2 Alt-1			
				Projected Capacity	Projected		Projected minus 5%	
Type	Name	SCP	Workload		Capacity	% Delta	Capacity	% Delta
GP	Batch	z/OS-1.9*	LoIO-Mix	587.0	789.7	+34.5%	750.2	+27.8%
GP	CICS-1	z/OS-1.9*	TM-Mix	1,307.8	836.5	-36.0%	794.7	-39.2%
GP	CICS-2	z/OS-1.9*	TM-Mix	386.3	515.4	+33.4%	489.6	+26.7%
GP	CICS-3	z/OS-1.9*	TD-Mix	387.3	509.5	+31.6%	484.0	+25.0%
GP	IMS	z/OS-1.9*	TI-Mix	752.7	1,001.3	+33.0%	951.2	+26.4%
GP	Test	Linux	WASDB/L	79.0	115.8	+46.6%	110.0	+39.2%
zAAP	CICS-1	z/OS-1.9*	TM-Mix		854.0		811.3	