

zPCR Capacity Sizing Lab – Part 2 Hands On Lab Exercise

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Function Selection Window

III 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 Ca	ipacity
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, zAware, 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)	
2094-701 @ 1.000 {ITR Ratio}	IBM zEnterprise EC12 (zEC12)
QuickStart Guide	
Click on Single-Image Capacity tab for LSPR Single-Image Capacity	tables

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 **z196 2817-707** (7-way processor) installed, which based on their last zPCR study as having about **7,127 MIPS** of usable capacity. The 2817-707 is currently averaging **100% 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	Weight	Capped	Workload Category
1	CICSA	Share	7	340	No	z/OS-1.13 Average
2	BATCHA	Share	7	195	No	z/OS-1.13 Average
3	BATCHB	Share	2	32	No	z/OS-1.13 Average
4	TESTB	Share	2	12	No	z/OS-1.13 Average
5	TESTIMS	Share	5	36	No	z/OS-1.13 Average
6	CICSB	Share	7	297	No	z/OS-1.13 Average
7	IMSA	Share	5	73	No	z/OS-1.13 Average
8	TESTCICS	Share	2	15	No	z/OS-1.13 Average

A plan is being developed to **replace the z196 2817-707 with a newer technology zEnterprise EC12 processor**. The specific model chosen must provide at least **20% additional capacity**, or at least **8,553 MIPS (7127 x 1.20)**. The current partitions are to be moved to the new processor with the partitions and their workloads as being run today. The customer has turned on CPU MF counters and has collected SMF 113 data. They ran CP3KEXTR and created an EDF file containing data from 9/15. The data spans from 8:00 am through 12:00 pm using 15 minute intervals. In addition the customer is looking at moving some work to Linux under System z.

Tasks Overview

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

*** The actual Lab starts on the next page ***

- Task 1 Load the EDF containing the latest RMF/SMF data including SMF 113 data
- **Task 2** Rename the configuration
- **Task 3** Save the current study in Advanced-Mode (e.g. task2.zpcr)
- Task 4 Find an appropriate Enterprise EC12 (zEC12) 700 model replacement processor
- Task 5 Model the intended zEC12 processor
- Task 6 Review the Capacity results and save the Study (use a different file name than Task 3, e.g. task6.zpcr)

Additional Analysis To Try

- A. Model a zEC12 2827-600 as an alternative
- B. Add 1 IFL partition running Linux for System z under z/VM to zEC12 700

Note: When instructed to **<u>Return</u>** the **S** icon should be used

The **Double Return** icon may also be used to return two windows where available

Task 1: Load the EDF with the RMF/SMF data

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 <u>Return</u>
- 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/zPCR8.1/EDF Files directory, where the Task 1.edf 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.
- Drag the "Task 1.edf" edf file from the "zPCR" subdirectory underneath or on top of the "Configuration #1" icon #1 to open the EDF Interval Selection window.

EDF Interval Selection Window

Analysis steps

1. Sort (Click) on the Pool 1 GP Pool Utilization column

3																					
				EDF In	tervals																
				#1 🛕 Con	figuration #1																
			EDF I	File Name: I	\zpcr\Task 1	.edf															
Relative		GP				Number of	Availa	ble Data	Pool 1												
Interval Number	CPC ID	Processor Model	Date	Time	Interval Length	Active Partitions	CPU-MF	DASD I/O	GP Pool Utilization												
12.	12. CPC00001 2817-707 2012-09-15 10:44:00 00:15:00 8 ✔ 100.00%																				
10. CPC00001 2817-707 2012-09-15 10:14:00 00:15:00 8 ✔ 100.00%																					
8.	8. CPC00001 2817-707 2012-09-15 09:44:00 00:15:00 8 🗸 99.99% \Xi																				
7.																					
13.																					
11.	CPC00001	2817-707	2012-09-15	10:29:00	00:15:00	8			99.98%												
9.	CPC00001	2817-707	2012-09-15	09:59:00	00:15:00	8			99.98%												
14.	CPC00001	2817-707	2012-09-15	11:14:00	00:15:00	8	×		99.97%	÷											
Table View																					
Load ED)F Sho	w Partitions						Load EDF Show Partitions													

2. Select Interval #12 and double click to open the "Create LPAR Configuration from EDF" window.

3								al #12: PC ID: (S SMF D Extract EDF I Date=20 CPC000 lost = 2	ata Set N Version: File Name 012-09-15 01; GP P 2817-M1	Iration fr ame: ZPCR CP3KEXTR : I:\zpcr\Ta 5 Time=10: Processor I .5/700 wi Active Stu	LAB.C 08/28 sk 1.e 44:00 40de th 7	PUMFSM 3/12 adf) Length = 281	=00:15: 7-707	00					
											onfiguration	_								
LPAR Host as specified above Partition Configuration as specified below Partition Identification Partition Configuration Additional Info Workload Assignment Metrics																				
Copy From LD F Active No. Type Name SCP Workload Mode LCPs Weight Weight & CAP Active Parked RNI Utilization Rate/Sec CPU-MF DASD 1/0 Used																				
	*	*	1	GP	CICSA	z/OS-1.13	Average	SHR	7.0	340	34.0%		×	4.0	0.88	35.67%		Average		CPU-MF
V		✓		GP	BATCHA	z/OS-1.13	Average	SHR	7.0	195	19.5%					20.40%				Default
V		×.		GP	BATCHB	z/OS-1.13	Average	SHR	2.0	32	3.2%					1.62%				Default
✓ ✓		1		GP GP	TESTB TESTIMS	z/OS-1.13 z/OS-1.13	Average	SHR	2.0 5.0	12 36	1.2% 3.6%					0.63% 3.81%				Default Default
				GP	CICSB	z/OS-1.13 z/OS-1.13	Average Average	SHR	5.0 7.0	297	29.7%					30.75%				Default
		~	-	GP	IMSA	z/OS-1.13	Average	SHR	5.0	73	7.3%					5.82%				Default
V		*		GP	TESTCICS	z/OS-1.13	Average	SHR	2.0	15	1.5%					0.79%				Default
																Remove	Parked LCPs f	from Partition I	.CP Count DASD I/O Me	thod
Se	lect All		elect /	Active	Remove	All	noose Another E	DF Interv	/al									Wo	rkload Selection	
Create	LPAR (Configura	ation																	

- 3. Click on "Create LPAR Configuration" to transfer the LPAR Host and 8 partitions to the active zPCR study.
- 4. Click ok to dismiss the "zPCR EDF Copy Partitions" transfer message

Advanced-Mode Control Panel Window

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R	eference-CPU														
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	Partitions	8	0	0	0	0	8								
	LCPs	33	0	0	0	0	33								
	Capacity	7,127.4					7,127.4								
	Capacity b	asis: 2094-701 (2 593.00 MIP	S for a shar	ed single-p	artition con	figuration								
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Task 2: Rename the configuration

Review the capacity assessment and rename the configuration.

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 "Configuration #1" to "Current 2817-707"
- Double-click on the Current 2817-707 LPAR configuration icon ^{#1}² to open the LPAR Host and Partition Configuration window for the Current 2817-707 LPAR configuration.
- Click <u>Partition Detail</u> in the Capacity Reports Groupbox to open the Partition Detail Report window. This window will reveal the total GP capacity available as 7,127 MIPS. The XYZ Company believes that the total GP capacity of this machine for their environment is about 7,124 MIPS.



Task 3: Save the study

Analysis Steps

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

Task 4: Find an appropriate replacement processor

Browsing the **z/OS-1.13 Multi-Image LSPR Capacity Ratios** table, find the IBM zEC12 processor that can provide the required capacity increment using the z/OS <u>Average</u> 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.
- Find an IBM zEnterprise EC12 processor that can provide the required 8,553 MIPS. (tip right click for a list of the Families, then select via scroll to IBM, then select zEC12/700)

For the purposes of this exercise, choose the **2827-707**, which appears to have just a bit more capacity than we require, (e.g. **8,954** 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 <u>Return</u> to go back to the *Advanced-Mode Control Panel* window.

LISPR Capacity Ratios														
File Workload Graph	Help													
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		Z	/OS-1.13	LSPR Data	(08/28/2012))								
		LSP	R Multi	-Image C	apacity Rat	tios								
				eral Purpo										
	Values	are appl				z/VM and Linu	x							
Capa	acity basis: 20	094-701	@ 559.7	792 MIPS for	a typical mul	ti-partition co	nfiguration							
Capacity	for z/OS on	z10 and	l later pro	ocessors is re	presented w	ith HiperDispa	tch turned ON	4						
Processor	Features	Flag	MSU	Low	Low-Avg	Average	Avg-High	<u>High</u>						
2827-620	20W	=	1,656	15,703	14,649	13,728	12,980	12,310						
zEnterprise EC12/700							,							
2827-701	1W	=	188	1,541	1,527	1,514	1,468	1,426						
2827-702	2W	=	352	2,989	2,920	2,853	2,733	2,623						
2827-703 3W = 511 4,408 4,276 4,151 3,955 3,776 2827-704 4W = 664 5,799 5,597 5,409 5,135 4,887														
2827-704 4W = 664 5,799 5,597 5,409 5,135 4,887														
2827-705 5W = 813 7,161 6,884 6,628 6,277 5,961														
2827-706 6W = 957 8,494 8,137 7,809 7,382 6,999														
2827-706 6W = 957 8,494 8,137 7,809 7,382 6,999 2827-707 7W = 1,092 9,799 9,357 8,954 8,452 8,003														
2827-708	8W	=	1,224	11,076	10,545	10,063	9,487	8,974						
2827-709	9W	=	1,350	12,327	11,702	11,137	10,490	9,913						
2827-710	10W	=	1,473	13,552	12,829	12,179	11,460	10,821						
2827-711	11W	=	1,593	14,751	13,926	13,188	12,399	11,699						
2827-712	12W	=	1,709	15,924	14,994	14,166	13,308	12,548						
2827-713	13W	=	1,822	17,085	16,046	15,126	14,200	13,381						
2827-714	14W	=	1,934	18,231	17,082	16,069	15,075	14, 198						
2827-715	15W	=	2,043	19,365	18,102	16,994	15,935	15,000						
2827-716	16W	=	2,149	20,486	19,108	17,904	16,778	15,786	_					
2827-717	17W	=	2,254	21,593	20,098	18,797	17,606	16,557						
2827-718	18W	=	2,359	22,688	21,074	19,673	18,418	17,314						
2827-719	19W	=	2,462	23,771	22,034	20,534	19,216	18,056	Ŧ					
Processors					Table	View	_		_					
In entire table: 9	08				Fami	lies & Model	s zEC12 & z	196 Powe	<u>r</u>					
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		nation is	provided '	'as is", without		tool. ressed or implie use of this tool.								
Global Reference-CF Select multiple proces									or					

Task 5: Model the intended LPAR host

Using the current z196 LPAR configuration as a starting point, we will transfer it to the new IBM zEnterprise zEC12 processor, making any necessary adjustments to the partition definitions.

Analysis Steps

- 1. Single-click the **Current 2817-707** icon on the **Advanced-Mode Control Panel** window to select it.
- 2. Click the <u>Clone</u> toolbar button. A second LPAR configuration is created as an exact copy of the first. It is icon **#2**, Rename it to **Proposed 2827-707**
- 3. Double-click the **Proposed 2827-707** icon ^{#2}^A to open the *LPAR Host and Partition Configuration* window for the **Proposed 2827-707** LPAR configuration.
- 4. Click <u>Specify Host</u> to open the LPAR Host window.
 - a) Set the *Family* to be zEC12/700.
 - b) Set the *Model* to **2827-H20/700** (this model has a maximum total of 20 configurable GCPs).
 - c) Leave zEC12 & z196 Power checked to Full

LPAR Host [I:\ta	sk3.zpcr]				X
3					
	LPAR H	lost Pro	cessor		
	Stud	y ID: Not spec	ified		
	#2 🔁	Proposed 28	27-707		
	Description: Clo	oned from Curi	rent 2817-707		
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	zEC12/700	- 28	27-H20/700	•	
	-50	12 & z196 Po			
	۲	Full 🔘 Sav	ing		
Configu	re Real CP Types	\$			
GP	zAAP	zIIP	IFL	ICF	
7	• 0 •	0 🔻	0 🗸	0 🗸	
	🔲 Enable 🛛	ZAAP on ZIIP"	capability		
zEC12 zero GP configu	rations require zEC	12/400			

- d) Set *General Purpose CPs* to 7 (seen as a 2827-707). There are no other CP types planned at this time.
- e) Click <u>Return</u>.

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

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				Based o		R Data for Study ID: N			rocessors					
						: Cloned fr								
			ZEC	C12/700 H		: 2827-F tive Parl				GP=7				
		Capa	acity basis: 2	2094-701 @						tition con	figuratio	on		
		Capacity	y for z/OS o	n z10 and la	iter p	rocessors	s is repr	esente	d with H	iperDispat	tch turn	ed ON		
			Partition Ide	entification				Part	ition Conf	iguration	,	Partition	Capacity	
Include No. Type Name SCP Workload Mode LCPs Weight Weight % CAP Minimum Maximum V 1 GP CICSA z/OS-1.13 Average SHR 3 34.00% 3,042.5 3,835.1 V 1 GP CICSA z/OS-1.13 Average SHR 3 34.00% 3,042.5 3,835.1														
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	6	GP	CICSB	z/OS-1.13	Aver	-	SHR	7	297	29,709		2.625.5	8,840	
	7	GP	IMSA	z/OS-1.13	Aver	-	SHR	5	73	7.309		655.0	6,408	
	8	GP	TESTCICS	z/OS-1.13	Aver	age	SHR	2	15	1.50%	6	132.3	2,519	
Table Vi		ntrols IP/IFL Pari	titions			Capacit	y Summ		Pool	LCPs	SHR LCP:	RCP Can	acity	
						GP		7	8	33			8,890.0	
	n Assoc	iated GP	Separate b	·		ZAAP		None	-				n/a	
Show		GP Po	ool Specialty	/ Pools		zIIP		None					n/a	
All F	Partition	s 🔽 🤅	SP ZAAI	P 📃 zi	IP	IFL		None					n/a	
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0.000							Totals	7	8	33			8,890.0	
Host Su	ummary	M	odify SCP/Work	load LC	P Alter	natives	ZAA	P/zIIP Lo	ading					
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.														

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 (**8,553 MIPS**), for the overall host and for each individual partition.

Analysis Steps

- 1. On the *Partition Detail Report* window, the overall effective capacity for the 2827-707 is **8,890 MIPS** for this LPAR configuration. The effective capacity for the 2817-707 was **7,127 MIPS**. (see page 9)
- Click two <u>Return</u> buttons (or click the **Double Return** button) 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 **<u>Compare</u>** 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.



4. Click <u>Minimum Capacity</u> in the *Comparison Report by Partition* group box. Note that all of the partitions see an increase of approximately 20% or more.

GP BATCHB z/OS-1.13 Average 2 SHR 2 3.20% 226.3 2 SHR 2 3.20% 28.2 +55.9 +24. GP CICSA z/OS-1.13 Average 3 SHR 3 34.00% 2438.2 3 SHR 3 3.00% 3.00% 3.00% 3.042.5 +604.3 +24. GP CICSB z/OS-1.13 Average 4 SHR 7 29.70% 2.625.5 +519.8 +24. GP IX6A z/OS-1.13 Average 5 SHR 5 7.30% 524.9 5 SHR 5 7.30% 655.0 +130.1 +24. GP TESTB z/OS-1.13 Average 6 SHR 2 1.20% 6 SHR 2 12 1.20% 6 50.0 +130.1 +24. GP TESTB z/OS-1.13 Average 6 SHR 2 12 1.20% 6 105.8 +20.9 +24. GP TESTE z/OS-1.13 Average	Parti		y Comparisor						1					ĺ					
Based on Partition Minimum Capacity Current 2817-707: Created from EDF IL·, Task Ledi Inteval # 12 Proposed 2827-707: Cloned from Current 2817-707 Capacity basis: 2094-701 @ 593.00 MIPS for a shared single-partition configuration Capacity for z/OS on 210 and later processors is represented with HiperDispatch turned ON Partition Identification List of Al Included Partitions #1 C Current 2817-707 #2 C Proposed 2827-707 Full Capacity (MPS) With Unique ID Metrics #1 C Search 2010; GP=7 #2 C Partition Definition Minimum Net % GP BATCHA Z/OS-1.13 Average 1 SHR 7 195 19.50% 1,723.8 +341.3 +24. GP BATCHA Z/OS-1.13 Average 2 SHR 7 19.50% 1,382.5 1 SHR 7 232 3.20% 282.2 +55.9 +24. GP BATCHA Z/OS-1.13 Average 3 SHR 7 29.50% 2,105.7 4 SHR 7 29.7 29.70% 2,625.5 +50.9 +24. GP EXTCHA Z/OS-1.13 Average 3	3	M 🕐																	
List of All Included Partitions #1 2817-H15/700: GP=7 #2 2827-H20/700: GP=7 Capacity (MIPS) Type Name SCP Workload LP# Mode LCPs Weight % CAP Capacity LP# Mode LCPs Weight % CAP Capacity LP# Mode LCPs Weight % CAP Capacity Minimum Net % GP BATCHA z/OS-1.13 Average 1 SHR 7 19.50% 1,723.8 +34.1 +24. GP CICSA z/OS-1.13 Average 2 SHR 7 19.50% 1,723.8 +34.1.3 +24. GP CICSA z/OS-1.13 Average 3 SHR 3 34.00% 2,438.2 SHR 7 29.70% 2,625.5 +519.8 +24. GP TISA z/OS-1.13 Average SHR 7 29.70% 2,625.5 +519.8 +24. GP TEST z/OS-1.13 Average <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>sis: 20</td> <td>Based rent 2817-70 Proposed 94-701 @ 1</td> <td>1 on Pa 7: Creat 1 2827-70 593.00</td> <td>rtition Min ed from EDF I)7: Cloned fro MIPS for a</td> <td>imum (:\Task m Curren a shareo</td> <td>apacity 1.edfint t 2817-7</td> <td>erval # 12 07 -partiti</td> <td>on config</td> <td></td> <td>1</td> <td></td> <td></td> <td></td>							sis: 20	Based rent 2817-70 Proposed 94-701 @ 1	1 on Pa 7: Creat 1 2827-70 593.00	rtition Min ed from EDF I)7: Cloned fro MIPS for a	imum (:\Task m Curren a shareo	apacity 1.edfint t 2817-7	erval # 12 07 - partiti	on config		1			
Type Name SCP Workload LP# Mode LCPs Weight% CAP Capacity LP# Mode LP# Mode LCPs L24 Capacity Capacity Capacity Capacity Cap Cap Cap		List of All 1	nduded Partiti	ions		#		urrent 2817 817-M15/700:	GP=7				#2 <mark>/</mark> 2	Propos 2827-H2	ed 2827-707 20/700: GP=7	2			
GP BATCHB z/OS-1.13 Average 2 SHR 2 3.20% 226.3 2 SHR 2 322 3.20% 282.2 +55.9 +24. GP CICSA z/OS-1.13 Average 3 SHR 3 34.00% 2,438.2 3 SHR 3 3400% 3,042.5 +604.3 +24. GP CICSB z/OS-1.13 Average 4 SHR 7 29.70% 2,105.7 4 SHR 7 29.70% 2,625.5 +51.98 +24. GP TISA z/OS-1.13 Average 5 SHR 5 7.30% 524.9 5 SHR 5 7.30% 655.0 +130.1 +24. GP TESTB z/OS-1.13 Average 6 SHR 2 1.20% 105.8 +20.9 +24. GP TESTG z/OS-1.13 Average 7 SHR 2 1.50% 106.1 7 SHR 2 12 1.20% 105.8 +20.9 +24. GP TESTB <t< td=""><td>Туре</td><td></td><td></td><td>1</td><td>LP#</td><td></td><td></td><td></td><td>CAP</td><td></td><td>LP#</td><td>Mode</td><td></td><td></td><td></td><td>CAP</td><td></td><td></td><td></td></t<>	Туре			1	LP#				CAP		LP#	Mode				CAP			
GP BATCHB z/OS-1.13 Average 2 SHR 2 3.20% 226.3 2 SHR 2 322 3.20% 282.2 +55.9 +24. GP CICSA z/OS-1.13 Average 3 SHR 3 34.00% 2,438.2 3 SHR 3 3400% 3,042.5 +604.3 +24. GP CICSB z/OS-1.13 Average 4 SHR 7 29.70% 2,105.7 4 SHR 7 29.70% 2,625.5 +51.98 +24. GP TISA z/OS-1.13 Average 5 SHR 5 7.30% 524.9 5 SHR 5 7.30% 655.0 +130.1 +24. GP TESTB z/OS-1.13 Average 6 SHR 2 1.20% 105.8 +20.9 +24. GP TESTG z/OS-1.13 Average 7 SHR 2 1.50% 106.1 7 SHR 2 12 1.20% 105.8 +20.9 +24. GP TESTB <t< td=""><td>GP</td><td colspan="15">GP BATCHA z/OS-1.13 Average 1 SHR 7 19.50% 1,382.5 1 SHR 7 195 19.50% 1,723.8 +341.3 +24.7%</td></t<>	GP	GP BATCHA z/OS-1.13 Average 1 SHR 7 19.50% 1,382.5 1 SHR 7 195 19.50% 1,723.8 +341.3 +24.7%																	
GP CICSB z/OS-1.13 Average 4 SHR 7 29.70% 2,625.5 +519.8 +24. GP IMSA z/OS-1.13 Average 5 SHR 5 7.30% 655.0 +130.1 +24. GP TEST z/OS-1.13 Average 6 SHR 2 1.20% 84.9 6 SHR 2 1.20% 10.58 +20.9 +24. GP TEST z/OS-1.13 Average 7 SHR 2 1.20% 84.9 6 SHR 2 1.20% 10.58 +20.9 +24. GP TESTIMS z/OS-1.13 Average 7 SHR 2 1.50% 132.3 +26.2 +24. GP TESTIMS z/OS-1.13 Average 8 SHR 5 3.60% 258.9 8 SHR 5 3.60% 323.0 +64.1 +24. Change Undo Changes Optimize SHR LCPs Consider Margin-of-Error. Upgrading the processor family is considered to have a +/-5% margin-of-error. Upgrading the processor family is considered a significan	GP	GP BATCHB z/OS-1.13 Average 2 SHR 2 3.20% 226.3 2 SHR 2 32 3.20% 282.2 +55.9 +24.7%																	
GP IMSA z/OS-1.13 Average 5 SHR 5 7.30% 5 SHR 5 7.30% 655.0 +130.1 +24. GP TESTB z/OS-1.13 Average 6 SHR 2 1.20% 105.8 +20.9 +24. GP TESTB z/OS-1.13 Average 7 SHR 2 1.20% 105.8 +20.9 +24. GP TESTIMS z/OS-1.13 Average 7 SHR 2 1.50% 106.1 7 SHR 2 12 1.20% 105.8 +20.9 +24. GP TESTIMS z/OS-1.13 Average 8 SHR 5 3.60% 258.9 8 SHR 5 3.60% 323.0 +64.1 +24. Change Controls	GP																		
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GP TESTCICS z/OS-1.13 Average 7 SHR 2 1.50% 132.3 +26.2 +24. GP TESTIMS z/OS-1.13 Average 8 SHR 5 3.60% 258.9 8 SHR 5 3.60% 323.0 +64.1 +24. Change Controls	GP	IMSA	z/OS-1.13	Average	5	SHR	5	7.30%		524.9	5	SHR	5	73	7.30%		655.0	+130.1	+24.8%
GP TESTIMS z/OS-1.13 Average 8 SHR 5 3.60% 258.9 8 SHR 5 3.60% 323.0 +64.1 +24.4 Change Controls Commit Changes Undo Changes Optimize SHR LCPs Consider Margin-of-Error. Upgrading the processor family is considered a significant configuration changes. Undo Changes Consider 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,	GP	TESTB	z/OS-1.13	Average	6	SHR	2	1.20%		84.9	6	SHR	2	12	1.20%		105.8	+20.9	+24.6%
Change Controls Commit Changes Undo Changes Optimize SHR LCPs 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,	GP	TESTCICS	z/OS-1.13	Average	7	SHR	2	1.50%		106.1	7	SHR	2	15	1.50%		132.3	+26.2	+24.7%
Commit Changes Undo Changes Optimize SHR LCPs Consider Margin-of-Err 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, Consider Margin-of-Error	GP	TESTIMS	z/OS-1.13	Average	8	SHR	5	3.60%		258.9	8	SHR	5	36	3.60%		323.0	+64.1	+24.8%
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,																			
					IBM	l does not expres	Upgradin t guarant sed or in	g the process see the results plied. You are	or family s from th e respons	is considered is tool. This in sible for the re	a signific formation esults obt	ant confi i is provid	guration o led "as is"	hange. ', without w	arranty,				
Input fields have white background; Single-click a "selection field" for drop-down list; Double click a "key-in field" to open.	Input fiel	ds have white	background;	Single-click a "s	election fie	eld" for d	rop-dowr	n list; Double	dick a "k	ey-in field" to	open.								

5. Click <u>Optimize SHR LCPs</u> 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 LCPs
Optimize Shared Logical CP Configuration
Select Partition Types
GP ZAAP ZIIP IFL ICF
LCP Count Assignment
Moderate Minimum
Optimize Cancel

6. Click **Optimize** using 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.

III Part		y Comparisor	1	1.00		4								-		array by		- C X
						sis: 209	Based rent 2817-70 Proposed 94-701 @ 1	1 on Pa 7: Create 1 2827-70 593.00	acity Com rtition Min ed from EDF I: 17: Cloned fro MIPS for a cessors is re	imum (:\Task m Currer shared	apacity 1.edf into it 2817-7 1 single	erval # 1: 07 - partiti	on config	juration 1 turned OM				
	List of All	n Identificati Included Partiti	ions		#		urrent 281 17-M15/700	GP=7				#2 <mark>/</mark> 2	Propos 2827-H2	ed 2827-707 20/700: GP=7	<u>'</u>			Full ty (MIPS)
Type	With Ur Name	nique ID Metric	s Workload	LP#	Par Mode	tition De	efinition Weight%	CAP	Minimum Capacity	LP#	Mode	Partitio	on Definiti Weight	on Weight%	CAP	Minimum Capacity	Net Change	% Delta
GP	SP BATCHA z/OS-1.13 Average 1 SHR 7 19.50% 1,382.5 1 SHR 2 195 19.50% 📄 1,784.0 +401.5 +29.0%																	
GP																		
GP	CICSA	z/OS-1.13	Average	3	SHR	3	34.00%		2,438.2	3	SHR	3	340	34.00%		3,156.8	+718.6	+29.5%
GP	CICSB	z/OS-1.13	Average	4	SHR	7	29.70%		2,105.7	4	SHR	3	297	29.70%		2,757.6	+651.9	+31.0%
GP	IMSA	z/OS-1.13	Average	5	SHR	5	7.30%		524.9	5	SHR	1	73	7.30%		648.5	+123.6	+23.5%
GP	TESTB	z/OS-1.13	Average	6	SHR	2	1.20%		84.9	6	SHR	1	12	1.20%		106.6	+21.7	+25.6%
GP	TESTCICS	z/OS-1.13	Average	7	SHR	2	1.50%		106.1	7	SHR	1	15	1.50%		133.3	+27.2	+25.6%
GP	TESTIMS	z/OS-1.13	Average	8	SHR	5	3.60%		258.9	8	SHR	1	36	3.60%		319.8	+60.9	+23.5%
Change Controls Consider Margin-of-Error Consider Margin-of-Error																		
		hadraar di		IBM	ا I does not expres	Upgradin t guarant sed or im	g the process ee the result plied. You ar	or family s from thi e respons	is considered is tool. This inf sible for the re	a signific formatior esults obt	ant confi is provid	guration o led "as is"	hange. ', without w					
Input fie	ids nave white	e background;	Single-click a "s	election fi	ela for di	rop-dowr	n list; Double	CICK a 'k	ey-in field" to	open.								

 For availability reasons we will increase all of the partition LCPs (BATCHB, IMSA, TESTB, TESTCICS and TESTIMS) showing only 1 LCP to have 2 LCPs as shown below.

	ition Capacity	v Comparison		1														
9 •	M 🥑		(nsis: 209	Based rent 2817-70 Proposed 94-701 @ 1	d on Pa 17: Create d 2827-70 593.00	acity Com rtition Min ed from EDF I 17: Cloned fro MIPS for a cessors is n	imum (:\Task m Currer a sharee	apacity 1.edfinte it 2817-7 1 single	rval # 13 07 - partiti	on confi <u>c</u>	juration า turned Ol	N			
	List of All I	Identificati ncluded Partiti	ons		#	1 🛕 💁	urrent 2817 17-M15/700:	7-707 GP=7				#2 <mark>/</mark> 2	Propos 2827-H	ed 2827-70	7			Full ity (MIPS)
Туре	Image: Displaying the production of the producting the producting the production of the production of the productin																	
GP GP	GP BATCHA z/OS-1.13 Average 1 SHR 7 19.50% 1,382.5 1 SHR 2 195 19.50% 2 2.23 3.20% 2 29.01 +63.8 +28.2%																	
GP GP	GP CICSA z/OS-1.13 Average 3 SHR 3 34.00% 2,438.2 3 SHR 3 34.00% 📑 3,128.0 +689.8 +28.3%																	
GP GP	IMSA TESTB	z/OS-1.13 z/OS-1.13	Average Average	5 6	SHR SHR	5 2	7.30% 1.20%		524.9 84.9	5 6	SHR SHR	2	73 12	7.30% 1.20%		661.8 108.8	+136.9 +23.9	+26.1% +28.2%
GP GP	TESTCICS TESTIMS	z/OS-1.13 z/OS-1.13	Average Average	7 8	SHR SHR	2 5	1.50% 3.60%		106.1 258.9	7 8	SHR SHR	2	15 36	1.50% 3.60%		136.0 326.3	+29.9 +67.4	+28.2% +26.0%
	e Controls	: Uni	do Changes	Op	otimize Sł	HR LCPs											Consider N	1argin-of-Error
For significant configuration changes, capacity comparisons should be considered to have a +/-5% margin-of-error. Upgrading the processor family is considered a significant configuration change. IBM does not guarantee the results from this tool. This information is provided "as is", without waranty, expressed or inplied. You are responsible for the results obtained form your use of this tool.																		
Input fie	lds have white	background;	Single-click a "se	election fie	eld" for d	lrop-down	ilist; Double	click a "k	ey-in field" to	open.								

8. 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 all of the partitions have met the 20% capacity increase when factoring in the -5% margin of error except IMSA and TESTIMS.

Partition		pacity basis: 20	Partition rent 2817-707: Creat Proposed 2827- 94-701 @ 593.0	of-Error Considera on Minimum Capao ated from EDF I:\Task 1 707: Cloned from Current 0 MIPS for a shared occssors is represent	ity .edfinterval # 1 2817-707 single-partiti	on configurat					
	Deutitie	n Identification		#1 Current 2817-707		#2 A Propos	sed 2827-707				
	Partition	Identification	1	Projected	Proje	cted	Projected r	ninus 5%			
Туре	Name	SCP	Workload	Capacity	Capacity	% Delta	Capacity	% Delta			
GP	BATCHA	z/OS-1.13	Average	1,382.5	1,767.7	+27.9%	1,679.3	+21.5%			
GP	BATCHB	z/OS-1.13	Average	226.3	290.1	+28.2%	275.6	+21.8%			
GP	CICSA	z/OS-1.13	Average	2,438.2	3,128.0	+28.3%	2,971.6	+21.9%			
GP	CICSB	z/OS-1.13	Average	2,105.7	2,732.4	+29.8%	2,595.8	+23.3%			
GP	IMSA	z/OS-1.13	Average	524.9	661.8	+26.1%	628.7	+19.8%			
GP	TESTB	z/OS-1.13	Average	84.9	108.8	+28.2%	103.3	+21.7%			
GP	TESTCICS	z/OS-1.13	Average	106.1	136.0	+28.2%	129.2	+21.8%			
GP	TESTIMS	z/OS-1.13	Average	258.9	326.3	+26.0%	310.0	+19.7%			
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.											

9. First close the *Partition-Margin-of- Error* window. Then raise the weights by one for each of the two partitions (IMSA to 74 and TESTIMS to 37) not meeting the Margin-of-Error.

		Comparisor							-							Test street		, e <mark>×</mark>
G 🗄	M 🕐																	
	Partition Capacity Comparison Report Based on Partition Minimum Capacity Current 2817-707: Created from EDF 1:Task 1.edf Interval # 12 Proposed 2827-707: Cloned from Current 2817-707 Capacity basis: 2094-701 @ 593.00 MIPS for a shared single-partition 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 #1 Current 2817-707 #2 Proposed 2827-707 Full List of All Included Partitions #1 2817-M15/700: GP=7 #2 2827-H20/700: GP=7 Capacity (MIP5)																	
With Unique ID Metrics Partition Definition Minimum Partition Definition Minimum Net %																		
Туре	Name	SCP	Workload	LP#	Mode	LCPs	Weight%	CAP	Capacity	LP#	Mode	LCPs	Weight	Weight%	CAP	Capacity	Change	
GP	BATCHA	z/OS-1.13	Average	1	SHR	7	19.50%		1,382.5	1	SHR	2	195	19.46%		1,764.2	+381.7	+27.6%
GP	BATCHB	z/OS-1.13	Average	2	SHR	2	3.20%		226.3	2	SHR	2	32	3.19%		289.5	+63.2	+27.9%
GP	CICSA	z/OS-1.13	Average	3	SHR	3	34.00%		2,438.2	3	SHR	3	340	33.93%		3,121.8	+683.6	+28.0%
GP	CICSB	z/OS-1.13	Average	4	SHR	7	29.70%		2,105.7	4	SHR	3	297	29.64%		2,727.0	+621.3	+29.5%
GP	IMSA	z/OS-1.13	Average	5	SHR	5	7.30%		524.9	5	SHR	2	74	7.39%		669.5	+144.6	+27.5%
GP	TESTB	z/OS-1.13	Average	6	SHR	2	1.20%		84.9	6	SHR	2	12	1.20%		108.6	+23.7	+27.9%
GP GP	TESTCICS TESTIMS	z/OS-1.13 z/OS-1.13	Average Average	7	SHR SHR	2	1.50% 3.60%		106.1 258.9	7	SHR SHR	2	15 37	1.50% 3.69%		135.7 334.7	+29.6 +75.8	+27.9% +29.3%
Changes Undo Changes Optimize SHR LCPs Consider Margin of Error																		
For significant configuration changes, capacity comparisons should be considered to have a +/-5% margin-of-error. Upgrading the processor family is considered a significant configuration change. IBM does not guarantee the results from this tool. This information is provided "as is", without warranty, expressed or implied. You are responsible for the results obtained from your use of this tool. Inout fields have white background: Single-click a "selection field" for droo-down list: Double click a "two-in field" to open.																		

10. **<u>Consider Margin-of-Error</u>** now all of our partitions show at least 20%.

99														
	Margin-of-Error Consideration													
Partition Minimum Capacity														
Current 2817-707: Created from EDF I:\Task 1.edf interval # 12														
Proposed 2827-707: Cloned from Current 2817-707														
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														
	Partitio	on Identification		#1 Current 2817-707		#2 A Propos	sed 2827-707							
				Projected	Proje	cted	Projected I	ninus 5%						
Туре	Name	SCP	Workload	Capacity	Capacity	% Delta	Capacity	% Delta						
GP	BATCHA	z/OS-1.13	Average	1,382.5	1,764.2	+27.6%	1,676.0	+21.2%						
GP	BATCHB	z/OS-1.13	Average	226.3	289.5	+27.9%	275.0	+21.5%						
GP	CICSA	z/OS-1.13	Average	2,438.2	3,121.8	+28.0%	2,965.7	+21.6%						
GP	CICSB	z/OS-1.13	Average	2,105.7	2,727.0	+29.5%	2,590.6	+23.0%						
GP	IMSA	z/OS-1.13	Average	524.9	669.5	+27.5%	636.0	+21.2%						
GP	TESTB	z/OS-1.13	Average	84.9	108.6	+27.9%	103.1	+21.4%						
GP	TESTCICS	z/OS-1.13	Average	106.1	135.7	+27.9%	128.9	+21.5%						
GP	TESTIMS	z/OS-1.13	Average	258.9	334.7	+29.3%	318.0	+22.8%						
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.														

11. First close the *Partition-Margin-of- Error* window. Then click <u>Commit Changes</u> 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 **9,151 MIPS**, which is more than the **8,553 MIPS** objective.

LPAR Host Capacity Comparison Report Capacity by Partition Type Current 2817-707: Created from EDF I:\Task 1.edf interval # 12 Proposed 2827-707: Cloned from Current 2817-707 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 A Current 2817-707 Full														
#1 2 2817-M15/700: GP=7 #2 2 2827-H20/700: GP=7 Capacity (MIPS)														
Partition Type	Partitions	Usable RCPs	LCPs	SHR LCP:RCP	Capacity	Partitions	Usable RCPs	LCPs	SHR LCP:RCP	Capacity	Net Change	% Delta		
GP	8	7	33	4.714	7,127.4	8	7	18	2.571	9,151.0	+2,023.6	+28.4%		
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						
Total	8	7	33		7,127.4	8	7	18		9,151.0	+2,023.6	+28.4%		
Comparison Report by Partition Show capacity as Minimum Capacity Maximum 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.														

- 12. 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 <u>File</u>→<u>Save as</u>, 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 **8,553 MIPS** objective and 20% for each partition. In addition we also were able to meet the 20% with the -5% margin of error.

*** End of Task 6 ***

Additional Analysis To Try

A. Evaluate a zEC12 2827-600 as an alternative

Browsing the *z/OS-1.13 Multi-Image LSPR Capacity Ratios* table, find the IBM zEC12 processor that can provide the required capacity increment using the z/OS <u>Average</u> 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.
- Find an IBM zEnterprise EC12 600 processor that can provide the required 8,553 MIPS. (tip right click for a list of the Families, then select via scroll to IBM, then select zEC12/600)

For the purposes of this exercise, choose the **2827-612**, which appears to have a bit more capacity than we require, (e.g. **9,086** 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**.

LSPR Capacity Rat		-							
😋 🌆 🥝									
		z	/OS-1.13	8 LSPR Data	(08/28/2012))			
		LSP			apacity Rat	lios			
	Maharan			eral Purpo		har - day			
~~~						z/VM and Linu			
	pacity basis: 20						-		
Capacity	y for z/OS on	z10 and	i later pr	ocessors is re	presented w	ith HiperDispa	tch turned ON	•	
Processor	Features	Flag	<u>MSU</u>	Low	Low-Avq	Average	Avg-High	<u>High</u>	
2827-604	4W	=	419	3,651	3,523	3,403	3,232	3,077	
2827-605	5W	=	514	4,512	4,339	4,178	3,962	3,768	
2827-606	6W	=	606	5,356	5,136	4,934	4,675	4,442	
2827-607	7W	=	695	6,186	5,917	5,670	5,369	5,099	
2827-608	8W	=	783	7,000	6,680	6,389	6,047	5,740	
2827-609	9W	=	869	7,800	7,428	7,089	6,707	6,365	
2827-610	10W	=	952	8,586	8,158	7,772	7,352	6,975	
2827-611	11W	=	1,031	9,357	8,873	8,437	7,980	7,570	
2827-612	12W		1,108	10,114	9,573	9,086	8,593	8,150	
2827-613	13W	=	1,184	10,858	10,257	9,719	9,191	8,717	1
2827-614	14W	=	1,256	11,589	10,927	10,336	9,774	9,269	
2827-615	15W	=	1,327	12,306	11,582	10,938	10,342	9,808	
2827-616	16W	=	1,397	13,010	12,222	11,524	10,897	10,334	
2827-617	17W	=	1,464	13,702	12,849	12,096	11,437	10,846	
2827-618	18W	=	1,530	14,381	13,462	12,654	11,965	11,347	
2827-619	19W	=	1,594	15,048	14,062	13,197	12,479	11,834	
2827-620	20W	=	1,656	15,703	14,649	13,728	12,980	12,310	
Enterprise EC12/70	D								1
2827-701	1W	=	188	1,541	1,527	1,514	1,468	1,426	
2827-702	2W	=	352	2,989	2,920	2,853	2,733	2,623	
2827-703	3W	=	511	4,408	4,276	4,151	3,955	3,776	
					Table	View			
Processors							- FOID C	10C P	-
In entire table:	908				Fami	lies & Model	<u>zEC12 &amp; z</u>	196 Powe	<u>r</u>
In this view: 79	7				S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S     S	ubset 💿 All	Full		
Currently select						elected	Saving		
					03	ciccicu	Javing		
Provisional Refere	nce-CPU	Proces	sor Familie	es Wo	kloads				
					esults from this				
		nation is	provided '	"as is", without	t warranty, exp	ressed or implie	d.		
	You are	e respons	ible for th	e results obtai	ned from your	use of this tool.			
Global Reference-C	PU is active;	double	click any	processor r	ow to set it a	s a Provisional	Reference-CP	U	
Select multiple proce									

4. Click <u>Return</u> to go back to the *Advanced-Mode Control Panel* window.

#### Analysis Steps

- 1. Single-click the **Current 2817-707** #1 A on the **Advanced-Mode Control Panel** window to select it.
- 2. Click the <u>**Clone</u>** toolbar button. A third LPAR configuration is created as an exact copy of the second. Its icon ***3** , Rename it **Proposed 2827-612**</u>
- 3. Double-click the **Proposed 2827-612 ***³ **△** icon to open the **LPAR Host and Partition Configuration** window for the **Proposed 2827-612** LPAR configuration.
- 4. Click Specify Host
  - a) Set the *Family* to be zEC12/600.
  - b) Set the *Model* to **2827-H20/600** (this model has a maximum total of 20 configurable GCPs).
  - c) Leave zEC12 & z196 Power checked to Full
  - d) Set *General Purpose CPs* to 12 (seen as a 2827-612).

LPAR Host [untitle	ed]	1.000		x
3 😵 🥑				
	LPAR Host I	Processor		
	Study ID: Not	specified		
	#3 🛓 Propos	ed 2827-612		
	Description: Cloned from	Current 2817-707		
	Family	Model		
	zEC12/600 👻	2827-H20/600	-	
	zEC12 & z19	6 Dower		
	Full	) Saving		
		Saving		
Configu	ire Real CP Types			
GP	zAAP ZIIP	IFL	ICF	
12	▼ 0 ▼ 0	▼ 0 ▼	0 👻	
	Enable "zAAP on	zIIP" capability		
zEC12 zero GP configu	urations require zEC12/400			

2. Click Return

3. <u>Click Partition Detail</u> in the Capacity *Reports* group box, and review the capacity picture.

Partitio	n Detai	Report	18.5	r							100		
Graph CP	calcula	tor Docu	mentation										
00		sv 🕐											
			zEC1	Based or Des 2/600 Hos	#3 #3 aription		IBM Sys lot specifi osed 2827 om Curre 20/600	tem z Pr ed 7-612 nt 2817-3 ) with	rocessors 707 <b>12 CPs:</b>	GP=12			
		Can	acity basis: 2			tive Part				tition con	figuratio	n	
			y for z/OS o										
			Partition Id	entification				Parti	ition Conf	iguration		Partition	Capacity
Include	No.	Туре	Name	SCP	W	orkload	Mode	LCPs	Weight	Weight %	CAP	Minimum	Maximum
<b>V</b>	1	GP	CICSA	z/OS-1.13	Aver	age	SHR	3	340	34.00	%	2,384.5	2,384.
<b>V</b>	2	GP	BATCHA	z/OS-1.13	Aver	age	SHR	7	195	19.50	%	2,036.4	5,499.4
<b>V</b>	3	GP	BATCHB	z/OS-1.13	Aver	age	SHR	2	32	3.20	% 📃	357.7	1,568.2
<b>V</b>	4	GP	TESTB	z/OS-1.13	Aver	age	SHR	2	12	1.20	% 📃	169.4	1,568.2
<b>V</b>	5	GP	TESTIMS	z/OS-1.13	Aver	age	SHR	5	36	3.60	%	487.5	3,982.
<b>V</b>	6	GP	CICSB	z/OS-1.13	Aver	age	SHR	7	297	29.70	% 📃	2,998.0	5,499.4
<b>V</b>	7	GP	IMSA	z/OS-1.13	Aver	age	SHR	5	73	7.30	%	841.1	3,982.
V	8	GP	TESTCICS	z/OS-1.13	Aver	age	SHR	2	15	1.50	%	197.7	1,568.3
Table V					_	Capacity CP Poo	y Summa		ool artitions	LCPs	SHR LCP:R	CD	
		IP/IFL Par				GP		12	aruuons   8	33			· ·
@ Wit	th Assoc	iated GP	Separate b	y Pool		ZAAP		None	0	33	2.1	-30 S	,472.2 n/a
Show		GP Po	ool Specialty	Pools		zIIP		None					n/a
() All	Partition	s 🔽 G	SP ZAA	P ZI	P	IFL		None					n/a
○ Inc	ludes Or	nly	IFL		F	ICF	Totals	None 12	8	33		a	n/a
Host S	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.												
		IBM			e respo	onsible for t	the result	s obtaine	d from you	r use of this	s tool.		
Note: One	e or more			implied. You ar					<u> </u>	r use of this	s tool.		

- a) Note the one partition CICSA doesn't have a sufficient number of LCPs to satisfy the weight assigned. We will fix this later
- b) Note that Total capacity (9,472 vs 8,553 requirement). Click <u>Return</u> 2 times (or click the **Double Return**) to get back to <u>Advanced-Mode_Control Panel</u> window.
- c) Select both **Current 2817-707 *1 A** and the **2827-612 *3 A** configurations and then click **Compare i** icon on the **Advanced-Mode Control Panel** window.
- click <u>Minimum Capacity</u>. Note that now all partitions are seeing more than the required 20% capacity increase over the old 2817-707 configuration except for CICSA.
- e) Click <u>Optimize SHR LCPs</u> for GPs in the *Change Controls* group box to see if you can improve the results by reducing (increasing) the number of LCPs assign to each partition to that required to accommodate its weight. Click <u>Optimize</u> with the <u>Moderate</u> option.

f) The CICSA partition has 35.2% more capacity and we have more than met our 20% objective for all partitions. We should also consider changing all of the partitions with only 1 LCP to have 2 LCPs for availability reasons as shown below. Increase the LCPs to 2 for partitions BATCHB, IMSA, TESTB, TESTCICS and TESTIMS. (CICSA now has 34.2% more capacity)

Parti	tion Capacity	Comparison																
G 🛓	M 🕐																	
						basis: 2(	Base urrent 2817-7 Propose 094-701 @	d on Pa 07: Creat d 2827-6 593.00	acity Con artition Min ed from EDF I 12: Cloned fro MIPS for a cessors is r	imum ( :\Task om Currer a shared	apacity 1.edf inte t 2817-70 I single-	rval # 12 7 <b>partitio</b>						
	Partition Identification         #1 Current 2817-707         #3 Proposed 2827-612         Full           List of All Included Partitions         #3 2174115/7001 (CP=7)         #3 28274120/601 (CP=12)         Full           With Unique ID Metrics         Destribute Definition         Partition Definition         Partition Definition         Full																	
Type         Name         SCP         Workload         LP#         Mode         LCPs         Weight%         CAP         Capacity         LP#         Mode         LCPs         Weight%         CAP         Capacity         Delta																		
				LP#				CAP		LP#			-					
GP         BATCHA         z/OS-1.13         Average         1         SHR         7         19.50%         1,382.5         1         SHR         3         195         19.50%         1,885.6         +503.1         +36.4%           GP         BATCHB         z/OS-1.13         Average         2         SHR         2         3.20%         226.3         2         SHR         2         32         3.20%         305.4         +79.1         +35.0%																		
GP	CICSA	z/OS-1.13 z/OS-1.13	Average	2	SHR	2	34.00%		2,438.2	2	SHR	6	340	34.00%		3,271.4	+833.2	+35.0%
GP	CICSB	z/OS-1.13	Average	4	SHR	7	29,70%		2,105.7	4	SHR	5	297	29,70%		2,878.1	+772.4	+36.7%
GP	IMSA	z/OS-1.13	Average	5	SHR	5	7,30%		524.9	5	SHR	2	73	7.30%		696.6	+171.7	+32.7%
GP	TESTB	z/OS-1.13	Average	6	SHR	2	1.20%		84.9	6	SHR	2	12	1.20%		114.5	+29.6	+34.9%
GP	TESTCICS	z/OS-1.13	Average	7	SHR	2	1.50%		106.1	7	SHR	2	15	1.50%		143.1	+37.0	+34.9%
GP	TESTIMS	z/OS-1.13	Average	8	SHR	5	3.60%		258.9	8	SHR	2	36	3.60%		343.5	+84.6	+32.7%
Change Controls Commit Changes Undo Changes Optimize SHR LCPs For significant configuration changes, capacity comparisons should be considered to have a +/-5% margin-of-error. Uporading the processor family is considered a significant configuration change.																		
anut fiel	de lasue udaite l	hadioroundi. C	ingle-click a "sele		exp	ressed or i	implied. You a	re respon	is tool. This in sible for the r	esults obt								
put fiel	ds nave white l	background; S	ingle-click a "sele	ection field	for dro	p-down lis	t; Double did	a key-in	field to oper	ı.								

g) Click on <u>Consider Margin of Error</u> 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	Margin-of-Error				-						
3											
			Margin-	of-Error Considera	ation						
			Partitio	on Minimum Capad	itv						
		Our		ated from EDF I:\Task 1	•	2					
				612: Cloned from Current		-					
				0 MIPS for a shared							
	Capacit	y for z/OS on z	10 and later pr	ocessors is represent	ted with Hipe	rDispatch tur	med ON				
	Partition	Identification		#1 Current 2817-707		#3 🛕 Propo	sed 2827-612				
				Projected	Proje	ected	Projected	minus 5%			
Type	Name	SCP	Workload	Capacity	Capacity	% Delta	Capacity	% Delta			
GP	BATCHA	z/OS-1.13	Average	1,382.5	1,885.6	+36.4%	1,791.3	+29.6%			
GP	BATCHB	z/OS-1.13	Average	226.3	305.4	+35.0%	290.1	+28.2%			
GP	CICSA	z/OS-1.13	Average	2,438.2	3,271.4	+34.2%	3,107.9	+27.5%			
GP	CICSB	z/OS-1.13	Average	2,105.7	2,878.1	+36.7%	2,734.2	+29.8%			
GP	IMSA	z/OS-1.13	Average	524.9	696.6	+32.7%	661.8	+26.1%			
GP	TESTB	z/OS-1.13	Average	84.9	114.5	+34.9%	108.8	+28.2%			
GP	TESTCICS	z/OS-1.13	Average	106.1	143.1	+34.9%	136.0	+28.2%			
GP	TESTIMS	z/OS-1.13	Average	258.9	343.5	+32.7%	326.4	+26.1%			
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.											

h) First close the *Partition-Margin-of- Error* window. Then click <u>Commit Changes</u> 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 **9,638.3 MIPS**, which is more than the **8,553 MIPS** objective.

Host Capac	ity Compari	ison					-		1.5						
3 🚵 🥝	)														
	LPAR Host Capacity Comparison Report Capacity by Partition Type Current 2817-707: Created from EDF I:\Task 1.edf interval # 12 Proposed 2827-512: Cloned from Current 2817-707 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														
	#1 2 2817-M15/700: GP=7 #3 2 2827-H20/600: GP=12 Capacity (MIPS)														
Partition Type         Usable RCPs         Usable LCPs         SHR LCP:RCP         Usable Capacity         Usable Partitions         SHR RCPs         SHR LCP:RCP         Net Capacity         % Delta															
GP	8	7	33	4.714	7,127.4	8	12	24	2.000	9,638.3	+2,510.9	+35.2%			
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							
Total	8	7	33		7,127.4	8	12	24		9,638.3	+2,510.9	+35.2%			
Comparison Report by Partition       Show capacity as         Minimum Capacity       Maximum 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.															

Click two Return buttons to close the windows

While we won't execute the following in this lab, however there are some things to consider since this zEC12 612 has more capacity than is required. Perhaps a zEC12 611 may be an option?, although getting 20% more with a -5% margin of error is unlikely. If the partitions had zIIP/zAAP eligible workload perhaps their GCP requirement / weight could be reduced making a 611 an option closer to the GCP capacity requirement?

In addition, this sub-capacity model has "more slower" engines than the z196 and the zEC12 options (which will be shown and briefly discussed at the end of the lab).

In summary there are many additional "real world" considerations when utilizing zPCR to analyze System z capacity configuration alternatives.

# *** End of Additional Analysis A ***

#### B. Add an IFL to the zEC12 2827-707 Configuration for the Linux workload

#### Analysis Steps

- 1. Single-click on the **Proposed 2827-707** icon **#2** on the **Advanced-Mode Control Panel** window to select it.
- 2. Click the <u>**Clone</u>** toolbar button. A fourth LPAR configuration is created as an exact copy of the second. Its icon **#4** A, Rename it **2827-707 with IFL**</u>
- 3. Double-click the **2827-707 with IFL ***⁴ **△** icon to open the **LPAR Host and Partition Configuration** window for the **2827-707 with IFL** LPAR configuration.
- 4. Click Specify Host

a) include 1 IFL CP.	
LPAR Host [untitled]	• ×
LPAR Host Processor	
Study ID: Not specified	
#4 🛕 2827-707 with IFL	
Description: Cloned from Proposed 2827-707	
Family Model	
zEC12/700    2827-H20/700	
zEC12 & z196 Power	
Full Saving	
Configure Real CP Types	
GP ZAAP ZIIP IFL ICF	
Enable "zAAP on zIIP" capability	

2. <u>Click Return</u> From the *LPAR Host and Partition Configuration* window, click <u>IFL</u> in the *Define Partitions* group box

3. From the *LPAR Partition Definition* window, edit the partition name (from LP-09) by double-clicking the name field to open it and entering text to "TESTLNX", and hitting

Partition Definition	-	-	-	-					X
CPcalculator Documentation									
3 1 🖿 🔍 🥑									
				M Syst	em z Proce	ssors			
		#4 🖊	2827-7	07 with	IFL				
	Des	cription: Cl	oned from	Propose	ed 2827-707				
zEC12	2/700 Host	= 2827	-H20/7	700 w	ith 8 CPs	s: GP=3	7 IFL=1		
	9 A	ctive Pa	rtitions	: GP=	=8 IFL=1				
	LP Identifica	tion				LP	Configura	ition	
Include No. Type	Name	SCP	Workl	oad	Mode	LCPs	Weight	Weight %	CAP
	TESTLNX	z/VM	Average	/LV	SHR	1	100	100.00%	
	Partition S	ummary t	y Pool						
Name prefix LP					DED		SHR	Sum	
	CP Pool GP		LPs 8	RCPs	LCPs	LCP			.,002
Move Partition	ZAAP		0		0 0			000	0
	zIIP		0		0 (	)	0 0.0	000	0
	IFL		1			)		000	100
	ICF		0		0 (	)	0 0.0	000	0
Add Clone	Delete								
Input fields are white background;	Single click sele	ction field f	for drop-do	own list;	Double click	entry fiel	ds to open.		
enter.									

4. click Return.

5. From the *LPAR Host and Partition Configuration* window, click <u>Partition Detail</u> in the **Capacity** *Reports* group box to open the **Partition** *Detail Report* window, revealing the updated capacity picture. The overall capacity increased to **10,693**.

	Partitio	n Detail	Report		_										х
Particina Procession Barbon Structure         Base on SPR Data for IBM System 2 Processor Surgin: Not specified         # 20:27.07 With RC         Catch 2 each 2 - 120 / 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 8 CPs; CP = 7 IFL = 1. 200 on 200 with 1. 200 on 200	iraph CP	calculat	or Docu	mentation											
Based on LSPR Data for BMS System 2 Processors Study ID: Not specified         # ▲ 227-707 with FL Description: Cloned from Proposed 2827-707.         CEC12/700 Host = 2827-H20/700 with 8 CPs: GP=7 IFL=1 9 Ative Partitions: GP=8 IFL=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       No.       Type       Name       SCP       Workload       Mode       LCPs       Weight       Weight %       Additus       Maximum         V       1       GP       CICSA       z/OS-1.13       Average       SHR       2       19       46%       1,758       2,55         V       3       GP       BATCHB       z/OS-1.13       Average       SHR       2       12       1,96%       3,393%       3,311       3,9         V       1       GP       CICSA       z/OS-1.13       Average       SHR       2       12       1,06%       1,758       2,5         V       4       GP       TESTIB       z/OS-1.13       Average       SHR       2       37       3,66%       334       2,5         V       5       GP       TESTIB       z/OS-1.13       Average <td< td=""><td>3 3</td><td>HTM C</td><td><b>N</b></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>	3 3	HTM C	<b>N</b>												
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         Indude       No.       Type       Name       SCP       Workload       Mode       LCPs       Weight %       CAP       Minimum       Maximu         V       1       GP       CICSA       z/OS-1.13       Average       SHR       3       340       33.93%       3,111       3,9         V       2       GP       BATCHA       z/OS-1.13       Average       SHR       2       195       19.46%       1,758       2,55         V       4       GP       TESTB       z/OS-1.13       Average       SHR       2       12       1.20%       108       2,55         V       4       GP       TESTIM       z/OS-1.13       Average       SHR       2       12       1.20%       108       2,55         V       5       GP       TESTIMS       z/OS-1.13       Average       SHR       2       37       3.69%       33.4       2,5         V       6       GP       CICSB       z/OS-1.13       Average       SHR       2       74       7.39%       6667       2,5				zEC12	Based o Desc <b>/700 Host</b>	n LSPR Da Stud #4 2 cription: Clo = 2827-	ta for y ID: N 282: ned fro - <b>H20</b>	IBM Sys Not specif 7-707 with om Propos /700 N	tem z P ied n IFL sed 2827 <b>with 8</b>	-707 CPs: GP	=7 IFL=	1			
Include       No.       Type       Name       SCP       Workload       Mode       LCPs       Weight       Weight       %_CAP       Minimum       Maximu         ♥       1       GP       CICSA       z/OS-1.13       Average       SHR       3       340       33.93%       3,111       3,9         ♥       2       GP       BATCHA       z/OS-1.13       Average       SHR       2       195       19.46%       1,758       2,5         ♥       3       GP       BATCHB       z/OS-1.13       Average       SHR       2       32       3.19%       289       2,5         ♥       4       GP       TESTB       z/OS-1.13       Average       SHR       2       12       1.20%       108       2,5         ♥       5       GP       TESTIMS       z/OS-1.13       Average       SHR       2       37       3.69%       334       2,5         ♥       6       GP       CICSB       z/OS-1.13       Average       SHR       2       37       3.69%       334       2,5         ♥       7       GP       IMSA       z/OS-1.13       Average       SHR       2       15       1.50%					2094-701 @	593.00 N	4IPS	for a sh	ared si	ngle-part					
V       1       GP       CICSA       z/OS-1.13       Average       SHR       3       340       33.93%       3,111       3,9         V       2       GP       BATCHA       z/OS-1.13       Average       SHR       2       195       19.46%       1,758       2,5         V       3       GP       BATCHB       z/OS-1.13       Average       SHR       2       32       3.19%       289       2,5         V       4       GP       TESTB       z/OS-1.13       Average       SHR       2       12       1.20%       108       2,5         V       5       GP       TESTIMS       z/OS-1.13       Average       SHR       2       37       3.69%       334       2,5         V       6       GP       TESTIMS       z/OS-1.13       Average       SHR       2       374       7.39%       667       2,5         V       6       GP       IMSA       z/OS-1.13       Average       SHR       2       74       7.39%       667       2,5         V       8       GP       TESTCICS       z/OS-1.13       Average       SHR       2       15       1.50%       1135       2,5				Partition Id	entification				Part	ition Confi	guration		Partition	Capacity	y
V       2       GP       BATCHA       z/OS-1.13       Average       SHR       2       195       19.46%       1,758       2,5         V       3       GP       BATCHB       z/OS-1.13       Average       SHR       2       32       3.19%       289       2,5         V       4       GP       TESTB       z/OS-1.13       Average       SHR       2       12       1.20%       108       2,5         V       5       GP       TESTIMS       z/OS-1.13       Average       SHR       2       37       3.69%       334       2,5         V       6       GP       TESTIMS       z/OS-1.13       Average       SHR       2       37       3.69%       334       2,5         V       6       GP       TICSB       z/OS-1.13       Average       SHR       2       74       7.39%       667       2,5         V       8       GP       TESTCICS       z/OS-1.13       Average       SHR       2       15       1.50%       135       2,5         V       9       IFL       TESTCICS       z/OS-1.13       Average       SHR       2       15       1.50%       1.55%       1.50%	Include	No.	Туре	Name	SCP	Worklo	ad	Mode	LCPs	Weight	Weight %	CAP	<u>Minimum</u>	Maximu	m
V       3       GP       BATCHB       z/OS-1.13       Average       SHR       2       32       3.19%       289       2,5         V       4       GP       TESTB       z/OS-1.13       Average       SHR       2       12       1.20%       108       2,5         V       5       GP       TESTIMS       z/OS-1.13       Average       SHR       2       37       3.69%       334       2,5         V       6       GP       TESTM       z/OS-1.13       Average       SHR       2       37       3.69%       334       2,5         V       6       GP       TESTIMS       z/OS-1.13       Average       SHR       2       74       7.39%       667       2,57         V       8       GP       TESTICICS       z/OS-1.13       Average       SHR       2       15       1.50%       135       2,55         V       9       IFL       TESTLNX       z/NM       Average       SHR       2       14       100       100.00%       1,574       1,55         V       9       IFL       TESTLNX       z/NM       Average/LV       SHR       1       100       100.00%       1,574	Image: GP         CICSA         z/OS-1.13         Average         SHR         3         340         33.93%         3,111         3,93%														
V       5       GP       TESTIMS       z/OS-1.13       Average       SHR       2       37       3.69%       334       2,57         V       6       GP       CICSB       z/OS-1.13       Average       SHR       3       297       29.64%       2,718       3,9         V       7       GP       IMSA       z/OS-1.13       Average       SHR       2       74       7.39%       667       2,5         V       8       GP       TESTCICS       z/OS-1.13       Average       SHR       2       15       1.50%       135       2,5         V       9       IFL       TESTLIX       z/VM       Average       SHR       2       15       1.50%       135       2,5         V       9       IFL       TESTLIX       z/VM       Average       SHR       2       15       1.50%       135       2,5         Ipplay zAAP/zIIP/IFL Partitions       0       Specialty Pool       CP Pool       RCPs       Partitions       LCPs       SHR LCP:RCP       Capacity         Ipplay zAAP/zIIP/IFL Partitions       Ipplay       Specialty Pool       Ipplay       ZAAP       None       n/a       n/a         Ipplay indudes Only </td <td></td> <td></td> <td>GP</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>32</td> <td></td> <td></td> <td></td> <td></td> <td></td>			GP							32					
Ø       6       GP       CICSB       z/OS-1.13       Average       SHR       3       297       29.64%       2,718       3,9         Ø       7       GP       IMSA       z/OS-1.13       Average       SHR       2       74       7.39%       667       2,5         Ø       8       GP       TESTCICS       z/OS-1.13       Average       SHR       2       15       1.50%       135       2,5         Ø       9       IFL       TESTLIX       z/VM       Average       SHR       2       15       1.50%       135       2,5         Ø       9       IFL       TESTLIX       z/VM       Average/LV       SHR       1       100       100.00%       1,574       1,5											2,5	58			
V       7       GP       IMSA       z/OS-1.13       Average       SHR       2       74       7.39%       667       2,5         V       8       GP       TESTCICS       z/OS-1.13       Average       SHR       2       15       1.50%       135       2,5         V       9       IFL       TESTCICS       z/OS-1.13       Average       SHR       2       15       1.50%       135       2,5         V       9       IFL       TESTLIX       z/VM       Average/LV       SHR       1       100       100.00%       1,574       1,574       1,574         Capacity Summary by Pool         Display zAAP/ZIIP/IFL Partitions         GP       7       8       18       2.571       9,120         Show       GP Pool       Specialty Pools		5	GP	TESTIMS	z/OS-1.13	Average		SHR	2	37	3.69%	6 📃	334	2,5	6
Image: Ship of the state of the st	✔         6         GP         CICSB         z/OS-1.13         Average         SHR         3         297         29.64%         2,718         3,9														
Image: Point State       Image: Po	▼         7         GP         IMSA         z/OS-1.13         Average         SHR         2         74         7.39%         667         2,581														
Capacity Summary by Pool         Capacity Summary by Pool         Display zAAP/zIIP/IFL Partitions       CP Pool       RCPs       Partitions       LCPs       SHR LCP:RCP       Capacity         Image:															
With Associated GP       Separate by Pool         Show       GP Pool       Specialty Pools         Image: All Partitions       Image: GP       ZAAP         Includes Only       IFL       ICF	Display zAAP/zIIP/IFL Partitions CP Pool RCPs Partitions LCPs SHR LCP:RCP Capacity														
ⓐ All Partitions         ♥ GP         ☐ ZAAP         ☐ ZIIP         ☐ Includes Only         ♥ IFL         ☐ ICF		th Associ		· ·	·	_	zAAP		None	0	10	2.	571	n/a	
○ Indudes Only     IFL   ICF   Totals   8   9   19   10,693	All i	Partition	s 🔽 G			P	IFL		1	1	1	1.	000	1,574	
Host Summary Modify SCP/Workload LCP Alternatives ZAAP/zIIP Loading	) Inc	ludes Or	nly	IFL			ICF	Totals		9	19				
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.	Host Si	ummary	For signi	ficant configura Upgra M does not guar	tion changes, ca ding the process antee the result	apacity com sor family is ts from this	parisor consid tool. T	ns should lered a sig his inform	be consid gnificant ( ation is p	dered to hav configuratio provided "as	n change. is", without	warranty,	error.		3

 Verify using the Margin of Error we see that all of our partitions will still meet our objective of > 20% with the addition of the IFL partition. Close all windows. On the *Advanced-Mode Control Panel* window, select the two configurations #1 and #4

(hold the cntl key and click on both) and click the **Compare** tool bar icon. Click on **Minimum Capacity**, and then click **Consider Margin-of-Error** to see the following.

		pacity basis: 20	Partitic rent 2817-707: Crea 2827-707 with I 94-701 @ 593.0	of-Error Consider on Minimum Capa- ted from EDF I:\Task FL: Cloned from Propose O MIPS for a shared pocessors is represen	<b>city</b> 1.edfinterval # 1 d 2827-707 l <b>single-partit</b> i	ion configura					
Partition Identification #1 A Current #4 A 2827-707 with IFL											
Projected Projected Projected minus 5%											
Type	Name	SCP	Workload	Capacity	Capacity	% Delta	Capacity	% Delta			
GP	BATCHA	z/OS-1.13	Average	1,383	1,758	+27.1%	1,670	+20.8%			
GP	BATCHB	z/OS-1.13	Average	226	289	+27.9%	274	+21.2%			
GP	CICSA	z/OS-1.13	Average	2,438	3,111	+27.6%	2,956	+21.2%			
GP	CICSB	z/OS-1.13	Average	2,106	2,718	+29.1%	2,582	+22.6%			
GP	IMSA	z/OS-1.13	Average	525	667	+27.0%	634	+20.8%			
GP	TESTB	z/OS-1.13	Average	85	108	+27.1%	103	+21.2%			
GP	TESTCICS	z/OS-1.13	Average	106	135	+27.4%	128	+20.8%			
GP	TESTIMS	z/OS-1.13	Average	259	334	+29.0%	317	+22.4%			
IFL	TESTLNX	z/VM	Average/LV		1,574		1,495				
		Upgrading 1 does not guarant	the processor family the results from the	omparisons should be cor / is considered a significa his tool. This information i hisible for the results obta	nt configuration o s provided "as is"	hange. , without warran					

7. Close all windows. From the Advanced-Mode Control Panel window, click LPAR

*Host Capacity Summary Report* icon S. 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				-							
3 🖬 🗟 🥑											
	LPAR Host Capacity Capacity basis: 2094-701 @ 593.00 MIPS fo Capacity for z/OS on z10 and later processors i	or a shared	single-parti								
LPAR Configuration Full CPC Capacity (based on usable RCP count)											
Identity	Hardware	GP	zAAP	zIIP	IFL	ICF	Total				
#1 🛓 Current 2817-707	2817-M15/700: GP=7	7,127.4					7,127.4				
#2 🛕 Proposed 2827-707	2827-H20/700: GP=7	9,151.0					9,151.0				
#3 🛕 Proposed 2827-612	2827-H20/600: GP=12	9,638.3					9,638.3				
#4 🚣 2827-707 with IFL 2827-H20/700: GP=7 IFL=1 9,119.6 1,573.7 10,693.3											
Content Control	(a) Based on "Current 2817-707"         Incremental         For significant configuration changes, capacity comparisons         Upgrading the processor family is conside         IBM does not guarantee the results from this tool. Thi         expressed or implied. You are responsible for the	red a significar s information is	CPC le-CP sidered to hav nt configuratio s provided "as	n change. is", without wa	rranty,						
Position mouse on LPAR configu	ration to display description										
		-	_		-	_					

 Change the view to the Single-CP. Single-CP capacity represents the average capacity of each CP (determined by dividing the full capacity by the number of CPs involved). Single-CP capacity can be useful for revealing relative engine speed when comparing LPAR configurations where the host processor family is changed

3 🗎 🔊 🥑	LPAR Host Capacit Capacity basis: 2094-701 @ 593.00 MIPS Capacity for z/0S on z10 and later processors	for a shared :	single-parti								
LPAR Configuration Single-CP Capacity (based on usable RCP count)											
Identity Hardware GP zAAP zIIP IFL ICF Total											
#1 🛓 Current 2817-707 2817-M15/700: GP=7 1,018.2 1,018.2											
#2 A Proposed 2827-707 2827-H20/700: GP=7 1,307.3 1,307.3 1,307.3											
#3 A Proposed 2827-612 2827-H20/600: GP=12 803.2 803.2 803.2											
#4 🛕 2827-707 with IFL	2827-H20/700: GP=7 IFL=1	1,302.8			1,573.7		1,336.				
Content Control	exity Deltas Based on "Current 2817-707" Incremental	Show capac Full Sing	CPC								
'asition mouse on LPAR configu	For significant configuration changes, capacity compariso Upgrading the processor family is consi IBM does not guarantee the results from this tool. T expressed or implied. You are responsible for	lered a significar his information is	nt configuration s provided "as	n change. is", without wa	rranty,						

One use of the Single-CP option is to compare the zEC12 612 alternative. In this case it has "more slower" engines (12 engines with 803.2 MIPS relative capacity per GCP) than the zEC12 707 options and the z196 that it came from, but more total GCP capacity. This would be one consideration for a sub-capacity model, along with the type of work, number of partitions, dispatch points, CPU per Tran etc.

# *** End of Additional Analysis B ***

# *** End of Lab ***

#### Rename a Configuration

#### Procedure

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



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







# Notice Regarding Specialty Engines (e.g., zIIPs, zAAPs and IFLs):

Any information contained in this document regarding Specialty Engines ("SEs") and SE eligible workloads provides only general descriptions of the types and portions of workloads that are eligible for execution on Specialty Engines (e.g., zIIPs, zAAPs, and IFLs). IBM authorizes customers to use IBM SEs only to execute the processing of Eligible Workloads of specific Programs expressly authorized by IBM as specified in the "Authorized Use Table for IBM Machines" provided at:

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