

zPCR Capacity Sizing Lab Part 2 Hands-on Lab

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March 4, 2015 Session Number 16798







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zPCR Capacity Sizing Lab – Part 2 Hands On Lab Exercise

John Burg

Function Selection Window

III Function Selection [untitled]	
File Edit CPcalculator Registration Documentation Help	
	zPCR V8.7a
zPCR	
Processor Capacity Reference for IBM	z Systems
Study ID:	
Tab-1: Multi-Image Capacity Tab-2: Single-Image Capacity	
LSPR Multi-Image Capacity Ratios	
General Purpose CPs IFL CPs	
Capacity results will be relative to a 2094-701 MI capacity is 559.792 MIPS, for a 5-partition configuration	
Project capacity for specific LPAR configurations Hardware: IBM z Systems processor models CP types: General Purpose, zAAP, zIIP, ITL, 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 593.00 MIPS, for a 1-partition configuration	
Reference-CPU (controls all zPCR function)	
REE 2094-701 @ 593.00 MIPS	IBM z13
QuidkStart 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 **7,164 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-2.1 Average
2	ВАТСНА	Share	7	195	No	z/OS-2.1 Average
3	ВАТСНВ	Share	2	32	No	z/OS-2.1 Average
4	TESTB	Share	2	12	No	z/OS-2.1 Average
5	TESTIMS	Share	5	36	No	z/OS-2.1 Average
6	CICSB	Share	7	297	No	z/OS-2.1 Average
7	IMSA	Share	5	73	No	z/OS-2.1 Average
8	TESTCICS	Share	2	15	No	z/OS-2.1 Average

A plan is being developed to **replace the z196 2817-707 with a newer technology z Systems (z13) processor**. The specific model chosen must provide at least **36% additional capacity**, or **9,743 MIPS** (7,164 x 1.36). The current configuration is to be moved to the new processor with the partitions and their workloads continuing as 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 2/03. 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 on IBM z Systems**.

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** which contains 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 IBM z13/700 model replacement processor.
- Task 5 Model the intended IBM z13/700 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 **z13/600** as an alternative.
 - B. Add 1 IFL partition to the z13/700 running Linux guests under z/VM using SMT with a 20% capacity benefit, and add 1 zIIP partition to the CICSA partition (2 zIIPs) using SMT with a 25% capacity benefit.

Note: When instructed to **<u>Return</u>** the Sicon should be used.

The **Double Return** icon may be used to close multiple open windows, returning directly to the **Advanced-Mode Control Panel** window.

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**. In order to have capacity results represented with typical MIPS values, we need to set the *Reference-CPU* to the **2094-701 rated at 593 MIPS**.

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.

ile CPcalculat	tor Documentation Help
	zPCR. V8
	Advanced Made Conseits Dispuise Control Danel
	Advanced-Mode Capacity Planning Control Panel
Study ID:	
	Double click on a tree branch below to access the relevant windows
Reference-Cl	PU
REF 📓 209	4-701 @ 593.00 MIPS
LSPR Multi-Im	nage Processor Table
LSP. In Gen	
	CDe
	-
LPAR Configu	Jrations
#1 2 Con	figuration #1
-Manage	
Manage	Compare
Manage	Compare
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Manage	Compare Migrate & Anal QuickStart Guide rations are defined
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Manage — Io LPAR configue efine an LPAR c +Dorag & drop +Double-cick 1 reate additional	Compare - QuickStart Guide Parations are defined configuration a PPCR study file, EDF, or RMF file onto the LPAR configuration icon the LPAR configuration icon for manual definition windows LPAR configurations
Manage	Compare Migrate & Anal QuickStart Guide rations are defined configuration a 2PCR study file, EDF, or RMF file onto the LPAR configuration icon the LPAR configuration icon for manual definition windows ILPAR configurations {+}* toolshar i con and define the LPAR configuration as described above
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4. On the Advanced-Mode Control Panel window, double click on the

Reference-CPU icon **Reference-CPU** icon , currently tagged with "2094-701 @ 1.000 {ITR Ratio}". The *Reference-CPU* window will appear.

- a) Click <u>Typical</u> to set the *Reference-CPU* to the 2094-701 rated at 593 MIPS.
- b) Click <u>Return</u>.
- Open Windows Explorer (by clicking on "Start", "All Programs", "Accessories", "Windows Explorer"). Then using Windows Explorer (under My Computer/Local Disk (C:)) select the C:\CPSTOOLS\zPCR\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. *** For the lab there is a shortcut to this folder on the desktop ***
- Drag the "Task 1.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.

			E	DE Intoru	ale			
			-	DF IIICEIV	a15			
			#1 🔼	Configurat	tion #1			
		EDF	File Name: D):\Share zPC	CR Lab\Task	1.edf		
Relative Interval Number	CPC ID	GP Processor Model	Date	Time	Interval Length	Number of Active <u>Partitions</u>	Includes CPU-MF	Pool 1 GP Pool Utilization
12.	CPC00001	2817-707	2015-02-03	10:44:00	00:15:00	8	*	100.00%
10.	CPC00001	2817-707	2015-02-03	10:14:00	00:15:00	8	*	100.00%
8.	CPC00001	2817-707	2015-02-03	09:44:00	00:15:00	8	*	99.99%
7.	CPC00001	2817-707	2015-02-03	09:29:00	00:15:00	8		99.99%
13.	CPC00001	2817-707	2015-02-03	10:59:00	00:15:00	8		99.98%
11.	CPC00001	2817-707	2015-02-03	10:29:00	00:15:00	8		99.98%
9.	CPC00001	2817-707	2015-02-03	09:59:00	00:15:00	8		99.98%
14.	CPC00001	2817-707	2015-02-03	11:14:00	00:15:00	8	*	99.97%
٤	CBC00001	7917 707	2015 02 02	00+14+00	00.15.00	•		00.079/
Table Vie	w	Number of in	tervals: 16					

2. Select Interval #12 and double click to open the <u>Create LPAR Configuration</u> from *EDF* window.

Create LPAR Configuration	from EDF											4	L	- 0	23
8														zPCF	2 V8.7a
	LPAR Configuration from EDF z/OS SMF Data Set Name: 2PCRLAB.CPUMFSMF Extract Version: CP3KEXTR11/16/12 EDF File Name: D:(Share 2PCR Lab/Task 1.edf Interval #12: Date=2012-09-15 Time=10:44/Task 1.edf CPC ID: CPC00001; GP Processor Model = 2817-707 z196 Host = 2817-M15/700 with 7 CPs: GP=7 Create LPAR Configuration LPAR Host as specified below Partition Identification Partition Configuration as specified below														
1P 1P 1P Partition Identification Partition Configuration HiperDispatch CPU-MF															
Copy is from LP Active EDF No.	Type Nar	ne SCP	Assigned Workload	Mode	LCPs	Weight	Weight %	Cap ✓	ABS	Active	LCPs Parked	RNI	Workload Assignmen	Meth Use	od :d
V V V 1	GP CICSA	z/OS-2.1	Average	SHR	7.0	340	34.0%			*	4.0	0.88	Average	CPU	MF
✓ ✓ 2	GP BATCH	IA z/OS-2.1	Average	SHR	7.0	195	19.5%							Defa	ult
V V 3	GP BATCH	IB z/OS-2.1	Average	SHR	2.0	32	3.2%							Defa	ult
V V 4	GP TESTB	z/OS-2.1	Average	SHR	2.0	12	1.2%							Defa	ult
V V 5	GP TESTI	MS z/OS-2.1	Average	SHR	5.0	36	3.6%							Defa	ult
🗹 🗸 6	GP CICSB	z/OS-2.1	Average	SHR	7.0	297	29.7%							Defa	ult
7	GP IMSA	z/OS-2.1	Average	SHR	5.0	73	7.3%							Deta	ult
V V 8	GP TESTC	ICS z/05-2.1	Average	SHR	2.0	15	1.5%							Defa	ult
Select All Select Active Remove All Choose Another EDF Interval When copying partitions into zPCR remove Parked LCPs from the LCP Count Create LPAR Configuration															

- 3. Click on <u>Create LPAR Configuration</u> to transfer the LPAR host processor and its 8 partitions to the active zPCR study.
- 4. Click **OK** to dismiss the *zPCR EDF Copy Partitions* transfer dialog.

Advanced-Mode Control Panel Window

Advanced-Mode Control Panel Juntitled													
File CPcalculator Documentation Help													
Advanced-Mode Capacity Planning Control Panel													
Study ID:													
Double click on a tree branch below to access the relevant windows													
Reference-CPU													
REF M 2094-701 @ 593.00 MIPS													
LSPR Multi-Image Processor Table													
LSPR Multi-Image Processor Table													
Lipp It IFL CPs													
with Configuration #1													
rManage													
QuickStart Guide													
Configuration #1 #1 Created from EDE D: Task 1 edf interval # 12													
z196/700 LPAR Host: 2817-M15/700													
Pool #1 #2 #3 #4 #5 CPC CPType GP zAAP z11P IEI ICE Total													
RCPs 7 0 0 0 7													
RCPs 7 0 0 0 7 Partitions 8 0 0 0 8													
RCPs 7 0 0 0 7 Partitions 8 0 0 0 8 LCPs 33 0 0 0 33													
RCPs 7 0 0 0 7 Partitions 8 0 0 0 8 LCPs 33 0 0 0 33 Capacity 7,164.0 n/a n/a n/a n/a 7,164.0													

Task 2: Rename the configuration

Review the capacity assessment and rename the configuration.

Analysis Steps

- 1. Refer to the "**Rename an LPAR Configuration**" at the end of this document to rename the configurations as shown in the lab.
- 2. Using the directions above to rename "Configuration #1" to "Current 2817-707"
- 3. Double-click on the **Current 2817-707** LPAR configuration icon **#1** to open the **LPAR Host and Partition Configuration** window for the **Current 2817-707** LPAR configuration.
- 4. 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 7,164 MIPS.

	Partitic	on Detail	Report												
1	Graph Do	cument	ation												
	00	2.0 2	0											7PCR V8.7a	
ľ															
l						Partition	Deta	ail Re	port						
1					Based	on LSPR Data	for IBM	z Syster	ns Proces	sors					
						Study I	D: Not s	pecified							
1						#1 🔼	Current	2817-707							
l					Descripti	on: Created from	EDF D:\.	Task 1.	edf interval	# 12					
	2196/700 Host = 2817-M15/700 with 7 CPs: GP=7 8 Active Partitions: GP=8														
l	8 Active Partitions: GP=8 Capacity basis: 2094-701 @ 593.00 MIPS for a shared single-partition configuration														
1	Capacity for z/OS on z10 and later processors is represented with HiperDispatch turned ON														
	Indude Partition Identification Partition Configuration Capping Partition Capacity														
	√	No.	Туре	Name	SCP	Workload	Mode	LCPs	Weight	Weight %	*	ABS	Minimum	Maximum	
l	V	1	GP	CICSA	z/OS-2.1	Average	SHR	3	340	34.00%			2,464.4	3,106.4	
1	V	2	GP	BATCHA	z/OS-2.1	Average	SHR	7	195	19.50%			1,382.5	7,089.8	
	V	3	GP	BATCHB	z/OS-2.1	Average	SHR	2	32	3.20%			231.9	2,070.9	
	V	4	GP	TESTB	z/OS-2.1	Average	SHR	2	12	1.20%			87.0	2,070.9	
	V	5	GP	TESTIMS	z/OS-2.1	Average	SHR	5	36	3.60%			258.9	5,136.2	
	V	6 7	GP	TACA	z/OS-2.1 Average SHR 7 297 29.70%			2,105.7	7,089.8						
			GP	TESTCICS	2/05-2.1	Average	SHR	2	15	1 50%			524.9	2,130.2	
			U.	12010100	2700 212	menage	- Crine		10			_			
						Capacity	Summa	ary by Po	ol						
	Table V	liew Co	ntrols					Deal	DED	SHR		Sum	of Car	acity	
	Display	zAAP/zI	IP/IFL Par	titions		CP Pool		CPs L	Ps LCP	s LCPs LC	P:RCP	Wei	ghts Tot	als	
	@ Wi	ith Associ	ated GP	🕘 Separate b	by Pool	GP		7	8	33	4.714	1	1,000	7,164.0	
ł	Show		GP Po	ool Specialty	/ Pools	ZAAP									
		Partition	s 100 0	P	P 711	ZIIP									
						IFL									
1	Inc	cludes Or	nly	IFL	ICF	ICF				-					
							lotals	/	8	0 33				7,164.0	
	·											_			
1	Host S	Summary	M	odify SCP/Work	load LCP	Alternatives	ZAAF	P/zIIP Loa	ding	Calibrate Cap	bacity				
l			For	significant confi	ouration changes	s, capacity compa	risons sh	ould be o	onsidered to	p have a +/-5%	margin	of-erro	r		
			1.74	U	pgrading the pro	cessor family is co	nsidered	d a signific	ant configu	ration change			÷		
	Inout fields	have u.h	to hade-	und. Single di	du a "coloction fo	ld" for drop down	list. D-	uble dide	- Trow in fi	ald" to open					
Į	input neids	nave wh	ite backgr	ound; single-cli	ck a selection fie	and for drop-down	i list; Do	uble click	a key-in fie	eiu to open.					

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-2.1 Multi-Image LSPR Capacity Ratios* table, find the **IBM z13** processor that can provide the required capacity increment using the z/OS <u>Average</u> workload category.

Analysis Steps

- 1. From the *Advanced-Mode* window, double click on **General Purpose CPs** to open the *LSPR Multi-Image Processor Capacity Ratios* table.
- 2. Find an **IBM z13** processor that can provide the required **9,743 MIPS**. (tip: right click for a list of the *Families*, select *Scroll to IBM*, then select *z13/700*).

For the purposes of this exercise, choose the **2964-707**, which appears to have just a bit more capacity than we require, (e.g. **9,964** for *Average*). 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.

LSPR Capacity Ra	tio Table								3					
Workload Graph H	elp													
								zPCR V8.	7a					
		z	/05-2.11	SPR Data (0	1/14/2015)									
		-			-, - ,,,									
		LSP	R Multi-	Image Ca	pacity Rat	ios								
	Maharana		<u>Gene</u>	ral Purpos	se CPs	1.00 and 1.50								
Can	values a acity basis: 20	re appik 04-701	Cable for 2	2/US; repres	entative of z	/ VM and Lini	JX Infiguration							
Conscitu	(for 7/05 on 7	10 - nd	btor pro		a cypical muli	th HinorDico	atch turnod C	M						
LSPR Workload Category														
<u></u>	- 22				LSPR	vorkioad Ca	tegory		-					
Processor	Features	Hag	MSU	Low	Low-Avq	Average	<u>Avg-High</u>	<u>Hiqh</u>	1					
<u>z13/700</u>	*147	2000	210	1 770	1.706	1.005		1.040	^					
2964-701	100	-	210	1,779	1,730	1,095	1,014	1,540						
2964-702	3W	-	571	5.085	4 854	4 644	4 340	4 073						
2964-704	4W		740	6,678	6.344	6.041	5,625	5,262						
2964-705	5W	=	905	8,238	7,792	7.392	6,866	6,410						
2964-706	6W	-	1.062	9,765	9,202	8,700	8,066	7,518						
2964-707	7W	-	1,212	11,260	10,573	9,964	9,224	8,587						
2964-708	8W	120	1,356	12,724	11,906	11,188	10,344	9,618						
2964-709	9W	=	1,496	14,157	13,204	12,371	11,425	10,613						
2964-710	10W	-	1,632	15,560	14,466	13,515	12,469	11,574						
2964-711	11W	=	1,764	16,933	15,693	14,622	13,479	12,501	111					
2964-712	12W	=	1,891	18,278	16,887	15,693	14,453	13,395	-					
2964-713	13W	-	2,011	19,594	18,049	16,729	15,395	14,258						
2964-714	14W	=	2,129	20,883	19,178	17,731	16,305	15,091						
2964-715	15W	=	2,244	22,144	20,277	18,700	17,184	15,895						
2964-716	16W	=	2,358	23,400	21,371	19,665	18,058	16,695						
2964-717	17W	=	2,472	24,650	22,458	20,624	18,929	17,490						
2964-718	18W	=	2,584	25,895	23,541	21,579	19,794	18,282						
2964-719	1900		2,695	27,134	24,618	22,529	20,656	19,070						
2964-720	2000	-	2,801	28,308	25,690	23,475	21,513	19,854						
2904-721	2100	-	2,905	29,390	20,737	24,415	22,300	20,034						
2904-722	2200	-	3,009	32,035	27,010	25,551	23,214	21,410						
2964-724	24W	-	3,212	33,246	29,975	27,209	24,899	22,102	-					
2501721			5/212	55/2 10	23,525	2.7255		22,555						
	Processor m	odels in	table = 1,2	295; In this vie	ew = 231; Curr	ently selected	= 1							
Provisional Refere	ence-CPU	Worklo	ad Catego	ries C	opy Selected t	o Favorites	Table Co	ntrols						
Global Reference-C Select multiple proce	CPU is active; essors with Ct	double rl+Left	click any Click or S	processor ro Shft+LeftC	w to set it a lick; For flag	is a Provision explanation,	al Reference- position mou	CPU se on indica	ato					

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 z13** 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 2^{nd} LPAR configuration is created as an exact copy of the first. It is icon **#2** A, Rename it to **Proposed 2964-707**.</u>
- 3. Double-click the **Proposed 2964-707** icon **#2** to open the **LPAR Host and Partition Configuration** window for the **Proposed 2964-707** LPAR configuration.
- 4. Click <u>Specify Host</u> to open the LPAR Host window.
 - a) Set the *Family* to be z13/700.
 - b) Set the *Model* to 2964-N30/700 (this model has a maximum total of 30 CPs).
 - c) Leave z13 & z196 Power set to Full.
 - d) Leave *General Purpose CPs* set at **7** (recognized as a **2964-707**). There are no other CP types planned at this time.

LPAR Host [unti	tled]	zPCR	۲۶.7a
	LPAR Host Processor		
	Study ID: Not specified		
	#2 🛕 Proposed 2964-707		
	Description: Cloned from Current 2817-707		
	Family Model		
	-12/200 2064 N20/200		
	215/700 •		
	Power Mode		
	Full (Saving		
Configu	Ire Real CP Types		
GP	ZAAP ZIIP IFL I	10-	
7			
		14	

e) Click <u>Return</u>.

5. Click **<u>Partition Detail</u>** in the **Capacity Reports** group box.

Partition	Detail	Report		1	1		67				1				• ×
Graph Doc	umenta	ation													
	1	1													-000 10 7-
															ZPCK VO. /d
					Da	rtition	Det	ail R	on	ort					
				Base	ed on l	SPR Data	for IBM	7 Svs	tems	Processo	ors				
	Study ID: Not specified														
						#2 🛕 P	roposed	2964-	707						
					Descri	ption: Clone	ed from	Current	t 281	7-707					
				z13/700	Host	= 2964	-N30/	700	wit	h 7 CPs	: GP=7				
					8	Active P	artitic	ons: (GP=	8					
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															
Capacity for Z/OS on Z10 and later processors is represented with HiperDispatch turned ON Include Partition Identification Partition Configuration Capping Partition Capacity															
Include			Partition Id	entification	1			Parti	tion	Configura	ation	Ca	pping	Partition	Capacity
×	No.	Туре	Name	SCP	V	/orkload	Mode	LC	Ps	Weight	Weight %	1	ABS	Minimum	Maximum
	1	GP	CICSA	z/OS-2.1	Ave	rage	SHR	-	3	340	34.00%			3,440	4,336
	2	GP	BATCHB	2/05-2.1	Ave	age	SHR	-	2	195	3 20%			1,919	9,840
	Ave	age	SHR	-	2	12	1.20%			121	2,890				
V	5	GP	TESTIMS	Ave	rage	SHR		5	36	3.60%			361	7,155	
1	6	GP	CICSB	z/OS-2.1 Ave		Average			7	297	29,70%	6		2,922	9,840
V	7	GP	IMSA	z/OS-2.1	Ave	rage	SHR		5	73	7,30%	•		731	7,155
V	8	GP	TESTCICS	z/OS-2.1	Ave	rage	SHR		2	15	1.50%	6		152	2,890
Table Vie	Table View Controls Capacity Summary by Pool Capacity Summary by Pool Capacity Summary by Pool Capacity Stress of Capacity														
Display z	AAP/ZII	P/IFL Part	auons	0.000		CP Poo	ř.,	CPs	LPs	s LCPs	LCPs L	CP:RCF	P Weig	ghts Tot	als
@ With	Associa	ated GP	Separate b	y Pool		GP		7		8	33	4.71	4 1	,000	9,970
Show		GP Po	ol Specialty	Pools		zAAP									
All Page	artitions	s 🔽 G	P ZAAF	2 zl	IP	ZIIP									
@ Inch	udee On	ly.	ET TEL		12	ICE									
O Incio	ues on	iy	(L) # L			1	Totals	7		8 0	33				9,970
						L		392	_						an converse
Add SM	T Benefi	it to Cana	rity Results												
- Hou Diri	- and the fi		any measure												
Host Su	mmarv		odify SCP/Workle	oad LC	P Alter	natives	ZAA	P/zIIP	Loadi	ng					
							<u></u>			-					
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															
		to backers	undu Single dia	k a "selection (field" fo	dron-down	liet: De	while d	ick a	kewin fol	d" 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 36% capacity increase (**9,743 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 **z13** 2964-707 is 9,970 MIPS for this LPAR configuration. The effective capacity for the **z196 2817-707** is 7,164 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 **Ctrl** 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.</u>

Host Capa	ity Compar	rison												
3 🖬 🧕												zPCR V8.7a		
LPAR Host Capacity Comparison Report Capacity by Partition Type Current 2817-707: Created from EDF D:\Task 1.edf interval # 12 Proposed 2964-707: 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														
#1 2817-707 2817-M15/700: GP=7 #2 2964-707 2964-N30/700: GP=7 Capacity Net Change														
Partition Type	Partitions	Usable RCPs	LCPs	SHR LCP:RCP	Full Capacity	Partitions	Usable RCPs	LCPs	SHR LCP:RCP	Full Capacity	MIPS	% Delta		
GP	8	7	33	4.714	7,164	8	7	33	4.714	9,970	+2,806	+39.2%		
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		7,164	8	7	33		9,970	+2,806	+39.2%		
Comparison R	eport by Par	tition			Sh	ow capacity a	is							
Minimum (Capacity	Maxir	num Capacit	y	j	Full CPC) Sing	le-CP			Consider Marg	in-of-Error		
		For significa	int configura Upgra	tion changes ding the pro	, capacity con cessor family i	nparisons sho s considered	ould be cons a significant	idered to ha t configuratio	ve a +/-5% on change	margin-of-erro	r			

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 36% or more.

III Par	tition Capacity	y Comparison				-		-	-	-								
0)																	zPCR V8.7a
	Partition Capacity Comparison Report Based on Partition Minimum Capacity Current 2817-707; Created from EDF Di-U,Task Ledf Interval # 12 Proposed 2964-707; Cloned from Current 2817-707 Capacity basis: 2094-701 @ 593.00 MPS for a shared single-partition configuration Capacity for z/OS on z10 and later processors is represented with HiperDispatch turned ON Partition Identification A Current 2817-707 A Proposed 2964-707 Capacity																	
	Partition Identification #1 Current 2817-707 #2 Proposed 2964-707 Capacity List of All Included Partitions 2817-415/7001 GP=7 #2 2964H30/7001 GP=7 Net Change With Unique ID Metrics Detablic D Defaultion D Def																	
	With Unique ID Metrics Partition Definition Minimum Partition Definition													on		Minimum		%
Туре	Name	SCP	Workload	LP#	Mode	LCPs	Weight%	CAP	Capacity	LP#	Mode	LCPs	Weight	Weight%	CAP	Capacity	MIPS	Delta
GP	BATCHA	z/OS-2.1	Average	1	SHR	7	19.50%		1,383	1	SHR	7	195	19.50%		1,919	+536	+38.8%
GP	BATCHB	z/OS-2.1	Average	2	SHR	2	3.20%		232	2	SHR	2	32	3.20%		324	+92	+39.7%
GP	CICSA	z/OS-2.1	Average	3	SHR	3	34.00%		2,464	3	SHR	3	340	34.00%		3,440	+976	+39.6%
GP	CICSB	z/OS-2.1	Average	4	SHR	7	29.70%		2,106	4	SHR	7	297	29.70%		2,922	+816	+38.7%
GP	IMSA	z/OS-2.1	Average	5	SHR	5	7.30%		525	5	SHR	5	73	7.30%		731	+206	+39.2%
GP	TESTB	z/OS-2.1	Average	6	SHR	2	1.20%		8/	6	SHR	2	12	1.20%		121	+34	+39.1%
GP	TESTUCS	z/05-2.1	Average		SHR	2 5	3.60%		250	8	SHD	2	36	3 60%		361	+43	+39.4%
Chan	OP TESTERS z/OS-2.1 Average 2 1.50% 102 143 +.39.4% GP TESTERS z/OS-2.1 Average 8 SHR 5 3.60% 259 8 SHR 5 3.60% 361 +102 +39.4% Change Controls																	
Input fi	elds have white	background; S	ingle-click a "seli	ection field	for drop	p-down list	; Double click	a "key-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	
<u>Opti</u>	mize Shared Logical CP Con	figuration
Select Partitio	n Types	
GP GP	ZAAP ZIIP IF	L 🕅 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.

Image: Partition Capacity Comparison Report Based on Partition Minimum Capacity Description Capacity Comparison Report Based on Partition Minimum Capacity Current 8317-707: Created from DFDP UL, Task 1:ed interval # 12 Proposed 2964-707: Cloned Single-partition configuration Capacity for z/OS on 210 and later processors is represented with HiperDispatch turned ON Partition Identification Urb All Included Partitions ** Carent 8317-207: Capacity East 2004-701 (2005 on 210 and later processors is represented with HiperDispatch turned ON Type Name SCP. Via.78 Carent 8317-207: Capacity East 2004-701 (2005 on 210 and later processors is represented with HiperDispatch turned ON Type Name SCP. Via.78 Partition Definition Minimum Partition Definition Minimum Partition Definition Minimum Partition Definition Minimum Partition 2005 (2007) Capacity (2007) Capacity (2007) Cpc BATCHA Z(DS-2:1 Average 2 95.90% 2,383 1 SHR 2 195.90% 2,305 <th< th=""><th>L</th><th>Parti</th><th>tion Capacity</th><th>/ Comparison</th><th></th><th>1</th><th>-</th><th>-</th><th></th><th>-</th><th></th><th>-</th><th></th><th>-</th><th></th><th></th><th></th><th></th><th></th><th>- 0 X</th></th<>	L	Parti	tion Capacity	/ Comparison		1	-	-		-		-		-						- 0 X
Partition Capacity Comparison Report Based on Partition Minimum Capacity Based on Partition Minimum Capacity Capacity for 2014 2014 2014 2014 2014 2014 2014 2014	(3 🗄	M 🕑																	zPCR V8.7a
Partition Identification List of Al Included PartBons #1 Current 2817-707 #2 Partition Definition Capacity Wet Unique UN Wetrics Capacity III P# Partition Definition Capacity Wetrice Capacity III P# #2 Capacity III P# Partition Definition Capacity IIII P# Mode LCPs #2 Capacity IIIII Partition Definition Capacity IIIIII Main IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII						,	Capa Capacity	Ci acity basis for z/OS	Partitio Base Propose 2094-701 on 210 and	on Cap d on Pa 07: Creat d 2964-7 @ 593.0 later pro	acity Com rtition Min ed from EDF D 07: Cloned fro 0 MIPS for a cessors is re	imum Ca imum Ca :\Task : m Current shared s presente	n Repo apacity 1.edf inte 2817-70 single-pa d with H	rval # 12 7 Intition co HiperDisp	onfiguration atch turner	i d ON				
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$			Partitio List of All	n Identificati Included Partiti	on ons		į	#1 🛕 🙎	urrent 2817 817-M15/700:	<u>-707</u> GP=7				#2	Propose 2964-N3	ed 2964-707			Cap Net C	acity hange
Type Name SCP Workbad LP# Mode LCPs Weight% CAP Capacity LP# Mode LCPs Use Jassis	1	With Unique ID Metrics Partition Definition Minimum % Type Name SCP Workload LP# Mode LCPs Capacity LP# Mode LCPs Weight% CAP Capacity LP# Mode LCPs Weight% CAP Capacity Minimum Minimum %																		
GP BATCHA Z/OS-2.1 Average 1 SHR 7 19.50% 1.383 1 SHR 2 195 19.50% 2.047 +664 +48.0% GP BATCHA Z/OS-2.1 Average 2 SHR 2 3.20% 2.32 SHR 1 52 SSW 3.20% 3.20% 2.22 2 SHR 1 53 3.40% 3.60% 2.22 2 SHR 1 53 3.40% 3.60% 2.464 3 SHR 3 3.400% 3.60% 3.60% 3.40% 3.40% 3.40% 3.40% 3.40% 3.40% 3.40% 3.40% 3.40% 3.60%		Туре	Name	SCP	Workload	LP#	Mode	LCPs	Weight%	CAP	Capacity	LP#	Mode	LCPs	Weight	Weight%	CAP	Capacity	MIPS	Delta
GP BATCHB Z/OS-2.1 Average 2 SHR 2 3.20% 22 2 SHR 1 32 3.20% 336 +104 +44.8% GP CICSA z/OS-2.1 Average 3 3400% 242 2 SHR 1 32 3.20% 336 +104 +44.8% GP CICSA z/OS-2.1 Average 4 SHR 3 3400% 3.56% 1 735 948 3 3400% 3.56% +1.012 +44.8% GP CICSB z/OS-2.1 Average 5 SHR 7 29.70% 22.55 SHR 3 340 7.00% 3.118 +1.012 +44.8% GP TESTB z/OS-2.1 Average 6 SHR 2 1.20% 87 6 SHR 1 122 1.20% 126 +39 +44.8% 6 SHC 1 105 1.50% 157 +48 +44.4%		GP	BATCHA	z/OS-2.1	Average	1	SHR	7	19.50%		1,383	1	SHR	2	195	19.50%		2,047	+664	+48.0%
GP CICSA z/OS-2.1 Average 3 SHR 3 34,00% 2,464 3 SHR 3 3400 3,569 +1,105 +44,85% GP CICSA z/OS-2.1 Average 4 SHR 7 2,106 4 SHR 3 29,70% 2,116 4 SHR 3 29,70% 3,118 +1,012 +44,85% GP IMSA z/OS-2.1 Average 5 SHR 5 7,30% 525 S SHR 1 73 7,30% 766 +241 +45,9% 6% TESTIB z/OS-2.1 Average 7 SHR 2 1,20% 87 6 SHR 1 12 1,20% 126 +39 +44,40% 6% GP TESTIMS z/OS-2.1 Average 7 SHR 2 1,50% 109 7 SHR 1 15 1,50% 157 +44 +44,0% GP TESTIMS z/OS-2.1 Average 8 SHR 5 3,60% 259 8 SHR 1 36		GP	P BATCHA z/05°2.1 Average 1 SHR 7 19.50% 1,383 1 SHR 2 195 19.50% 2,047 +664 +48.09% P BATCHB z/05°2.1 Average 2 SHR 2 3.20% 232 2 SHR 1 32 3.20% 336 +104 +44.8% P CLCSA z/05°2.1 Average 3 SHR 3 34.00% 2,464 3 SHR 3 340 34.00% 3,569 +1,105 +44.8%																	
GP CICSB z/OS-2.1 Average 4 SHR 7 29.70% 2,106 4 SHR 3 227 29.70% 3,118 +1,012 +48.81% GP IMSA z/OS-2.1 Average 5 SHR 5 7,30% 525 5 SHR 1 73 7,30% 7,60% <t< td=""><th></th><td colspan="14">P BATCHE z/OS-2.1 Average 2 SHR 2 3.20% 232 2 SHR 1 32 3.20% 336 +104 +44.8% SHR 3 SHR 3 34.00% 2,464 3 SHR 3 34.00% 2,464 3 SHR 3 34.00% 3,569 +1,105 +44.8% P CICISA z/OS-2.1 Average 4 SHP 7 29.70% 2106 4 SHP 3 297 29.70% 3118 +1.012 +48.1% 14.81%</td></t<>		P BATCHE z/OS-2.1 Average 2 SHR 2 3.20% 232 2 SHR 1 32 3.20% 336 +104 +44.8% SHR 3 SHR 3 34.00% 2,464 3 SHR 3 34.00% 2,464 3 SHR 3 34.00% 3,569 +1,105 +44.8% P CICISA z/OS-2.1 Average 4 SHP 7 29.70% 2106 4 SHP 3 297 29.70% 3118 +1.012 +48.1% 14.81%																		
GP TESTB z/OS-2.1 Average 6 SHR 2 1.20% 87 6 SHR 1 12 1.30% 1/60% 1/44.8% GP TESTB z/OS-2.1 Average 6 SHR 2 1.20% 87 6 SHR 1 12 1.20% 1/26 +39 +44.8% GP TESTCICS z/OS-2.1 Average 7 SHR 2 1.50% 109 7 SHR 1 15 1.50% 157 +48 +44.0% GP TESTIMS z/OS-2.1 Average 8 SHR 5 3.60% 259 8 SHR 1 36 3.60% 378 +119 +45.9%		3P CICSA z/05-2.1 Average 3 SHR 3 34.00% 2,464 3 SHR 3 34.00% 3,569 +1,105 +44.8% GP CICSB z/05-2.1 Average 4 SHR 7 29,70% 2,106 4 SHR 3 247 29,70% 3,118 +1,012 +48.1%																		
OF TESTID 4/05*2.1 Average 0 arm 2 1.00% 10 1 12 1.00% 120 T-35 T+44.0% GP TESTIMS z/OS*2.1 Average 7 SHR 2 1.50% 109 7 SHR 1 15 1.50% 157 +44 +44.0% 444.0%		GP	IMSA	z/OS-2.1	Average	5	SHR	5	7.30%		525	5	SHR		/3	7.30%		/66	+241	+45.9%
GP TESTING 2/05-2-1 Average 8 SHR 5 3.60% 259 8 SHR 1 36 3.60% 378 +119 +45.9%	1	CP	TESTO	2/05-2.1	Average	7	SHD	2	1.20%		100	7	SHD		12	1.20%		157	+39	+44.8%
		GP	TESTINS	z/OS-2.1	Average	8	SHR	5	3.60%		259	8	SHR	1	36	3.60%		378	+119	+45.9%
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 Input fields have white background: Single-click a "selection field" for droo-down list: Double click a "key-in field" to goen.	Ē	Change Co	e Controls mmit Changes ds have white	Und	o Changes	Optin For si	nize SHR gnificant	LCPs configurat Upgrac	ion changes, o ling the proces : Double dick	apacity c	omparisons sh v is considered field" to open.	ould be co l a significa	nsidered ant config	to have a juration ch	+/-5% mary	gin-of-error			Consider M	argin-of-Error

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

Partition Capacity Comparison Report Based on Partition Minimum Capacity Current 2817-707; Coreated from EDF D-N, Task Ledfiniterval # 12 Proposed 2964-707; Coreated from Current 2817-707 Capacity basis; 2004-701 @ 593.00 MIPS for a shared single-partition configuration Capacity for z/OS on z10 and later processors is represented with HiperDispatch turned ON	zPCR V8.7a													
Partition Capacity Comparison Report Based on Partition Minimum Capacity Current 2817-707: Created from DFD FD., Task Ledfinterval # 12 Proposed 2964-707: Cloned from Current 2817-707 Capacity Dais: 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 2964-707 Cc List of All Included Partitions #1 2817-M15/700: GP=7 #2 #2 Proposed 2964-707 Ref	acity Change													
With Unique ID Metrics Partition Definition Minimum Partition Definition Minimum % Type Name SCP Workload LP# Mode LCPs Weight% CAP Capacity LP# Mode LCPs Weight% CAP Capacity LP# Mode LCPs Weight% CAP Capacity MIPS Delta														
ppe Name SCP Workload LP# Mode LCPs Weight% CAP Capacity LP# Mode LCPs Weight% CAP Capacity LP# Mode LCPs Weight% CAP Capacity Delta b BATCHA z/OS-2.1 Average 1 SHR 7 19.59% 1,383 1 SHR 2 195 19.59% 2,028 +645 +46.5% BATCHA z/OS-2.1 Average 2 SHR 2 232 3.29% 3.233 +101 +42.5%														
P BATCHB z/OS-2.1 Average 2 SHR 2 3.20% 232 2 SHR 2 3.20% 333 +101 +43.5%														
BATCHA Z/OS-2.1 Average 1 SHK / 19.30% 1,383 1 SHK 2 195 19.30% 2,028 +645.4% P BATCHB Z/OS-2.1 Average 2 SHR 2 322 SHR 2 323 +101 +43.5% D CFCH V 2.02% 2.02% 2.02% 2.02% 3.20% 3.33 +101 +43.5%														
P BATCHB z/OS-2.1 Average 2 SHR 2 3.20% 232 2 SHR 2 3.20% 333 +101 +43.5% P CICSA z/OS-2.1 Average 3 SHR 3 34.00% 2,464 3 SHR 3 34.00% 3,536 +1,072 +43.5%														
GP CICSB z/OS-2.1 Average 4 SHR 7 29.70% 2,106 4 SHR 3 297 29.70% 3,089 +983	+46.7%													
GP IMSA z/OS-2.1 Average 5 SHR 5 7.30% 525 5 SHR 2 73 7.30% 759 +234	+44.6%													
GP TESTB z/OS-2.1 Average 6 SHR 2 1.20% 87 6 SHR 2 1.2 1.20% 125 +38	+43.7%													
GP TESTCICS z/OS-2.1 Average 7 SHR 2 1.50% 109 7 SHR 2 15 1.50% 156 +47	+43.1%													
GP TESTIMS z/OS-2.1 Average 8 SHR 5 3.60% 259 8 SHR 2 36 3.60% 374 +115	+44.4%													
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 to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor family is considered to have a +/-5% margin-of-error Upgrading the processor	largin-of-Error													

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 realize the intended 36% capacity increase when considering the $\pm 5\%$ Margin-of-Error.

Partition	Margin-of-Error				- 24	and the second		zPCR V8.7a
	,	C Capacity basi Capacity for z/OS	Margin- Partiti urrent 2817-707: Cre Proposed 2964 s: 2094-701 @ 593 on z10 and later p	of-Error Consideration Minimum Capace ated from EDF D:\Task 1 -707: Cloned from Current 8.00 MIPS for a shared s processors is represented	tion ity .edfinterval # 12 2817-707 ingle-partition c d with HiperDisp	2 onfiguration patch turned O	'n	
	Dautitie	on Identification				#2 🛕 Propos	ed 2964-707	
	Faruur		1	Projected	Projec	ted	Projected n	ninus 5%
Туре	Name	SCP	Workload	Capacity	Capacity	% Delta	Capacity	% Delta
GP	BATCHA	z/OS-2.1	Average	1,383	2,028	+46.6%	1,927	+39.3%
GP	BATCHB	z/OS-2.1	Average	232	333	+43.5%	316	+36.2%
GP	CICSA	z/OS-2.1	Average	2,464	3,536	+43.5%	3,360	+36.4%
GP	CICSB	z/OS-2.1	Average	2,106	3,089	+46.7%	2,935	+39.4%
GP	IMSA	z/OS-2.1	Average	525	759	+44.6%	721	+37.3%
GP	TESTB	z/OS-2.1	Average	87	125	+43.7%	119	+36.8%
GP	TESTCICS	z/OS-2.1	Average	109	156	+43.1%	148	+35.8%
GP	TESTIMS	z/OS-2.1	Average	259	374	+44.4%	356	+37.5%
	For sig	nificant configurati Upgradi	on changes, capacity ing the processor fam	comparisons should be con ily is considered a significar	sidered to have a It configuration d	+/-5% margin-c hange	of-error	

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 **10,401 MIPS** (**9,881 MIPS** when considering the ±5% Margin-of-Error), both of which are greater than the **9,743** MIPS objective.

In	Host Margin-of-Erro	or				
(3 0					zPCR V8.7a
		Ма	rgin-of-Error Co	nsideration		
			LPAR Host Ca	pacity		
	c	Current 2817-70 Propose Capacity basis: 2094-701 apacity for z/OS on z10 and	07: Created from EDF D: d 2964-707: Cloned fro @ 593.00 MIPS for a later processors is rep	\Task 1.edfinterval m Current 2817-707 shared single-partitic presented with Hiper	# 12 n configuration Dispatch turned ON	
		#1 🛕 Current 2817-707		#2 🛕 Propos	ed 2964-707	
	Partition	Projected	Proje	cted	Projected m	ninus 5%
	Туре	Capacity	Capacity	% Delta	Capacity	% Delta
	GP	7,164	10,401	+45.2%	9,881	+37.9%
	ZAAP					
	ZIIP					
	IFL					
ŀ	Total	7.164	10.401	+45.2%	9.881	+37.9%
	100	1,201	10,101		5,001	10/15/10
	For sign	ificant configuration changes, ca Upgrading the process	apacity comparisons sho sor family is considered a	uld be considered to hav a significant configuratio	ve a +/-5% margin-of-er n change	rror

- 10. 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→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 **9,743 MIPS** overall objective and 36% for each partition even when considering a potential \pm 5% Margin-of-Error.

*** End of Task 6 ***

Additional Analysis To Try

A. Evaluate a z13/600 as an alternative

Browsing the *z/OS-2.1 Multi-Image LSPR Capacity Ratios* table, find the IBM z13/600 processor that can provide the required capacity increment using the z/OS <u>Average</u> workload.

Analysis Steps

- From the *Advanced-Mode* window, double click on General Purpose CPs
 to open the *LSPR Multi-Image Processor Capacity Ratios* table.
- Find an IBM z13/600 processor that can provide the required 9,743 MIPS. (tip right click for a list of the Families, then select via Scroll to IBM, then select z13/600)

For the purposes of this exercise, choose the **2964-612**, which appears to have a bit more capacity than we require, (e.g. **10,070 MIPS** for Average etc). Remember that capacity values in the Multi-Image LSPR table represent typical (or average) partition configurations, and therefore can only generalize on capacity.

orkload Graph H	lelp							
🕥 🖬 🤇								zPCR V8
		,	/05-2.11	SPR Data (0	1/14/2015)			
			,		-, - ,,			
		LSP	R Multi-	Image Ca	pacity Rat	ios		
	2-2-3-000000		Gene	ral Purpos	se CPs			
~	Values a	re appli	cable for a	z/OS; repres	entative of z	/VM and Lini	X	
Caj	pacity basis: 20	94-701	@ 559./	JZ MIPS TOP	a typical muit	-partition co	onfiguration	
Capacit	y for z/OS on z	210 and	later pro	cessors is rep	presented wr	th HiperDispa	atch turned O	N
					LSPR V	Vorkload Ca	tegory	
Processor	Features	Flag	MSU	Low	Low-Avq	Average	<u>Avg-High</u>	<u>High</u>
3/600								
964-601	1W	=	134	1,121	1,094	1,068	1,017	970
964-602	2W	=	249	2,186	2,099	2,019	1,894	1,785
964-603	ЗW	=	363	3,223	3,074	2,938	2,743	2,573
964-604	4W	=	471	4,234	4,020	3,827	3,564	3,336
964-605	5W	=	577	5,225	4,943	4,690	4,361	4,075
964-606	6W	-	678	6,197	5,843	5,528	5,134	4,793
964-607	7W	-	777	7,151	6,722	6,342	5,885	5,489
964-608	8W	=	874	8,087	7,579	7,132	6,613	6,164
964-609	9W	-	968	9,005	8,416	7,899	7,320	6,819
964-610	10W	-	1,056	9,905	9,232	8,644	8,005	7,454
964-611	11W	=	1,141	10,789	10,028	9,368	8,671	8,071
964-612	12W	100	1,224	11,655	10,805	10,070	9,317	8,668
2964-613	13W	1	1,305	12,505	11,563	10,752	9,944	9,248
964-614	14W	=	1,384	13,339	12,302	11,414	10,552	9,811
964-615	15W	=	1,460	14,157	13,023	12,057	11,142	10,356
964-616	16W	=	1,535	14,971	13,739	12,695	11,727	10,896
964-617	17W	-	1,610	15,779	14,450	13,328	12,307	11,431
2964-618	18W	=	1,684	16,583	15,156	13,956	12,881	11,960
		3232	1.000			14,000		
	Processor m	nodels in	table = 1,2	295; In this vie	ew = 231; Curr	ently selected	= 1	
							-022	
Provisional Refer	ence-CPU	Worklo	ad Catego	ries	opy Selected t	o Favorites	Table Cor	ntrois
				20 B			1.0	8

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** 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 (A)**, Rename it **Proposed 2964-612**</u>
- 3. Double-click the **Proposed 2964-612 *** icon to open the **LPAR Host and Partition Configuration** window for the **Proposed 2964-612** LPAR configuration.
- 4. Click Specify Host
 - a) Set the *Family* to **z13/600**.
 - b) Set the *Model* to 2964-N30/600 (this model has a maximum of 30 CPs).
 - c) Leave z13 and z196 Power set to Full.
 - d) Set General Purpose CPs to 12 (recognized as a 2964-612).

LPAR Host [untitled]	
	zPCR V8.7a
LPAR Host Processor	
Study ID: Not specified	
#3 🛕 Proposed 2964-612	
Description: Cloned from Current 2817-707	
Family Model	
z13/600 - 2964-N30/600 -	
Power Mode	
Full O Saving	
Configure Real CP Types	
GP ZAAP ZIIP IFL	ICF
z13 zero GP configurations require zEC12/400	

e) Click Return

5. Click <u>Partition Detail</u>. In the *Capacity Reports* group box, review the capacity for the General Purpose CP pool.

Partition Detail Report	-	18	1		100			2							
Graph Documentation	_				-	-	_	_	_	_					
😋 🥨 🖬 📴 🥝												zPCR V8.7a			
			Pa	rtition	Deta	il Rep	ort								
		Based	d on I	SPR Data	for IBM z	System	s Processo	ors							
				Study	D: Not sp	ecified									
				#3 🛕 F	roposed 2	964-612									
			Descr	iption: Clon	ed from Cu	urrent 281	17-707								
	z13/600 Host = 2964-N30/600 with 12 CPs: GP=12 8 Active Partitions: GP=8														
8 Active Partitions: GP=8 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															
· · · · · · · · · · · · · · · · · · ·	Capacity for a	2/US ON 210 a	ind la	ter proces	sors is re	presente	ia with Hi	pervispatch	turnea	ON					
Include	Partition Ide	entification				Partition	Configura	ation	Cap	oping	Partition	Capacity			
✓ No. Type	Name	SCP	V	Vorkload	Mode	LCPs	Weight	Weight %	×	ABS	Minimum	Maximum			
📝 1 GP	CICSA	z/OS-2.1	Ave	rage	SHR	3	340	34.00%			2,704	2,704			
2 GP	BATCHA	z/OS-2.1	Ave	rage	SHR	7	195	19,50%	•		2,274	6,141			
₩ 3 GP	Image: Weight of the state of the														
V 4 GP	V 4 GP TESTB z/OS-2.1 Average SHR 2 12 1.20% 195 1,803 V 5 GP TESTIMS z/OS-2.1 Average SHR 5 36 3,60% 546 4,464 V 5 GP TESTIMS z/OS-2.1 Average SHR 5 36 3,60% 546 4,464														
GP 5 GP	✓ 5 GP TESTIMS z/OS-2.1 Average SHR 5 36 3.60% □ 546 4.464 ✓ 6 GP CICSB z/OS-2.1 Average SHR 7 297 29,70% □ 3.348 6,141														
7 GP	Image GP CICSB z/OS-2.1 Average SHR 7 297 29.70% 3,348 6,141 Image 7 GP IMSA z/OS-2.1 Average SHR 5 73 7.30% 943 4,464														
🔽 8 GP	V 7 GP IMSA z/OS-2.1 Average SHR 5 73 7.30% 943 4,464 V 8 GP TESTCICS z/OS-2.1 Average SHR 2 15 1.50% 943 4,464														
				0.2000.000.000											
Table View Controls				Capacity	Summar	y by Poo		1		-					
Display zAAP/zITP/TEL Partiti	ions		a de la compañía de la		R	eal	DED	SH	R	Sum	of Cap	acity			
				CP Poo		Ps LP	s LCPs	LCPs L	CP:RCP	Weig	jhts Tota	als			
With Associated GP	Separate by	Y POOI		GP		12	8	33	2,750	1	,000	10,648			
Show GP Pool	Specialty	Pools		ZAAP											
All Partitions GP	ZAAP	zII	>	ZIIP											
Tochudos Ophy	1111			ICE											
Includes Only	- nr			10	Totals	12	8 0	33				10,648			
								1. (1997)							
Add CAST Dans Birlin Council	Deer (here)														
Add SMT Benefit to Capacit	ty Results														
	if contraction				-										
Host Summary Mod	ITY SCP/WORKIC		Alteri	natives	ZAAP	ZIIP LOad	ing								
For sig	nificant config	uration change	s, cap	acity compa	risons sho	uld be cor	nsidered to	have a +/-5%	% margir	n-of-erro	r.				
	Up	grading the pro	cesso	r family is co	insidered a	a significa	nt configura	ation change							
Note: One or more partition we	eights indicate	more capacity t	han c	an be provi	ded with L	CPs define	ed; Unusabl	le capacity is	redistrib	uted to t	he rest of the	pool			
Input fields have white backgrou	nd: Sinale-did	k a "selection fie	d" fo	r drop-dow	list; Dou	ble click a	"key-in fiel	d" to open.							

- a) Note that 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 (10,648 MIPS vs 9,671 requirement). Click <u>Return</u> 2 times (or click the Double Return) to get back to <u>Advanced-Mode Control</u> Panel window.
- c) Select both the **2817-707 #1** and the **2964-612 #3** configurations and then click **Compare** icon on the **Advanced-Mode_Control Panel** window.

 d) Click <u>Minimum Capacity</u>. Note that now all partitions are seeing more than the required 35% capacity increase over the old 2817-707 configuration except for CICSA.

Consider Margin of First Consider Margin of First Consider Margin of First Consider Margin of First	1	Parti	tion Capacity	/ Comparison	A														L		23
Partition Capacity Comparison Report Based on Partition Minimum Capacity Based on Partition Minimum Capacity Based on Partition DEP PLYTask LedTinerval ± 12 Proposed 2964-712: Concert 291-700 Capacity for z004-701 @ 504-701 Capacity for z004-701 @ 504-702 Capacity for z004-701 @ 504-702 With Unique ID Metrics Arrent 281-700 Capacity for z005 @ 504-712 Capacity for z005 @ 504-712 Name SCP Workload PP # Mode CPs Partition Definition Minimum Minimum Capacity (CPs Capacity for z005-21 Net colspan="2">Capacity MiPS Partition Definition Minimum Capacity Colspan="2">Minimum Partition Definition Minimum Minimum Capacity Colspan="2">Partition Definition Minimum Minimum Capacity Colspan="2">Minimum Fait Colspan="2">Capacity MiPS Partition Definition Minimum Minimum Capacity Colspan="2">Partition Definition <th></th> <td>3 🖿</td> <td>) 🕖</td> <td></td> <td>zPCR</td> <td>V8.7a</td>		3 🖿) 🕖																	zPCR	V8.7a
Partition Identification With Unique ID Metrics							Capa Capacity	Ci acity basis for z/OS	Partitic Base urrent 2817-70 Propose 2094-701 on z10 and	on Cap d on Pa 07: Create d 2964-7 @ 593.0 later pro	acity Com rtition Min ed from EDF D 12: Cloned fro 0 MIPS for a cessors is re	imum Ca imum Ca :\Task m Current i shared s presente	A Repo apacity 1.edf inte 2817-70 single-pa d with H	rt rval # 12 7 rtition co liperDispa	nfiguratior atch turne	d ON					
With Unique ID Metrics Partition Definition Mnimum Partition Definition Mnimum % Type Name SCP Workload IP# Mode LCPs Weight% CAP Capacity MIPS Definition GP BATCH4 z/OS-2.1 Average 1 SFR 7 J353 SFR SFR 7 J353 SFR			Partitio List of All	n Identificati Included Partiti	ions		ŝ	#1 🛕 🙎	urrent 2817- 17-M15/700:	- <u>707</u> GP=7				#3	Propose 2964-N3	ed 2964-712			Cap Net C	acity hange	
Type Name SCP Workload IP # Mode LCPs Weight % CAP Capacity Mips Uses GP BATCH8 z/OS-21 Average 1 SHR 7 195 95.0% 1,383 1 SHR 7 195 95.0% 4,241 +91.7 44.4% GP BATCH8 z/OS-21 Average 2 SHR 2 3.20% 2.32 3.20% 411 +179 +77.2% GP CICSA z/OS-21 Average 3 SHR 3 94.00% 2,274 +991 +46.4% GP CICSA z/OS-21 Average 4 SHR 7 297 29.70% 2,348 +1,244 +9.97% GP TISST z/OS-21 Average 5 SHR 5 7.30% 525 5 SHR 7 297 29.70% 2,348 +1,24.4 +9.97% 6 SHR 5 1.20% 877 <th>1</th> <td>_</td> <td colspan="15">With Unique ID Metrics Partition Definition Partition Definition Minimum % ype Name SCP Workoad LP≢ Mode LCP# Mede LP# Mode LP#</td>	1	_	With Unique ID Metrics Partition Definition Partition Definition Minimum % ype Name SCP Workoad LP≢ Mode LCP# Mede LP# Mode LP#																		
GP BATCHA z/OS-2.1 Average 1 SHR 7 195 195 195 2,274 +491 +464,474 GP BATCHA z/OS-2.1 Average 2 3,20% 2,222 SHR 2 3,20% 4,11 +177,47% GP CICSA z/OS-2.1 Average 3 SHR 3 34,00% 2,464 3 SHR 3 340 94,000% 2,704 +240 +9,7% GP CICSA z/OS-2.1 Average 4 SHR 7 29,70% 2,320 411 +177,4% 477,4% 49,7% 49,7% 414 +79,7% 2,106 SHR 7 29,7% 3,348 +1,24,2 +59,0% 2,97,7% 525 SHR 5 72 7,30% 943 +118 +79,6% 6% TESTB z/OS-2.1 Average 7 SHR 2 12 1,20% 195 +108 +108,3% 6% 6% FS 3,60% 259 8 SHR 5 36 3,60% 546 +287	1	Туре	Vitro Unique II or View III or View IIII or View III or View III or View IIII or View III or View IIII or View IIIII or View IIII or View IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII																		
GP CISA z/OS-2.1 Average 2 SHR 2 3.0% 2.2 2 SHR 2 3.0% 4.11 +1/1/3<		GP	pp rvame social rvame noue curs vegins rvame rvame <thrvam< th=""> rvame rvam</thrvam<>																		
GP CLSAH 2/05-2.1 Average 3 3+0.078 2/104 3 3+0.078 2/104 7+240 7		GP	BATCHA z/OS-2.1 Average 1 SHR 7 19.50% 1,383 1 SHR 7 195 19.50% 2,274 4991 +64.4% BATCHA z/OS-2.1 Average 2 SHR 2 2.0% 2.32 2 SHR 2 3.20% 4.11 +17.9 +77.2% CICSA z/OS-2.1 Average 3 SHR 3 34.00% 2.464 SHR 3 34.00% 2.704 +24.0 +9.7% CICSA z/OS-2.1 Average 4 SHR 7 196 4 SHR 3 34.00% 2.704 +24.0 +9.7% CICSA z/OS-2.1 Average 4 SHR 7 196 4 SHR 3 34.00% 2.704 +24.0 +9.7% CICSA z/OS 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2																		
GP LCSD 2/JOS-2.1 Average 5 SHR 7 29/JOS 2/JOS 3/JOS 1/242 1/29/JOS GP IXSA z/OS-2.1 Average 5 SHR 5 7.30% 5/JOS 5/JOS 7/JOS 2/JOS 3/JOS 1/242 1/29/JOS 1/25/JOS 5/JOS 5/JOS 7/JOS 3/JOS 1/242 1/29/JOS 1/25/JOS 5/JOS 5/		GP	P BATCHE z/OS-2.1 Average 2 SHR 2 3.20% 232 3.20% 411 +17.9 +77.29% P CICSA z/OS-2.1 Average 3 SHR 3 34.00% 2,464 3 SHR 3 34.00% 2,704 +249 +9,7% P CICSA z/OS-2.1 Average 4 SHR 7 23.0% 2,704 +240 +9,7% P CICSA z/OS-2.1 Average 4 SHR 7 2,016 4 SHR 7 29,70% 3,348 +1,242 +59,0%																		
GP TEST 4/05-2-1 Average 6 SHR 2 1.20% 87 6 SHR 2 1.20% 195 +106 +124.1% GP TESTCICS z/OS-2-1 Average 7 SHR 2 1.20% 195 +106 +124.1% GP TESTCICS z/OS-2-1 Average 7 SHR 2 1.50% 22.7 +118 +108.3% GP TESTCICS z/OS-2.1 Average 8 SHR 5 3.60% 259 8 SHR 5 3.60% 546 +28.7 +110.8% Change Controls Consider Margin-of-Error 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 Consider Margin-of-Error		CP	CICSA z/0S-2.1 Average 3 SHR 3 34.00% 2,464 3 SHR 3 340 34,00% 2,704 +240 +9,7% P CICSB z/0S-2.1 Average 4 SHR 7 29.70% 2,348 +1,242 +59,0% P IMSA z/0S-2.1 Average 4 SHR 7 297 29,70% 3,348 +1,242 +59,0% P IMSA z/0S-2.1 Average 5 SHE 5 73 7,30% 3,348 +1,242 +59,0%																		
GP TESTCICS z/OS-2.1 Average 7 SHR 2 1.50% 109 7 SHR 2 1.50% 227 +108.3% GP TESTCICS z/OS-2.1 Average 8 SHR 5 3.60% 259 8 SHR 5 3.60% 546 +287 +108.3% GP TESTIMS z/OS-2.1 Average 8 SHR 5 3.60% 259 8 SHR 5 3.60% 546 +287 +110.8% Change Controls Consider Margin-of-Error Detemperations should be considered to have a +/-5% margin-of-error Updating the processor family is considered a significant configuration change Consider Margin-of-Error		GP	TESTR	2/05-2.1	Average	6	SHR	2	1 20%		87	6	SHR	2	12	1 20%		195	+108	+12	4 19/0
CP TESTIMS z/OS-2.1 Average 8 SHR 5 3.60% 259 8 SHR 5 36 3.60% 546 +287 +110.8% Change Controls Consider Margin-of-Error Consider Margin-of-Error Consider Margin-of-Error Consider Margin-of-Error Updating the processor family is considered a significant configuration change		GP	TESTCICS	z/05-2.1	Average	7	SHR	2	1.50%		109	7	SHR	2	15	1.50%		227	+118	+10	8.3%
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		GP	TESTIMS	z/OS-2.1	Average	8	SHR	5	3.60%		259	8	SHR	5	36	3.60%		546	+287	+11	0.8%
		Change Co	: Controls mmit Changes	: Und	o Changes	Opti For s	mize SHR ignificant	LCPs configurat Upgrad) ion changes, c	apacity c	omparisons sh r is considered	ould be co l a significa	insidered ant config	to have a uration ch	+/-5% mar ange	gin-of-error			Consider M	argin-of-E	irror

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.

III Part	ition Capacity	/ Comparison					-											
0	d 🕑																	zPCR V8.7a
					Capa Capacity	Cu acity basis for z/OS	Partitic Base Irrent 2817-70 Propose 2094-701 on z10 and	on Cap d on Pa 7: Creat d 2964-7 @ 593.0 later pro	acity Com artition Min ed from EDF D '12: Cloned fro 00 MIPS for a occessors is re	imum C imum C :\Task om Current shared presente	A Repo apacity 1.edf inte 2817-70 single-pa d with F	rt 12 7 rtition cc liperDispa	nfiguration atch turner	i on				
	Partitio List of All	n Identificati Induded Partiti	on ons		į	#1 🛕 🔒	urrent 2817- 17-M15/700:	- 707 GP=7				#3	2964-N3	d 2964-712 0/600: GP=12			Cap Net C	acity hange
-	With U	nique ID Metric	s		Pai	tition De	finition		Minimum			Partiti	on Definitio	n		Minimum		%
Туре	ype Name SCP Workload LP# Mode LCP Weight Weight CAP Capacity MIPS Delta 2 BATCHA z/OS-2.1 Average 1 SHR 7 19.50% 1,383 1 SHR 3 195 19.50% 2,155 +772 +55.8% BATCHA z/OS-2.1 Average 1 SHR 7 19.50% 1,383 1 SHR 3 195 19.50% 2,155 +772 +55.8%																	
GP	P BATCHA z/OS-2.1 Average 1 SHR 7 19,50% 1,383 1 SHR 3 195 19,50% 2,155 +772 +55.8% JP BATCHB z/OS-2.1 Average 2 SHR 2 3.20% 232 2 SHR 1 32 3.20% 354 +122 +52.6%																	
GP	P BATCHB z/05-2.1 Average 2 SHR 2 3.20% 232 2 SHR 1 322 3.20% 354 +122 +52.6% iP CICSA z/05-2.1 Average 3 SHR 3 34.00% 2,464 3 SHR 6 340 34.00% 3,688 +1,224 +49.7%																	
GP	P CICSA 2/05-2.1 Average 2 SHR 2 3:40.0% 2,464 3 SHR 6 340 34.00% 3,688 +1,224 +49.7%																	
GP	IMSA	2/05-2.1	Average	5	SHR	5	7 30%		525	5	SHR	1	73	7 30%		3,230	+282	+53.7%
GP	TESTB	7/05-2.1	Average	6	SHR	2	1.20%		87	6	SHR	1	12	1,20%		133	+46	+52.9%
GP	TESTCICS	z/05-2.1	Average	7	SHR	2	1.50%		109	7	SHR	1	15	1.50%		166	+57	+52.3%
GP	TESTIMS	z/OS-2.1	Average	8	SHR	5	3.60%		259	8	SHR	1	36	3.60%		398	+139	+53.7%
Chang	Change Controls Commit Changes Undo Changes Coptimize 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																	
Input fie	lds have white	background; S	ingle-dick a "sele	ection field	for drop	-down list	; Double click	a "key-in	field" to open.	8					_			

f) The CICSA partition has 49.7% more capacity and we have more than met our 35% 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 48.5% more capacity).

Lul Part	ition Capacity	/ Comparison	and the second			-	1.00	-1					-				
6	n 🕐																zPCR V8.7a
					Capa Capacity	C acity basi for z/OS	Partitic Base urrent 2817-70 Propose s: 2094-701 on z10 and	on Cap d on Pa 07: Creat d 2964-7 @ 593.0 later pro	acity Com artition Min ed from EDF D 12: Cloned fro 00 MIPS for a occessors is re	parison imum Ca :\Task m Current shared s presente	A Repo apacity 1.edf inte 2817-70 single-pa d with H	rt 7 7 rtition co liperDispa	nfiguration Itch turned	d on			
	Partitio List of All	n Identificati Included Partiti	on ons		ŝ	#1 🛕 🗧	urrent 2817 817-M15/700:	- 707 GP=7				#3 🛃	Propose 2964-N30	ed 2964-712 D/600: GP=12		Cap Net C	acity hange
	With U	nique ID Metric	s		Pai	tition De	finition		Minimum			Partitio	on Definitio	n	Minimum		%
Туре	Type Name SCP Workload LP# Mode LCPs Weight% CAP Capacity MIPS Delta GP BATCHA z/OS-2.1 Average 1 SH 7 19.50% 1,383 1 SHR 3 195 19.50% 2,138 +755 +54.6%																
GP	GP BATCHA z/OS-2.1 Average 1 SHR 7 19.50% 1,383 1 SHR 3 195 19.50% 2,138 +755 +54.6% GP BATCHB z/OS-2.1 Average 2 SHR 2 3.20% 232 2 SHR 2 32 3.20% 351 +119 +51.3%																
GP	GP BATCHB z/05-21 Average 2 5HR 2 3.20% 232 2 5HR 2 32.0% 351 +119 +51.3%																
GP	or and b 2/07-21 Average 2 3/R 2 3.00% 22/64 3 RR 2 3.00% 32/07 113 13/113 13/15/11																
GP	CICSB	z/OS-2.1	Average	4	SHR	7	29.70%		2,106	4	SHR	5	297	29.70%	3,226	+1,120	+53.2%
GP	IMSA	z/OS-2.1	Average	5	SHR	5	7.30%		525	5	SHR	2	73	7.30%	801	+276	+52.6%
GP	TESTB	z/OS-2.1	Average	6	SHR	2	1.20%		87	6	SHR	2	12	1.20%	132	+45	+51.7%
GP	TESTCICS	z/OS-2.1	Average	7	SHR	2	1.50%		109	7	SHR	2	15	1.50%	164	+55	+50.5%
GP	TESTIMS	z/OS-2.1	Average	8	SHR	5	3.60%		259	8	SHR	2	36	3.60%	395	+136	+52.5%
Chang	Change Controls Commit Changes Undo Changes Optimize SHR LCPs Consider Margin-of-Error For significant configuration changes, capacity comparisons should be considered to have a +/-5% margin-of-error Upgrading the processor family is considered a significant configuration change																

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 >35% delta on the projected minus 5%. more capacity.

Partitio	on Margin-of-Error							
3								zPCR V8.7a
			Margin-	of-Error Considera	tion			
			Partiti	on Minimum Capac	ity			
		Q	urrent 2817-707: Cre	ated from EDF D:\Task 1	.edfinterval # 1	2		
			Proposed 2964	-712: Cloned from Current	2817-707			
		Capacity basis	: 2094-701 @ 593	0.00 MIPS for a shared s	ingle-partition	configuration		
		Capacity for 2/05	on 210 and later p	rocessors is represente	a with HiperDis	patch turned C	NN .	
	Dautiti	on Identification		#1 Current			ed 2964-712	
	Faruu		1	2017-707	Proje	cted	Projected n	ninus 5%
Туре	Name	SCP	Workload	Capacity	Capacity	% Delta	Capacity	% Delta
GP	BATCHA	z/OS-2.1	Average	1,383	2,138	+54.6%	2,031	+46.9%
GP	BATCHB	z/OS-2.1	Average	232	351	+51.3%	333	+43.5%
GP	CICSA	z/OS-2.1	Average	2,464	3,660	+48.5%	3,477	+41.1%
GP	CICSB	z/OS-2.1	Average	2,106	3,226	+53.2%	3,064	+45.5%
GP	IMSA	z/OS-2.1	Average	525	801	+52.6%	760	+44.8%
GP	TESTB	z/OS-2.1	Average	87	132	+51.7%	125	+43.7%
GP	TESTCICS	z/OS-2.1	Average	109	164	+50.5%	156	+43.1%
GP	TESTIMS	z/OS-2.1	Average	259	395	+52.5%	375	+44.8%
	For sig	Initicant configuratio	on changes, capacity	comparisons should be con ily is considered a significar	isidered to have	a +/-5% margin-o banga	of-error	
		opgrau	ng the processor fall	iny is considered a significal	it configuration c	nunge		

- 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 10,866 MIPS, which is more than the 9,743 MIPS objective.
- i) Click two <u>**Return**</u> buttons to close the windows.

While we won't execute the following in this lab, there are some things to consider since this **z13 2964-612** has more capacity than is required. Perhaps a **z13 2964-611** could be an option, although getting 36% more capacity with a \pm 5% Margin-of-Error is unlikely. If the partitions have **zIIP/zAAP eligible workload content**, perhaps their GCP requirement / weight could be reduced making a 2964-611 an option closer to the GCP capacity requirement.

In addition, this sub-capacity model has "more & slower" engines than the **z196 2817-707** and the **z13 2964-707** option (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 **z Systems** configuration alternatives to achieve desired capacity.

*** End of Additional Analysis A ***

B. Add an IFL to the z13 2964-707 Configuration for the Linux workload Add zIIPs to the z13 2964-707 Configuration for the CICSA workload

Analysis Steps

- 1. Single-click on the **Proposed 2964-707** icon **#2** on the **Advanced-Mode Control Panel** window to select it.
- 2. Click the <u>**Clone</u>** toolbar button. A 4th LPAR configuration is created as an exact copy of the second. Its icon **#4** A, Rename it **Proposed 2964-707 with IFL**.</u>
- 3. Double-click the **Proposed 2964-707 w IFL zIIPs #4** icon to open the **LPAR Host and Partition Configuration** window for the **Proposed 2964-707 w IFL zIIPs** LPAR configuration.
- 4. Click Specify Host
 - a) Add 1 IFL CP.
 - b) Add 2 zIIP CPs.

LPAR Host [c:\SHARE Seattle Analysis B with 2SMTs.zpcr]			23
		zP(CR V8.7
LPAR Host Processor			
Study ID: Not specified			
#4 🛕 Proposed 2964-707 w IFL zIIPs			
Description: Cloned from Proposed 2964			
Family Model			
z13/700 - 2964-N30/700	•		
Power Mode			
Full			
Configure Real CP Types			
GP ZAAP ZIIP IFL	IC	0F	
	0	-]	

c) Click <u>Return</u>.

- 5. From the *LPAR Host and Partition Configuration* window, click <u>IFL</u> in the *Define Partitions* group box.
- 6. From the *LPAR Partition Definition* window, edit the partition name (from IFL-01) by double-clicking the name field to open it and entering text to "TESTLNX", and hitting enter.

- artition	Definitio	n									
Documenta	tion										
01		0									zPCR V8.7
			Ва	Def sed on LSF	R Data for IBM Study ID: Not sp	z Systems Pr pecified	rocessors				
				#4 🔼	Proposed 2964-	707 w IFL zIIP	s				
				Descrip	tion: Cloned from	Proposed 296	4				
		z13	/700 Host =	= 2964-N	130/700 with	h 10 CPs:	GP=7 z	IIP=2 IF	L=1		
			9 /	Active Pa	rtitions: GP=	=8 zIIP=0	IFL=1		,		
			LP Identifica	ation			LP Conf	iguration		Сар	ping
Include	No.	Туре	Name	SCP	Workload	Mode	LCPs	Weight	Weight %	¥	ABS
			TESTERS	2/10	Average/Lv	SHIK		100	100.00 /8		_
						Partition Surr	nmary by	Pool			
		-			1	Partition Sum	Real	Pool DED	SHR	P-PCP	Sum of
Name pre	fix IFL					Partition Sum	Real CPs	Pool LPs DED LCPs	SHR LCPs LC	P:RCP	Sum of Weights
Name pre	fix IFL					Partition Sum CP Pool GP zAAP	Real CPs 7	Pool LPs DED LCPs 8	LCPs LC 18	P:RCP 2.571	Sum of Weights 1,000
Name pre Move F	fix IFL				-	CP Pool GP zAAP zIIP	Real CPs 7 2	Pool LPs LCPs 8	LCPs LC 18	P:RCP 2.571	Sum of Weights 1,000
Name pre Move F	fix IFL Partition				-	CP Pool GP ZAAP ZIIP IFL	Real CPs 7 2 1	Pool LPs DED LCPs 8	LCPs LCC 18	P:RCP 2.571 1.000	Sum of Weights 1,000 100
Name pre Move F	fix IFL Partition				-	CP Pool GP ZAAP ZIIP IFL ICF Totals	Real CPs 7 2 1 3	Pool LPs LCPs 8	LCPs LC 18	P:RCP 2.571 1.000	Sum of Weights 1,000 100
Name pre Move F	fix IFL Partition	8				CP Pool GP ZAAP IIP IFL ICF Totals	Real CPs 7 2 1 ; 10	Pool LPs DED LCPs 8	SHR LCPs LC 18 1 19	P:RCP 2.571 1.000	Sum of Weights 1,000 100
Name pre Move F	fix IFL Partition	Ione	Delete			CP Pool GP ZAAP ZIIP IFL ICF Totals	Real CPs 7 2 1 5 10	Pool LPs DED LCPs 8 1 9 0	LCPs LC 18 19	P:RCP 2.571	Sum of Weights 1,000 100

Click Return.

- From the LPAR Host and Partition Configuration window, click <u>GP / zllP</u> in the Define Partitions group box.
- From the LPAR Partition Definition select the CICSA partition, then click on the z/OS only <u>zIIP</u> in the Associate with Selected GP group box. This will create the associated zIIP partition for CICSA. Assign 2 LCPS to the zIIP partition.

ш	Partition	Defin	ition												x
D	ocumenta	tion													
(3 1													zPCR	V8.7
			713	De E	fine Ger tased on LSPF #4 Descript = 2964-N	R Data fo Study ID Proposed	Purpo r IBM z S Not speci 2964-707 d from Pro	se ystem fied w IFL posed	Parti ns Proce zIIPs 2964 25: GP	tions essors	5 [P=2) IFL=1			
				1	0 Active Pa	rtitions	5: GP=8	zII	P=1 I	FL=1					
1				Partition Ide	entification			P	artition	n Config	urati	on	Cap	ping	
	Include	No.	Туре	Name	SCP	Workle	ad M	ode	LCPs	Weig	ht	Weight %	*	ABS	1
	1	1	GP	CICSA	z/OS-2.1	Average	: SH	R	3	340)	34.00%			
			zIIP	CICSA	z/OS-2.1	Average	SH	R	2	100	0	100.00%			
		2	GP	BATCHA	z/OS-2.1	Average	: SH	R	2	195	5	19.50%			
		3	GP	BATCHB	z/OS-2.1	Average	e SH	R	2	32	2	3.20%			E
	V	4	GP	TESTB	z/OS-2.1	Average	e SH	R	2	12	2	1.20%			
		5	GP	TESTIMS	z/OS-2.1	Average	e SH	R	2	36	5	3.60%	1200 C		
		6	GP	CICSB	z/OS-2.1	Average	e SH	R	3	293	7	29.70%			
		7	GP	IMSA	z/OS-2.1	Average	e SH	R	2	7.	3	7.30%			-
							Partition	Sumi	mary by	Pool					
			f	ssociate with	Selected GP		CP Pool		Real CPs	LPs	DED LCPs	LCPs L	IR .CP:RCP	Sum of Weight	ts
	Name pre	fix G	P	z/US only	z/VM only		GP		7	8		18	2.571	1,00	00
	Moura P	artitio		ZAAP	IFL		ZAAP								
	HOVER	aruuo		z/OS only			zIIP		2	1		2	1.000	10	00
		Y	$\mathbf{\nabla}$	ZIIP			IFL		1	1		1	1.000	10	00
							ICF								
	Totals 10 10 0 21														
															_
	Add GP		Clone	Delete											
In	out fields ar	e whit	e backgrou	ind; Single click	election field for	or drop-do	wn list; Do	uble c	lick entry	/ fields to	o oper	n.			

Click Return.

9. 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 **15,083 MIPS**.

Partitio	on Detail	Report													
Graph Do	ocumenta	ation													
		NUM													
99	HTM CS	v 🕐													zPCR V8.7
					Par	tition	Det	ail R	ep	ort					
				Based	on L	SPR Data f	for IBN	I z Sys	tems	Processo	Irs				
						Study II	D: Not :	specifie	d						
					#4	Propose	d 2964	-707 w	IFL z	IIPs					
					Descr	iption: Clon	ed from	n Propo	sed 2	964					
			z13/70	Host = 2	964-	N30/70	0 wit	th 10	CPs	6: GP=7	zIIP=2 I	FL=1			
			121-112	10 Ac	tive I	Partition	is: GF)=8 z	IIP	=1 IFL=	=1				
			Capacity	basis: 2094-7	01 @	593.00 MI	IPS for	a sha	red s	ingle-part	ition configu	iration	~		
	,		Capacity for	z/OS on z10 a	nd late	er process	iors is i	represe	ented	a with Hip	perDispatch	turned	ON		
Include		_	Partition Id	entification				Parti	tion	Configura	tion	Сар	ping	Partition	Capacity
×	No.	Туре	Name	SCP	W	orkload	Mode	2 10	Ps	Weight	Weight %	×	ABS	Minimum	Maximum
	1	GP	CICSA	z/OS-2.1	Avera	age	SHR	_	3	340	34.00%			3,347	4,219
V		ZIIP	CICSA	z/OS-2.1	Avera	age	SHR	_	2	100	100.00%			3,147	3,147
7	2	GP	BATCHA	z/OS-2.1	Avera	age	SHR	_	2	195	19.50%			2,022	2,962
	3	GP	BATCHB	z/OS-2.1	Avera	age	SHR	-	2	32	3.20%			332	2,962
	4	GP	TESTB	z/OS-2.1	Avera	age	SHR		2	12	1.20%			124	2,962
	V 5 GP TESTIMS z/OS-2.1 Average SHR 2 36 3.60% 373 2,962														
	Image: Weight of the second														
	7	GP	IMSA	z/05-2.1	Avera	age	SHR		2	73	7.30%			757	2,962
	0	GP	TESTCICS	2/05-2.1	Avera	ige	CHD		2	15	1.50%			1 747	2,902
N.	3	IFL	TESTENA	2/111	Avera	sge/Lv	SHK	_	-	100	100.00%		-	1,/4/	1,/4/
Table V	line Con	trala				Capacity	Summ	ary by	Pool						
Table V	new Con	trois			- 1			Real		DED	SHR	6	Sum	of Car	pacity
Display	zAAP/zII	P/IFL Part	titions			CP Pool		CPs	LPs	LCPs	LCPs LC	P:RCP	Weig	hts Tot	als
🔘 Wi	ith Associa	ated GP	Separate b	y Pool		GP	- 10	7	-	8	18	2.571	1.	.000	10.189
Show		GP Pc	ol Specialty	Pools	-11	ZAAP									
	-					zIIP		2		1	2	1.000		100	3,147
	Partitions		ZAA	V 211		IFL		1		1	1	1.000		100	1,747
) Inc	dudes On	ly	V IFL	ICF		ICF									
	Totals 10 10 0 21 15,083														
					l							_			
Add C	Add SMT Boands to Cranyibu Donular														
AUU SI	Add SMI Benefit to Capacity Results														
Curre			16 000 111 11				<u> </u>	0/100							
Host S	Host Summary Modify SCP/Workload LCP Alternatives zAAP/zIIP Loading														
		For	significant confid	uration changes	, capa	city compar	isons st	hould b	e con	sidered to	have a +/-5%	margin	-of-error	r.)	
			Up	grading the pro	cessor	family is con	nsidere	d a sign	ifican	t configura	tion change				
Input fields	have whit	te backgro	ound; Single-clic	k a "selection fie	ld" for	drop-down	list; Do	ouble d	ick a '	key-in field	d' to open.				

Click Return

10. From the *Partition Detail Report* window, click the <u>Add SMT Benefit to Capacity</u> <u>Results</u> button to open the *SMT Benefit* dialog and the *Global SMT* window.

Be aware that SMT is currently supported only by the SCPs listed below. SMT Benefit will not be realized by other SCPs until such support is available. - z/OS-2.1 (zIIP CPs only) - z/VM-6.3 (IFL CPs only) Native Linux does not currently support SMT. zPCR currently does not enforce the SMT support rules based on the SCP specified. SMT Benefit can be defined regardless of the SCP selected for the zIIP or IFL partition	1	SMT Benefit
SMT Benefit will not be realized by other SCPs until such support is available. - z/OS-2.1 (z]IP CPs only) - z/VM-6.3 (IFL CPs only) Native Linux does not currently support SMT. zPCR currently does not enforce the SMT support rules based on the SCP specified. SMT Benefit can be defined regardless of the SCP selected for the z]IP or IFL partition	~	Be aware that SMT is currently supported only by the SCPs listed below.
 z/OS-2.1 (zIIP CPs only) z/VM-6.3 (IFL CPs only) Native Linux does not currently support SMT. zPCR currently does not enforce the SMT support rules based on the SCP specified. SMT Benefit can be defined regardless of the SCP selected for the zIIP or IFL partition 		SMT Benefit will not be realized by other SCPs until such support is available.
- z/VM-6.3 (IFL CPs only) Native Linux does not currently support SMT. zPCR currently does not enforce the SMT support rules based on the SCP specified. SMT Benefit can be defined regardless of the SCP selected for the zIIP or IFL partition		- z/OS-2.1 (zIIP CPs only)
Native Linux does not currently support SMT. zPCR currently does not enforce the SMT support rules based on the SCP specified. SMT Benefit can be defined regardless of the SCP selected for the zIIP or IFL partition		- z/VM-6.3 (IFL CPs only)
zPCR currently does not enforce the SMT support rules based on the SCP specified. SMT Benefit can be defined regardless of the SCP selected for the zIIP or IFL partition		Native Linux does not currently support SMT.
SMT Benefit can be defined regardless of the SCP selected for the zIIP or IFL partition		zPCR currently does not enforce the SMT support rules based on the SCP specified.
		SMT Benefit can be defined regardless of the SCP selected for the zIIP or IFL partition.

Click OK.

) 😢 🥑			zPCR V8
		SMT Benefit	
	S	et by Partition T	уре
		On Return, Set All Partitions of Type	SMT Benefit
	1	zIIP	25%
1		TEI	20%
V		ис	

You'll note that the *SMT Benefit* is defaulted to 25% for zIIPs and 20% for IFLs. In this case since the customer has no experience with SMT we'll the defaults. They are also expecting to support Linux under z/VM in the near future. Click <u>OK</u> on the information dialog and click <u>Return</u> on the *Global SMT* window. This will apply an *SMT Benefit* to the *Minimum* and *Maximum Capacity* result for each zIIP and IFL partition.

III Partiti	ion Deta	il Report													• <u>×</u>
Graph D	ocumer	ntation													
			T.												
96	HTM	ČSV 🥑													zPCR V8.7
1.0000000000000000000000000000000000000															
					Par	tition	Detai	Re	por	t					
				Ba	sed on LS	SPR Data	or IBM z	Syste	ms Pr	ocessors					
						Study I	D: Not spe	cified							
					#4 🔁	Propose	d 2964-70	7 w IF	L zIIPs						
					Descri	iption: Clon	ed from Pr	opose	d 2964	•					
			z13/	700 Host =	= 2964-	N30/70	0 with	10 C	Ps: 0	SP=7 zII	P=2	IFL=1			
			-	10	Active I	Partition	s: GP=	B ZII	[P=1	IFL=1					
			Capac	ity basis: 209	4-/01 @ :	593.00 MI	PS for a	snare	a sing	e-partition	config	uration	ION		
	1		Dautition Id	ontification	o ano lace	er process	Dautiti	esen	ceu w	ation	Spacen	cumet		Dautition	Canacity
Include	Ne	Tunn	Name	sco	Madda	and Ma	de LICO	a lu	nigur	Weight 0/	Ca	ADC	SMT	Mainum	Maulaum
	110.	_ Type	<u>Name</u>	SUP	Workid	ad Mo		s w	eight	Weight %	-	ABS	Benefit	Minimum	Maximum
	1	GP	CICSA	2/05-2.1	Average	SH			340	34.00%			259/	3,347	4,219
	2	CP	RATCHA	2/05-2.1	Average	SH CH	n.	2	100	10.00%			25%	3,933	3,933
	2	GP	BATCHR	2/05-2.1	Average	SH	R	2	32	3.20%				332	2,962
	4	GP	TESTB	z/OS-2.1	Average	SH	R	2	12	1.20%	一日			124	2,962
	5	GP	TESTIMS	z/05-2.1	Average	SH	R	2	36	3.60%	m			373	2,962
	6	GP	CICSB	z/OS-2.1	Average	SH	R	3	297	29.70%				3,079	4,443
	7	GP	IMSA	z/OS-2.1	Average	SH	R	2	73	7.30%				757	2,962
	8	GP	TESTCICS	z/OS-2.1	Average	SH	R	2	15	1.50%				156	2,962
	9	IFL	TESTLNX	z/VM	Average	/LV SH	R	1	100	100.00%			20%	2,097	2,097
						Capacity	Summary	by P	ool						
Table	View Co	ontrols			[[1	SH SH	iD.	1		- 1 0-	and the
Displa	y zAAP/2	IIP/IFL Pa	artitions			CD Deal	Real	1.00	DED		CD-DCC	Sum	of SM		als
@ V	Vith Asso	ciated GP	Separate	e by Pool		CP POOI	CPS	LPS 0	TLUP	S LUPS L	CP:RCP	vveig		nent	10.100
Chau		CD	Deel Cessia	ltu Deele		GP	/	8		18	2.5/	1 1,	000		10,189
Show		GP	Pool Specia	ity Pools	_ 11	TID	2		E	2	1.000	1	100	25%	3 9 3 3
A (0)	Il Partitio	ns 🔽	GP zł	VAP 🔽	ZIIP	TEL	1	- 1		1	1.000	5	100	20%	2.097
0.1	ocludes (oly	CZ TE		ICE	ICF					1.000	1 2		2070	
0.	neddeb e					То	tals 10	10	1	0 21					16,219
(LEde	Chill Dave	- C+ C	Constant Days da		- I chrt n				Col	hal carr nas		Coh	Chet C		
Hide SMT Benefit from Capacity Results Clear all SMT Benefit values when Hiding Global SMT Benefit Show SMT SCP Restrictions															
-															
Host	Host Summary Modify SCP/Workload LCP Alternatives ZAAP/zIIP Loading														
		Fo	r significant cor	figuration char	nges, capac	city compar	isons shou	d be d	conside	red to have	a +/-5	% margi	n-of-error	8	
		When disp	playing default	SMT Benefit val	ue, margin	-of-error is	+/-10%;	arger	SMT B	enefit values	s, marg	in-of-err	or will be	greater	
	Upgrading the processor family is considered a significant configuration change														
		Lite La 1	and the l	Adve Barle M	6-147.6	1 1	L.L. D. 1			In Coldina					
Input field	s have w	hite backg	round; Single-	click a "selection	n held" for	drop-down	iist; Doub	e click	a key	In field to	open.				
Capacity V	alues inc	iude SMT	Benefit for one	or more zIIP ar	nd/or IFL pa	artitions									

Note that with the *SMT Benefit* applied, the zIIP capacity has increase by 25%, from **3,147 MIPS** to **3,933 MIPS**. The IFL capacity has increased by 20% from **1,747 MIPS** to **2,097 MIPS**, and the total capacity has increased from **15,083 MIPS** to **16,219 MIPS**.

11. Close all windows. On the *Advanced-Mode Control Panel* window, select the two configurations #1 and #4 (hold the **Ctrl** key and click on both) and click the <u>Compare</u>

tool bar icon. Click on <u>Minimum Capacity</u>, and then click <u>Consider Margin-of-</u> <u>Error</u> to see the *Partition Margin-of-Error* window.

Partition	Margin-of-Error									
0								zPCR V8.7		
			Margin-g	of-Error Considera	tion					
			Plangin-C	- Litor Considera	ition .					
			Partico	on Minimum Capac	лу					
		Curr	rent 281/-/1/: Crea	ted from EDF C:\Task 1	Ledf interval # 1 Proposed 2964	2				
		Capacity basis:	2094-701 @ 593.	00 MIPS for a shared s	ingle-partition (configuration				
	Ca	apacity for z/OS o	n z10 and later pr	ocessors is represente	d with HiperDis	patch turned (N			
#1 Current #4 Proposed 2964-707 w IFL zIIPs										
	Partition	n Identification		** 2817-717	Proje	cted	Projected n	ninus 5%		
Type	Name	SCR	Workload	Projected -	Capacity	% Delta	Capacity	% Delta		
CP	RATCHA	2/05-2.1	Average	1 283	2 022	146 294	1 920	129.994		
GP	BATCHR	7/05-2.1	Average	232	332	+43.1%	315	+35.8%		
GP	CICSA	z/OS-2.1	Average	2.464	3.347	+35.8%	3.179	+29.0%		
zIIP	CICSA	z/OS-2.1	Average		3,933		3,737			
GP	CICSB	z/OS-2.1	Average	2,106	3,079	+46.2%	2,925	+38.9%		
GP	IMSA	z/OS-2.1	Average	525	757	+44.2%	719	+37.0%		
GP	TESTB	z/OS-2.1	Average	87	124	+42.5%	118	+35.6%		
GP	TESTCICS	z/OS-2.1	Average	109	156	+43.1%	148	+35.8%		
GP	TESTIMS	z/OS-2.1	Average	259	373	+44.0%	355	+37.1%		
IFL	TESTLNX	z/VM	Average/LV		2,097		1,992			
			4							
	For sign	ificant configuration	changes, capacity c	comparisons should be con	sidered to have a	a +/-5% margin-	of-error			
	when displaying	Upgrading	the processor famile	v is considered a significar	at configuration of	, margin-or-error hange	will be greater			
	Upgrading the processor family is considered a significant configuration change									
Proposed 296	4-707 w IFL zIIPs C	Capacity Values inclu	de SMT Benefit for o	ne or more zIIP and/or IF	L partitions					

Verify that all of our partitions will still meet our objective of > 36% with the addition of the zIIP and IFL partitions, (consider 35.6% and 36.8% as rounding up to 36%). The one exception is the **CICSA** partition, which is only reaching 29% capacity improvement. Since we expect this partition to start offloading work to the zIIP LCPs, 29% may be acceptable.

11. Close all windows. On the *Advanced-Mode Control Panel* window, select the two Close all windows. From the *Advanced-Mode Control Panel* window, click *LPAR*

Host Capacity Summary Report is tool bar icon. This window 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 Comparison Summary						000	0 X
🖸 🖬 🔤 🥑							zPCR.V8.7
Capacity ba Capacity for z/O	LPAR Host Capacity Comparis isis: 2094-701 @ 593.00 MIPS for a shared of on z10 and later processors is represented	on Report single-partiti ad with Hipe	on configurat rDispatch turr	ion ned ON			
LPAR Configuration	on	Q	Full CPC Cap	pacity (based	l on usable R	CP count)	
Identity Hardware	SMT	GP	ZAAP	zIIP	IFL	ICF	Total
#1 2 Current 2817-717 2817-M15/700: GP=7		7,164.0					7,164.0
#2 A Proposed 2964-707 2964-N30/700: GP=7		10,401.2	n/s				10,401.2
#3 A Proposed 2964-612 2964-N30/600: GP=12		10,866.3	n/s				10,866.3
#4 A Proposed 2964-707 w IFL 2964-N30/700: GP=7 zIIP	=2 IFL=1 🖌	10,188.8	n/s	3,933.5	2,096.7		16,218.9
Content Control	Show capacit	/ as					
Show Capacity Deltas Based on "Curre Based on "Curre Differential	ent 2817-717" Full C Single	ж -сР					
For significant configur, When displaying default SMT B Upgr	ation changes, capacity comparisons should be co Senefit value, margin-of-error is +/-10%; Larger ading the processor family is considered a signific	onsidered to h SMT Benefit va ant configurat	ave a +/-5% m alues, margin-ol ion change	argin-of-error f-error will be g	reater		
Position mouse on LPAR configuration to display description							
Check in SMT column indicates Capacity Values include SMT Benefit	for one or more zIIP and/or IFL partitions						

13. 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.

Solution of the second sec	Host Capacity Comparison	Summary								
CPAR Host Capacity Omparison Report Capacity basis: 2094-701 @ 593.00 MPS for a shared single-partition configuration. Capacity for z/00s on 20 and later processors is republicable with Higher/Despatch turned ON Total Single-CP Capacity (base: on usable RCP count) Identity Hardware SMT GP ZAAP ZIIP IFL ICF Total 1023.4 IP ICF Total 1,023.4 IP ICF Total 204-P70 2644430/700: GP=7 1,023.4 IP ICF Total 2064-930 2644430/700: GP=7 1,023.4 IP IP ICF Total Proposed 2964-707 2644430/700: GP=7 1,023.4 IP IP ICF Total Incremental Show Capacity as Incremental Incremental Show Capacity Delta Show capacity as Incremental Incremental Incremental Show Capacity Delta Incremental <th colsp<="" th=""><th>O 🖬 🗟 🥑</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th><th>zPCR V8.7</th></th>	<th>O 🖬 🗟 🥑</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th>zPCR V8.7</th>	O 🖬 🗟 🥑								zPCR V8.7
Image: Proposed 2964-707 Sit74115/700: GP=7 SMT GP ZAAP ZIIP IFL ICF Total 20 Proposed 2964-612 2964-N30/700: GP=7 1485.9 n/s Image: Proposed 2964-612 2964-N30/700: GP=7 1485.9 n/s Image: Proposed 2964-612 905.5 n/s Image: Proposed 2964-612 2064-N30/700: GP=7 ZIIP=2 IFL=1 Image: Proposed 2964-612 905.5 n/s 1,966.7 2,096.7 1,621.9 24 Proposed 2964-707 2664-N30/700: GP=7 ZIIP=2 IFL=1 Image: Proposed 2964-612 1,966.7 2,096.7 1,621.9 25 Proposed 2964-612 Section momental Show capacity Ember Show capacity Comparisons Should be considered to have a +/-SYs magnin-of-error wile section momental Image: Proposed 296.475.9 1,621.9 26 Proposed 296.4707 State on "Current 2817-717" Image: Proposed 296.475.9 Image: Proposed 296.475.9 1,621.9 Image: Proposed 296.475.9 1,621.9 27 Find CPC Image: Proposed 296.476.9 Image: Proposed 296.476.9 <th></th> <th>LPAR Host C Capacity basis: 2094-701 @ 593. Capacity for z/OS on z10 and later pr</th> <th>apacity Compariso .00 MIPS for a shared s rocessors is represente</th> <th>on Report single-partition d with Hiper</th> <th>on configurati Dispatch turr</th> <th>ion ned ON</th> <th></th> <th></th> <th></th>		LPAR Host C Capacity basis: 2094-701 @ 593. Capacity for z/OS on z10 and later pr	apacity Compariso .00 MIPS for a shared s rocessors is represente	on Report single-partition d with Hiper	on configurati Dispatch turr	ion ned ON				
Identity Hardware SMT GP ZAAP ZIIP IFL ICF Total #1 & Current 2817-717 2817-4115/7001: GP=7 1,023.4 1,025.5 n/s 1,025.5 n/s 1,025.5 1,621.9 1,621.9 1,621.9 1,621.9 1,621.9 1,621.9 1,621.9 1,621.9 1,621.9 1,621.9 1,621.9<		LPAR Configuration	100 - C	1 8	Single-CP Ca	pacity (base	d on usable R	(CP count)	97	
#1 ▲ Current 2817-717 2817-M15/700: GP=7 1,023.4 1,023.4 #2 ▲ Proposed 2964-707 2964-N30/700: GP=7 1,485.9 n/s 1,485.9 #3 ▲ Proposed 2964-707 2964-N30/700: GP=7 905.5 n/s 905.5 #4 ▲ Proposed 2964-707 w IFL 2964-N30/700: GP=7 z IIP=2 IFL=1 ✓ 1,455.5 n/s 1,966.7 2,096.7 1,621.9 Content Control Show capacity as Implemental Implementa	Identity	Hardware	SMT	GP	ZAAP	zIIP	IFL	ICF	Total	
#2 A proposed 2964-707 2964+N30/700: GP=7 1,485.9 n/s 1,485.9 #3 Proposed 2964-612 2964+N30/600: GP=12 905.5 n/s 905.5 #4 Proposed 2964-707 w IFL 2964+N30/700: GP=7 zIIP=2 IFL=1 ✓ 1,455.5 n/s 1,966.7 2,096.7 1,621.9 Image: Content Control Show capacity as Image: Content control Show capacity as Image: Content control Full CPC Image: Content control image: Considered to have a +/-5% margin-of-error will be greater Upgrading the processor family is considered a significant configuration changes, capacity comparisons should be considered to have a +/-5% margin-of-error will be greater Upgrading the processor family is considered a significant configuration to display description Protocom usue on LPAR configuration to display description Description mouse on LPAR configuration to display description Check in SMT column indicates Capacity Values indude SMT Benefit for one or more zIIP and/or IFL partitions Upgrading the processor family is considered a significant configuration thange	#1 A Current 2817-717	2817-M15/700: GP=7		1,023.4					1,023.4	
#3 A Proposed 2964-612 2964+N30/600: GP=12 905.5 n/s 905.5 1,966.7 905.5 #4 A Proposed 2964-707 w IFL 2964+N30/700: GP=7 zIIP=2 IFL=1 ✓ 1,455.5 n/s 1,966.7 2,096.7 1,621.9 Content Control Show capacity as Incremental Full CPC Full CPC Single-CP	#2 A Proposed 2964-707	2964-N30/700: GP=7		1,485.9	n/s				1,485.9	
#4 ▲ Proposed 2964-707 w IFL 2964+N30/700: GP=7 zIIP=2 IFL=1 ✓ 1,455.5 n/s 1,966.7 2,096.7 1,621.9 Content Control Show capacity as ● Ful CPC ● Ful CPC ● Show capacity Deltas ● Incremental Ful CPC ● Show capacity comparisons should be considered to have a +/-5% margin-of-error will be greater Upgrading the processor family is considered a significant configuration change significant configuration change Upgrading the processor family is considered a significant configuration change Upgrading the processor family is considered a significant configuration change Upgrading the processor family is considered a significant configuration change Upgrading the processor family is considered a significant configuration change Upgrading the processor family is considered a significant configuration change Upgrading the processor family is considered a significant configuration change Upgrading the processor family is considered a significant configuration change Upgrading the processor family is considered a significant configuration change Upgrading the processor family is considered to have a +/-5% margin-of-error will be greater Upgrading the processor family is considered to have a +/-5% margin-of-error will be greater Upgrading the processor family is considered to have a +/-5% margin-of-error will be greater Upgrading the processor family is considered to have a +/-5% margin-of-error will be greater Upgrading the procesesor family is considered to have a +/-5%	#3 A Proposed 2964-612	2964-N30/600: GP=12		905.5	n/s				905.5	
Content Control Content Control Show capacity Delts Show Capacity Delts For significant configuration changes, capacity comparisons should be considered to have a +/-5% margin-of-error When displaying default SMT Benefit value, margin-of-error is +/-10%; Larger SMT Benefit values, margin-of-error will be greater Upgrading the processor family is considered a significant configuration change Position mouse on LPAR configuration to display description Check in SMT column indicates Capacity Values include SMT Benefit for one or more zIIP and/or IFL partitions	#4 A Proposed 2964-707 w I	FL 2964-N30/700: GP=7 zIIP=2 IFL=1	*	1,455.5	n/s	1,966.7	2,096.7		1,621.9	
Content Control	Contrast Contrast		Chan constitu	22						
For significant configuration changes, capacity comparisons should be considered to have a +/-5% margin-of-error When displaying default SMT Benefit value, margin-of-error is +/-10%; Larger SMT Benefit values, margin-of-error will be greater Upgrading the processor family is considered a significant configuration change Position mouse on LPAR configuration to display description Check in SMT column indicates Capacity Values include SMT Benefit for one or more zIIP and/or IFL partitions	Show Cap	acity Deltas Based on "Current 2817-717" Incremental	 Full CP § Single- 	c CP						
Position mouse on LPAR configuration to display description Check in SMT column indicates Capacity Values include SMT Benefit for one or more zIIP and/or IFL partitions		For significant configuration changes, capacity When displaying default SMT Benefit value, margin-of- Upgrading the processor fam	comparisons should be co error is +/-10%; Larger S ily is considered a significa	nsidered to ha MT Benefit va Int configurati	ave a +/-5% m lues, margin-of on change	argin-of-error f-error will be g	reater			
check in SMT column indicates Capacity Values include SMT Benefit for one or more zIIP and/or IFL partitions	Position mouse on LPAR configura	ation to display description								
	Check in SMT column indicates Ca	pacity Values include SMT Benefit for one or more zIIP and	d/or IFL partitions							

One use of the **Single-CP** option is to compare the **z13 2964-612** alternative. In this case it has "more & slower" engines (12 engines with **905.5 MIPS** relative capacity per General Purpose CP) than the **z13 2964-707** option (**1,485.9 MIPS**) and the original **z196** (**1,023.4 MIPS**), 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 zPCR Lab ***

Renaming an LPAR Configuration

Procedure

- 1. On the *Advanced-Mode Control Panel* window, sSingle-click the LPAR Configuration icon to select it.
- 2. Right click on Rename Configuration popup.



3. Key in the LPAR Configuration name that you wish to use and press <u>Enter</u>.

Advanced-Mode Control Panel [untitled]	
File CPcalculator Documentation Help	
	zPCR V8.7a
Advanced-Mode Capacity Planning Control P	anel
Study ID:	
	l Marca
Double click on a tree branch below to access the relevant wind	lows
View M	
REF 2094-701 @ 593.00 MIPS	
LSPR Multi-Image Processor Table	1
Seprember 2015 - Seprem	
Lspg II IFL CPS	
LPAR Configurations	
#1 2 Current 2917-707	
r Manage	
	QuickStart Guide
"Configuration #1" LPAR configuration has not been defined	
Define an LPAR configuration	
+Drag & drop a zPCR study file, EDF, or RMF file onto the LPAR configuration ico	n
Create additional LPAR configurations	
+Click the "Add{+}" toolbar icon and define the LPAR configuration as described +Select a defined LPAR configuration icon and click the "Clone{=}" toolbar icon	above
Rename LPAR configurations	
+Right-dick LPAR configuration icon for pop-up menu and dick "Rename Configur	ation"
+Enter new name and press ENTER Delete LPAR configurations	
+Select LPAR configuration icon and dick the "Delete{X}" toolbar icon	