



Advanced Technical Support – Washington Systems Center

An Introduction to zPCR

IBM's Processor Capacity Reference
for System z9 and eServer zSeries

Walt Caprice
John Fitch
IBM Washington Systems Center

Agenda

- What is **zPCR**
- Inputs
- Usage considerations
- Sample exercise
- Where to get more information

What is **zPCR**

- A Java based PC tool
- Provides the capacity relationships for System z9 and zSeries processors, considering ...
 - SCP/workload environment (based on LSPR workloads)
 - LPAR configuration
- The IBM tool to properly size mainframe upgrades
 - Expected accuracy of $\pm 5\%$

Inputs to **zPCR**

- RMF CPU Activity Report for the installed machine
 - Machine type and model
 - LPAR definitions
- RMF Workload Activity Report(s)
 - Determine the workload mix for each partition
- Proposed machine
 - Processor type and model
 - LPAR definitions

Usage Considerations

- All capacity results from zPCR are relative to a user defined *Reference-CPU*. When comparing the capacity of various processors, it is critical all analyses be done using the same reference-CPU setting. Otherwise the ratios between processors will NOT be correct.
- The impact of LPAR on capacity affects all processors, and not necessarily equally. As such, you need to use zPCR to determine the capacity for the LPAR configuration of the current processor as well as the planned replacement. The ratio between these two values is the expected capacity delta.

Inputs for Sample zPCR Exercise

- Current machine characteristics
 - 2084-309 (B16 – 3,300 MIPS customer defined)

LPAR name	# LCPs (TRAD)	Weight	DASD I/O per Consumed MSU	Operating System Version
WSC1	6	500	17	z/OS 1.4
WSC2	3	250	20	z/OS 1.4
WSC3	3	250	18	z/OS 1.6

- Proposed machine characteristics
 - 2094-707 (S18) with 1 zAAP

LPAR name	# LCPs (TRAD)	Weight	# LCPs (zAAP)	Operating System Version
WSC1	5	500	NA	z/OS 1.4
WSC2	3	250	NA	z/OS 1.4
WSC3	3	250	1	z/OS 1.6

zPCR
Logo
Window

zPCR - Processor Capacity Reference

Processor Capacity Reference IBM System z9 and eServer zSeries zPCR version 4.5

(C) Copyright IBM Corp. 2003, 2006. All rights reserved.
Contains graphics software from KL Group.
(C) Copyright KL Group 2000. All rights reserved.
Lotus Notes support: CPS PC Tools/Gaithersburg/IBM@IBMUS
E-mail support: cpstools@us.ibm.com
IBM Employee Intranet Web Site: w3.ibm.com/support/americas/wsc/cpsproducts.html
IBM BP Internet Web Site: partners.boulder.ibm.com/src/atmsmastr.nsf/WebIndex/PRS1762

zPCR

Version
Identification

zPCR Function Selection Window

(1)
Enter Study
Identification

(2)
Click SI Reference-CPU

zPCR SI Ref-CPU Window

(1)
Set **Reference-CPU**

(2)
Set **Capacity Rating**

(3)
Set **Capacity Metric**

zPCR - SI Reference-CPU [untitled]

SI Reference-CPU
 used for
LPAR Configuration Capacity Planning
 and for
LSPR Single-Image Processor Capacity Tables
 System z9 and zSeries LSPR Data (04/27/2006)

<u>Reference CPU</u>		<u>Capacity Scaling</u>	
Family	<input type="text" value="zSeries 990 (2084)"/>	Factor =	<input type="text" value="3300"/>
Model	<input type="text" value="2084-309"/>	Metric =	<input type="text" value="MIPS"/>

Ref-CPU Tip Pertaining to "LPAR Configuration Capacity Planning" function

Capacity will be relative to a 2084-309 assumed at 3,300 MIPS

Click **Return**

Click *Workloads*

zPCR - Workloads [untitled]
 Workload Graph Help

zPCR Workloads Window

Workload Mix Definitions and Display Selections
 z/OS-1.6 LSPR Multi-Image Processor Capacity Table
 System z9 and zSeries LSPR Data (04/27/2006)

LSPR Workload Primitives

z/OS	
1. CB-L	Comm Batch (long jobs)
2. CB-J	Comm Batch (Java)
3. WASDB	WebSphere App Serving & ...
4. OLTP-W	Web-enabled on-line
5. OLTP-T	Traditional on-line
6. EAS-DB	DB server for SAP

z/VM	
1. CMS1	Interactive CMS Users
2. WASDB/L...	WebSphere App Serving & ...

Linux	
1. WASDB/L	WebSphere App Serving & ...
2. EAS-AS/L	Enterprise App Solution und...

LSPR Workload Mixes

Predefined

Suggested

1. z/OS LoIO-Mix	Low I/O Content
2. z/OS CB-Mix	Commercial Batch
3. z/OS TM-Mix	Transaction Moderate
4. z/OS TD-Mix	Transaction Dominant
5. z/OS TI-Mix	Transaction Intensive

Alternative

z/OS **Web-Mix** Web-centric Activity

Generic (not for capacity planning)

z/OS **LSPR-Mix** LSPR Generic Mix

Display

User Defined

SCP	Name
1.	none defined
2.	
3.	
4.	
5.	

Add z/OS Change

Initialize >

Add Primitives >

Add >

< Remove

Displayed for Traditional CPs

SCP	Name
01. z/OS	LoIO-Mix
02. z/OS	CB-L
03. z/OS	CB-J
04. z/OS	WASDB
05. z/OS	OLTP-W
06. z/OS	OLTP-T

Move Up ^

Move Down v

Return

Cancel

Choosing a Workload Mix

Click **Choosing a Workload Mix**

LSPR Workload Help System
_ □ ×

Workload Online Help

LSPR Workloads and Capacity Planning

- SCP Versions and Workload Primitives
- **Choosing a Workload Mix**
 - The LSPR-Mix Workload
 - When Is the Use of a Mix of LSPR Workloads
 - LoIO-Mix Workload - a Special Case
 - Tailoring a Custom Mix
 - Online to Other Ratio
 - Tailoring the Online Component
 - Tailoring the Other Component
 - Final Comments
- MVS LSPR Workloads
- VM LSPR Workloads
- Linux LSPR Workloads
- VSE LSPR Workloads

Choosing a Workload Mix

As an aid for deciding which LSPR workload primitive(s) should be used to represent a production workload, five suggested workload mixes have been defined, common to **Current LSPR (z/OS-1.6)** and to **Prior LSPR (z/OS-1.4 and OS/390)** tables. **Normally, one of these five suggested mixes will suffice for any MVS capacity planning exercise.** Guidelines for selecting the appropriate workload mix, or defining your own, are discussed under [Tailoring a Custom Mix](#), below.

If a capacity planning exercise involves migration from a G6 or prior processor, capacity data must be bridged between the **z/OS-1.4 LSPR Data** and the **OS/390-V2R10 LSPR Data**. **When bridging is required, it is essential that one of these five suggested workload mixes be used.** This is because the actual LSPR workload primitives that were measured differ between the various sets of LSPR data. The mix content for each of the five suggested mixes in the OS/390 LSPR tables has been specifically set to help assure consistency in capacity relationships with those produced from the z/OS LSPR table.

The suggested workload mixes include:

1.	TI-Mix	Transaction Intensive	60% Online / 40% Other
2.	TD-Mix	Transaction Dominant	40% Online / 60% Other
3.	TM-Mix	Transaction Moderate	30% Online / 70% Other
4.	CB-Mix	Commercial Batch	100% Other
5.	LoIO-Mix	Low IO Content	Special case when IO rate per MSU < 30

z/OS-1.4 LSPR Data...

- The **Online** component is distributed equally between **OLTP-T** and **OLTP□W**
- The **Other** component is assigned as ¾ **CB-L** and ¼ **CB-S**

z/OS-1.6 LSPR Data...

- The **Online** and **Other** components are distributed across the LSPR workload primitives similar to that for z/OS-1.4. However, since CB-S is no longer available, the mix definitions cannot be the same. The z/OS-1.6 mixes are

Select LoIO-Mix

LSPR Workload Help System

Workload Online Help
 LSPR Workloads and Capacity Planning
 ● SCP Versions and Workload Primit
 ● Choosing a Workload Mix
 ● The LSPR-Mix Workload
 ● When Is the Use of a Mix of L
 ● **LoIO-Mix Workload - a Specia**
 ● Tailoring a Custom Mix
 ● Online to Other Ratio
 ● Tailoring the Online Componen
 ● Tailoring the Other Componen
 ● Final Comments
 MVS LSPR Workloads
 VM LSPR Workloads
 Linux LSPR Workloads
 VSE LSPR Workloads

LoIO-Mix Workload - a Special Case

In cases where the total system DASD IO per second per MSU (that is, the total DASD IO rate divided by the consumed MSUs of the system) is less than 30, the predefined **LoIO-Mix** should be chosen. This mix is the preferred representation for a production workload that falls in this category.

Note: MSU values for the System z9, z990, and z890 are shown in **zPCR** as discounted values (providing improved software price/performance). Therefore, they must be adjusted to determine if the **LoIO-Mix** workload would apply.

Processor family	MSU Adjust Factor
System z9	0.81
z990	0.90
z890	0.90
All others	1.00

In these cases, you should divide the MSU value shown in **zPCR** by the **MSU Adjust Factor** to get the MSU value to be used for the **LoIO-Mix** workload test.

Example

2084-301	Processor model
70	MSU (a discounted value for z990)
64%	Utilization for this workload
1,395	DASD IO rate per second

Calculations

70 ÷ 0.90 = 77.8	2084-301 discounted MSU adjusted to full capacity
0.64 × 77.8 = 49.8	MSUs consumed
1,395 ÷ 49.8 = 28.0	DASD IO rate per consumed MSU

This workload qualifies for **LoIO-Mix** since it demonstrates less than 30 DASD IO per MSU consumed.

Close the window

zPCR - Workloads [untitled]

Workload Graph Help

Workload Mix Definitions and Display Selections

z/OS-1.6 LSPR Multi-Image Processor Capacity Table
System z9 and zSeries LSPR Data (04/27/2006)

LSPR Workload Primitives

z/OS

1. CB-L	Comm Batch (long jobs)
2. CB-J	Comm Batch (Java)
3. WASDB	WebSphere App Serving & ...
4. OLTP-W	Web-enabled on-line
5. OLTP-T	Traditional on-line
6. EAS-DB	DB server for SAP

z/VM

1. CMS1	Interactive CMS Users
2. WASDB/L...	WebSphere App Serving & ...

Linux

1. WASDB/L	WebSphere App Serving & ...
2. EAS-AS/L	Enterprise App Solution und...

LSPR Workload Mixes

Predefined

Suggested

1. z/OS LoIo-Mix	Low I/O Content
2. z/OS CB-Mix	Commercial Batch
3. z/OS TM-Mix	Transaction Moderate
4. z/OS TD-Mix	Transaction Dominant
5. z/OS TI-Mix	Transaction Intensive

Alternative

z/OS **Web-Mix** Web-centric Activity

Generic (not for capacity planning)

z/OS **LSPR-Mix** LSPR Generic Mix

Display

User Defined

SCP	Name
1.	none defined
2.	
3.	
4.	
5.	

Add z/OS Change

Initialize >

Add Primitives >

Add >

< Remove

Displayed for Traditional CPs

SCP	Name
01.	z/OS LoIo-Mix
02.	z/OS CB-L
03.	z/OS CB-J
04.	z/OS WASDB
05.	z/OS OLTP-W
06.	z/OS OLTP-T

Move Up ^

Move Down v

Return Cancel Choosing a Workload Mix

Click **Return**



Press **Configure LPAR**

zPCR Host & Partition Configuration Window

zPCR - LPAR Host and Partition Configuration [untitled]

File Reference-CPU Help

Based on current LSPR data for System z9 and zSeries
LPAR Configuration Capacity Planning
 Study Identification: XYZ Corporation

CP Pool	Partition Mode	No. of Real CPs	No. of Logical		LCP:RCP Ratio
			Partitions	CPs	

LPAR Host Processor

Processor Model

Configurable CPs

- GP
- zAAP
- zIIP
- IFL
- ICF
- Unassigned

Number of Books

Maximum partitions

Logical Partition Configuration

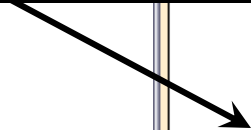
Define Partitions:

Get Partitions From:

Reports

Information

Click *Specify Host*



zPCR Host Specification Window

(1)
Select Host Processor Model

(2)
Select Number of CPs for each installed Feature Code

zPCR - LPAR Host Specification [untitled]

Based on current LSPR data for System z9 and zSeries

LPAR Host Processor

Family: zSeries 990 (2084) [v]

Model: 2084-B16 [v]

Feature Selection (CPs)

General Purpose: 9 [v]

zAAP: 0 [v]

zIIP: 0 [v]

IFL: 0 [v]

ICF: 0 [v]

Return Cancel

(3)
Click **Return**

zPCR - LPAR Host and Partition Configuration [untitled]

File Reference-CPU Help

Based on current LSPR data for System z9 and zSeries
LPAR Configuration Capacity Planning
 Study Identification: XYZ Corporation

LPAR Host Processor	
Processor Model	2084-B16
Configurable CPs	16
GP	9
zAAP	0
zIIP	n/s
IFL	0
ICF	0
Unassigned	7
Number of Books	2
Maximum partitions	30

Specify Host

Get Host and Partitions from RMF

Logical Partition Configuration					
CP Pool	Partition Mode	No. of Real CPs	No. of Logical		LCP:RCP Ratio
			Partitions	CPs	
<div style="border: 1px solid black; padding: 5px; display: inline-block;">Click GP</div>					

Define Partitions

GP IFL ICF

Get Partitions From

Previous Study RMF

Reports

Summary Detail

Information

About Partitioning zAAP/zIIP Capacity Considerations

Return

zPCR - LPAR Partition Definition [untitled]

File CPcalculator Help

Based on current LSPR data for System z9 and zSeries
Study Identification: XYZ Corporation

Define General Purpose Partitions

LPAR Host = 2084-B16 configured with 9 CPs: GP=9

Include	LP Identification				LP Configuration						zAAP LCPs	zIIP LCPs
	No.	Type	Name	SCP	Workload	Mode	LCPs	Weight	Weight %	Capping		
<input checked="" type="checkbox"/>	1	GP	LP-01	z/OS 1.6	LoIO-Mix	SHR	1	100	100.0%	<input type="checkbox"/>	n/a	n/a

CP_pool	summary	# LPs	# LCPs	LCP:RCP	Sum of Weights
DED		0	0	n/a	n/a
SHR		1	1	0.1	100

LP Name: LP
Default prefix: LP

Buttons: Add, Clone, Delete, Move LP (up/down arrows)

Return

Input fields are white background; Single click selection field for drop-down list; Double click entry fields to open.

(1)
Modify partition defining metrics

(2)
Add more partitions

zPCR - LPAR Partition Definition [untitled]

File CPcalculator Help

Based on current LSPR data for System z9 and zSeries

Study Identification: XYZ Corporation

Define General Purpose Partitions

LPAR Host = 2084-B16 configured with 9 CPs: GP=9

Include	LP Identification					LP Configuration					zAAP LCPs	zIIP LCPs
	No.	Type	Name	SCP	Workload	Mode	LCPs	Weight	Weight %	Capping		
<input checked="" type="checkbox"/>	1	GP	WSC1	z/OS**	LoIO-Mix	SHR	6	500	50.0%	<input type="checkbox"/>	n/a	n/a
<input checked="" type="checkbox"/>	2	GP	WSC2	z/OS**	LoIO-Mix	SHR	3	250	25.0%	<input type="checkbox"/>	n/a	n/a
<input checked="" type="checkbox"/>	3	GP	WSC3	z/OS 1.6	LoIO-Mix	SHR	3	250	25.0%	<input type="checkbox"/>	n/a	n/a

LP Name
Default
prefix

LP

CP pool summary	# LPs	# LCPs	LCP:RCP	Sum of Weights
DED	0	0	n/a	n/a
SHR	3	12	1.3	1,000

Move LP

Input fields are white background; Single click selection field for drop-down list; Double click entry fields to open.

Click **Return**

zPCR - LPAR Host and Partition Configuration [untitled]

File Reference-CPU Help

Based on current LSPR data for System z9 and zSeries
LPAR Configuration Capacity Planning
 Study Identification: XYZ Corporation

LPAR Host Processor

Processor Model 2084-B16

Configurable CPs 16

GP 9

zAAP 0

zIIP n/s

IFL 0

ICF 0

Unassigned 7

Number of Books 2

Maximum partitions 30

Logical Partition Configuration

CP Pool	Partition Mode	No. of Real CPs	No. of Logical		LCP:RCP Ratio
			Partitions	CPs	
GP	Dedicated	0	0	0	n/a
	Shared	9	3	12	1.333
zAAP/IFL/ICF	Dedicated	0	0	0	n/a
	Shared	0	0	0	n/a
Totals		9	3	12	

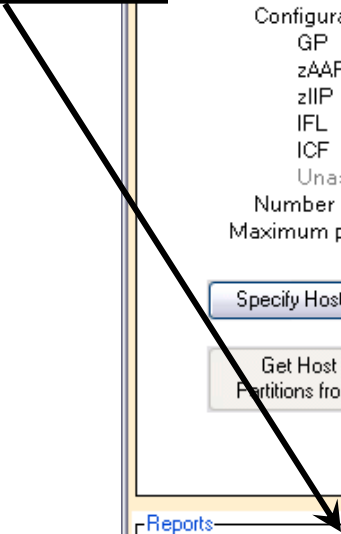
[Define Partitions](#)

[Get Partitions From](#)

[Reports](#)

[Information](#)

Click *Detail*



zPCR - LPAR Detailed Capacity Report [untitled]

File CPcalculator Help

Based on current LSPR data for System z9 and zSeries

Study Identification: XYZ Corporation

LPAR Host and Partition Capacity

LPAR Host = 2084-B16 configured with 9 CPs: GP=9
 Partitions: Active=3 GP=3 zAAP=0 zIIP=0 IFL=0 ICF=0

Capacity is relative to a 2084-309 assumed at 3,300 MIPS

Include	LP Identification					LP Configuration					LP Capacity	
	No.	Type	Name	SCP	Workload	Mode	LCPs	Weight	Weight %	Capping	Minimum	Maximum
<input checked="" type="checkbox"/>	1	GP	WSC1	z/OS**	LolO-Mix	SHR	6	500	50.0%	<input type="checkbox"/>	1,592.2	2,123.0
<input checked="" type="checkbox"/>	2	GP	WSC2	z/OS**	LolO-Mix	SHR	3	250	25.0%	<input type="checkbox"/>	805.8	1,074.4
<input checked="" type="checkbox"/>	3	GP	WSC3	z/OS 1.6	LolO-Mix	SHR	3	250	25.0%	<input type="checkbox"/>	809.2	1,078.9

Table View

Partitions displayed CP Pools displayed

All GP

Includes Only zAAP/IFL/ICF

LPAR configuration capacity summary

3 Partitions in GP RCP Pool 3,207.2

0 Partitions in zAAP/IFL/ICF RCP pool 0.0

3 Partitions - combined total 3,207.2

Return Comparison Report

zPCR V4.5

Input fields are white background; Double click entry fields to open.

(2)
Write results to clipboard

(1)
Review capacity results

(3)
Click Return

Contents of Clipboard

Can be pasted into a note or document

```

zPCR (4.5) - LPAR Capacity Report
  Based on current LSPR data for System z9 and zSeries
Study Identification: XYZ Corporation
LPAR Host and Partition Capacity
  LPAR Host = 2084-B16 configured with 9 CPs: GP=9
  Partitions: Active=3 GP=3 zAAP=0 zIIP=0 IFL=0 ICF=0
  Capacity is relative to a 2084-309 assumed at 3,300 MIPS

      LP Identification
Inc No  Type   Name      SCP      Workload  LP Definition
--- +--+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+
Y   1  GP     WSC1     z/OS**   LoIO-Mix  SHR      6     500     50.0%
Y   2  GP     WSC2     z/OS**   LoIO-Mix  SHR      3     250     25.0%
Y   3  GP     WSC3     z/OS 1.6 LoIO-Mix  SHR      3     250     25.0%
      LP Capacity
      Minimum Maximum
      1,592.2 2,123.0
      805.8  1,074.4
      809.2  1,078.9

      LPAR configuration capacity summary
      +-----+-----+-----+-----+-----+
      3 Partitions in GP RCP pool           3,207.2
      0 Partitions in zAAP/IFL/ICF RCP pool 0.0
      3 Partitions - combined total       3,207.2
    
```


Click *Specify Host*

zPCR - LPAR Host and Partition Configuration [untitled]

File Reference-CPU Help

Based on current LSPR data for System z9 and zSeries
LPAR Configuration Capacity Planning
 Study Identification: XYZ Corporation

LPAR Host Processor

Processor Model 2084-B16

Configurable CPs 16

GP 9

zAAP 0

zIIP n/s

IFL 0

ICF 0

Unassigned 7

Number of Books 2

Maximum partitions 30

Logical Partition Configuration

CP Pool	Partition Mode	No. of Real CPs	No. of Logical		LCP:RCP Ratio
			Partitions	CPs	
GP	Dedicated	0	0	0	n/a
	Shared	9	3	12	1.333
zAAP/IFL/ICF	Dedicated	0	0	0	n/a
	Shared	0	0	0	n/a
Totals		9	3	12	

Define Partitions

Get Partitions From

Reports

Information

(1)
Select Host Processor Model

(2)
Select Number of CPs for each installed Feature Code

zPCR - LPAR Host Specification [untitled]

Based on current LSPR data for System z9 and zSeries

<u>LPAR Host Processor</u>		<u>Feature Selection [CPs]</u>	
Family	System z9 EC (2094/700) ▼	General Purpose	7 ▼
Model	2094-S18/700 ▼	zAAP	1 ▼
		zIIP	0 ▼
		IFL	0 ▼
		ICF	0 ▼

Return Cancel

(3)
Click **Return**

zPCR - LPAR Host and Partition Configuration [untitled]

File Reference-CPU Help

Based on current LSPR data for System z9 and zSeries
LPAR Configuration Capacity Planning
 Study Identification: XYZ Corporation

Click GP / zAAP

CP Pool	Partition Mode	No. of Real CPs	No. of Logical		LCP/RCP Ratio
			Partitions	CPs	
GP	Dedicated	0	0	0	n/a
	Shared	7	3	12	1.714
zAAP	Dedicated	0	0	0	n/a
	Shared	1	0	0	0.000
zIIP	Dedicated	0	0	0	n/a
	Shared	0	0	0	0.000
IFL	Dedicated	0	0	0	n/a
	Shared	0	0	0	0.000
ICF	Dedicated	0	0	0	n/a
	Shared	0	0	0	0.000
Totals		8	3	12	

LPAR Host Processor

Processor Model 2094-S18/700

Configurable CPs 18

GP 7

zAAP 1

zIIP 0

IFL 0

ICF 0

Unassigned 10

Number of Books 2

Maximum partitions 60

Define Partitions

Get Partitions From

Reports

Information

zPCR - LPAR Partition Definition [untitled]

File CPcalculator Help

Based on current LSPR data for System z9 and zSeries

Study Identification: XYZ Corporation

Define General Purpose Partitions

LPAR Host = 2094-S18/700 configured with 8 CPs: GP=7 zAAP=1

Include	LP Identification					LP Configuration					zAAP LCPs	zIIP LCPs
	No.	Type	Name	SCP	Workload	Mode	LCPs	Weight	Weight %	Capping		
<input checked="" type="checkbox"/>	1	GP	WSC1	z/OS**	LoIO-Mix	SHR	5	500	50.0%	<input type="checkbox"/>	n/a	n/a
<input checked="" type="checkbox"/>	2	GP	WSC2	z/OS**	LoIO-Mix	SHR	3	250	25.0%	<input type="checkbox"/>	n/a	n/a
<input checked="" type="checkbox"/>	3	GP	WSC3	z/OS 1.6	LoIO-Mix	SHR	3	250	25.0%	<input type="checkbox"/>	1	n/a

LP Name: Default prefix:

CP_pool summary	# LPs	# LCPs	LCP:RCP	Sum of Weights
DED	0	0	n/a	n/a
SHR	3	11	1.6	1,000

Move LP

Input fields are white background; Single click selection field for drop-down list; Double click entry fields to open.

(1)
Update partition metrics for 2094

(2)
Click **Return**

zPCR - LPAR Host and Partition Configuration [untitled]

File Reference-CPU Help

Based on current LSPR data for System z9 and zSeries

LPAR Configuration Capacity Planning

Study Identification: XYZ Corporation

LPAR Host Processor

Processor Model 2094-S18/700

Configurable CPs 18

GP 7

zAAP 1

zIIP 0

IFL 0

ICF 0

Unassigned 10

Number of Books 2

Maximum partitions 60

Logical Partition Configuration

CP Pool	Partition Mode	No. of Real CPs	No. of Logical		LCP:RCP Ratio
			Partitions	CPs	
GP	Dedicated	0	0	0	n/a
	Shared	7	3	11	1.571
zAAP	Dedicated	0	0	0	n/a
	Shared	1	1	1	1.000
zIIP	Dedicated	0	0	0	n/a
	Shared	0	0	0	0.000
IFL	Dedicated	0	0	0	n/a
	Shared	0	0	0	0.000
ICF	Dedicated	0	0	0	n/a
	Shared	0	0	0	0.000
Totals		8	4	12	

Reports

Information

Click *Detail*

zPCR - LPAR Detailed Capacity Report [untitled]

File CPcalculator Help

(2) Write results to clipboard

Based on current LSPR data for System z9 and zSeries

Study Identification: XYZ Corporation

LPAR Host and Partition Capacity

LPAR Host = 2094-S18/700 configured with 8 CPs: GP=7 zAAP=1
 Partitions: Active=4 GP=3 zAAP=1 zIIP=0 IFL=0 ICF=0

Capacity is relative to a 2084-309 assumed at 3,300 MIPS

Include	LP Identification					LP Configuration					LP Capacity	
	No.	Type	Name	SCP	Workload	Mode	LCPs	Weight	Weight %	Capping	Minimum	Maximum
<input checked="" type="checkbox"/>	1	GP	WSC1	z/OS**	LoI0-Mix	SHR	5	500	50.0%	<input type="checkbox"/>	1,696.3	2,423.3
<input checked="" type="checkbox"/>	2	GP	WSC2	z/OS**	LoI0-Mix	SHR	3	250	25.0%	<input type="checkbox"/>	855.5	1,466.6
<input checked="" type="checkbox"/>	3	GP	WSC3	z/OS 1.6	LoI0-Mix	SHR	3	250	25.0%	<input type="checkbox"/>	837.1	1,435.0
<input checked="" type="checkbox"/>	*3	zAAP	WSC3	z/OS 1.6	LoI0-Mix	SHR	1	250	100.0%	<input type="checkbox"/>	501.8	501.8

(3) Click **Return**

(1) Review capacity results

Table View

Partitions displayed: All Includes Only

CP Pools displayed: GP IFL zAAP ICF zIIP

Return Comparison Report

zPCR V4.5

LPAR configuration capacity summary

3 Partitions in GP RCP Pool	3,388.9
1 Partitions in zAAP RCP pool	501.8
0 Partitions in zIIP RCP pool	0.0
0 Partitions in IFL RCP pool	0.0
0 Partitions in ICF RCP pool	0.0
4 Partitions - combined total	3,890.7

GP capacity
 zAAP capacity
 Total capacity

Input fields are white background; Double click entry fields to open.

Contents of Clipboard

Can be pasted into a note or document

```

zPCR (4.5) - LPAR Capacity Report
  Based on current LSPR data for System z9 and zSeries
Study Identification: XYZ Corporation
LPAR Host and Partition Capacity
LPAR Host = 2094-S18/700 configured with 8 CPs: GP=7 zAAP=1
Partitions: Active=4 GP=3 zAAP=1 zIIP=0 IFL=0 ICF=0
Capacity is relative to a 2084-309 assumed at 3,300 MIPS

LP Identification          LP Definition          LP Capacity
Inc No Type Name SCP Workload Mode #LCPS Weight Weight% Capping Minimum Maximum
---+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
Y  1 GP WSC1 z/OS** LoIO-Mix SHR  5  500  50.0% 1,696.3 2,423.3
Y  2 GP WSC2 z/OS** LoIO-Mix SHR  3  250  25.0%  855.5 1,466.6
Y  3 GP WSC3 z/OS 1.6 LoIO-Mix SHR  3  250  25.0%  837.1 1,435.0
Y  3 zAAP WSC3 z/OS 1.6 LoIO-Mix SHR  1  250 100.0%  501.8  501.8

LPAR configuration capacity summary
+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
3 Partitions in GP RCP pool 3,388.9
1 Partitions in zAAP RCP pool 501.8
0 Partitions in zIIP RCP pool 0.0
0 Partitions in IFL RCP pool 0.0
0 Partitions in ICF RCP pool 0.0
4 Partitions - combined total 3,890.7
    
```

zPCR Results

- Reference-CPU is a 2084-309 assumed to provide **3,300 MIPS** (customer defined)
- Current 2084-309 (B16) with LPAR configuration provides approximately **3,207⁽¹⁾ MIPS**. (LPAR cost can be inferred as 3,300 – 3,207, or 93 MIPS)
- 2094-707 (S18) with 1 zAAP running the proposed LPAR configuration would deliver approximately **3,389⁽²⁾ GP MIPS**, and **502⁽²⁾ zAAP MIPS**, for a total capacity of approximately **3,890⁽²⁾ MIPS**.
- Capacity ratios, considering ...
 - GP CPs only: **3,389⁽²⁾ ÷ 3,207⁽¹⁾**, or 1.06 (6% more capacity)
 - Overall: **3,890⁽²⁾ ÷ 3,207⁽¹⁾**, or 1.21 (21% more capacity)
(assumes that zAAP capacity can be utilized)

(1) 2084-309 capacity of **3,207 MIPS** is misstated as **3,287 MIPS** in the audio presentation

(2) 2094-707 capacity results differ slightly from the audio presentation due to zPCR logic improvements since v4.1b

zPCR - Function Selection [untitled]

File Customize CPcalculator Registration Help

New
Load
Save
Save as...
Exit Ctrl+E
Fast Exit Ctrl+Q

zPCR
Processor Capacity Reference for IBM System z9 and eServer zSeries

on: XYZ Corporation

Processor Capacity Tab-2: **Single-Image Capacity**

z/OS-1.6 LSPR Multi-Image Processor Capacity Table

General Purpose CPs z/OS 1.6 LSPR FAQ
MI Reference-CPU System z9 Workloads

Capacity values will be relative to a 2094-701 assumed at 1.00

LPAR Configuration Capacity Planning

Contemporary plan (System z9 and zSeries only), with z/OS-1.6, z/OS-1.4, z/VM, VSE/ESA, Linux, CFCC

Legacy plan (adds G6, G5, MP-3000 and prior), but limited to z/OS-1.4 (mixes only), z/VM, VSE/ESA, Linux, CFCC


Project Capacity for a specific LPAR Configuration

Configure LPAR
SI Reference-CPU

Capacity values will be relative to a 2084-309 assumed at 3,300 MIPS (entire CEC)

LSPR Document About Workloads

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



IBM System z9 Enterprise Class

Return to **Function Selection** window to save your study

The screenshot shows the 'zPCR - Function Selection [untitled]' application window. The title bar includes 'File', 'Customize', 'CPcalculator', 'Registration', and 'Help' menus. The main content area is titled 'zPCR Processor Capacity Reference for IBM System z9 and eServer zSeries'. A text field for 'Study Identification' contains 'XYZ Corporation'. Below this, there are two tabs: 'Tab-1: Multi-Image Capacity' and 'Tab-2: Single-Image Capacity'. The 'Multi-Image Capacity' section is active and displays 'z/OS-1.6 LSPR Multi-Image Processor Capacity Table'. It contains several buttons: 'General Purpose CPs', 'z/OS 1.6 LSPR FAQ', 'MI Reference-CPU', and 'System z9 Workloads'. A note states 'Capacity values will be relative to a 2094-701 assumed at 1.00'. Below this is the 'LPAR Configuration Capacity Planning' section, which has two radio button options: 'Contemporary plan (System z9 and zSeries only), with z/OS-1.6, z/OS-1.4, z/VM, VSE/ESA, Linux, CFCC' (selected) and 'Legacy plan (adds G6, G5, MP-3000 and prior), but limited to z/OS-1.4 (mixes only), z/VM, VSE/ESA, Linux, CFCC'. A note below says 'Capacity values will be relative to a 2084-309 assumed at 3,300 MIPS (entire CEC)'. At the bottom of this section are buttons for 'LSPR Document' and 'About Workloads'. On the right side of the window, there is an image of an IBM System z9 Enterprise Class server rack with the caption 'IBM System z9 Enterprise Class'. At the very bottom of the window, a footer text reads 'Click on Single-Image Capacity tab for LSPR Single-Image Capacity tables'.

Exit zPCR

View LSPR Processor Capacity Ratio Tables

Installing **zPCR**

- The requirement to specify an installation password for zPCR has been removed as of version 7.5b.

Where to Get More Information

- The **zPCR** User's Guide (implemented both as a PDF document and as online help)
 - Provides information about all the features contained in the tool
- The **zPCR** Email address
 - Provides defect support

Note: Effective with **zPCR** v4.3, the **zPCR Newsgroup**, discussed in the audio presentation, has been discontinued. Notices, FAQs, etc. can be found on the **zPCR** web site and in the NEWS file, available when **zPCR** is installed.