Advanced Technical Support – Washington Systems Center

An Introduction to the IBM Processor Capacity Reference for zSeries

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Agenda

- **What is the IBM Processor Capacity Reference for zSeries (zPCR)**
- **Inputs**
- **Execution considerations**
- **Sample session**
- **Where to get more information**

What is zPCR

- **A Java based PC tool**
- **Provides the capacity relationship of zSeries processors**
  - LSPR workloads determine the capacity ratio
  - Includes impact of LPAR configurations
  - Expected accuracy of + or – 5%
- **The IBM tool to properly size zSeries processor upgrades**

Input 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

Execution Considerations

- **If you are comparing multiple machines, it is critical the analysis be done using the same machine as the reference machine. Otherwise the ratios between the machines will NOT be correct as they are built using a different base machine**
- **The impact of LPAR on the capacity of a processor impacts all machines. As such, you need to use zPCR to determine the capacity of the current machine as well as the proposed machine**

Inputs for Sample Exercise

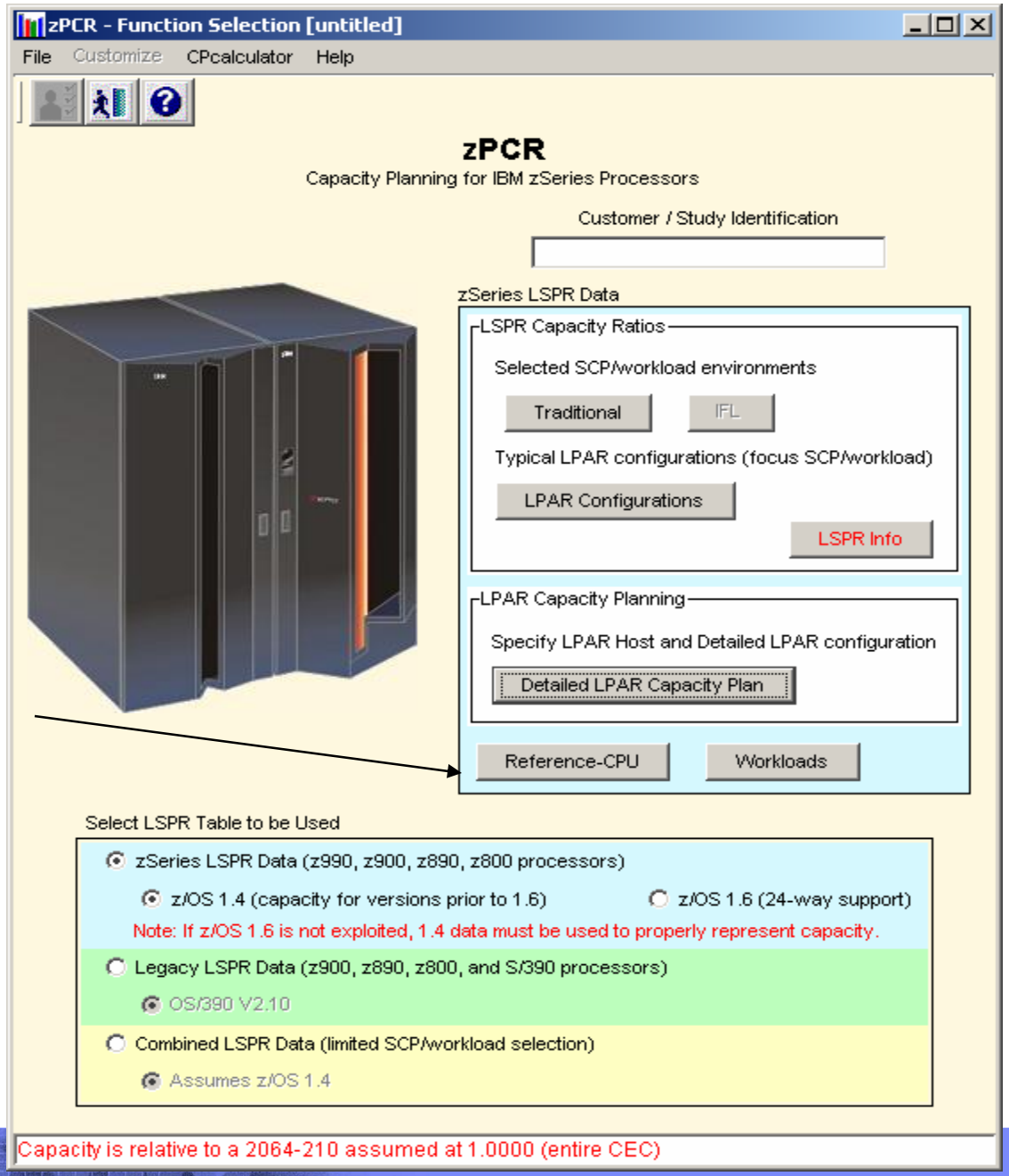
- **Current machine characteristics**
  - 2064-210 (2326 MIPs customer defined)

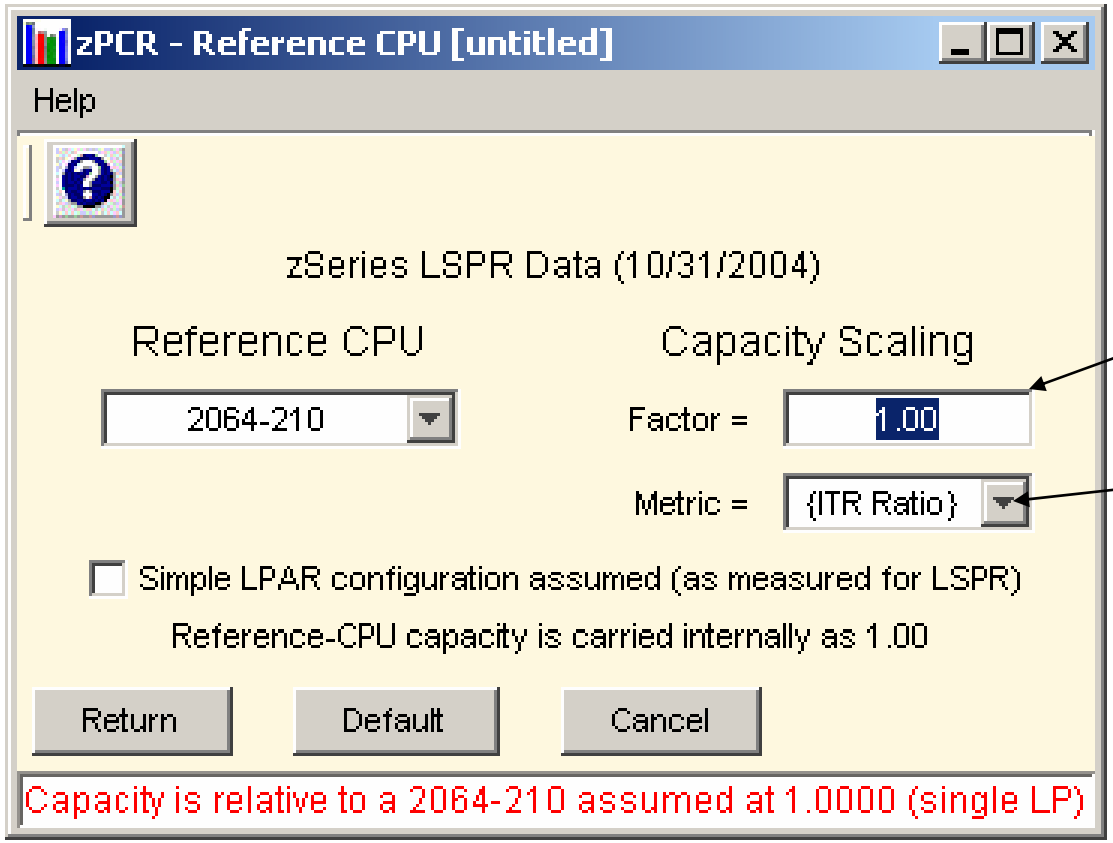
LPAR name	# LCPs (GP)	Weight	DASD I/O per Consumed MSU	Operating System Version
WSC1	6	500	17	z/OS 1.4
WSC2	3	250	20	z/OS 1.4
WSC3	3	250	18	z/OS 1.6

- **Proposed machine characteristics**
  - 2084-307 (A08) with 1 zAAP

LPAR name	# LCPs (GP)	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

Select
Reference CPU

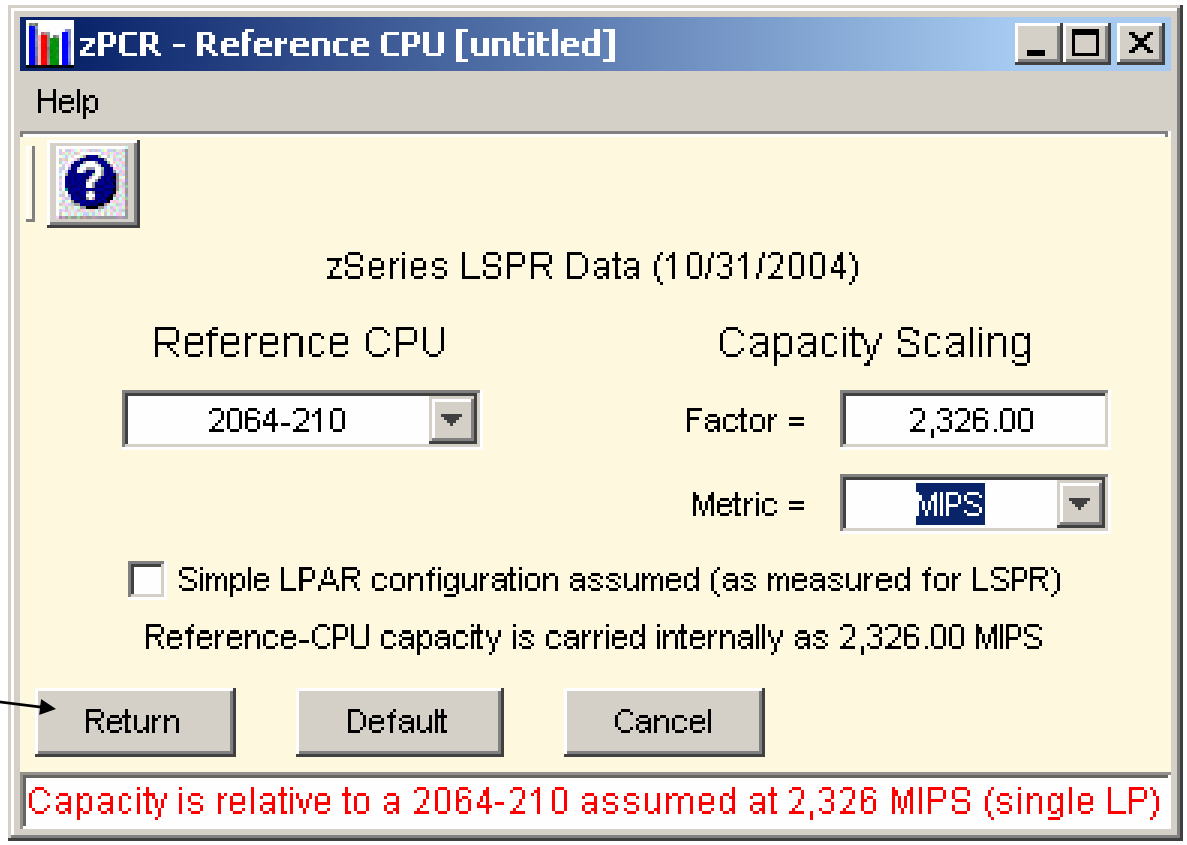


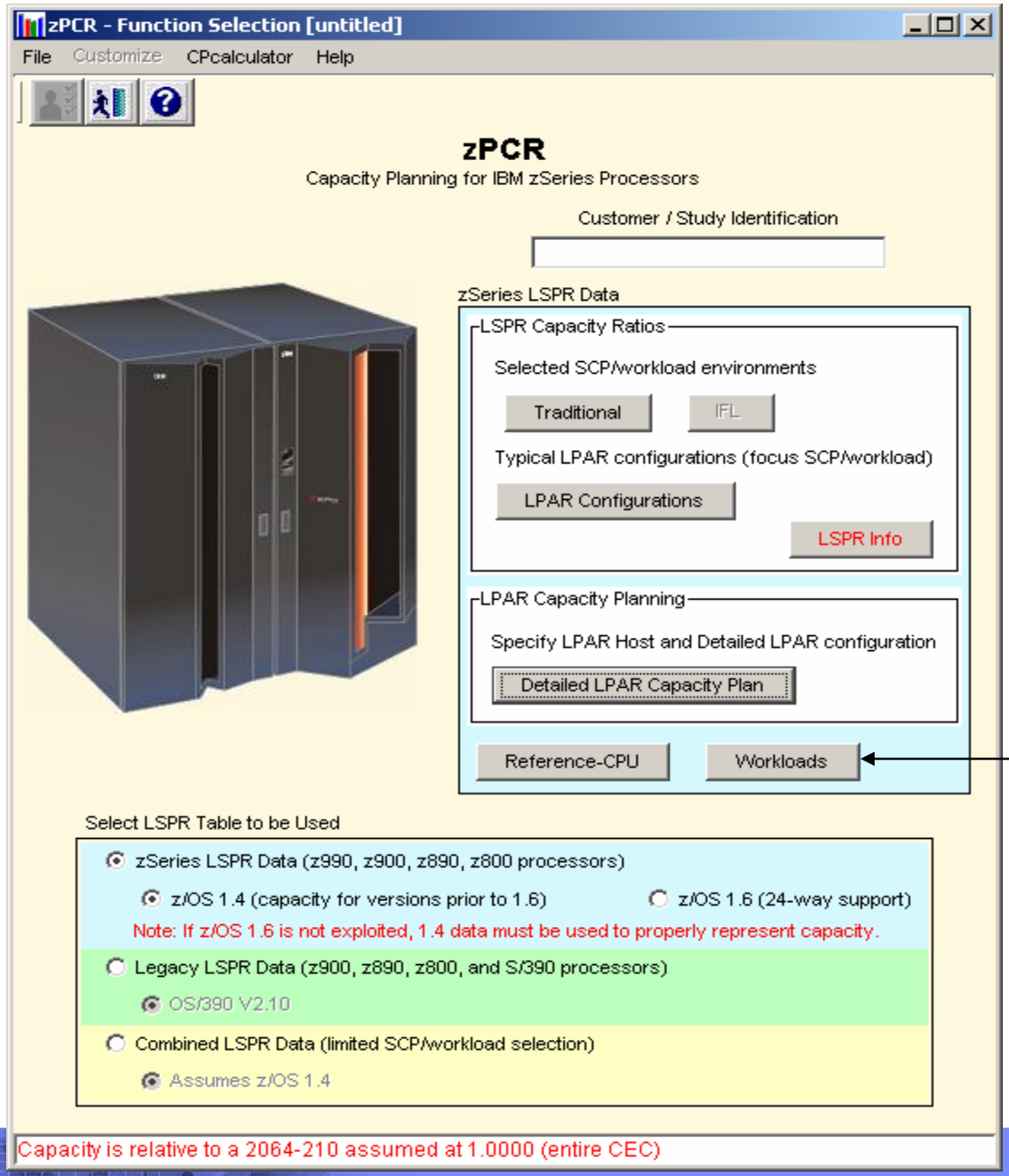


Set Default MIP Rating

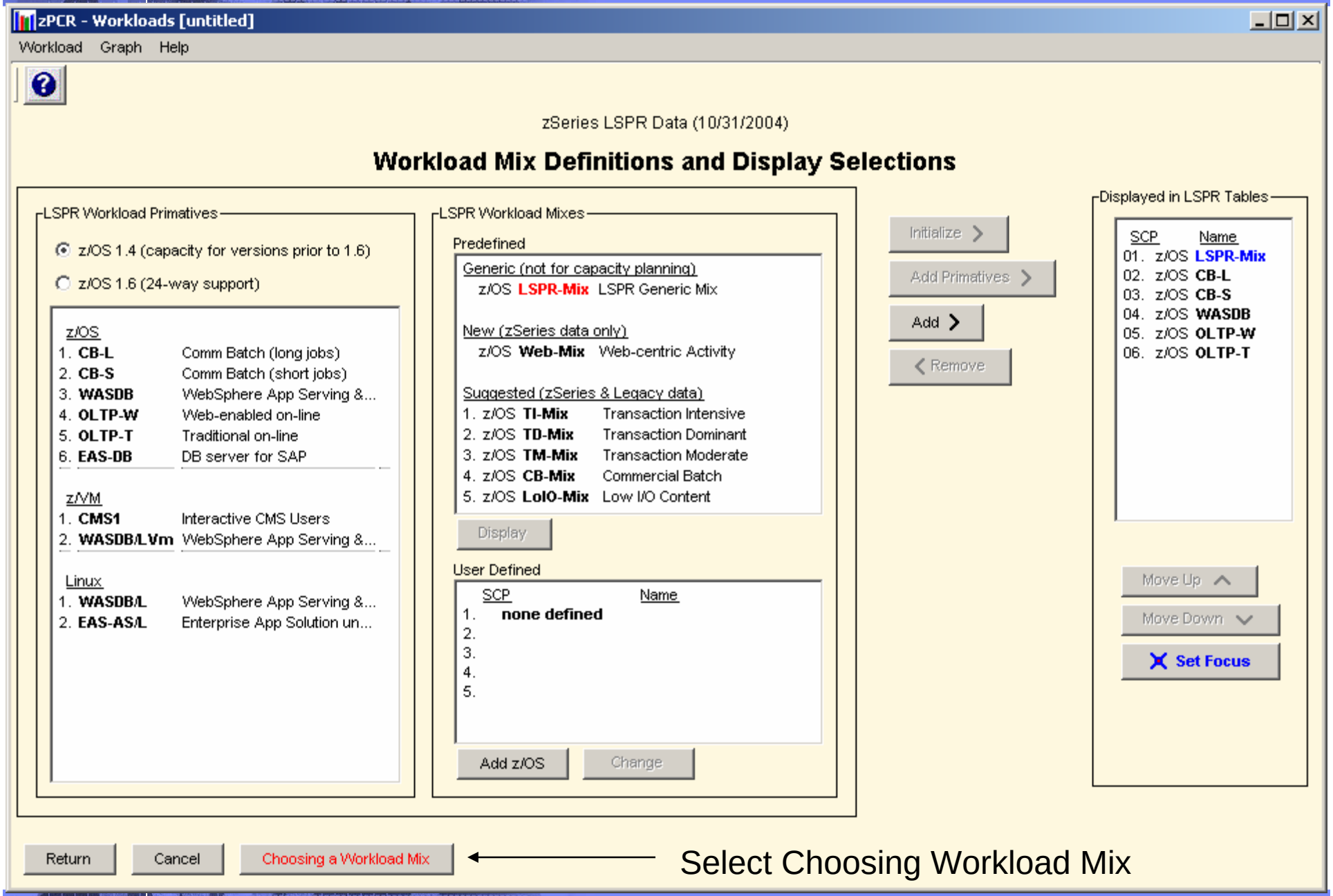
Metric = MIPS

Press Return

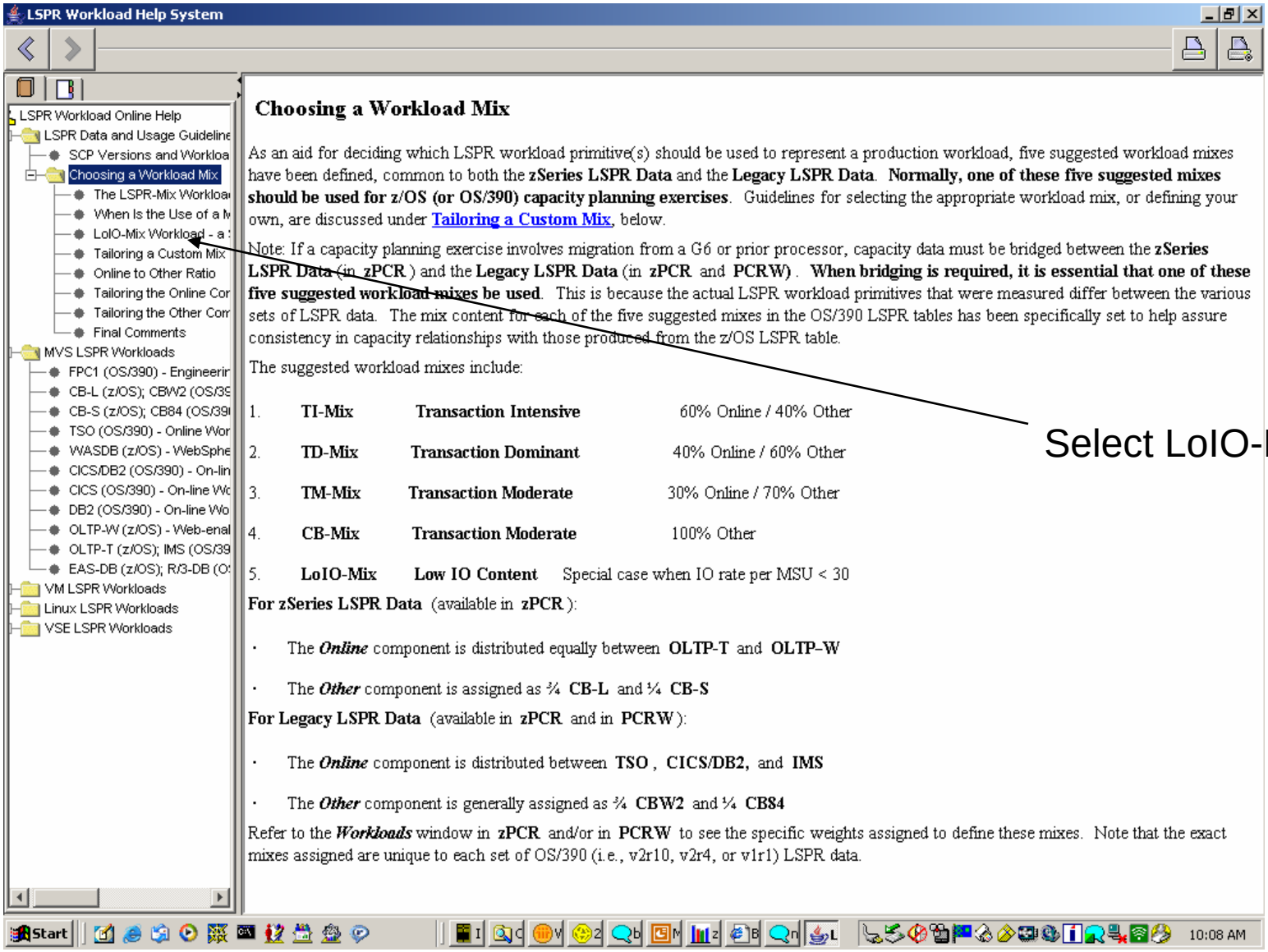


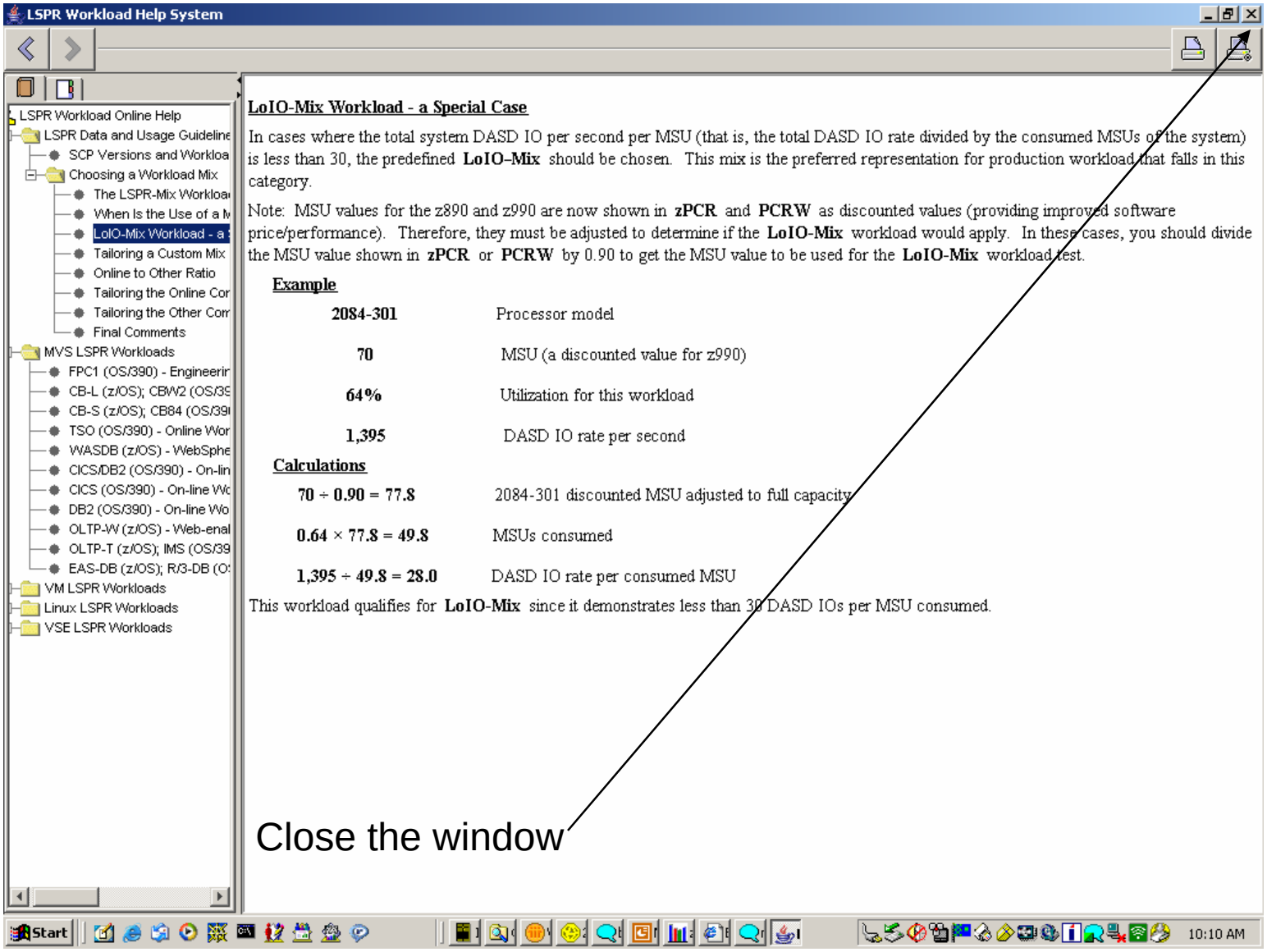


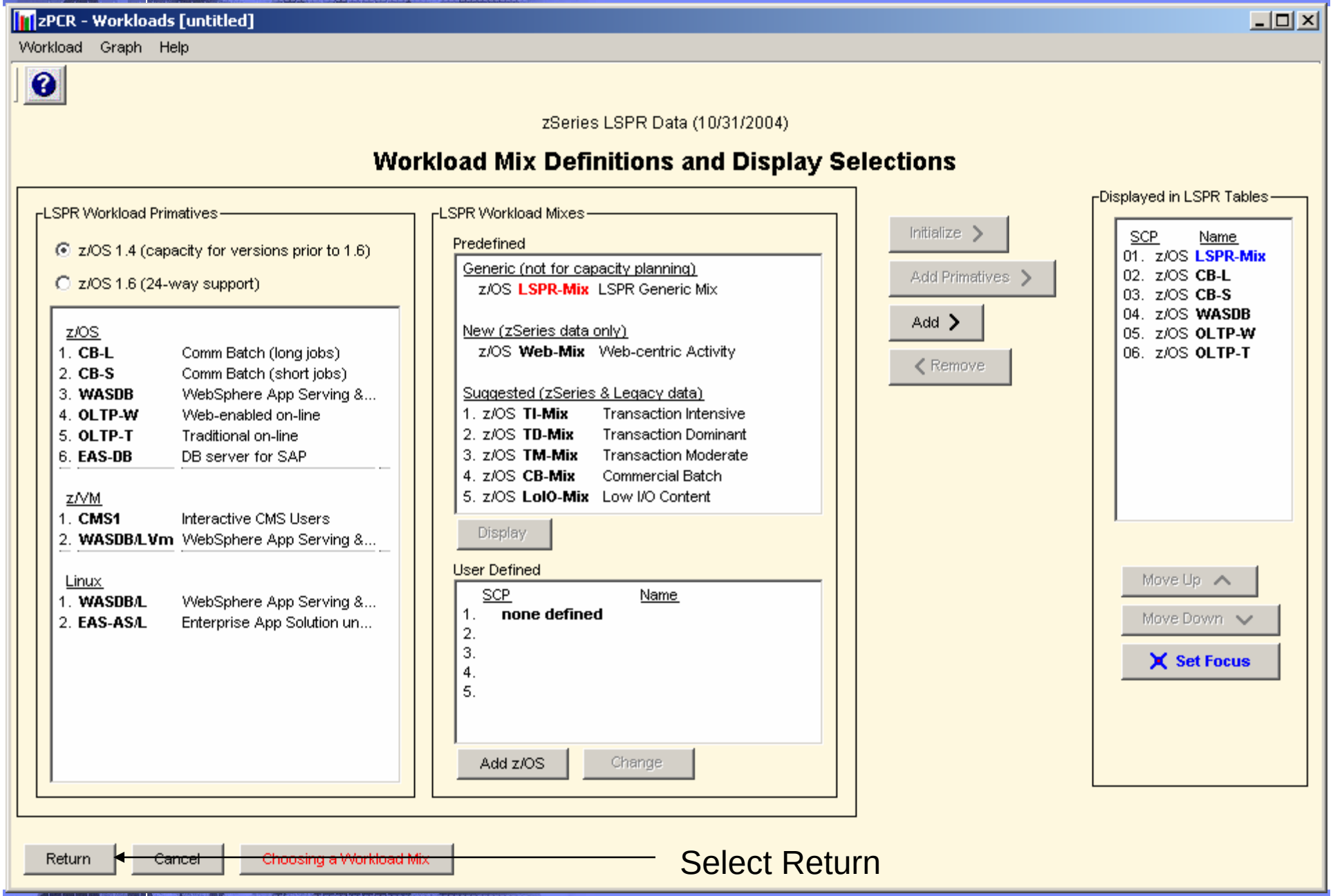
Select Workloads



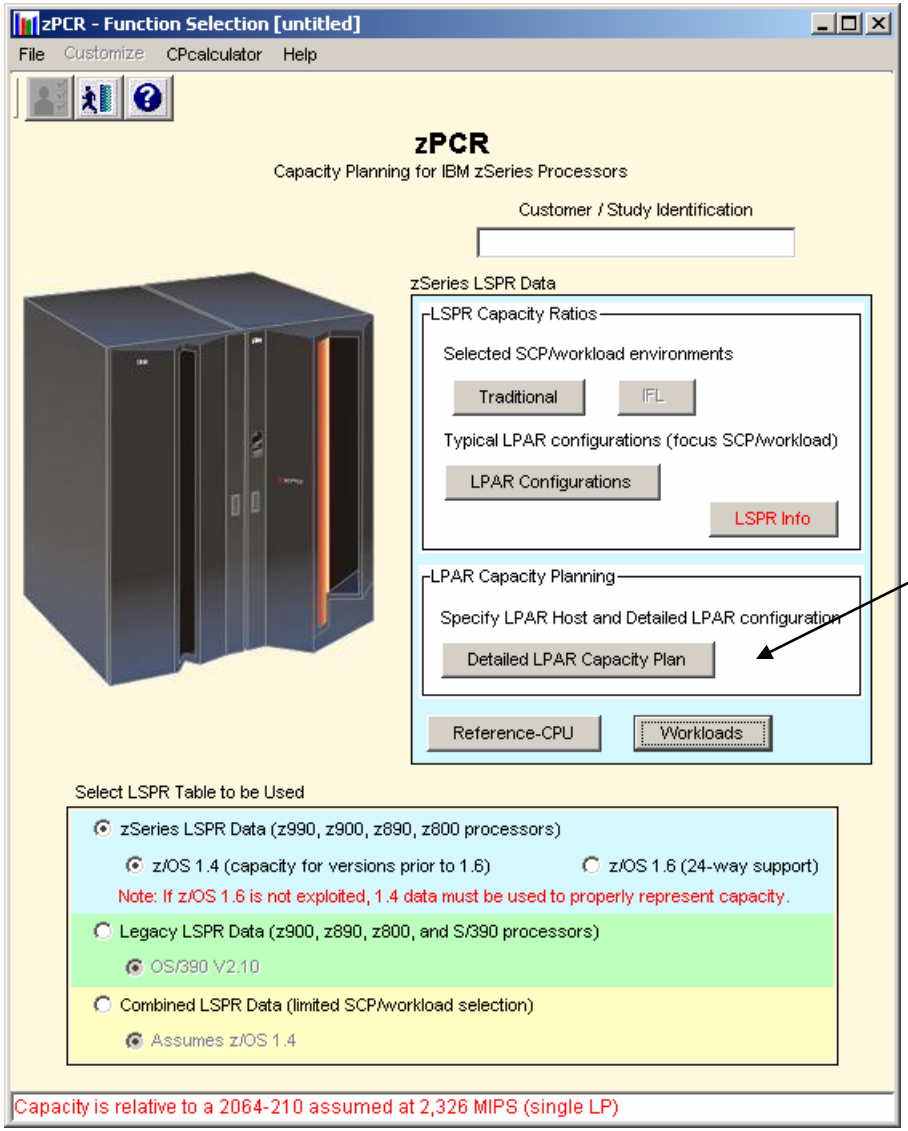
Select Choosing Workload Mix





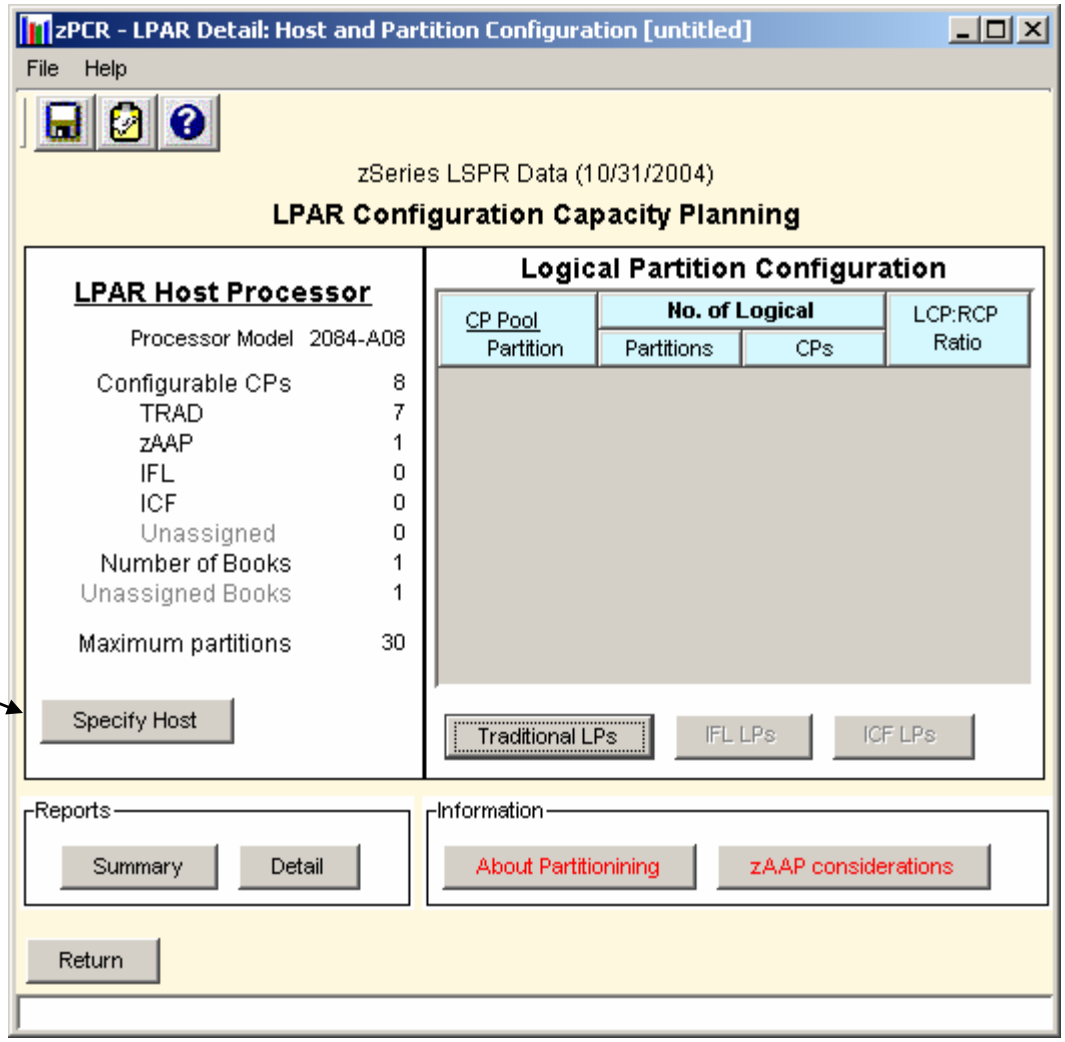


Select Return

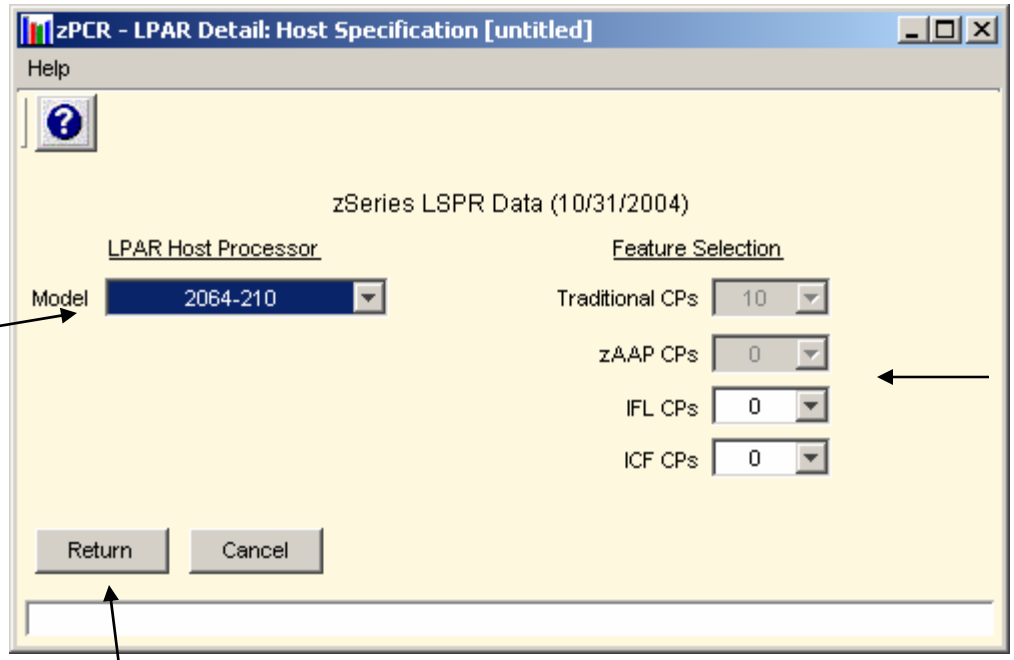


Select Detailed LPAR Capacity Plan

Select Specify Host

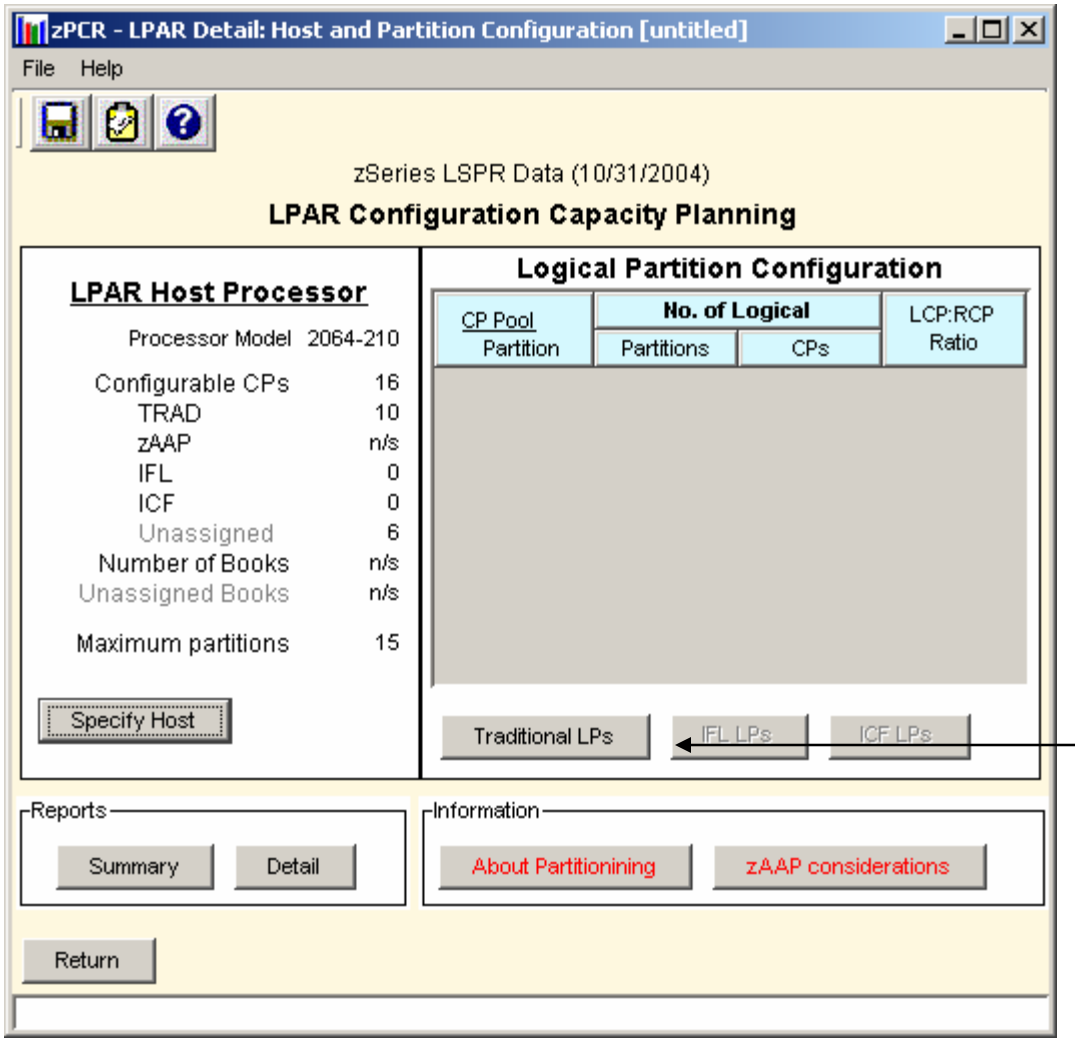


Update Host Processor

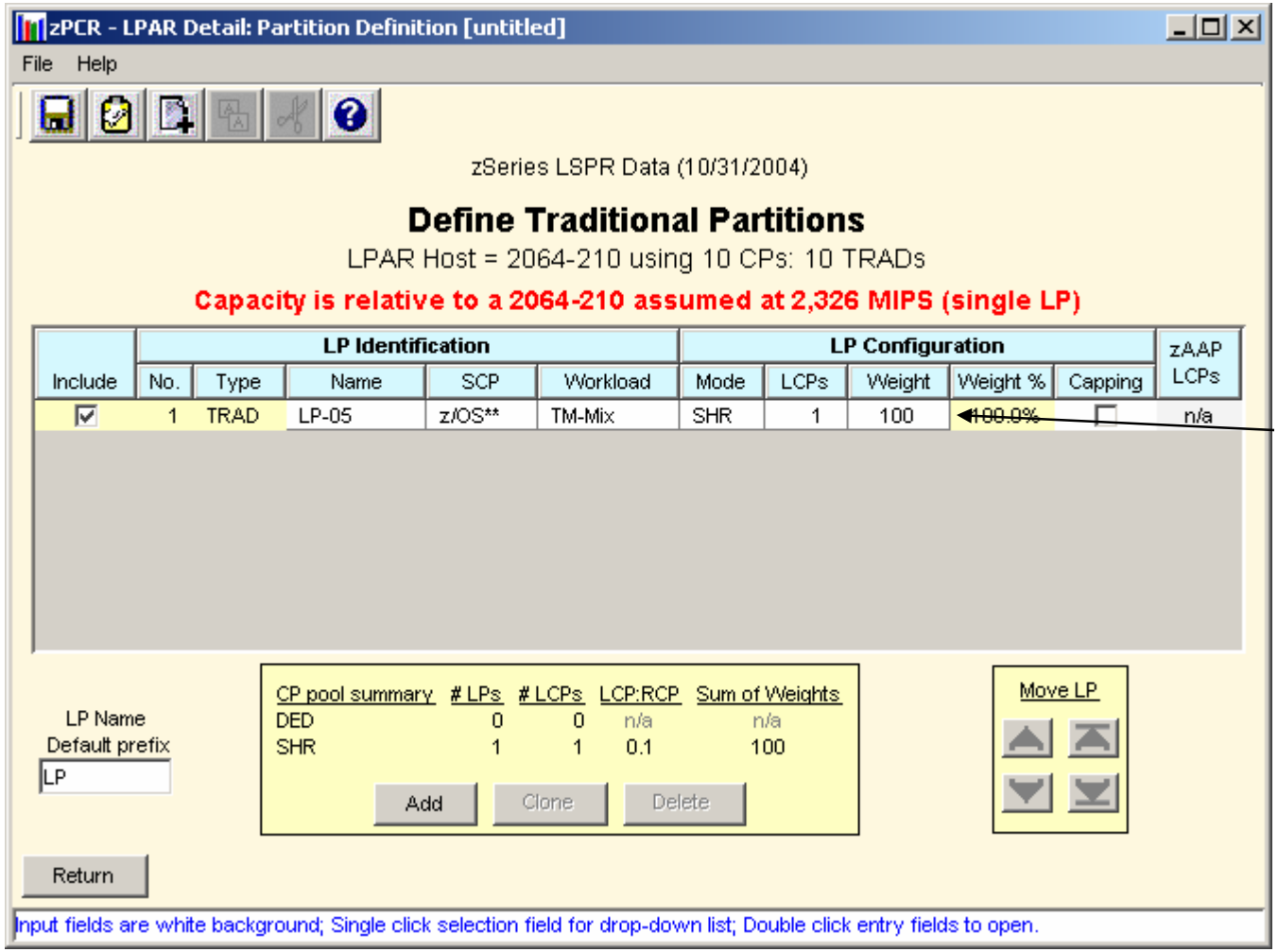


Update Features Selected

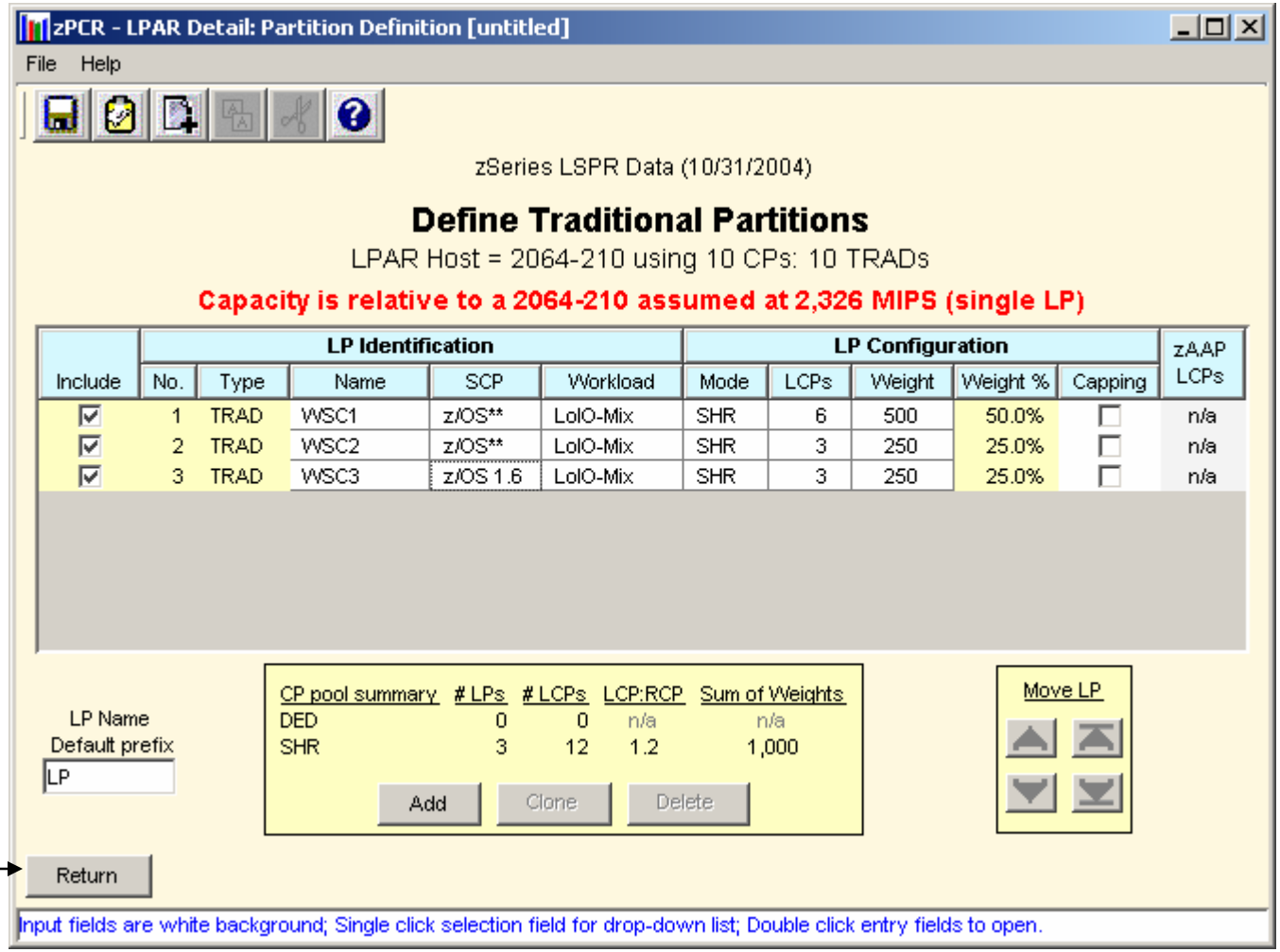
Select return



Select Traditional LPs

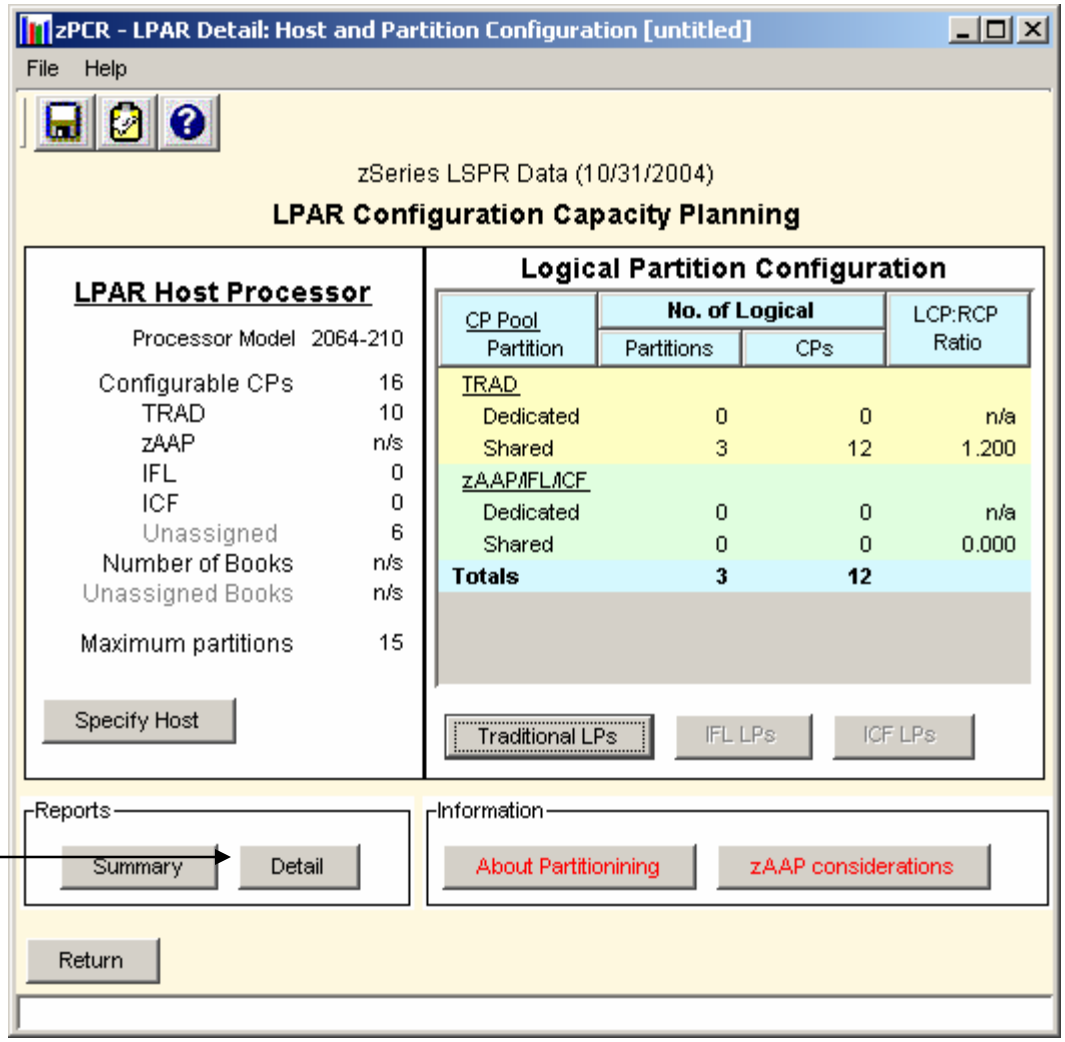


Enter LPAR Definitions for the 2064-210

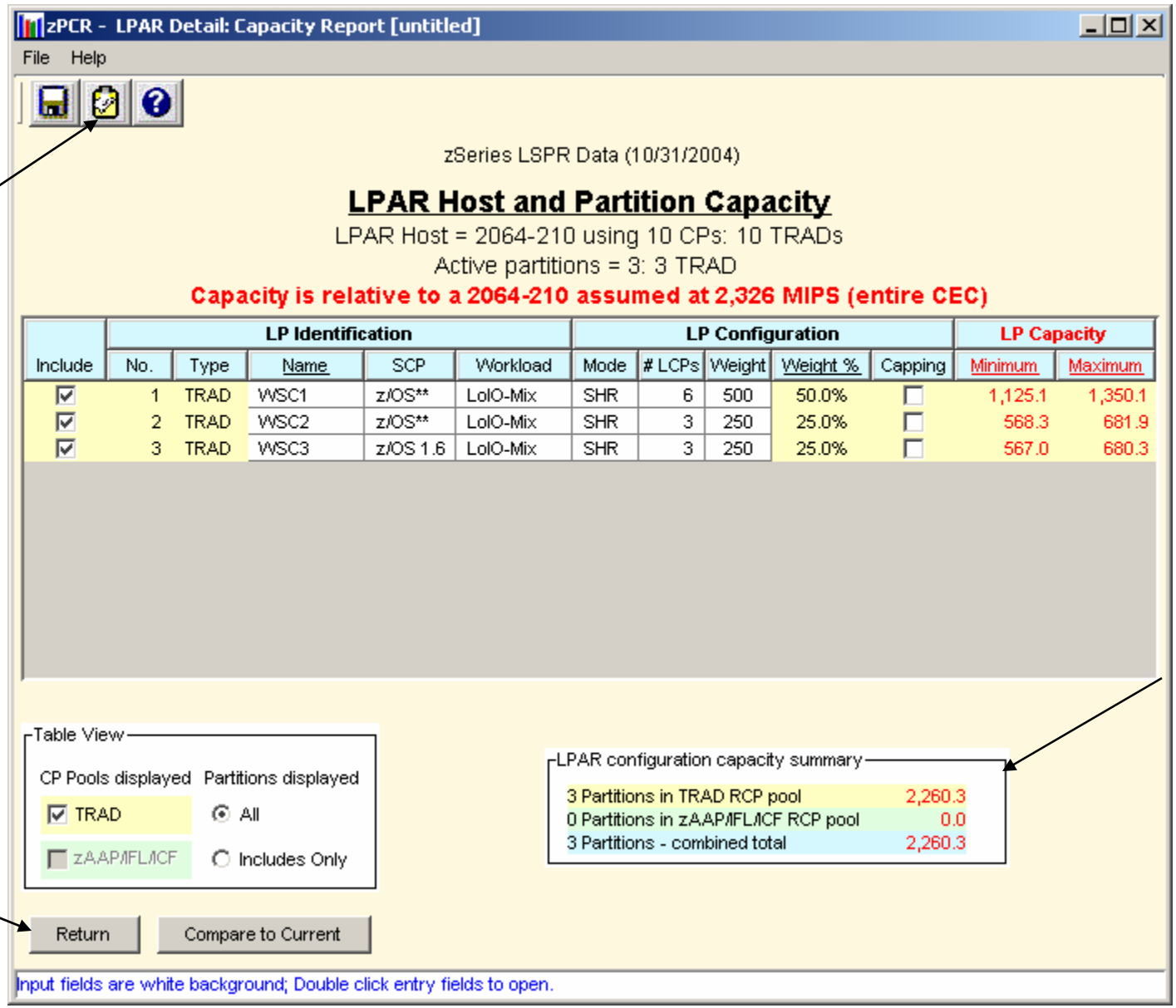


Select Return

Select Detail



Store results in clipboard



Include	LP Identification					LP Configuration					LP Capacity	
	No.	Type	Name	SCP	Workload	Mode	# LCPs	Weight	Weight %	Capping	Minimum	Maximum
☑	1	TRAD	WSC1	z/OS**	LoIO-Mix	SHR	6	500	50.0%	☐	1,125.1	1,350.1
☑	2	TRAD	WSC2	z/OS**	LoIO-Mix	SHR	3	250	25.0%	☐	568.3	681.9
☑	3	TRAD	WSC3	z/OS 1.6	LoIO-Mix	SHR	3	250	25.0%	☐	567.0	680.3

Capacity of our 2064-210 with 3 LPARS

Select Return

Contents of Clipboard

Can be pasted into a document

zPCR (2.4) - LPAR Capacity Report

zSeries LSPR Data (10/31/2004)

LPAR Host and Partition Capacity

LPAR Host = 2064-210 using 10 CPs: 10 TRADs

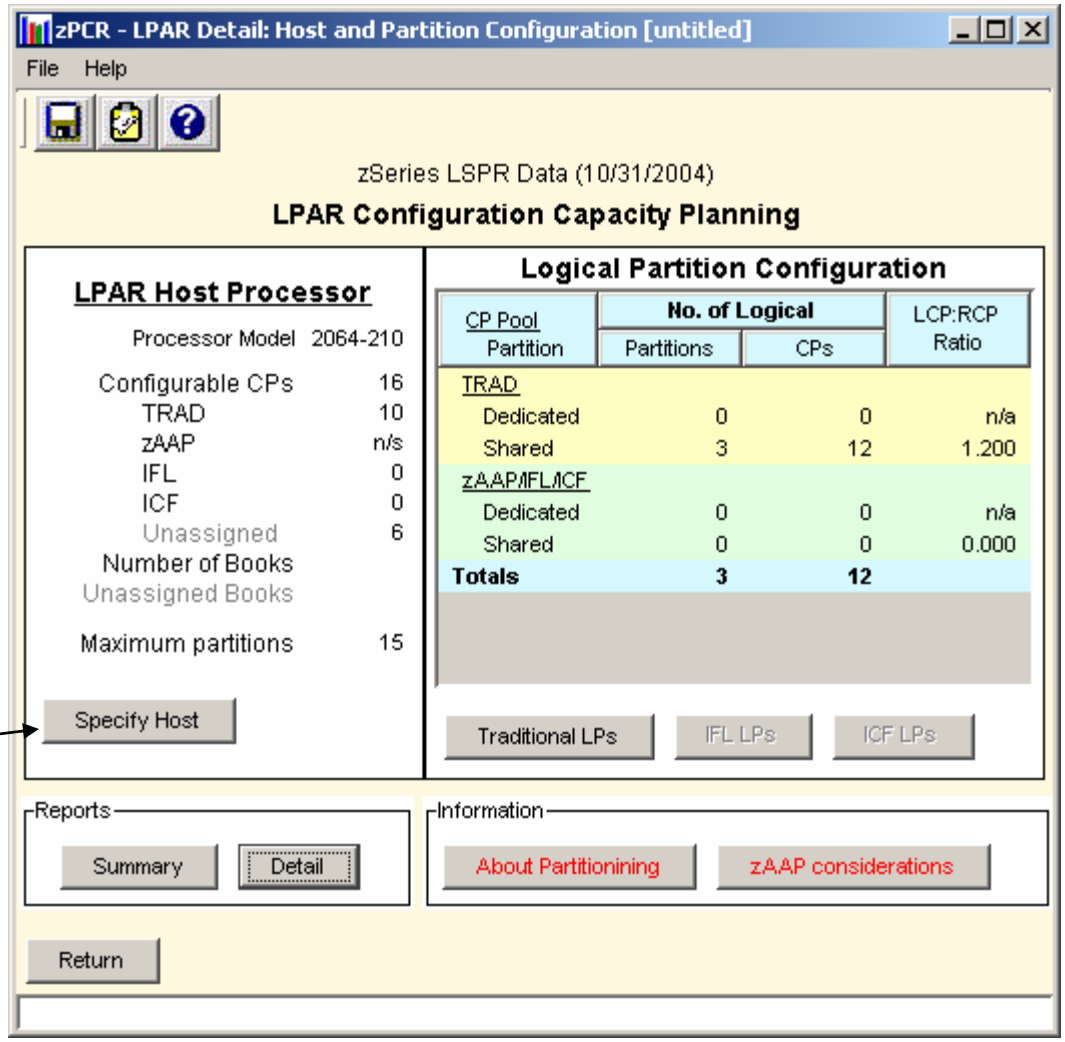
Active partitions = 3; 3 TRAD, 0 zAAP, 0 IFL, 0 ICF

Capacity is relative to a 2064-210 assumed at 2,326 MIPS (entire CEC)

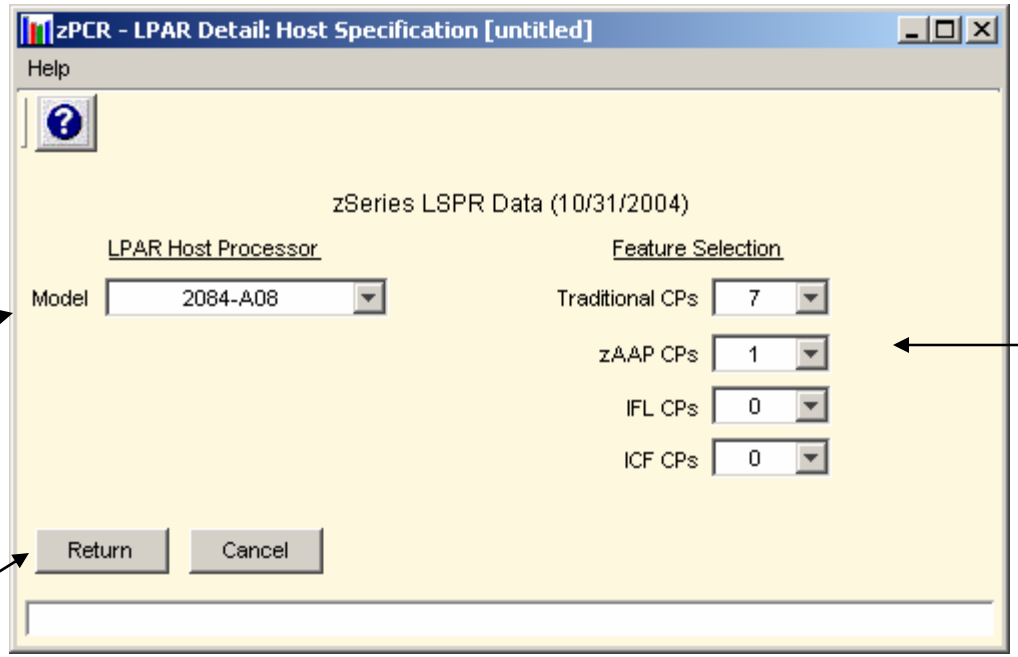
	LP Identification				LP Definition					LP Capacity	
Inc	No	Type	Name	SCP	Workload	Mode	#LCPs	Weight	Weight%	Capping	Minimum	Maximum
Y	1	TRAD	WSC1	z/OS**	LoIO-Mix	SHR	6	500	50.0%		1,125.1	1,350.1
Y	2	TRAD	WSC2	z/OS**	LoIO-Mix	SHR	3	250	25.0%		568.3	681.9
Y	3	TRAD	WSC3	z/OS 1.6	LoIO-Mix	SHR	3	250	25.0%		567.0	680.3

Totals for all partitions included in configuration	LP capacity
3 Partitions in TRAD RCP pool	2,260.3
0 Partitions in zAAP/IFL/ICF RCP pool	0.0
3 Partitions - combined total	2,260.3

Select Specify Host

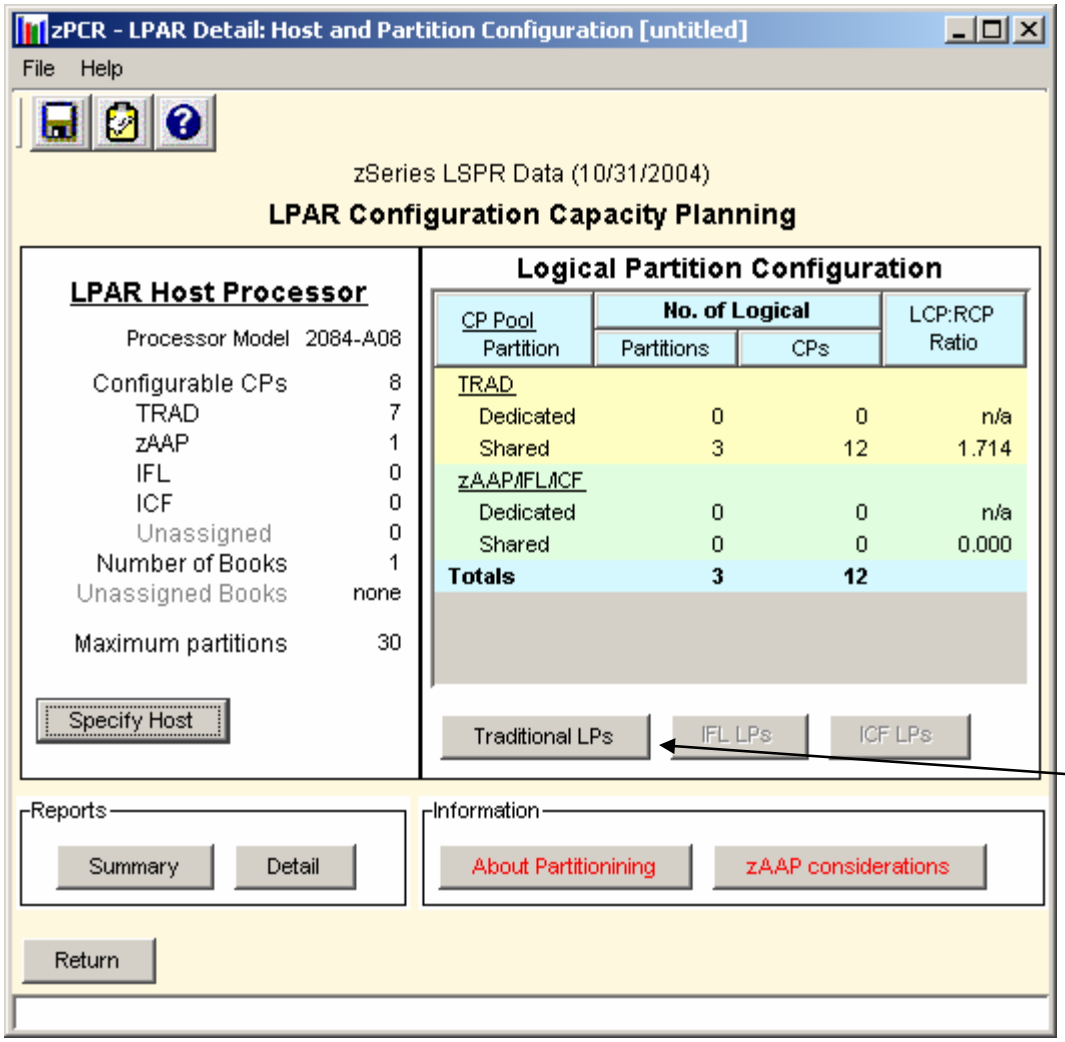


Update Host Processor

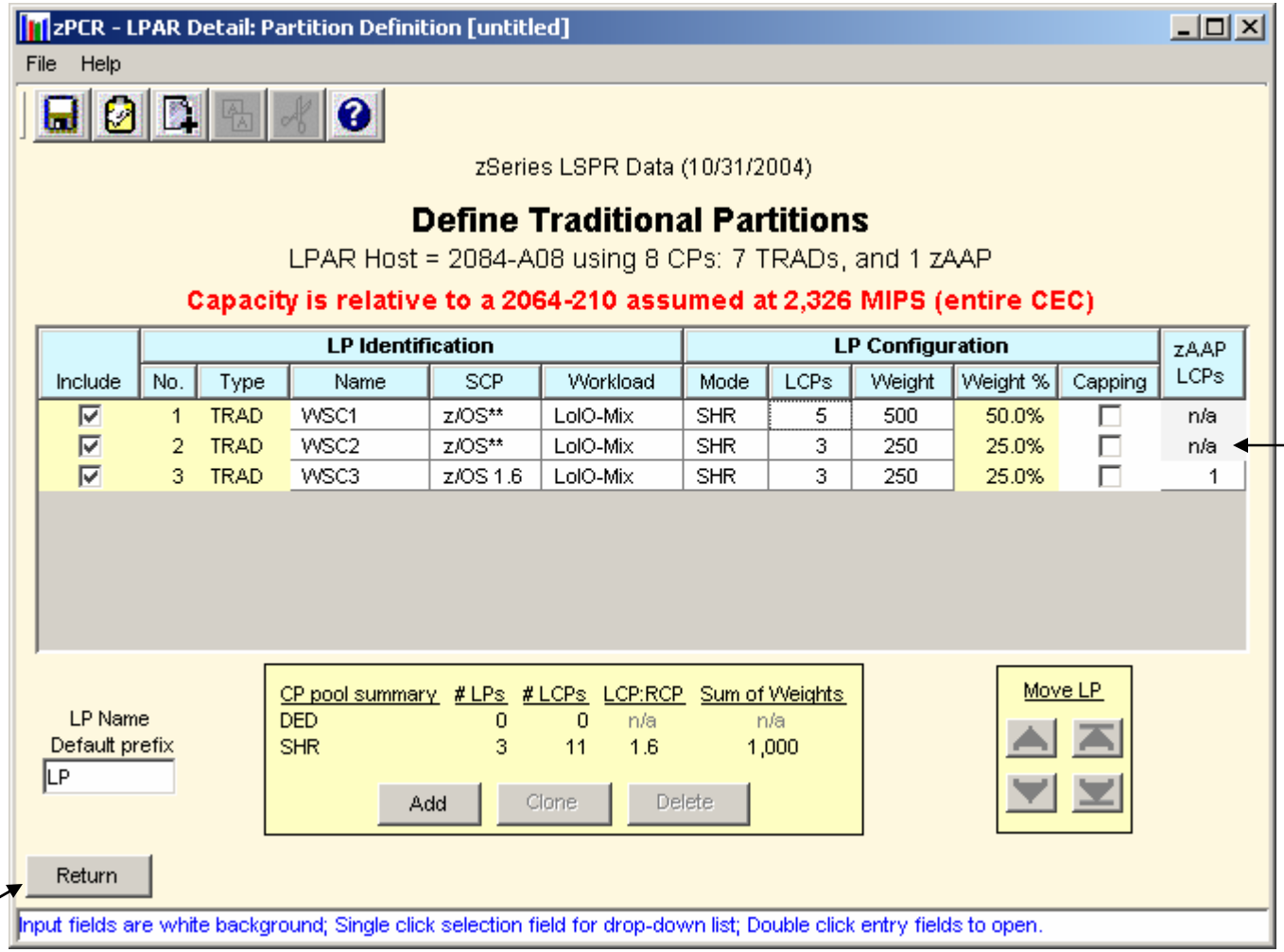


Update Feature Selection

Select Return



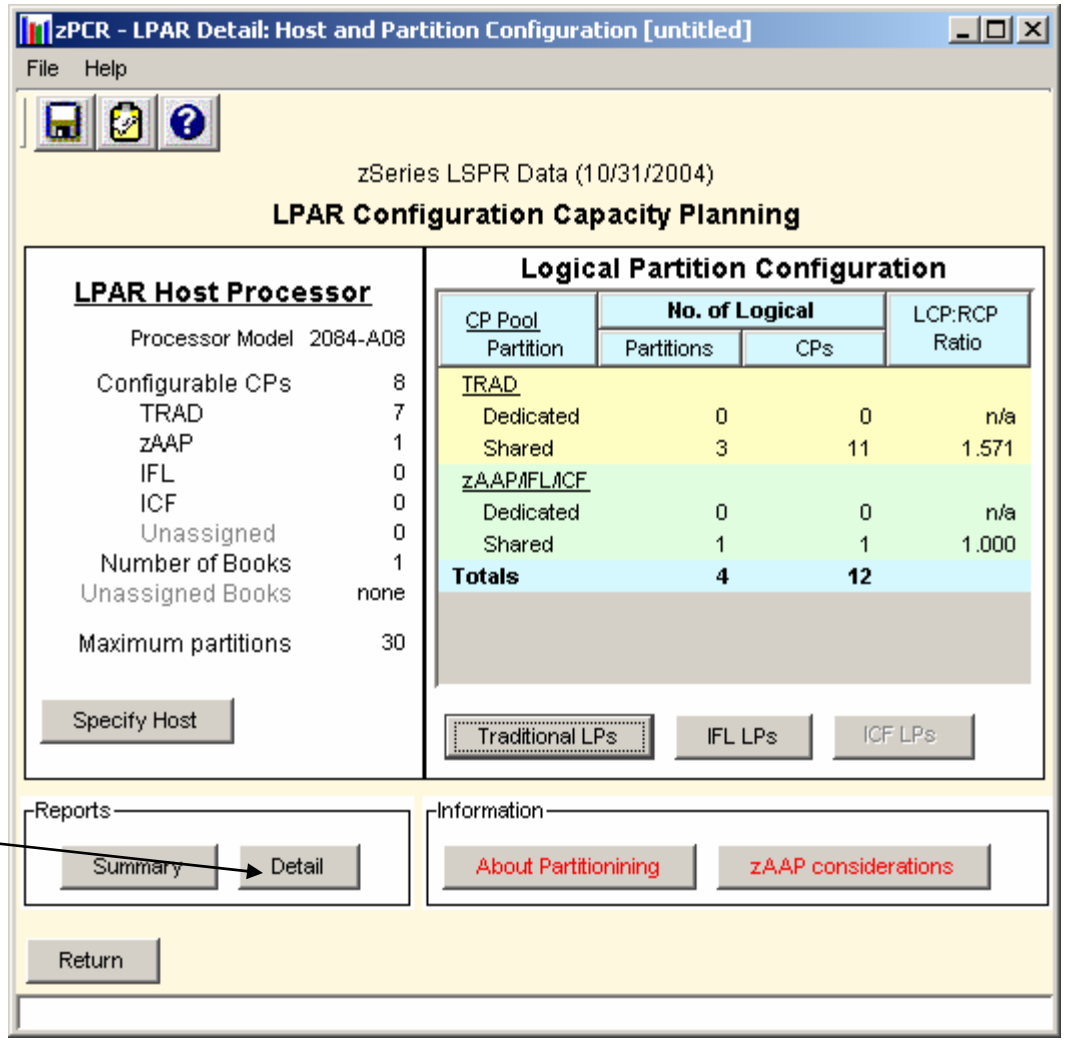
Select Traditional CPs

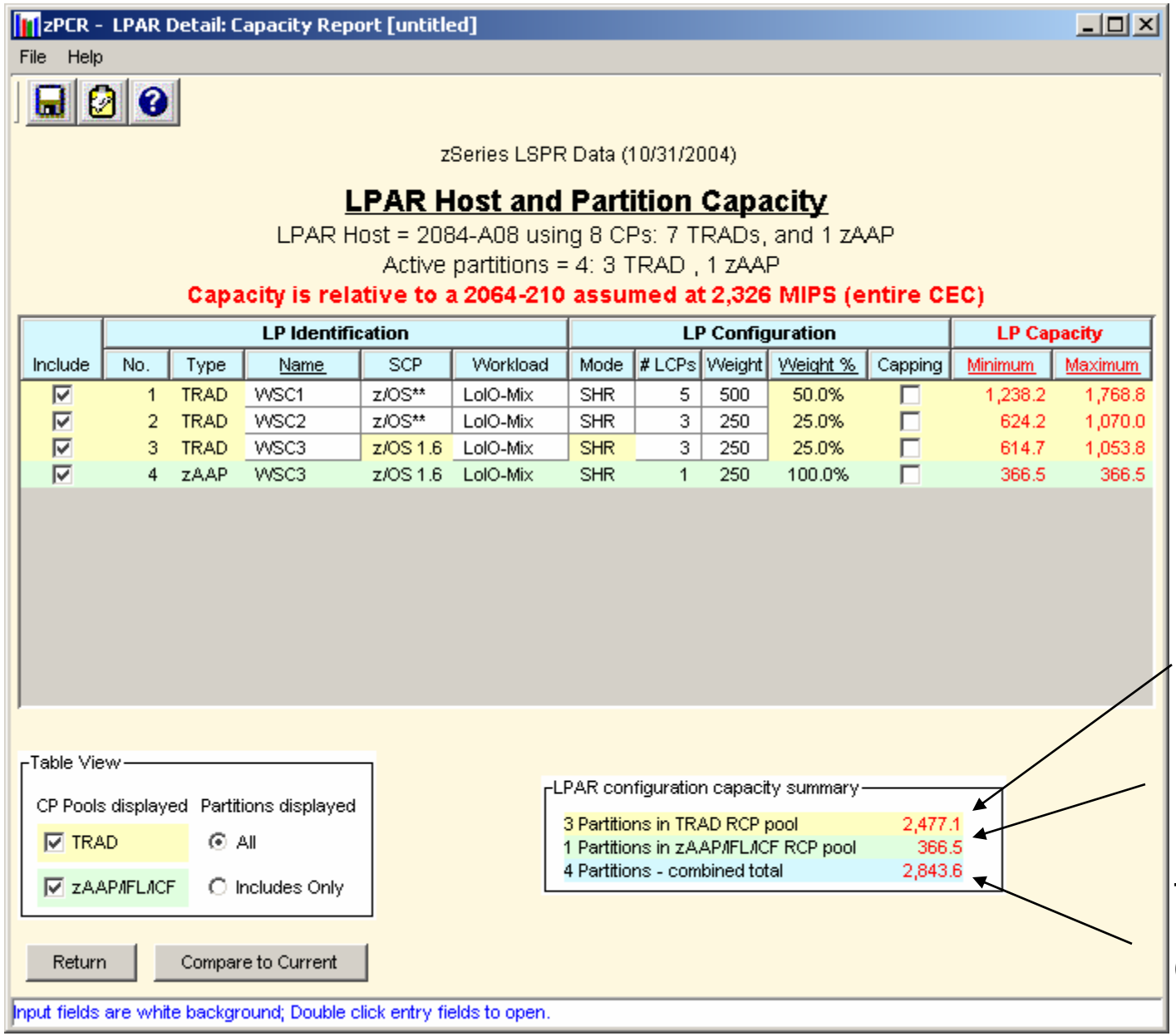


Update LPAR Definitions for 2084

Select Return

Select Detail





zPCR - LPAR Detail: Capacity Report [untitled]

File Help

zSeries LSPR Data (10/31/2004)

LPAR Host and Partition Capacity

LPAR Host = 2084-A08 using 8 CPs: 7 TRADs, and 1 zAAP

Active partitions = 4: 3 TRAD , 1 zAAP

Capacity is relative to a 2064-210 assumed at 2,326 MIPS (entire CEC)

	LP Identification					LP Configuration					LP Capacity	
Include	No.	Type	Name	SCP	Workload	Mode	# LCPs	Weight	Weight %	Capping	Minimum	Maximum
☑	1	TRAD	WSC1	z/OS**	LoIO-Mix	SHR	5	500	50.0%	☐	1,238.2	1,768.8
☑	2	TRAD	WSC2	z/OS**	LoIO-Mix	SHR	3	250	25.0%	☐	624.2	1,070.0
☑	3	TRAD	WSC3	z/OS 1.6	LoIO-Mix	SHR	3	250	25.0%	☐	614.7	1,053.8
☑	4	zAAP	WSC3	z/OS 1.6	LoIO-Mix	SHR	1	250	100.0%	☐	366.5	366.5

Table View

CP Pools displayed: ☑ TRAD, ☑ zAAP/MFL/ICF

Partitions displayed: ◉ All, ○ Includes Only

LPAR configuration capacity summary

3 Partitions in TRAD RCP pool	2,477.1
1 Partitions in zAAP/MFL/ICF RCP pool	366.5
4 Partitions - combined total	2,843.6

Return | Compare to Current

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

GP CP Capacity

zAAP CP Capacity

Total CEC Capacity

zPCR Results

- **Reference CPU is a 2064-210 provides 2326 MIPS (customer defined)**
- **2064-210 with current LPAR configuration provides approximately 2260 MIPS**
- **2084-307 (A08) and 1 zAAP with the proposed LPAR configuration would deliver approximately 2,477 GP CP MIPS and 366 zAAP CP MIPS for a total capacity of approximately 2843 MIPS**

Where to Get More Information

- **The IBM Processor Capacity Reference for zSeries User Manual**
  - Provides information about all the features contained in the tool
- **The zPCR Newsgroup**
  - Provides Q&A support
- **The zPCR Email address**
  - Provides defect support