

# Capacity Tools updates for z17 (zBNA & zPCR)

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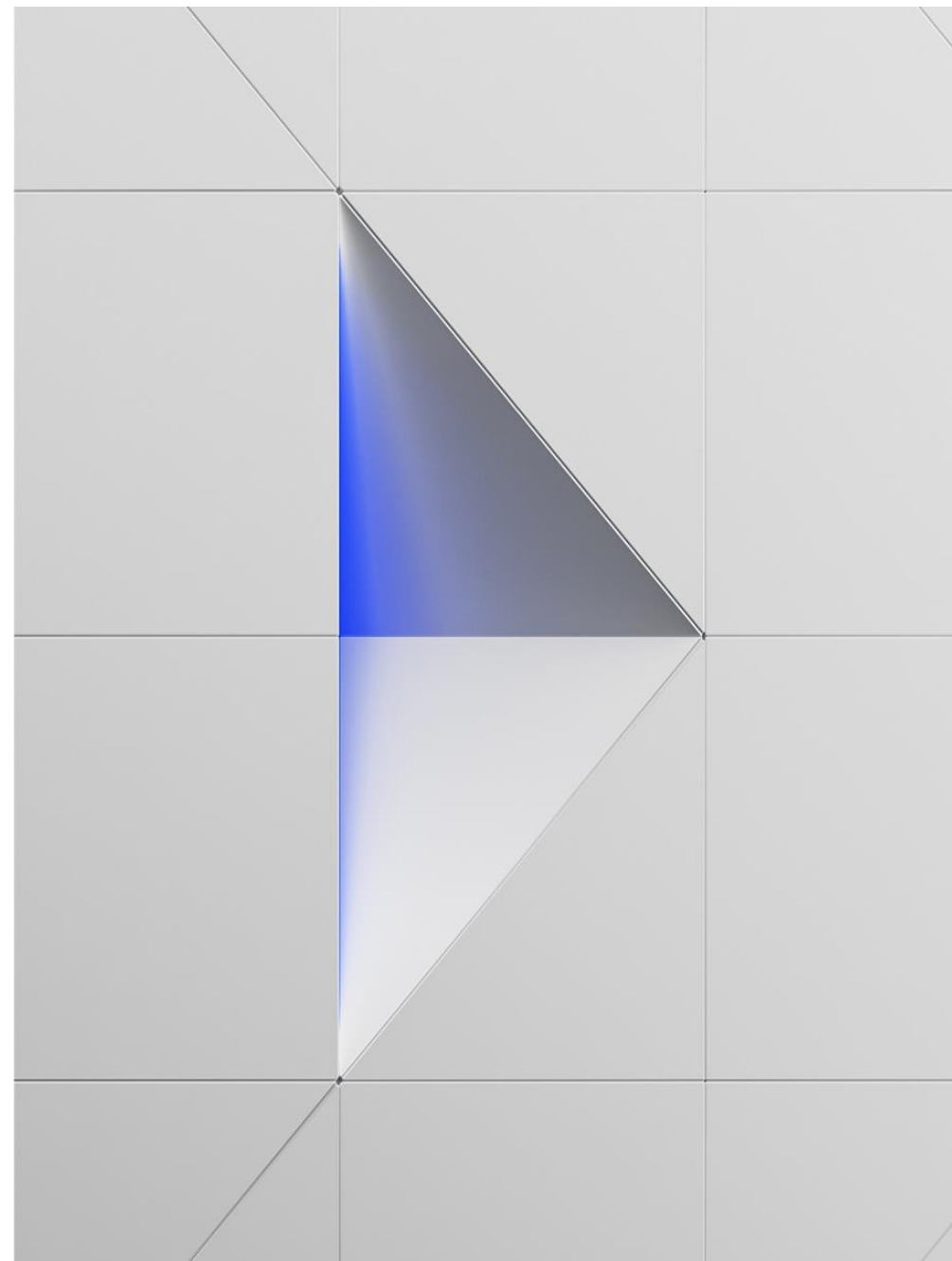
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- Multiple LPAR Options

## Resources & Links



# Using zPCR for z17 Upgrades

Goal: Empowering you with the  
tools to start z17 sizing  
conversations





# Capacity Concepts

## **LSPR = Large Systems Performance Ratio**

IBM builds LSPR data from a [set of benchmarks](#) running representative workloads

The unit of capacity is relative "MIPS" (Million Instructions Per Second) and [is consistent](#) across all generations of processors

## **Multi-Image (MI) Processor Capacity Ratio [table](#)**

Median complex LPAR configuration for each IBM Z model based on customer profiles (most representative for vast majority of customers)

Used for "high-level" starting-point sizing [ONLY](#)

## **LSPR Workload Categories**

Based on various combinations of measured workloads including CICS, Db2, IMS, OSAM, VSAM, Websphere, and COBOL

Categorized into Low/Average/High based on [use of the memory hierarchy](#)  
CPUMF data matches workload to an LSPR curve





# IBM zPCR

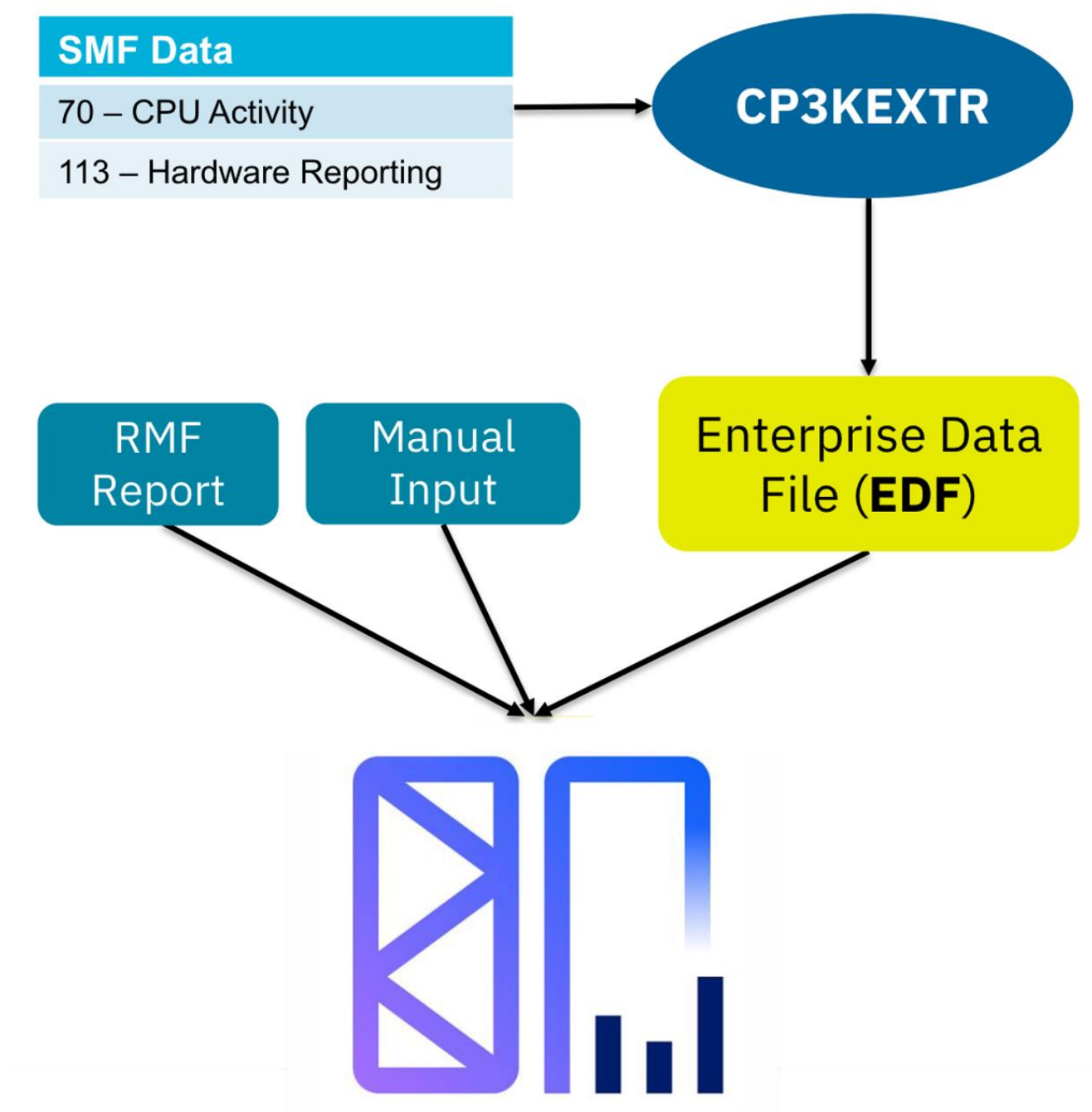
## IBM zPCR (IBM z Processor Capacity Reference)

Publicly available tool that provides user with **detailed capacity planning insight** based on:

- Specific LPAR configuration,
- Specific workload category, and
- Specific use of specialty CPs (IFLs, zIIPs, ICFs)

Much more **powerful and precise** than the Multi-Image Processor Capacity Ration Tables (i.e. "MIPS" Tables), with expected accuracy of  $\pm 5\%$

SMF (System Management Facilities) collects records that can be used for sizing CPU to current workload. The IBM Data Extraction Program (IBM CP3KEXTR) extracts SMF data as recommended input for IBM zPCR.





# Planning for z17 with IBM zPCR

## **Determine starting point for CPU sizing**

Identify LSPR curve your workload falls under and use built-in "MIPS table" to conveniently compare similar processors

## **Compare effective capacity**

Examine changes from updates to processor configuration, such as:

- Processor model updates
- LPAR configuration changes
- Engine addition or consolidation

## **Model Spyre Card management requirements**

View potential capacity impact of additional SSC Partitions:

3 Secure Service Container (SSC) LPARs, each with 2 shared IFLs with SMT

- 1 Appliance Control Center (ACC) partition
- 2 Spyre Support Appliance (SSA) partitions for each environment (e.g. Prod, Dev, Test)





# IBM zPCR

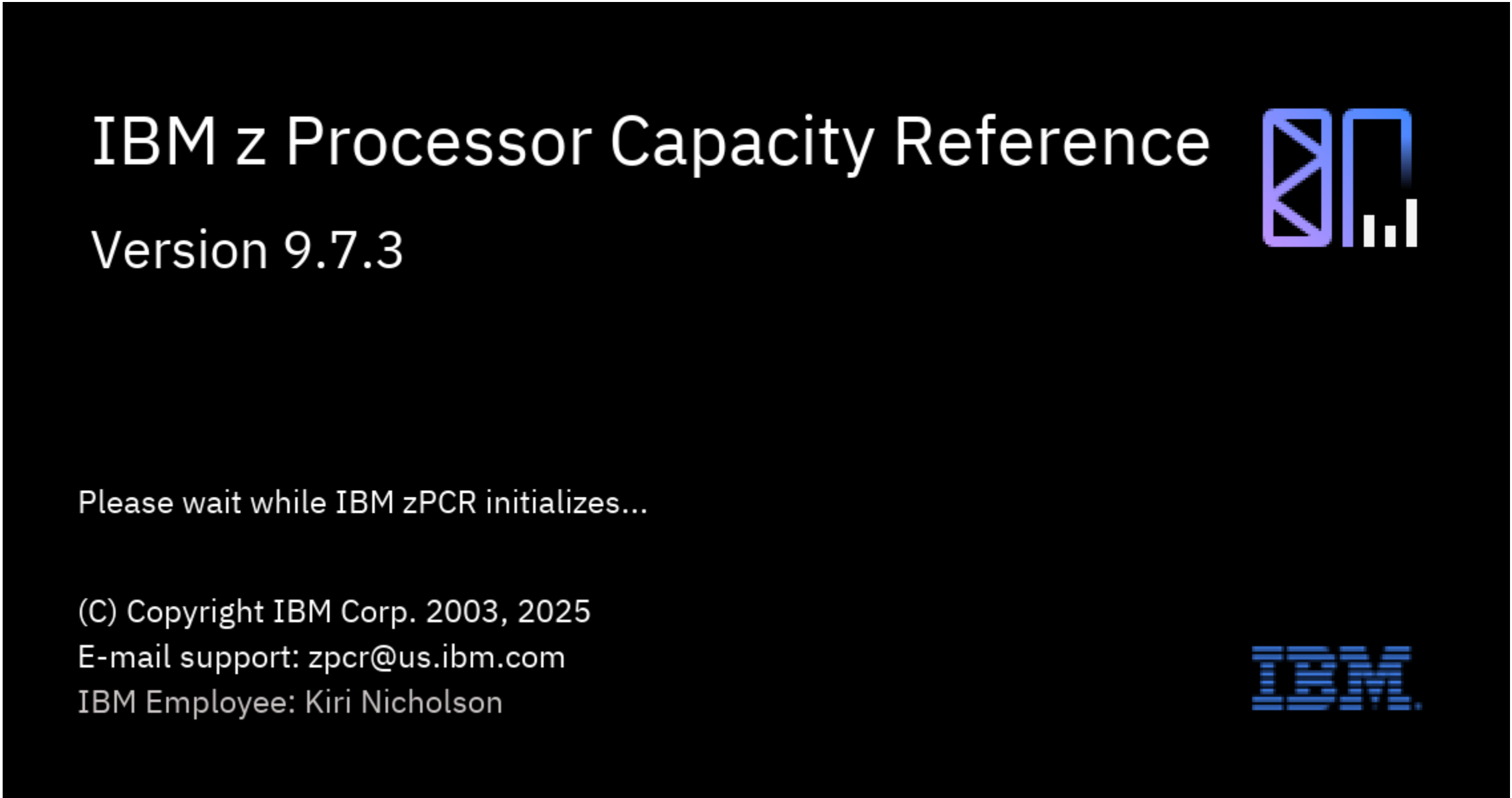
## Walkthrough

Goal: Use zPCR to demonstrate  
Capacity Net Change of two z17-  
705 machines.

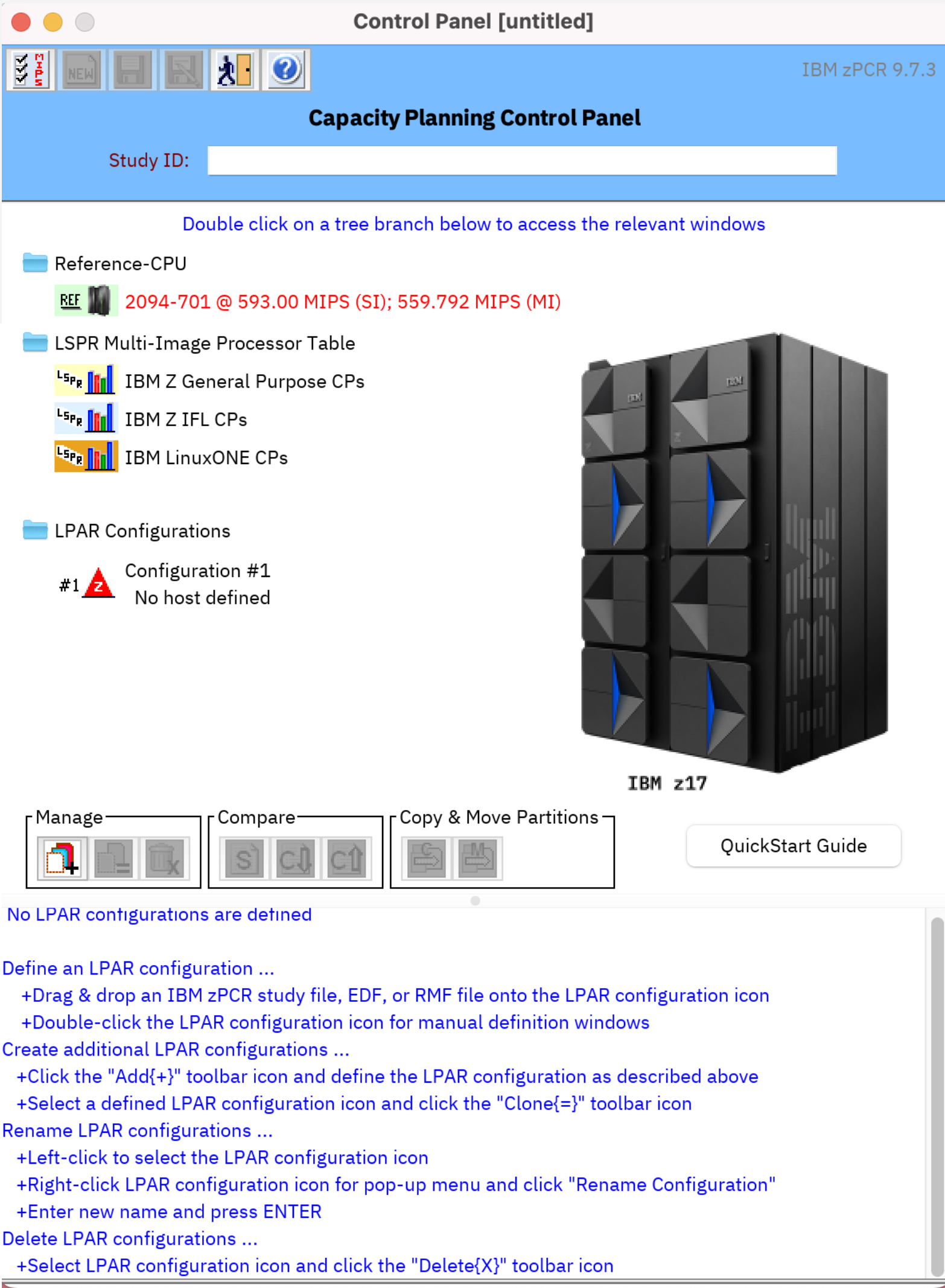




# zPCR - Open Application



Splash screen of IBM zPCR v 9.7.3, released 5/6/25



What you see when you open the application



# zPCR - Open Configuration #1



Control Panel [untitled]

IBM zPCR 9.7.3

Capacity Planning Control Panel

Study ID:

Double click on a tree branch below to access the relevant windows

Reference-CPU

REF 2094-701 @ 593.00 MIPS (SI); 559.792 MIPS (MI)

LSPR Multi-Image Processor Table

LSPR

IBM Z General Purpose CPs

LSPR

IBM Z IFL CPs

LSPR

IBM LinuxONE CPs

LSPR

IBM LinuxONE CPs

LPAR Configurations

#1 Configuration #1

No host defined

IBM z17

Manage

Compare

Copy & Move Partitions

QuickStart Guide

No LPAR configurations are defined

Define an LPAR configuration ...

+Drag & drop an IBM zPCR study file, EDF, or RMF file onto the LPAR configuration icon

+Double-click the LPAR configuration icon for manual definition windows

Create additional LPAR configurations ...

+Click the "Add{+}" toolbar icon and define the LPAR configuration as described above

+Select a defined LPAR configuration icon and click the "Clone{=}" toolbar icon

Rename LPAR configurations ...

+Left-click to select the LPAR configuration icon

+Right-click LPAR configuration icon for pop-up menu and click "Rename Configuration"

+Enter new name and press ENTER

Delete LPAR configurations ...

+Select LPAR configuration icon and click the "Delete{X}" toolbar icon

Double click on "Configuration #1"

LPAR Host and Partition Configuration

IBM zPCR 9.7.3

LPAR Configuration Capacity Planning

Based on LSPR Data for IBM Z Processors

Study ID: Not specified

#1 Configuration #1

Description: Enter description here

LPAR Host Processor	
Processor	Brand
Processor	Family
Processor	Model
Speed	Class
Maximum	CPs
	Configured
	RCP Pool Contention

CP Type	Assigned	Unused
GP		
zAAP		
zIIP		
IFL		
ICF		
Total		

Logical Partition Configuration					
CP Pool	Partition Mode	Number of			LCP:RCP Ratio
		Real CPs	Logical Partitions	Logical CPs	

Define LPAR Host Processor

Specify Host

Create Host and Partitions From

EDF RMF IBM zPCR Study

Define Partitions

GP IFL ICF

Copy Partitions From

EDF RMF IBM zPCR Study

Capacity Reports

Host Summary Partition Detail Partition Utilized Capacity

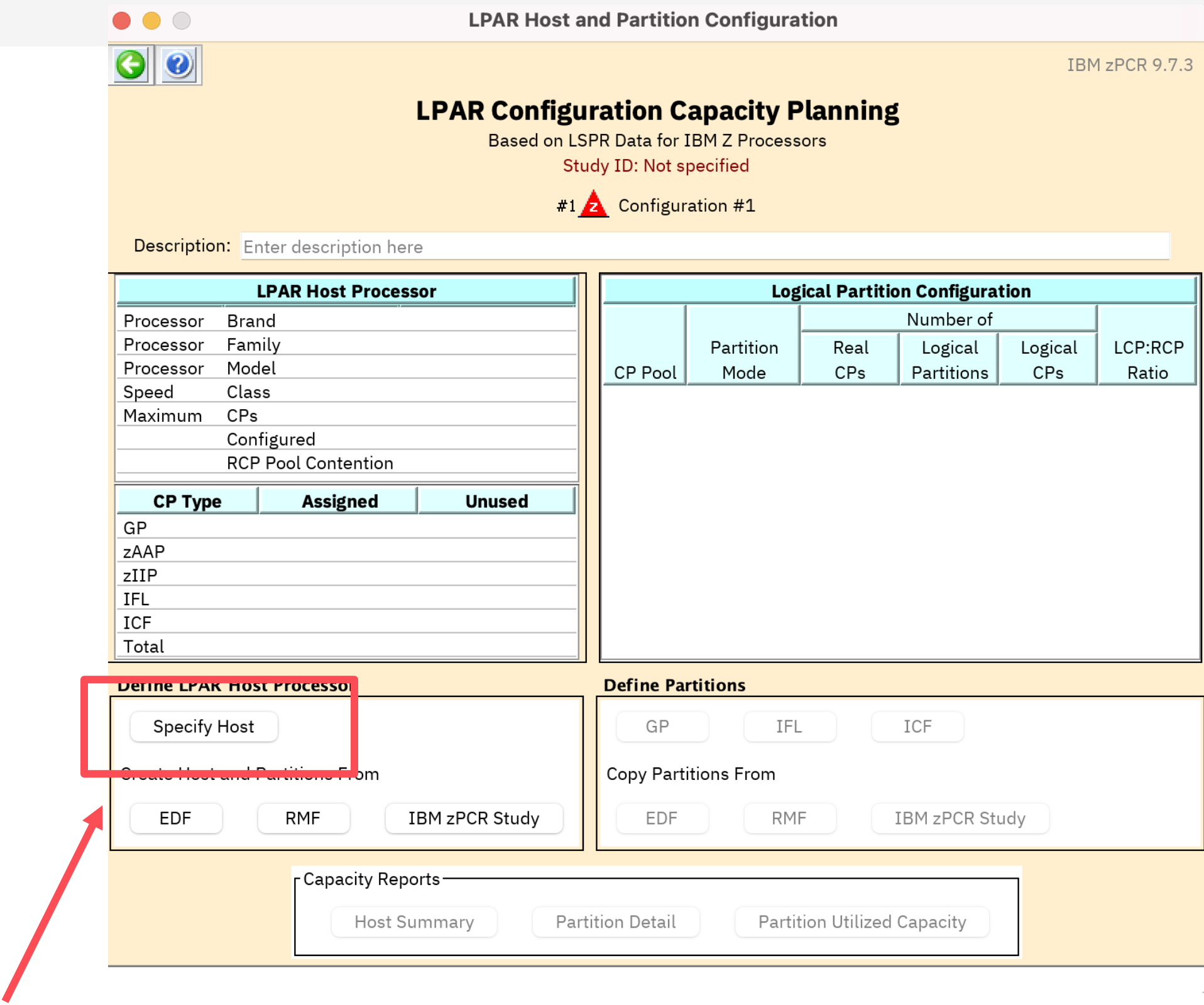
The "LPAR Host and Partition Configuration" screen opens up

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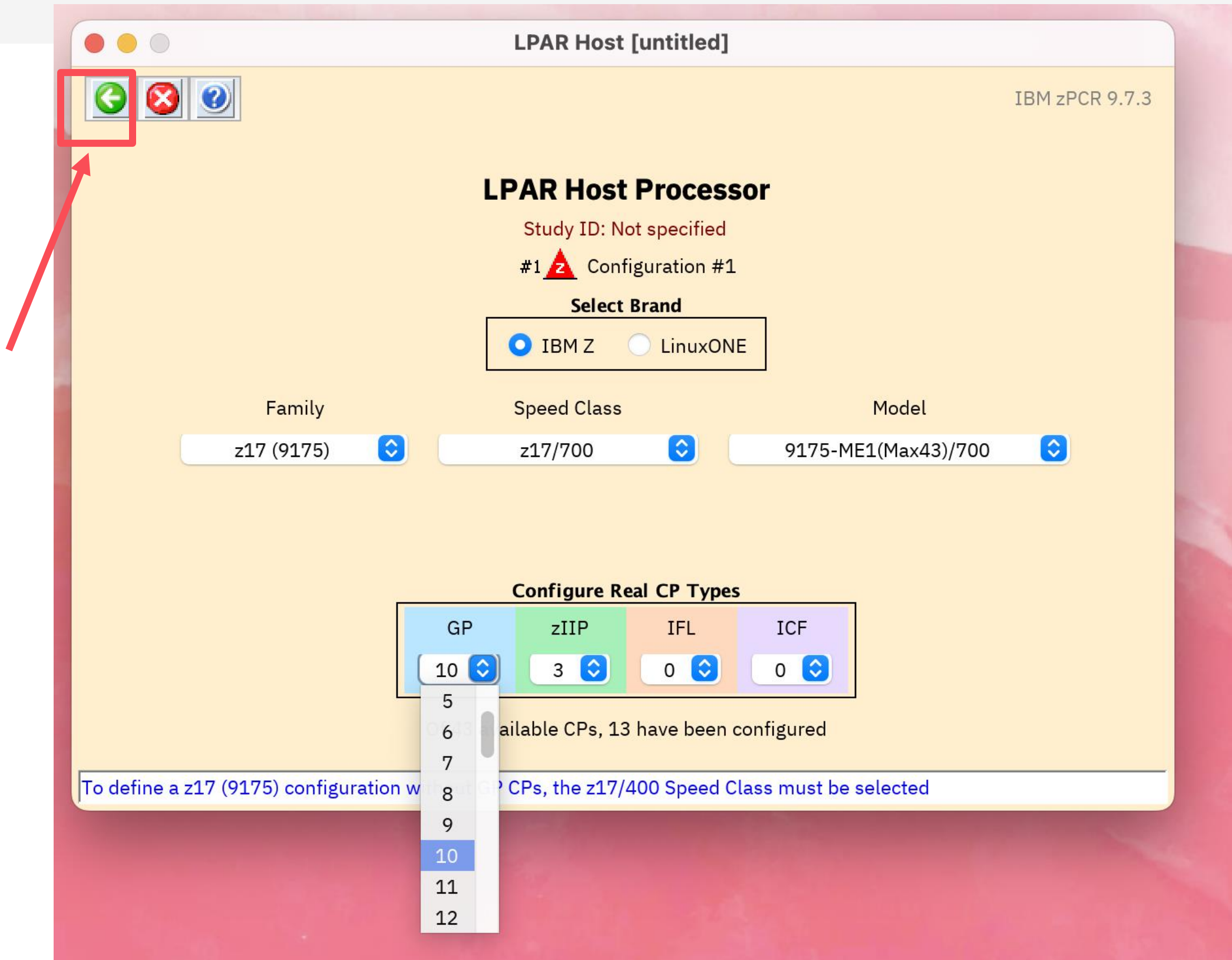
9



# zPCR - Specify Host



Select "Specify Host"



Use the drop down menus to select the host processor. We'll select a z17-710 (Max43) with 3 zIIP engines. Then hit the "Return" arrow to save.



# zPCR - Define Partitions



LPAR Host and Partition Configuration

IBM zPCR 9.7.3

LPAR Configuration Capacity Planning

Based on LSPR Data for IBM Z Processors

Study ID: Not specified

#1 Configuration #1

Description: Enter description here

LPAR Host Processor

Processor Brand	IBM Z
Processor Family	z17
Processor Model	9175-ME1(Max43)
Speed Class	700
Maximum CPs	43
Drawers Configured	1
Drawer RCP Pool Contention	None

CP Type	Assigned	Unused
GP	10	10
zAAP	n/s	0
zIIP	3	3
IFL	0	0
ICF	0	0
Total	13	13

Logical Partition Configuration

CP Pool	Partition Mode	Number of			LCP:RCP Ratio
		Real CPs	Logical Partitions	Logical CPs	

Define LPAR Host Processor

Specify Host

Create Host and Partitions From

EDF RMF IBM zPCR Study

Define Partitions

GP / zIIP IFL ICF

Copy Partitions From

EDF RMF IBM zPCR Study

Capacity Reports

Host Summary Partition Detail Partition Utilized Capacity

Under "Define Partitions" select "GP/zIIP"

Partition Definition

IBM zPCR 9.7.3

Define General Purpose Partitions

Based on LSPR Data for IBM Z Processors

Study ID: Not specified

#1 Configuration #1

z17 Host = 9175-ME1(Max43)/700 with 13 CPs: GP=10 zIIP=3

1 Active Partition: GP=1 zIIP=0

Include	Partition Identification					Partition Configuration				Capping	
	No.	Type	Name	SCP	Workload	Mode	LCPs	Weight	Weight %	INIT	ABS
<input checked="" type="checkbox"/>	1	GP	GP-01	z/OS-3.1	Average	SHR	1	100	100.00%	<input type="checkbox"/>	

Associate with Selected GP

Name prefix GP

Move Partition

zAAP IFL

zIIP ICF

Partition Summary by Pool

CP Pool	Real CPs	LPs	DED LCPs	SHR LCPs	LCP:RCP	Sum of Weights
GP	10	1		1	0.100	100
zIIP	3					
IFL						
ICF						
Totals	13	1	0	1		

Add GP Clone Delete

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

Use "Add GP" to create 10 LPARs. Associate one zIIP LPAR with each.



# zPCR - Define Partitions



Partition Definition

IBM zPCR 9.7.3

Define General Purpose Partitions

Based on LSPR Data for IBM Z Processors

Study ID: Not specified

#1 z17-705 with 10 LPARs

Description: z17-705 with 10 LPARs for zPCR demo

z17 Host = 9175-ME1(Max43)/700 with 8 CPs: GP=5 zIIP=3

20 Active Partitions: GP=10 zIIP=10

Include	Partition Identification				Partition Configuration			Capping			
	No.	Type	Name	SCP	Workload	Mode	LCPs	Weight	Weight %	INIT	ABS
<input checked="" type="checkbox"/>	1	GP	GP-01	z/OS-3.1	Average	SHR	1	100	10.00%	<input type="checkbox"/>	
<input checked="" type="checkbox"/>		zIIP	GP-01	z/OS-3.1	Average	SHR	2	100	10.00%	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	2	GP	GP-02	z/OS-3.1	Average	SHR	3	100	10.00%	<input type="checkbox"/>	
<input checked="" type="checkbox"/>		zIIP	GP-02	z/OS-3.1	Average	SHR	4	100	10.00%	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	3	GP	GP-03	z/OS-3.1	Average	SHR	5	100	10.00%	<input type="checkbox"/>	
<input checked="" type="checkbox"/>		zIIP	GP-03	z/OS-3.1	Average	SHR		100	10.00%	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	4	GP	GP-04	z/OS-3.1	Average	SHR	2	100	10.00%	<input type="checkbox"/>	
<input checked="" type="checkbox"/>		zIIP	GP-04	z/OS-3.1	Average	SHR	1	100	10.00%	<input type="checkbox"/>	
<input checked="" type="checkbox"/>	5	GP	GP-05	z/OS-3.1	Average	SHR	2	100	10.00%	<input type="checkbox"/>	
<input checked="" type="checkbox"/>		zIIP	GP-05	z/OS-3.1	Average	SHR	1	100	10.00%	<input type="checkbox"/>	

Associate with Selected GP

Name prefix GP

Move Partition

zAAP

IFL

zIIP

ICF

Partition Summary by Pool

CP Pool	Real CPs	LPs	DED LCPs	SHR LCPs	LCP:RCP	Sum of Weights
GP	5	10		20	4.000	1,000
zIIP	3	10		10	3.333	1,000
IFL						
ICF						
Totals	8	20	0	30		

Add GP

Clone

Delete

Note: When defining partitions, SMT for zIIP/IFL is assumed OFF unless previously activated on the Partition Detail Report window. Input fields are white background; Single click selection field for drop-down list; Double click entry fields to open.

Use the drop-downs to define 2 LCPs to each GCP LPAR. Use the default weight of "100". Select the green "Return" arrow to save.

LPAR Host and Partition Configuration

IBM zPCR 9.7.3

LPAR Configuration Capacity Planning

Based on LSPR Data for IBM Z Processors

Study ID: Not specified

#1 z17-705 with 10 LPARs

Description: z17-705 with 10 LPARs for zPCR demo

LPAR Host Processor			Logical Partition Configuration					
Processor	Brand	IBM Z	CP Pool	Partition Mode	Number of		LCP:RCP Ratio	
Processor Family	Model	9175-ME1(Max43)			Real CPs	Logical Partitions		Logical CPs
Speed Class	700		GP	Dedicated	0	0	0	n/a
Maximum CPs	43			Shared	5	10	20	4.000
Drawers Configured	1		zAAP	Dedicated	0	0	0	n/a
Drawer RCP Pool Contention	None			Shared	0	0	0	0.000
			zIIP	Dedicated	0	0	0	n/a
				Shared	3	10	10	3.333
			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	20	30	

Define LPAR Host Processor

Specify Host

Create Host and Partitions From

EDF

RMF

IBM zPCR Study

Define Partitions

GP / zIIP

IFL

ICF

Copy Partitions From

EDF

RMF

IBM zPCR Study

Capacity Reports

Host Summary

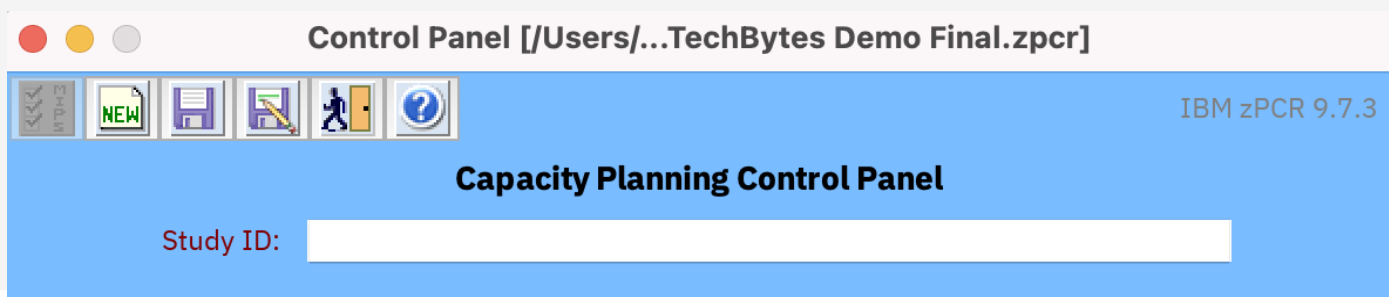
Partition Detail

Partition Utilized Capacity

Add a description of the configuration, and use the "Return" arrow to save.



# zPCR - Clone the configuration



Double click on a tree branch below to access the relevant windows


- Reference-CPU
  - REF 2094-701 @ 593.00 MIPS (SI); 559.792 MIPS (MI)
- LSPR Multi-Image Processor Table
  - LSPR IBM Z General Purpose CPs
  - LSPR IBM Z IFL CPs
  - LSPR IBM LinuxONE CPs
- LPAR Configurations
  - z17-705 with 10 LPARs



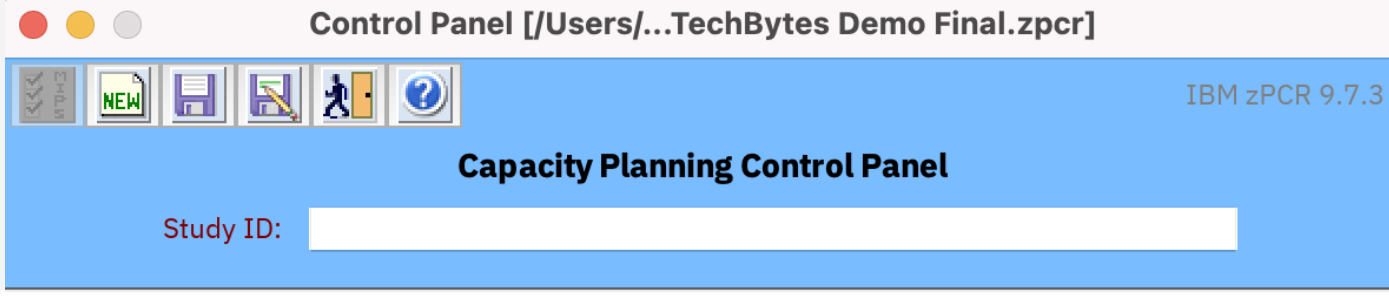
IBM z17



QuickStart Guide

#1 	z17-705 with 10 LPARs z17-705 with 10 LPARs for zPCR demo z17/700 LPAR Host: 9175-ME1(Max43)/700					
	Pool CP Type	#1 GP	#2 zAAP	#3 zIIP	#4 IFL	#5 ICF
RCPs	5	0	3	0	0	8
Partitions	10	0	10	0	0	20
LCPs	20	0	10	0	0	30
Capacity	10,963	n/a	6,509	n/a	n/a	17,472

Right click the configuration and select "Rename configuration". Assign this configuration a descriptive name.



Double click on a tree branch below to access the relevant windows


- Reference-CPU
  - REF 2094-701 @ 593.00 MIPS (SI); 559.792 MIPS (MI)
- LSPR Multi-Image Processor Table
  - LSPR IBM Z General Purpose CPs
  - LSPR IBM Z IFL CPs
  - LSPR IBM LinuxONE CPs
- LPAR Configurations
  - #1 z17-705 with 10 LPARs
  - #2 Configuration #2



IBM z17



QuickStart Guide

#1 	z17-705 with 10 LPARs					
	z17-705 with 10 LPARs for zPCR demo					
	z17/700 LPAR Host: 9175-ME1(Max43)/700					
Pool CP Type	#1 GP	#2 zAAP	#3 zIIP	#4 IFL	#5 ICF	CPC Total
RCPs	5	0	3	0	0	8
Partitions	10	0	10	0	0	20
LCPs	20	0	10	0	0	30
Capacity	10,963	n/a	6,509	n/a	n/a	17,472

Highlight Config #1, and use the "=" button to clone the configuration. Double click "Configuration #2"



# zPCR - Define Partitions



LPAR Host and Partition Configuration

IBM zPCR 9.7.3

LPAR Configuration Capacity Planning

Based on LSPR Data for IBM Z Processors

Study ID: Not specified

#2 Configuration #2

Description: Cloned from z17-705 with 10 LPARs

LPAR Host Processor

Processor	Brand	IBM Z
Processor	Family	z17
Processor	Model	9175-ME1(Max43)
Speed	Class	700
Maximum	CPs	43
Drawers	Configured	1
Drawer	RCP Pool Contention	None

CP Type	Assigned	Unused
GP	5	0
zAAP	n/s	0
zIIP	3	0
IFL	0	0
ICF	0	0
Total	8	0

Logical Partition Configuration

CP Pool	Partition Mode	Number of			LCP:RCP Ratio
		Real CPs	Logical Partitions	Logical CPs	
GP	Dedicated	0	0	0	n/a
	Shared	5	5	10	2.000
zAAP	Dedicated	0	0	0	n/a
	Shared	0	0	0	0.000
zIIP	Dedicated	0	0	0	n/a
	Shared	3	5	5	1.667
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	10	15	

Define LPAR Host Processor

Specify Host

Create Host and Partitions From

EDF RMF IBM zPCR Study

Define Partitions

GP / zIIP IFL ICF

Copy Partitions From

EDF RMF IBM zPCR Study

Capacity Reports

Host Summary Partition Detail Partition Utilized Capacity

Under "Define Partitions" select "GP/zIIP"

Partition Definition

IBM zPCR 9.7.3

Define General Purpose Partitions

Based on LSPR Data for IBM Z Processors

zPCR Partition Definitions

Click "Yes" to permanently delete this partition

No Yes

Include	No.	Type	GP	OS	Average	SHR	Weight	Weight %	INIT	ABS
<input checked="" type="checkbox"/>	2	GP	GP-02	z/OS-3.1	Average	SHR	1	100	16.67%	
<input checked="" type="checkbox"/>	3	GP	GP-03	z/OS-3.1	Average	SHR	2	100	16.67%	
<input checked="" type="checkbox"/>	4	GP	GP-04	z/OS-3.1	Average	SHR	2	100	16.67%	
<input checked="" type="checkbox"/>	5	GP	GP-05	z/OS-3.1	Average	SHR	1	100	16.67%	
<input checked="" type="checkbox"/>	6	GP	GP-06	z/OS-3.1	Average	SHR	2	100	16.67%	
<input checked="" type="checkbox"/>		zIIP	GP-06	z/OS-3.1	Average	SHR	1	100	16.67%	

Associate with Selected GP

Name prefix GP

Move Partition

zAAP IFL zIIP ICF

Add GP Clone Delete

Partition Summary by Pool

CP Pool	Real CPs	LPs	DED LCPs	SHR		Sum of Weights
				LCPs	LCP:RCP	
GP	5	6		12	2.400	600
zIIP	3	6		6	2.000	600
IFL						
ICF						
Totals	8	12	0	18		

Note: When defining partitions, SMT for zIIP/IFL is assumed OFF unless previously activated on the Partition Detail Report window.

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

For partitions GP-06 through GP-10, highlight, and select "Delete". Then hit "yes". When left with 5 Partitions, hit the green "Return" arrow.



# zPCR - Return & Rename



LPAR Host and Partition Configuration

IBM zPCR 9.7.3

LPAR Configuration Capacity Planning

Based on LSPR Data for IBM Z Processors

Study ID: Not specified

#2 Configuration #2

Description: Cloned from z17-705 with 10 LPARs

LPAR Host Processor		
Processor	Brand	IBM Z
Processor	Family	z17
Processor	Model	9175-ME1(Max43)
Speed	Class	700
Maximum	CPs	43
Drawers	Configured	1
Drawer	RCP Pool Contention	None
CP Type	Assigned	Unused
GP	5	0
zAAP	n/s	0
zIIP	3	0
IFL	0	0
ICF	0	0
Total	8	0

Define LPAR Host Processor

Specify Host

Create Host and Partitions From

EDF

RMF

IBM zPCR Study

Logical Partition Configuration					
CP Pool	Partition Mode	Number of			LCP:RCP Ratio
		Real CPs	Logical Partitions	Logical CPs	
GP	Dedicated	0	0	0	n/a
	Shared	5	5	10	2.000
zAAP	Dedicated	0	0	0	n/a
	Shared	0	0	0	0.000
zIIP	Dedicated	0	0	0	n/a
	Shared	3	5	5	1.667
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	10	15	

Define Partitions

GP / zIIP

IFL

ICF

Copy Partitions From

EDF

RMF

IBM zPCR Study

Capacity Reports

Host Summary

Partition Detail

Partition Utilized Capacity

Hit the green "Return" arrow again.

Control Panel [/Users/...TechBytes Demo Final.zpcr]

IBM zPCR 9.7.3

Capacity Planning Control Panel

Study ID:

Double click on a tree branch below to access the relevant windows

Reference-CPU

2094-701 @ 593.00 MIPS (SI); 559.792 MIPS (MI)

LSPR Multi-Image Processor Table

IBM Z General Purpose CPs

IBM Z IFL CPs

IBM LinuxONE CPs

LPAR Configurations

#1 z17-705 with 10 LPARs

z17-ME1(Max43) 9175-705 I=3

z17-705 with 5 LPARs

IBM z17

Manage

Compare

Copy & Move Partitions

QuickStart Guide

#2	Configuration #2					
	Cloned from z17-705 with 10 LPARs					
	z17/700 LPAR Host: 9175-ME1(Max43)/700					
Pool CP Type	#1 GP	#2 zAAP	#3 zIIP	#4 IFL	#5 ICF	CPC Total
RCPs	5	0	3	0	0	8
Partitions	5	0	5	0	0	10
LCPs	10	0	5	0	0	15
Capacity	11,526	n/a	6,796	n/a	n/a	18,322

Right click "Configuration #2" and select "Rename configuration". Give it a descriptive name.



# zPCR - Compare

Control Panel [/Users/...TechBytes Demo Final.zpcr]

IBM zPCR 9.7.3

Capacity Planning Control Panel


Study ID:

Double click on a tree branch below to access the relevant windows

Reference-CPU  
REF 2094-701 @ 593.00 MIPS (SI); 559.792 MIPS (MI)

LSPR Multi-Image Processor Table  
LSPR IBM Z General Purpose CPs  
LSPR IBM Z IFL CPs  
LSPR IBM LinuxONE CPs

LPAR Configurations  
#1 z17-705 with 10 LPARs  
z17-ME1(Max43) 9175-705 I=3  
#2 z17-705 with 5 LPARs  
z17-ME1(Max43) 9175-705 I=3



IBM z17

Manage

Compare

Copy & Move Partitions

QuickStart Guide

	z17-705 with 10 LPARs z17-705 with 10 LPARs for zPCR demo z17/700 LPAR Host: 9175-ME1(Max43)/700					
Pool CP Type	#1 GP	#2 zAAP	#3 zIIP	#4 IFL	#5 ICF	CPC Total
RCPs	5	0	3	0	0	8
Partitions	10	0	10	0	0	20
LCPs	20	0	10	0	0	30
Capacity	10,963	n/a	6,509	n/a	n/a	17,472

Highlight both configurations and then select the middle "Compare" button.



# zPCR - Compare



Host Capacity Comparison

IBM zPCR 9.7.3

LPAR Host Capacity Comparison Report

Capacity by Partition Type

z17-705 with 10 LPARs: z17-705 with 10 LPARs for zPCR demo

z17-705 with 5 LPARs: Cloned from z17-705 with 10 LPARs

Capacity basis: 2094-701 @ 593.00 MIPS for a shared single-partition configuration

Capacity for z/OS on z10 and later processors is represented with HiperDispatch turned ON

Partition Type	#1  z17-705 with 10 LPARs 9175-ME1(Max43)/700: GP=5 zIIP=3					#2  z17-705 with 5 LPARs 9175-ME1(Max43)/700: GP=5 zIIP=3					Capacity Net Change	
	# of LPs	Usable RCPs	Logical CPs	SHR LCP:RCP	Full Capacity	# of LPs	Usable RCPs	Logical CPs	SHR LCP:RCP	Full Capacity	MIPS	% Delta
GP	10	5	20	4.000	10,963	5	5	10	2.000	11,526	+563	+5.1%
zAAP	0	0	0			0	0	0				
zIIP	10	3	10	3.333	6,509	5	3	5	1.667	6,796	+287	+4.4%
IFL	0	0	0			0	0	0				
ICF	0	0	0			0	0	0				
Total	20	8	30		17,472	10	8	15		18,322	+850	+4.9%

Comparison Report by Partition

Minimum Capacity

Maximum Capacity

Show capacity as

☒ Full CPC

☐ Single-CP

Consider Margin-of-Error

For significant configuration changes, such as upgrading the processor family, all capacity comparisons are subject to a +/-5% margin-of-error.

IBM does not guarantee the results from this tool. This information is provided "as is", without warranty, expressed or implied. You are responsible for the results obtained from your use of this tool.

Here we can see the "Capacity Net Change" in two z17-705 machines with different LPAR configurations.

Hit the "Return" green arrows and save the study.



# zBNA Updates

Goal: Learn about the new features  
in IBM zBNA (like DS8000 G10  
zHyperLink™ analysis and new  
"Multiple LPAR Options" mode)





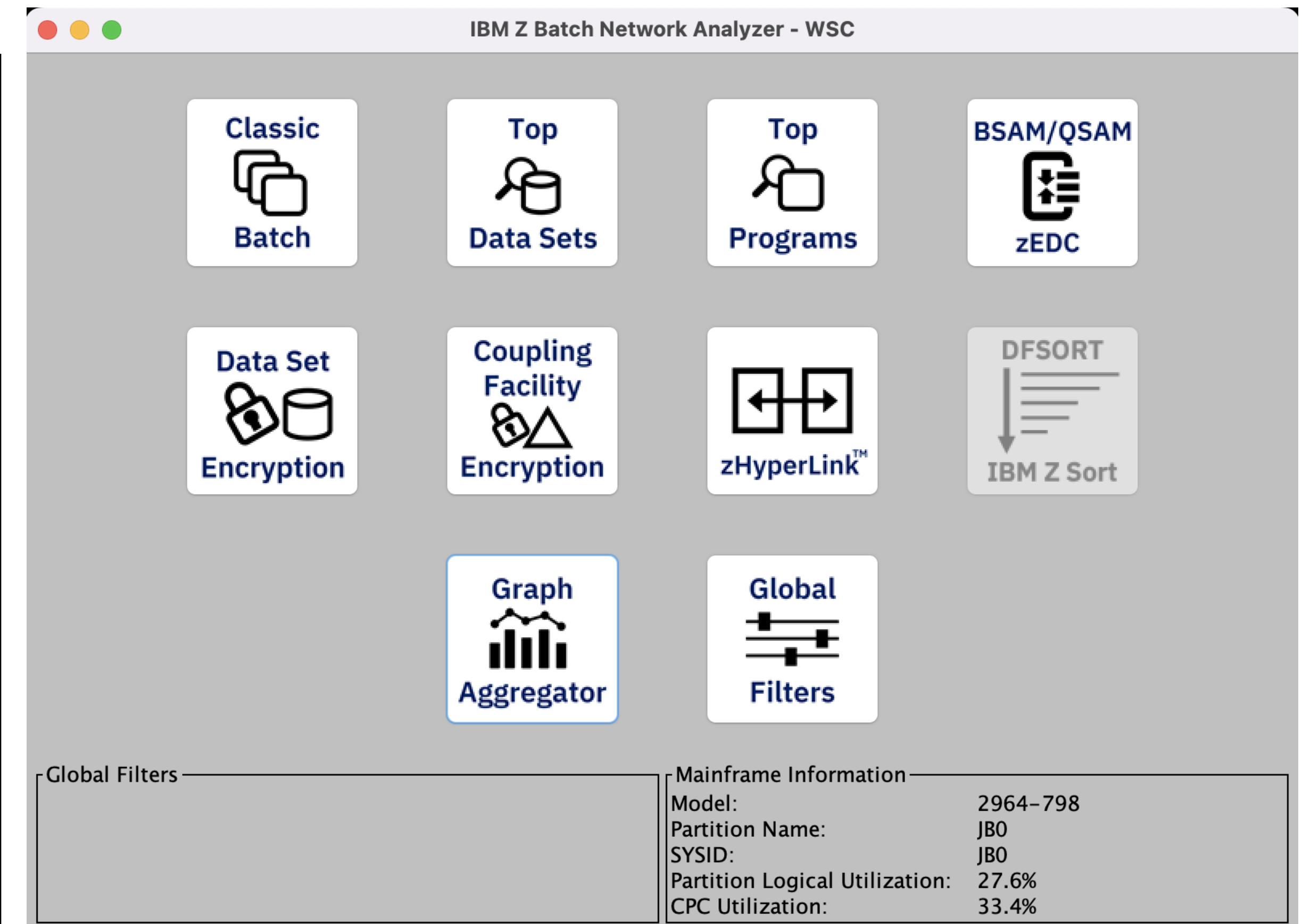
# IBM Z Batch Network Analyzer (zBNA)

## Latest version: 2.7.1 (05/06/2025)



Designed to provide capacity planning insight for new IBM Z technology

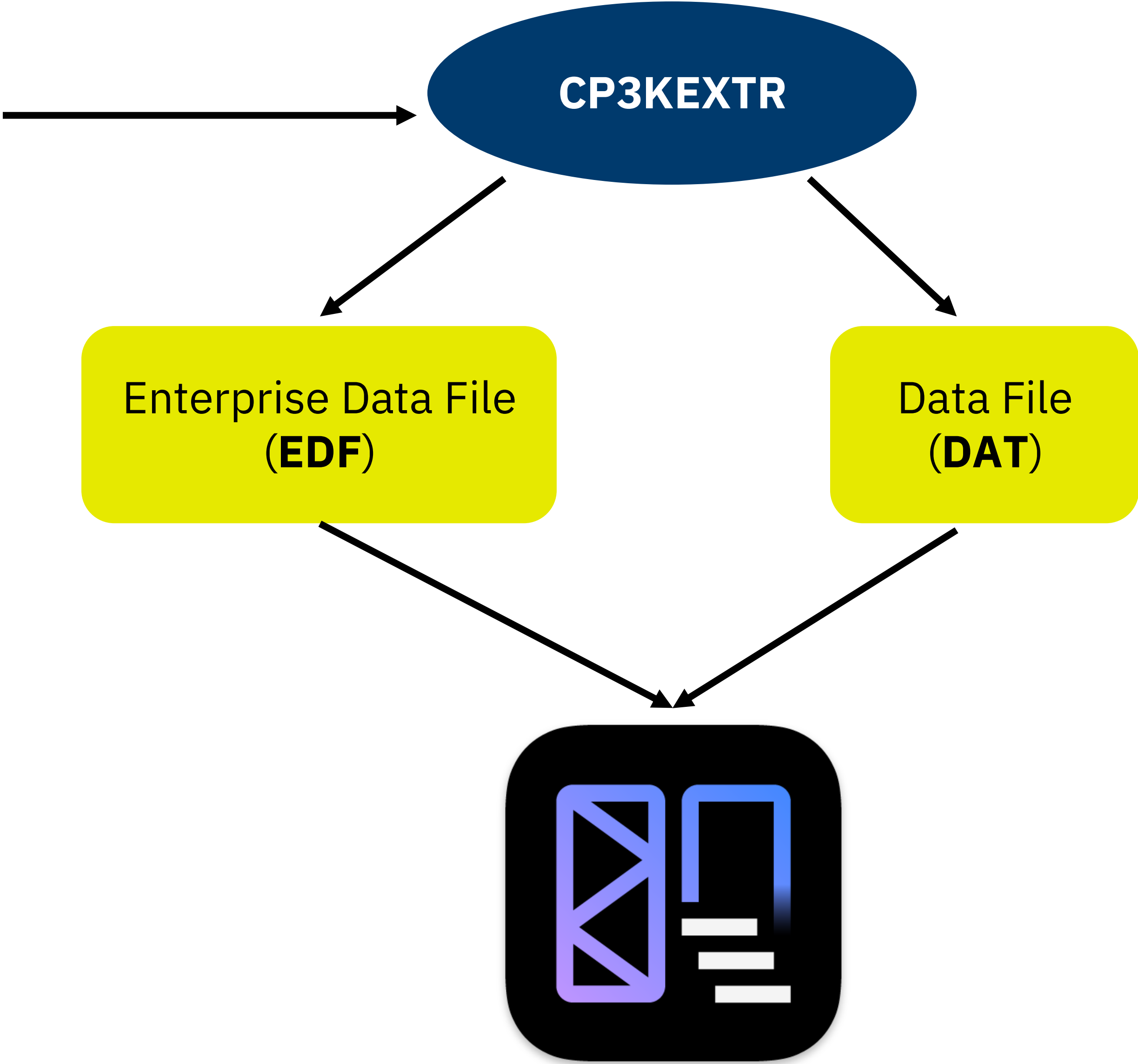
- No charge, “as is” tool with easy to read graphical and text reports.
- Evaluate the impact of new technology exploitation, like zEDC and zHyperLink™, using system specific data.
- IBM zBNA identifies which applications are available based on the data provided in the DAT and EDF files.





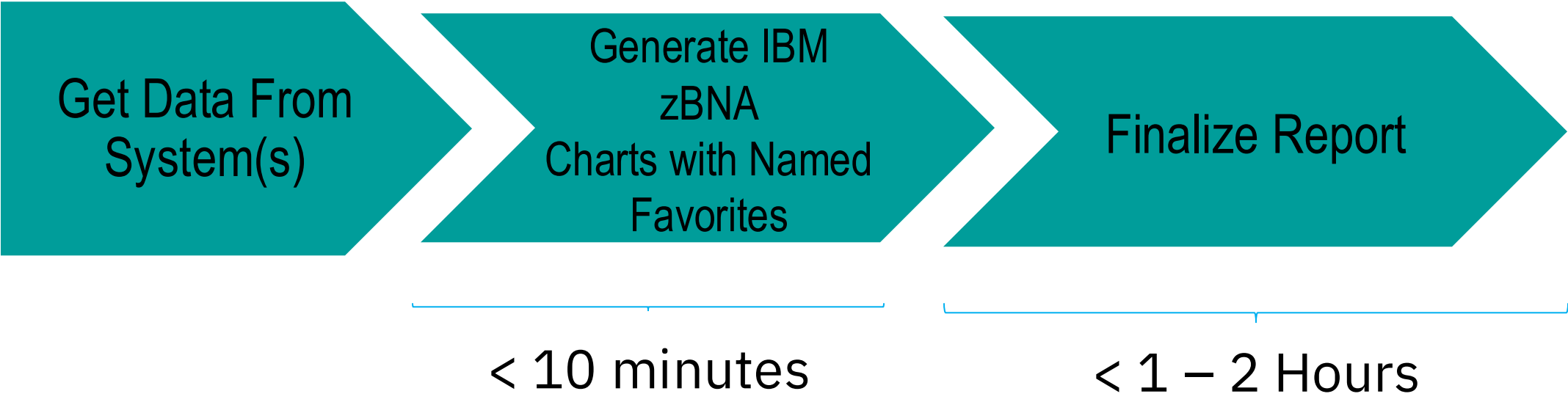
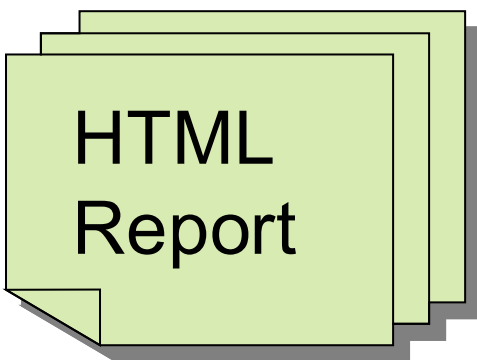
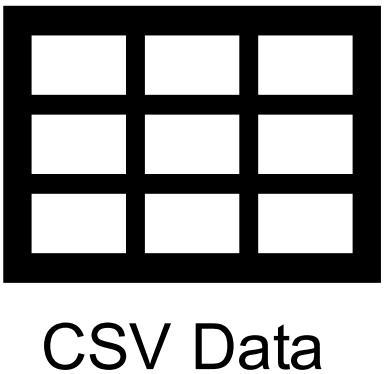
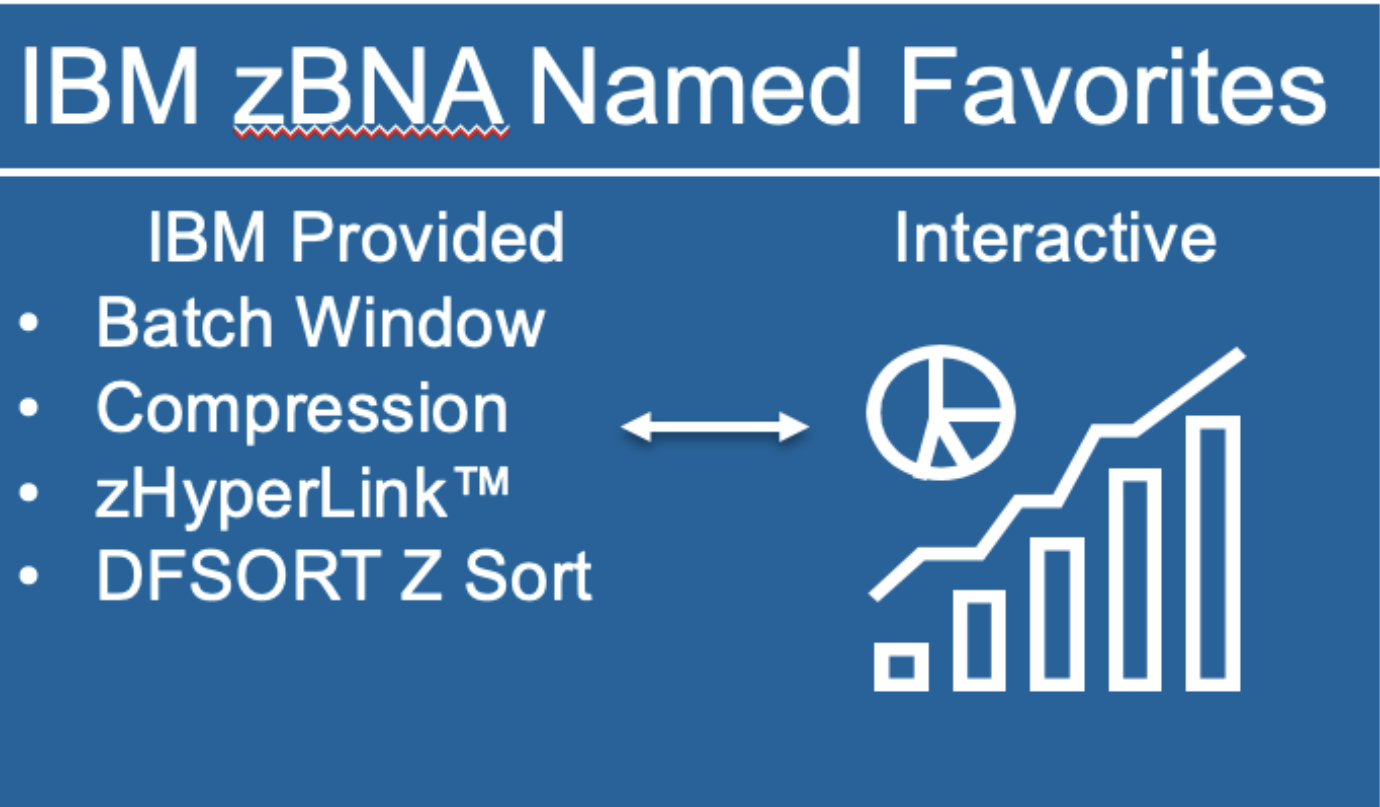
# Collecting data for an IBM zBNA Study

SMF Data
14/15 – Dataset Activity
16 – DFSORT
30.4 – Step Level
30.5 – Job Level
42.6 – DFSMS Statistics
70 – CPU Activity
72 – Workload Activity
74 – Device Activity
78 – I/O Queuing Activity
113 – Hardware Reporting





# Process Data Fast and Report Specific Value





# IBM zBNA Enablement Webpage



A series of short enablement videos on using the tool is provided at:  
<https://www.ibm.com/support/pages/zbna-enablement>

Category	Topic	Time	Date	Feedback
Getting started	Loading Data	8m15s	03/10/22	★ Feedback
	Document Author and Save Options	4m53s	03/10/22	★ Feedback
	Global Time Filter	5m40s	03/10/22	★ Feedback
	Filter Import Export	11m34s	03/14/22	★ Feedback
	Named Favorites	8m10s	03/01/22	★ Feedback
	Modify Document	14m21s	03/08/22	★ Feedback
	New Filters Panel	7m52s	10/20/21	★ Feedback
	Alternate Processors	18m28s	03/14/22	★ Feedback
	Study File	4m06s	03/16/22	★ Feedback



# IBM zBNA

## Applications



Application	Description
Classic Batch	Analyze job statistics during a batch window. DFSORT job analysis.
Top Data Sets	Explore data set usage during a batch window.
Top Programs	Identify programs consuming the most CPU time.
BSAM/QSAM zEDC	Identify BSAM/QSAM zEDC candidates, estimate CPU cost or savings, and estimate DASD space savings.
Data Set Encryption	Identify DFSMS data set encryption candidates, estimate CPU cost to encrypt, and identify benefits of zEDC compression before encryption.
Coupling Facility Encryption	Identify Coupling Facility encryption structure candidates and estimate CPU cost to encrypt.
zHyperLink™	Identify data sets with zHyperLink™ eligibility and estimate response time improvement. <b>**NEW**: IBM DS8000 G10 Support.</b>
DFSORT IBM Z Sort	Identify sorts eligible for the IBM Integrated Accelerator for Z Sort on z15 and later. Estimate CPU and Elapsed time savings.



zHyperLink™  
DS8000 G10  
Support

IBM DS8000 G10  
Announced  
09/10/2024



New in IBM zBNA 2.6.0 (09/30/2024)

Additional enhancements in 2.7.0 (04/08/2025)

zHyperLink™

zHyperLink™ Filters

zHL Type

☒ Show zHL Reads  
☒ Show zHL Writes

Data Set Type

☒ Show Linear

Service Class

STCI2V40  
STCI2V50

DSN Include Mask

+ -

Show All

zHL Active

☒ No  
☒ Mixed  
☒ Yes

Re-Dispatch Time Estimate

☐ Large (0.300 ms)  
☒ Medium (0.200 ms)  
☐ Small (0.100 ms)  
☐ Custom 0.000 ms

Job Name Include Mask

DBW2\*

DSN Exclude Mask

+ -

DASD Technology

☐ Model DS8900 zHyperLink™  
☒ Model DS8000 G10 zHyperLink™  
☐ Re-model active zHyperLink™

Max zHL Read Block Size

☐ 4K  
☒ 16K  
☐ Custom (4K-32K) 16384

zHyperLink™ Table													
Key DSN	Service Class	Job Name	Data Set Name	Storage Class	Type	Extended Format	Block Size	Total IO Number	Read %	zHL Active	% zHL Eligible	% zHL Hit	Avg. IO Response Time
<input checked="" type="checkbox"/>	ALL	DBW2DBM1	DSNDBWG.DSNDBD.DSNDB06.SYSTSCOL.I0001.A001	DB2DATA	Linear	Yes	8,192	20,184	100.0%	No	46.4%	100.0%	0.272 ms
<input type="checkbox"/>	ALL	DBW2DBM1	DB2DBWG.DSNDBD.DBITRK81.TSACTI81.I0001.A003	DB2DATA	Linear	No	8,192	1,816	100.0%	No	100.0%	84.8%	1.498 ms
<input type="checkbox"/>	ALL	DBW2DBM1	DB2DBWG.DSNDBD.DBITRK81.TSACTI81.I0001.A009	DB2DATA	Linear	No	8,192	1,778	100.0%	No	100.0%	84.1%	1.284 ms
<input type="checkbox"/>	ALL	DBW2DBM1	DB2DBWG.DSNDBD.DBITRK81.TSACTI81.I0001.A007	DB2DATA	Linear	No	8,192	1,777	100.0%	No	100.0%	85.7%	1.207 ms
<input type="checkbox"/>	ALL	DBW2DBM1	DB2DBWG.DSNDBD.DBITRK81.TSACTI81.I0001.A015	DB2DATA	Linear	No	8,192	1,766	100.0%	No	100.0%	66.4%	2.621 ms
<input type="checkbox"/>	ALL	DBW2DBM1	DB2DBWG.DSNDBD.DBITRK81.TSACTI81.I0001.A010	DB2DATA	Linear	No	8,192	1,748	100.0%	No	100.0%	85.4%	1.343 ms
<input type="checkbox"/>	ALL	DBW2DBM1	DB2DBWG.DSNDBD.DBITRK81.TSACTI81.I0001.A006	DB2DATA	Linear	No	8,192	1,745	100.0%	No	100.0%	68.4%	2.584 ms
<input type="checkbox"/>	ALL	DBW2DBM1	DB2DBWG.DSNDBD.DBITRK81.TSACTI81.I0001.A005	DB2DATA	Linear	No	8,192	1,733	100.0%	No	100.0%	84.0%	1.482 ms



# zHyperLink™ DS8000 G10 Support

## Key Updates for IBM zBNA zHyperLink™ Analysis:

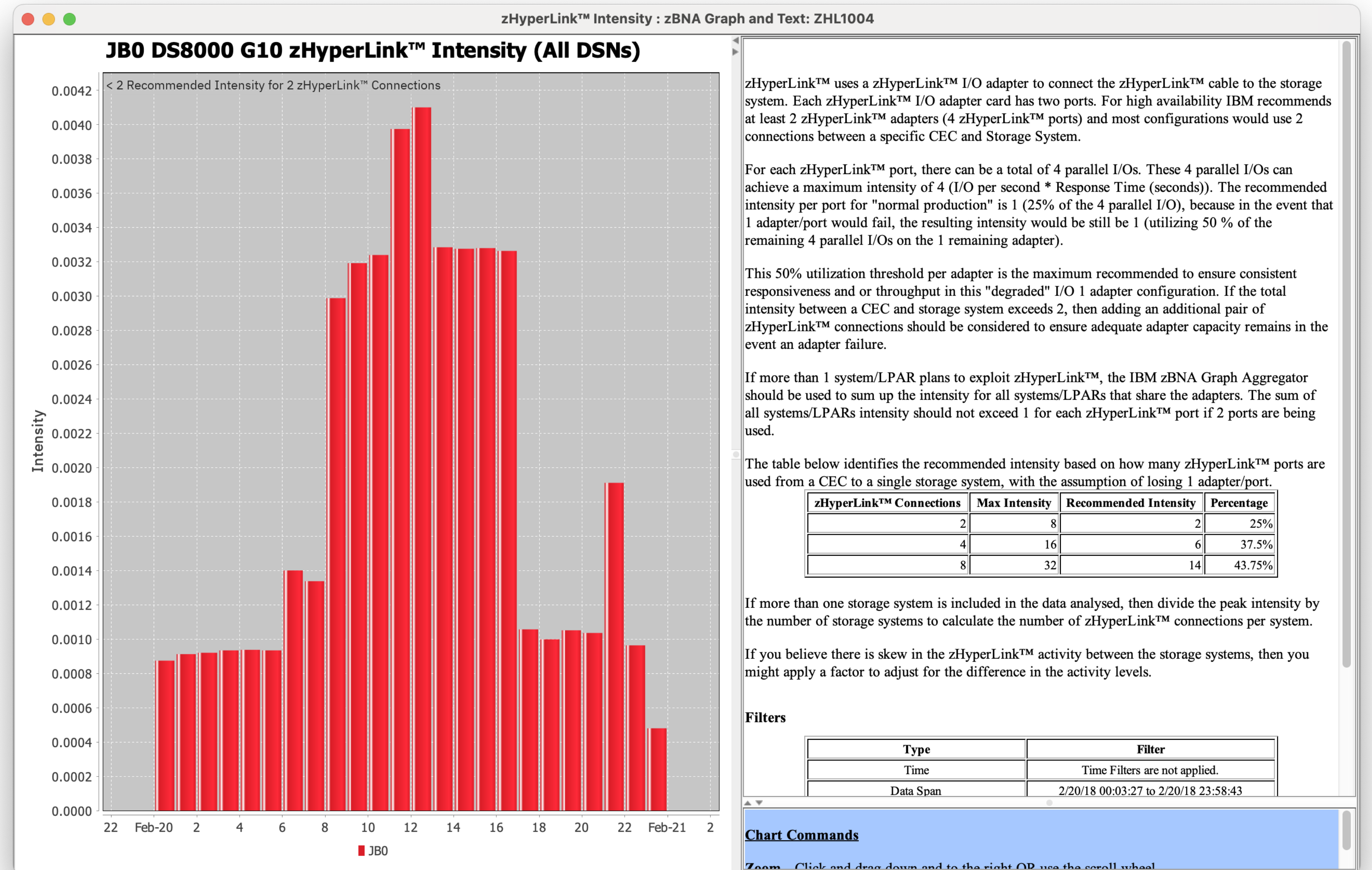
- IBM zBNA now estimates zHyperLink™ benefit on two generations of IBM DASD
  - DS8900 - Default and used in IBM zBNA prior to 2.6.0
  - DS8000 G10 – Must check the radio button in the DASD Technology Panel to enable
- DS8000 G10 provides several benefits over prior generation
  - Expected reductions to zHyperLink™ response times, especially for zHyperLink™ writes.
  - New default read block size limit of 16K. Can be configured up to 32K using Max Read Block Size filter.
    - DS8900 block size limit is 4K and cannot be changed.
    - zHyperLink™ Write block size limit is 4K even on DS8000 G10.
- “Re-model active zHyperLink™” filter enables calculation of additional zHyperLink™ response time benefit for active zHyperLink™ data sets if migrating from DS8900 to DS8000 G10.
- The estimated response time reductions assumes the IBM Z processor is connected to storage using a 150m cable, which is the longest length supported by zHyperLink™. This provides a more conservative estimate as shorter cable lengths are expected to provide a better response time benefit.







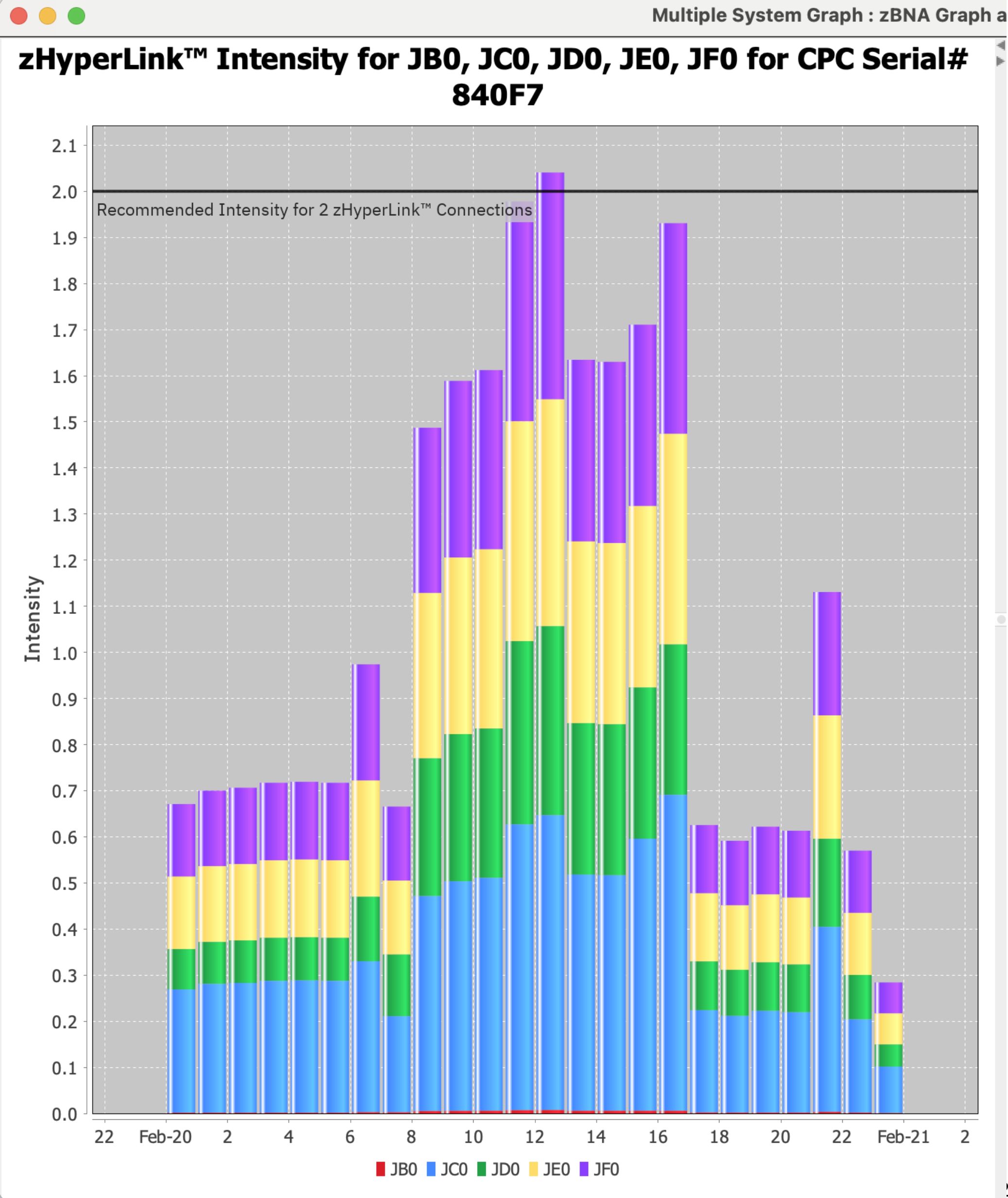
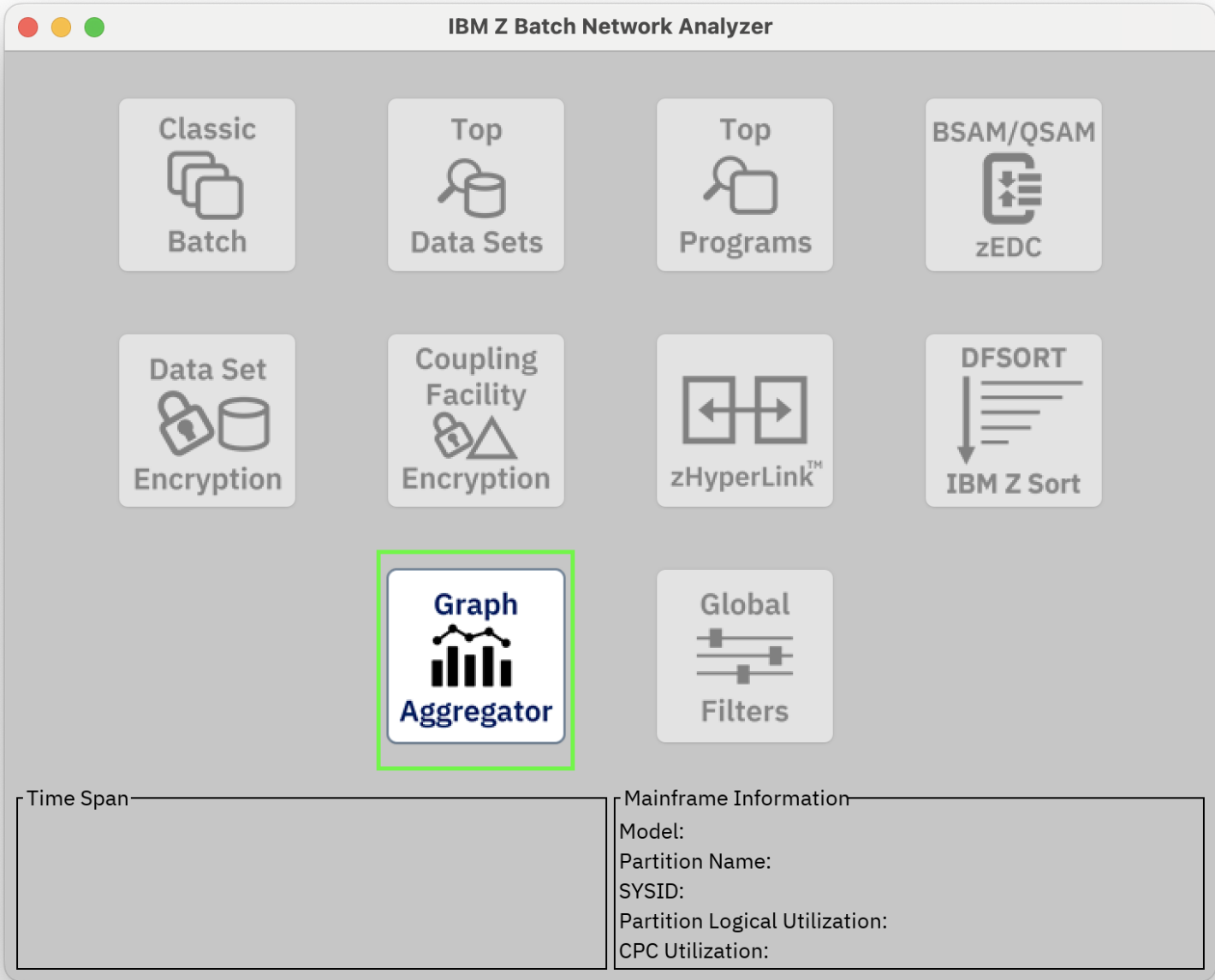
## New Chart: ZHL1004 – zHyperLink™ Intensity





# zHyperLink™ DS8000 G10 Support

## New Chart: AGGZHL1004 – zHyperLink™ Intensity using Graph Aggregator





# Named Favorites

## Multiple LPAR Generate



# New in IBM zBNA 2.6.2 (02/25/2025)

IBM zBNAFileGenerate

Multiple LPAR OptionsGenerate Reports

Named Favorites

Named Favorite Set: Compression StudySave As...

Available Favorites:

All Available Reports

> Classic Batch

> Top Data Sets

> Top Programs

> BSAM/QSAM zEDC

> Data Set Encryption

> BSAM/QSAM zEDC + Data Set Encryption

> Coupling Facility Encryption

> zHyperLink™

> IBM Z Sort

> DFSORT

Favorite Set Content:

Report

TOPDS1001: Data Set I/O Rate

TOPDS1002: Data Set I/O GigaBytes per Hour

EDC1009: zEDC Analysis

EDC1008: zEDC on SAP Analysis

EDC1001: Estimated Cards

EDC1005: Estimated I/O Count

EDC1004: Estimated MSU

EDC1000: Top 15 zEDC BSAM/QSAM Eligible Data Set ...

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Apply

Cancel



# Named Favorites

## Multiple LPAR Generate

Select LPARs to Generate

Use "Select .edf file", "Select .dat file" and (optionally) "Select filter file" buttons for each partition you want IBM zBNA graphs generated.

		.edf		.dat		filter (.zbnaf or .zbna)
Remove LPAR	Clear .edf file	JB0.EDF	Clear .dat file	JB0.DAT	Clear filter file	zhl-filters.zBNAF
Remove LPAR	Clear .edf file	WSCSYSD.BNALAB.EDF	Clear .dat file	WSCSYSD.BNALAB.DAT	Select filter file	
Add LPAR						

OK

Cancel





# Named Favorites

## Multiple LPAR Generate



AppleIBM zBNAFileGenerate

Multiple LPAR Options

Generate Multiple LPAR Reports

Named Favorite Set: Compression Study

Save As...

Available Favorites:

All Available Reports

> Classic Batch

> Top Data Sets

> Top Programs

> BSAM/QSAM zEDC

> Data Set Encryption

> BSAM/QSAM zEDC + Data Set Encryption

> Coupling Facility Encryption

> zHyperLink™

> IBM Z Sort

> DFSORT

Favorite Set Content:

Report
TOPDS1001: Data Set I/O Rate
TOPDS1002: Data Set I/O GigaBytes per Hour
EDC1009: zEDC Analysis
EDC1008: zEDC on SAP Analysis
EDC1001: Estimated Cards
EDC1005: Estimated I/O Count
EDC1004: Estimated MSU
EDC1000: Top 15 zEDC BSAM/QSAM Eligible Data Set ...

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Apply

Cancel



# Named Favorites

## Multiple LPAR Generate



zBNA - Modify Document

Viewing /Users/jmoss/Documents/zBNA/jb0/tes/x.htm

CPC840F7.JB0.zBNA.TOPDS1001 Data Set I/O Rate  
CPC840F7.JB0.zBNA.TOPDS1002 Data Set I/O GigaBytes per Hour  
CPC840F7.JB0.zBNA.EDC1009 zEDC Analysis  
CPC840F7.JB0.zBNA.EDC1001 Estimated Cards  
CPC840F7.JB0.zBNA.EDC1005 Estimated I/O Count  
CPC840F7.JB0.zBNA.EDC1004 Estimated MSU  
CPC840F7.JB0.zBNA.EDC1000 Top 15 zEDC BSAM/QSAM Eligible Data  
CPC723B8.KOSP02.zBNA.TOPDS1001 Data Set I/O Rate  
CPC723B8.KOSP02.zBNA.TOPDS1002 Data Set I/O GigaBytes per Hour  
CPC723B8.KOSP02.zBNA.EDC1009 zEDC Analysis  
CPC723B8.KOSP02.zBNA.EDC1005 Estimated I/O Count  
CPC723B8.KOSP02.zBNA.EDC1004 Estimated MSU  
CPC723B8.KOSP02.zBNA.EDC1000 Top 15 zEDC BSAM/QSAM Eligible Data

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Edit Summary

☐ Add Summary

☒ Add Glossary

Charts Only

Show Duplicates

Save

Cancel

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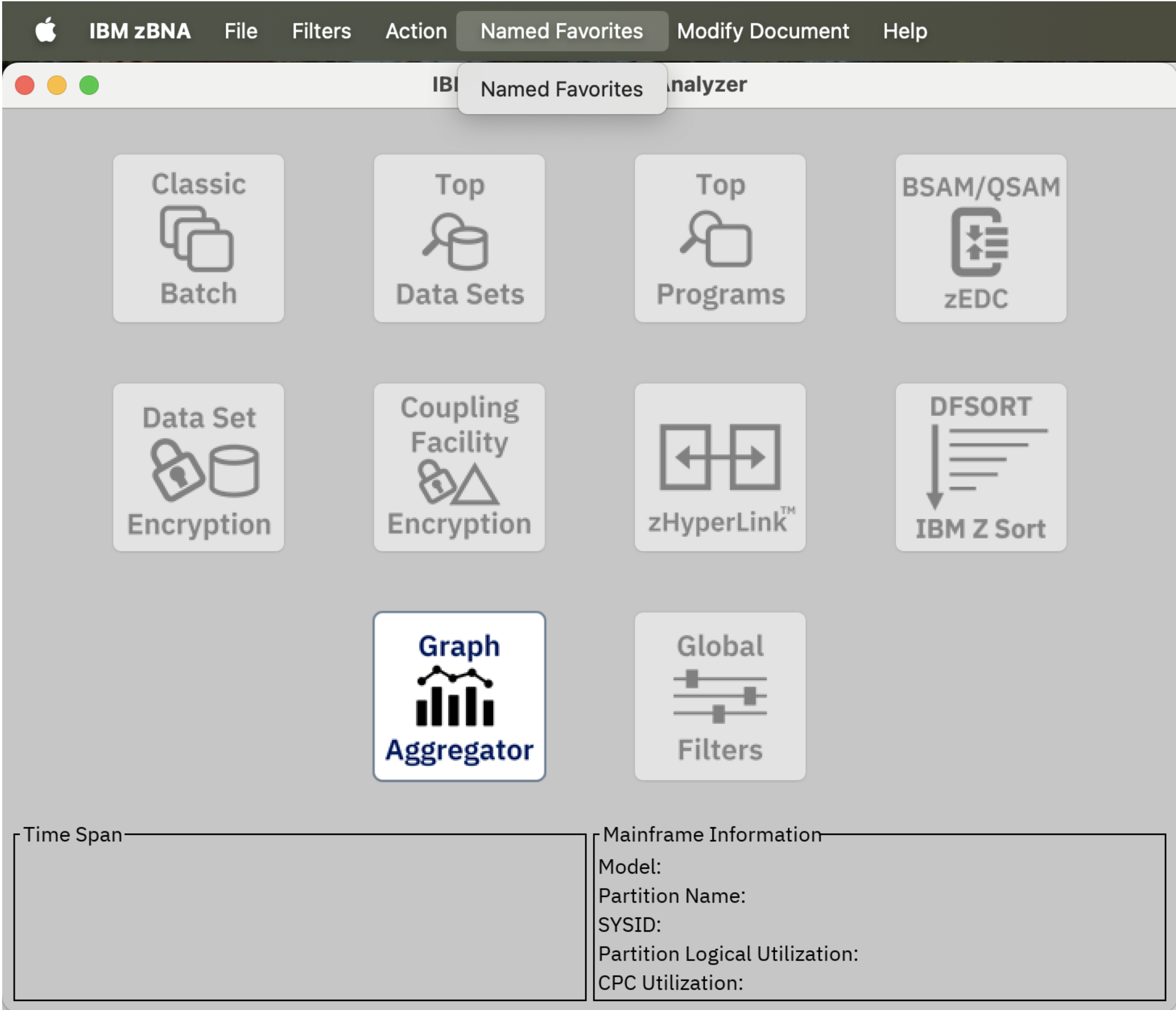


# Named Favorites

## Multiple LPAR Generate



No longer need to load EDF & DAT file to access Named Favorites Menu if Generating Multiple LPAR Reports





## Resources & Links

### **Multi-Image (MI) Processor Capacity Ratio table:**

<https://www.ibm.com/support/pages/ibm-z-lspr-itrrs>

**IBM zPCR:** <https://www.ibm.com/support/pages/node/6354029>

**IBM zBNA:** <https://www.ibm.com/support/pages/node/6354321>

**SMF Records:** <https://www.ibm.com/docs/en/zos/3.1.0?topic=smf-introduction>

### **The IBM Data Extraction Program (IBM CP3KEXTR):**

<https://www.ibm.com/support/pages/node/6354221>

User's Guides and Installation instructions for IBM zPCR, IBM zBNA and z/OS Data Extraction Program, at each link.





# Thank you

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