



IBM BusinessConnect

Ključ do rešitev 2014

Misli prihodnost. Bodi sprememba.

GH Bernardin | 23. oktober 2014

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System z Performance analysis

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- Sizing Tools and input data
- Current CPU utilization
- Utilization projected to zBC12
- Conclusion



zCP3000 release 27.02.2014.

CP3KEXTR release 26.02.2014.

zPCR release 8.5.a

Input: RMF records 70-78 for period 15.-
18.04.2014.

DB workload = CPAC (LPAR2) and LC02 (LPAR5)

Projected workload for peek utilization

(vertical lind on Wednesday

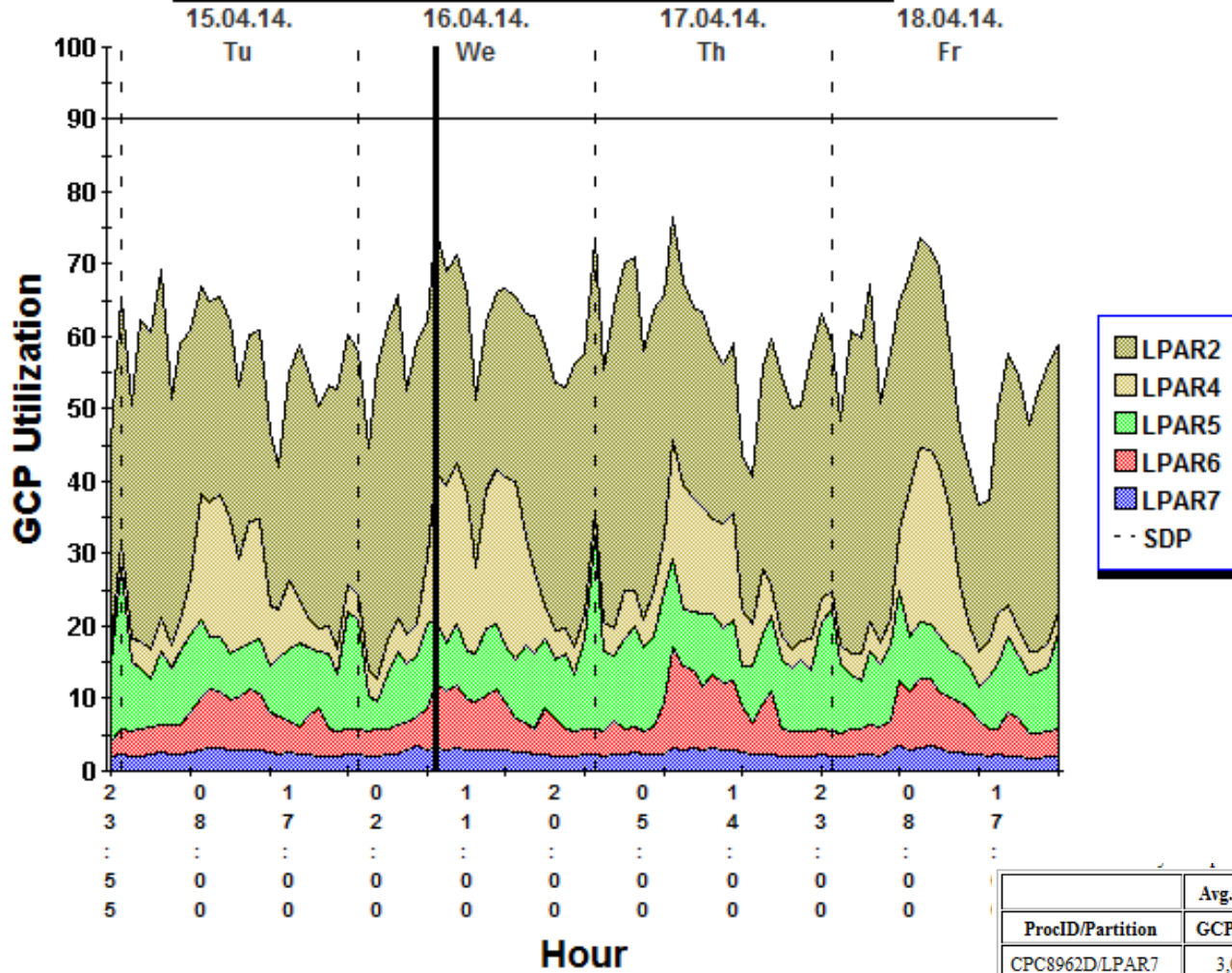
on first several slides) is shown on slides 10-15



CPU utilization on current server



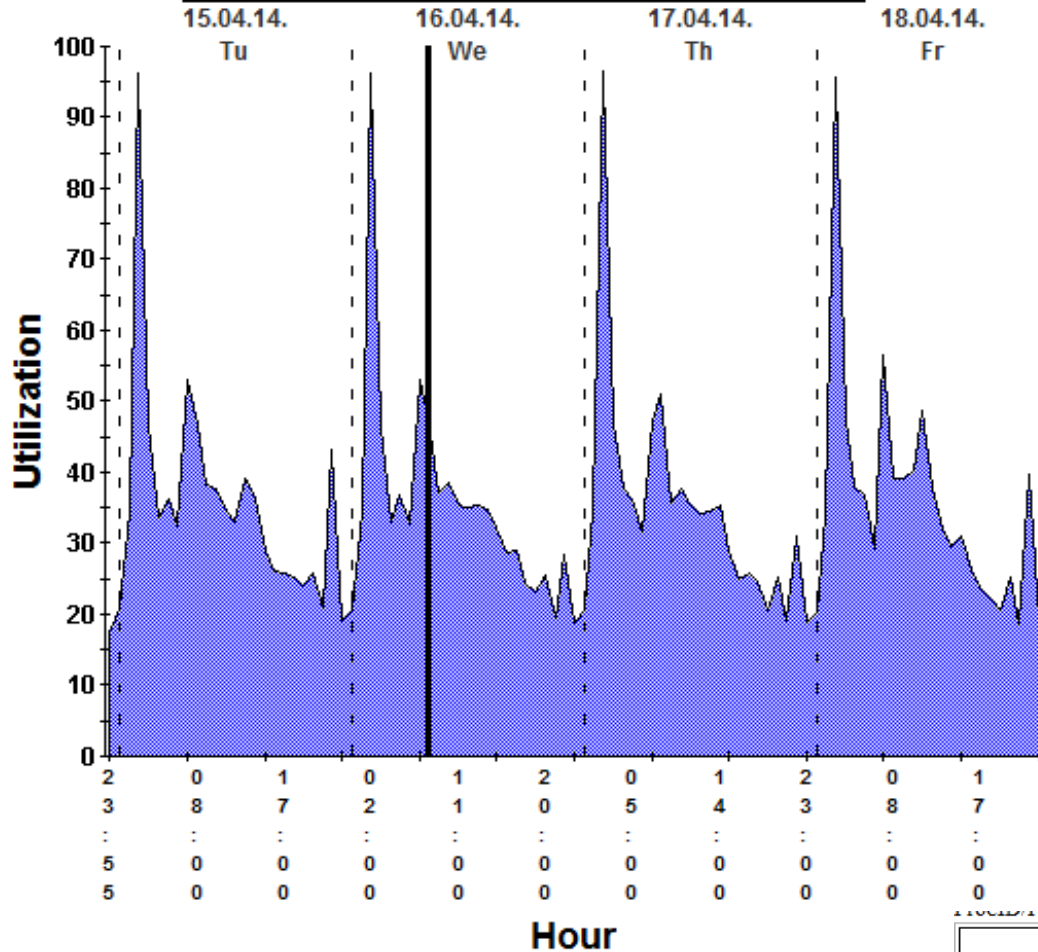
Utilization by GCP Pool for CPC8962D



ProcID/Partition	Avg. GCP	Partition		Accumulated		Study Interval MIPS	
		Avg.	Max.	Avg.	Max.	Value	Accum.
CPC8962D/LPAR7	3,0	56,9	81,3	56,9	81,3	70,2	70,2
CPC8962D/LPAR6	3,0	126,8	317,3	183,7	387,4	206,3	276,5
CPC8962D/LPAR5	3,0	216,6	611,6	400,3	746,3	202,7	479,1
CPC8962D/LPAR4	3,0	202,8	561,9	603,1	1.046,6	460,9	940,0
CPC8962D/LPAR2	3,0	740,1	1.099,9	1.343,2	1.743,0	779,5	1.719,5



Utilization by IFL Pool for CPC8962D

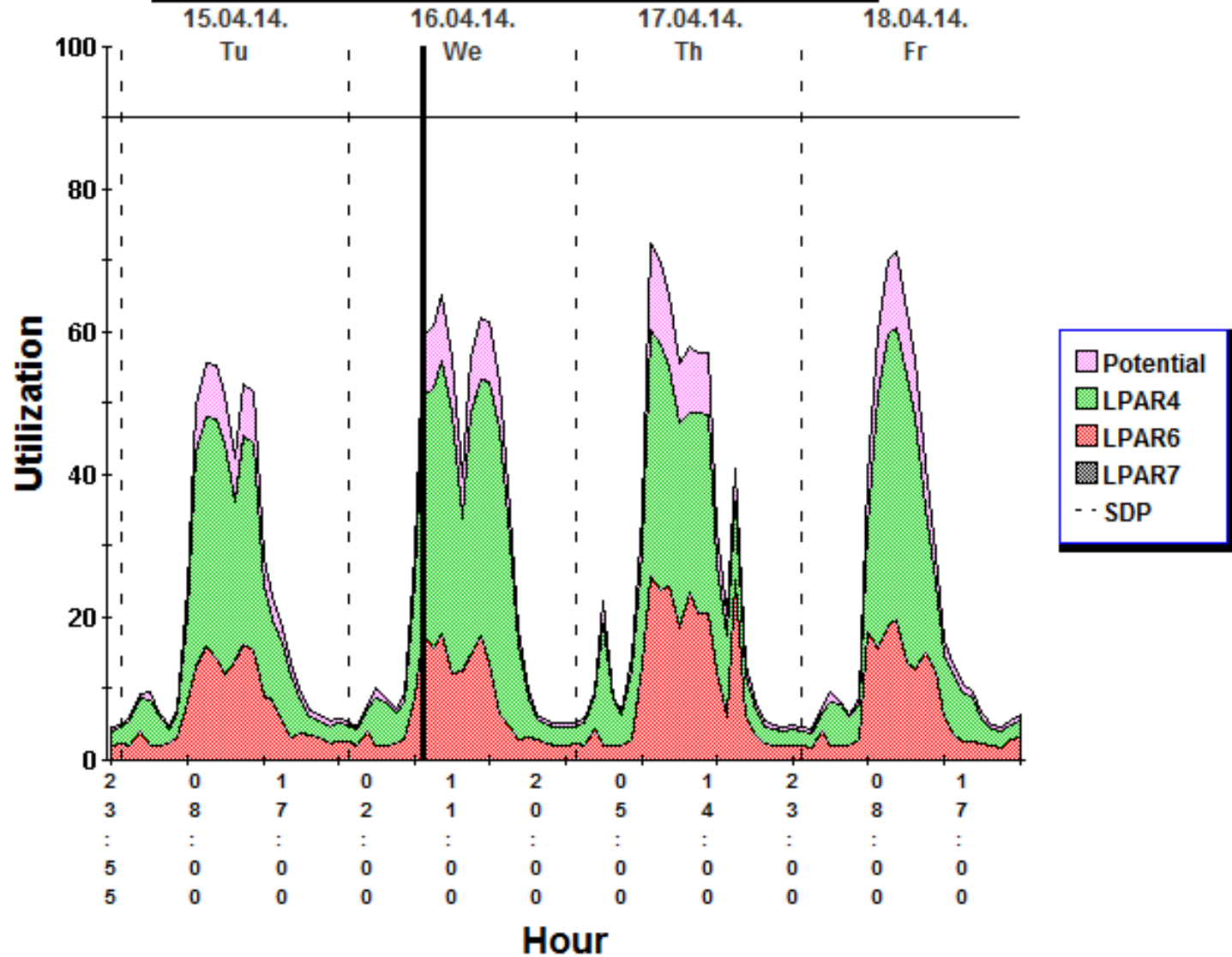


Utilization by sample.

ProcID/Partition	Avg. IFL	Partition		Accumulated		Study Interval MIPS	
		Avg.	Max.	Avg.	Max.	Value	Accum.
CPC8962D/LPAR1	2,0	612,8	1.684,1	612,8	1.684,1	828,5	828,5

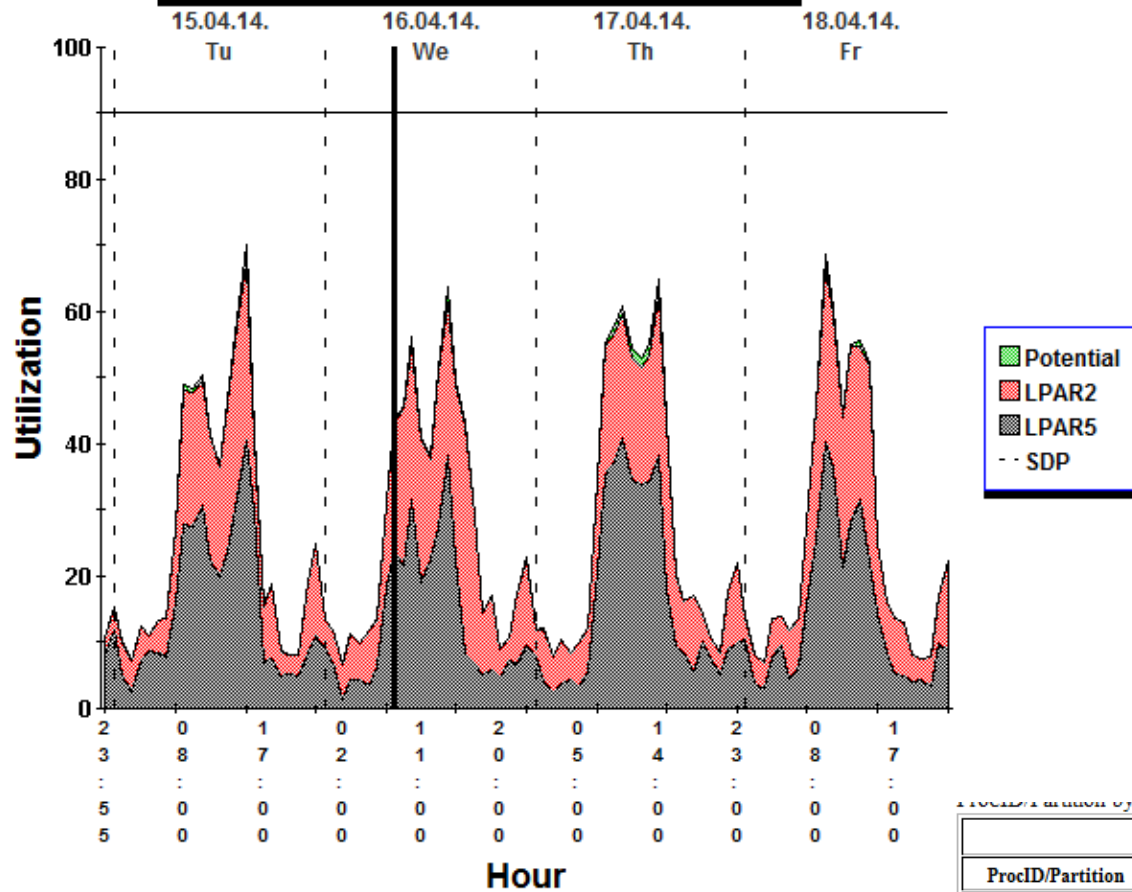


Utilization by zAAP Pool for CPC8962D





Utilization by zIIP Pool for CPC8962D



ProcID/Partition by sample.

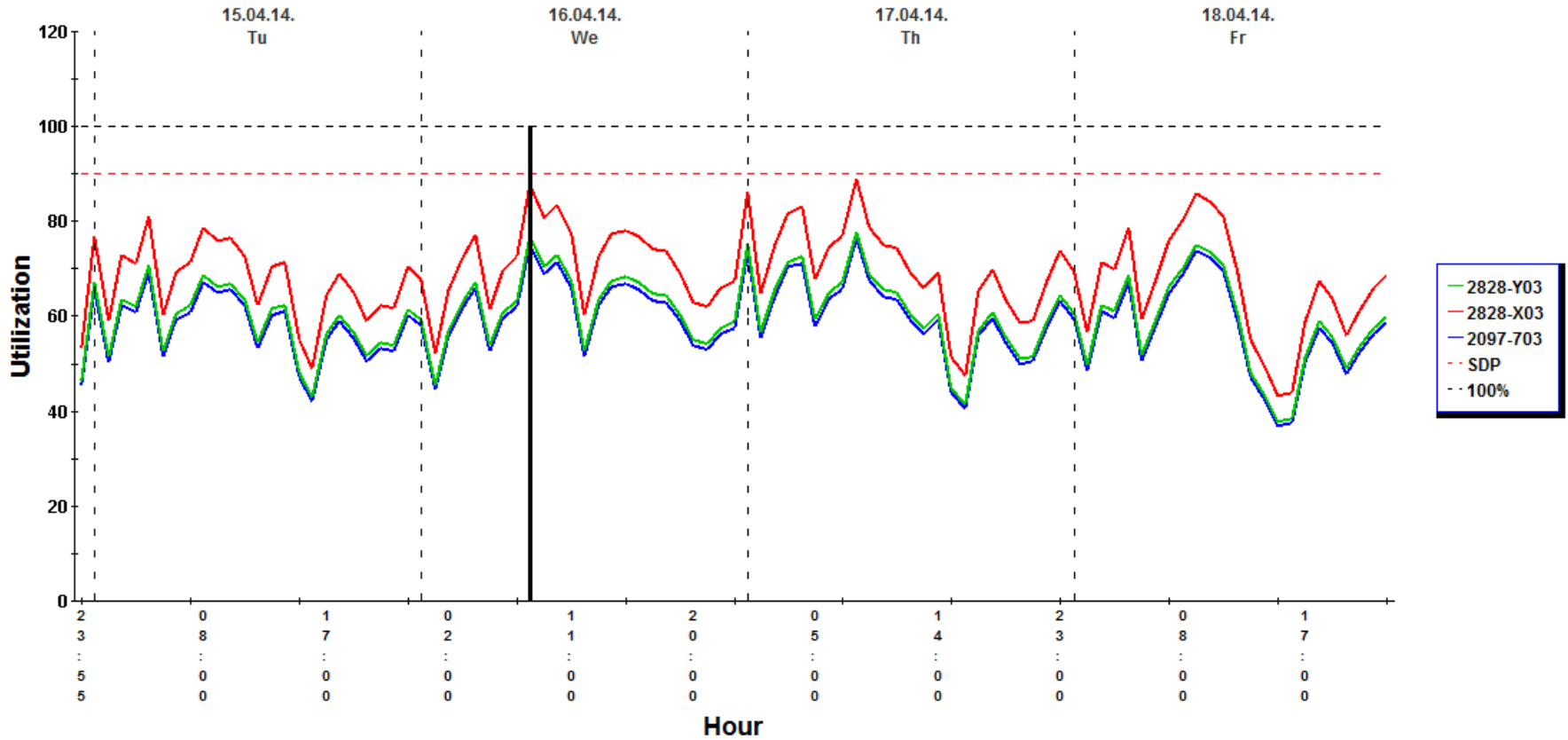
ProcID/Partition	Avg. zIIP	Partition		Accumulated		Study Interval MIPS	
		Avg.	Max.	Avg.	Max.	Value	Accum.
CPC8962D/LPAR5	3,0	343,6	960,8	343,6	960,8	563,6	563,6
CPC8962D/LPAR2	3,0	288,2	810,1	631,7	1.588,6	455,0	1.018,6



Utilization projected to zBC12

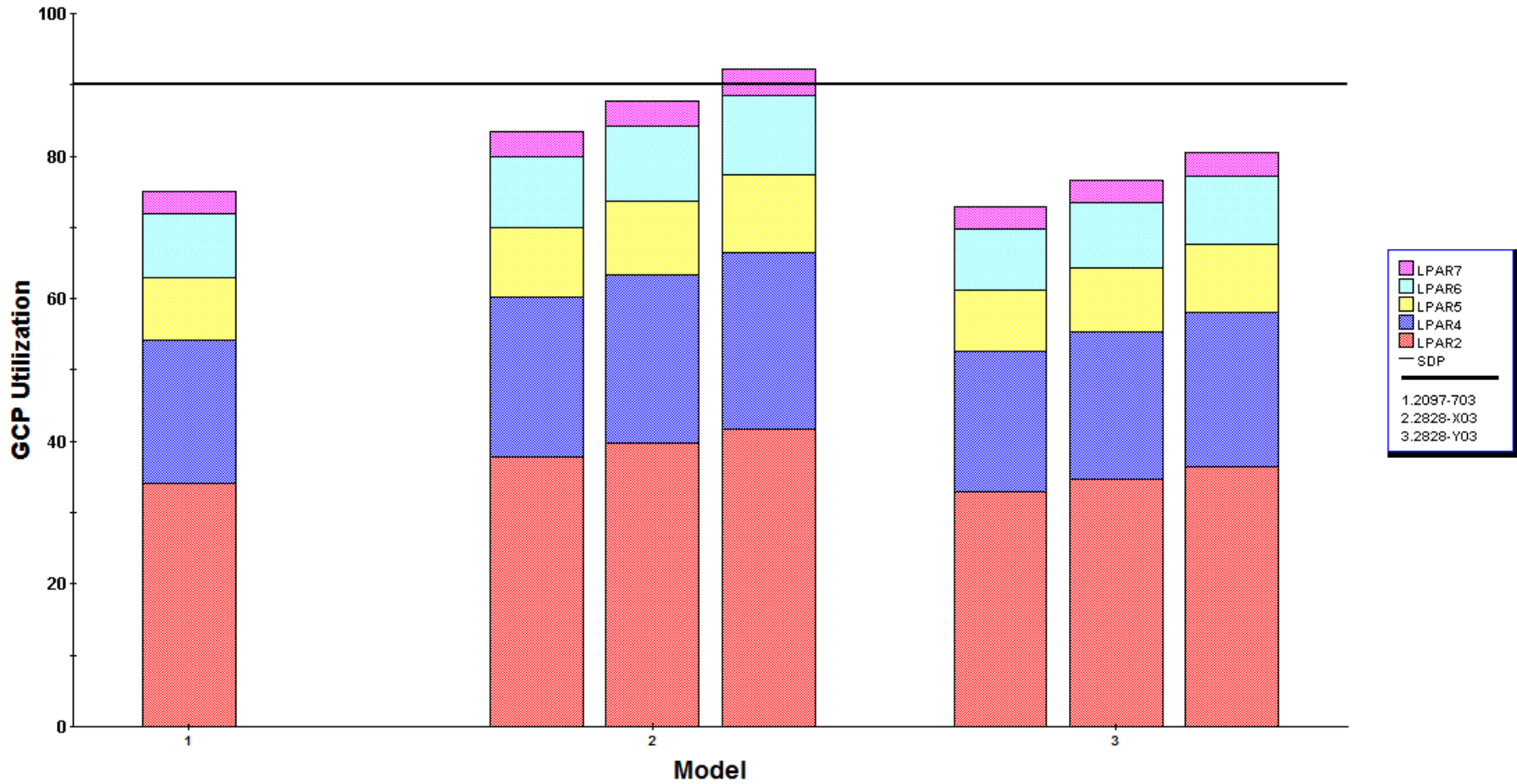


CPC8962D Base & Alt Utilization



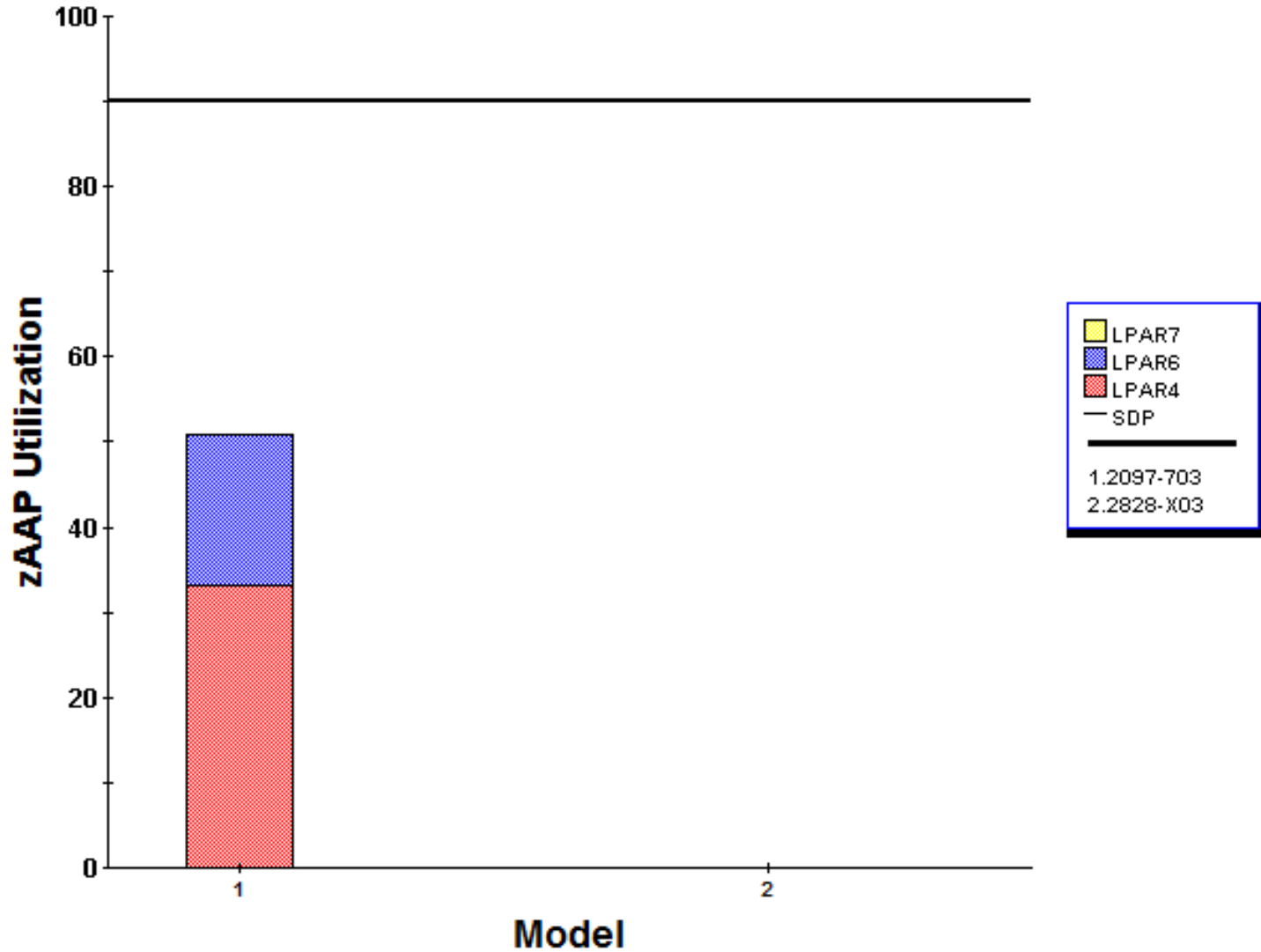


CPC8962D GCP Utilization by System



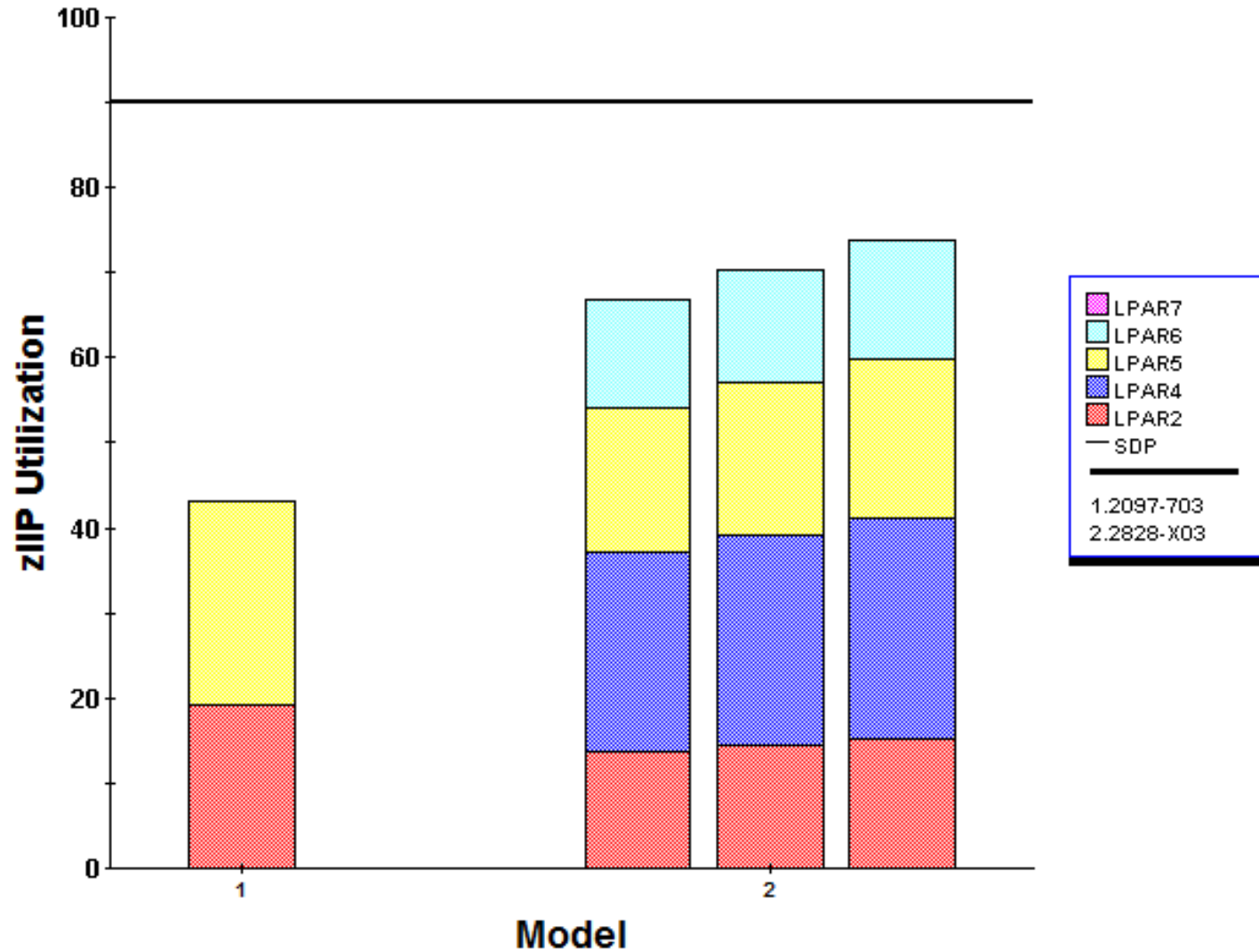


CPC8962D zAAP Utilization by System



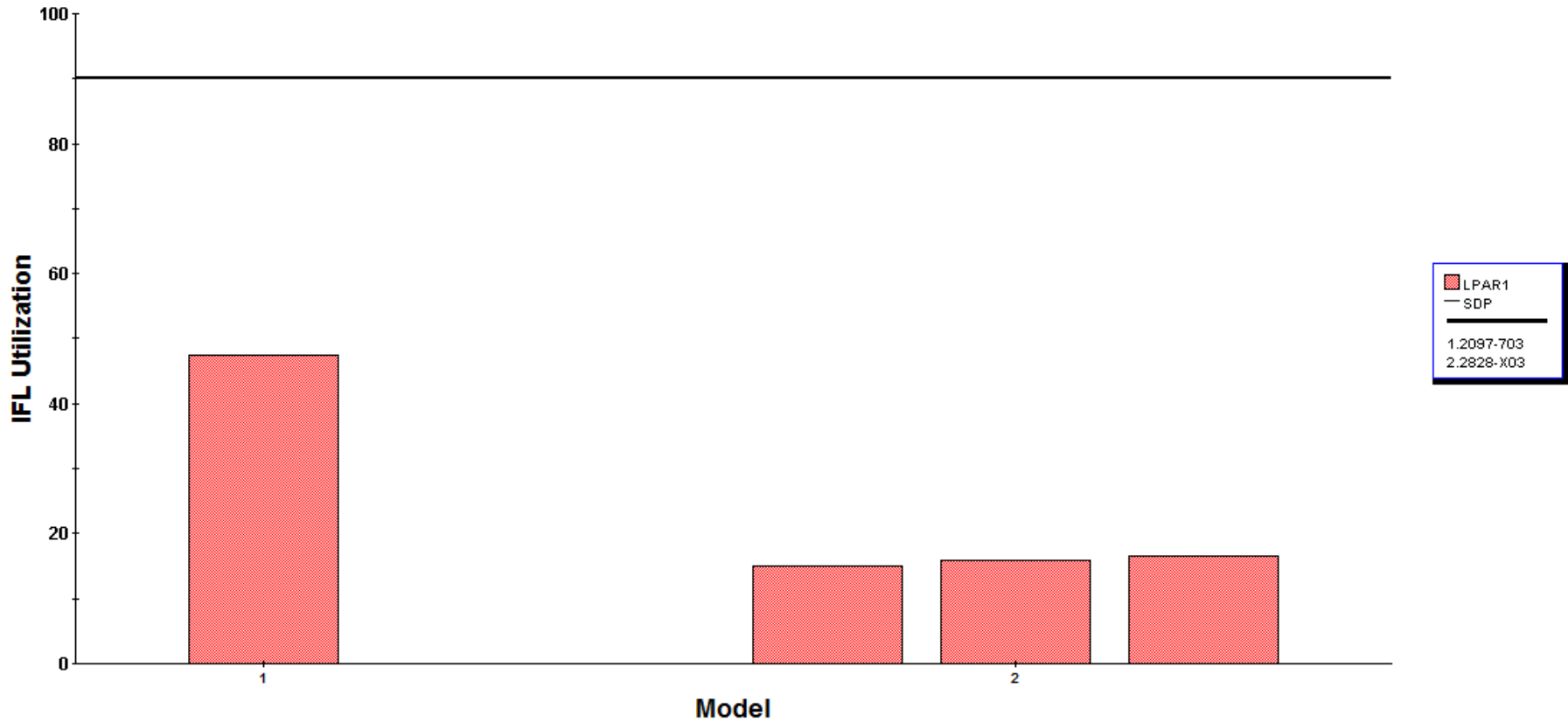


CPC8962D zIIP Utilization by System





CPC8962D IFL Utilization by System



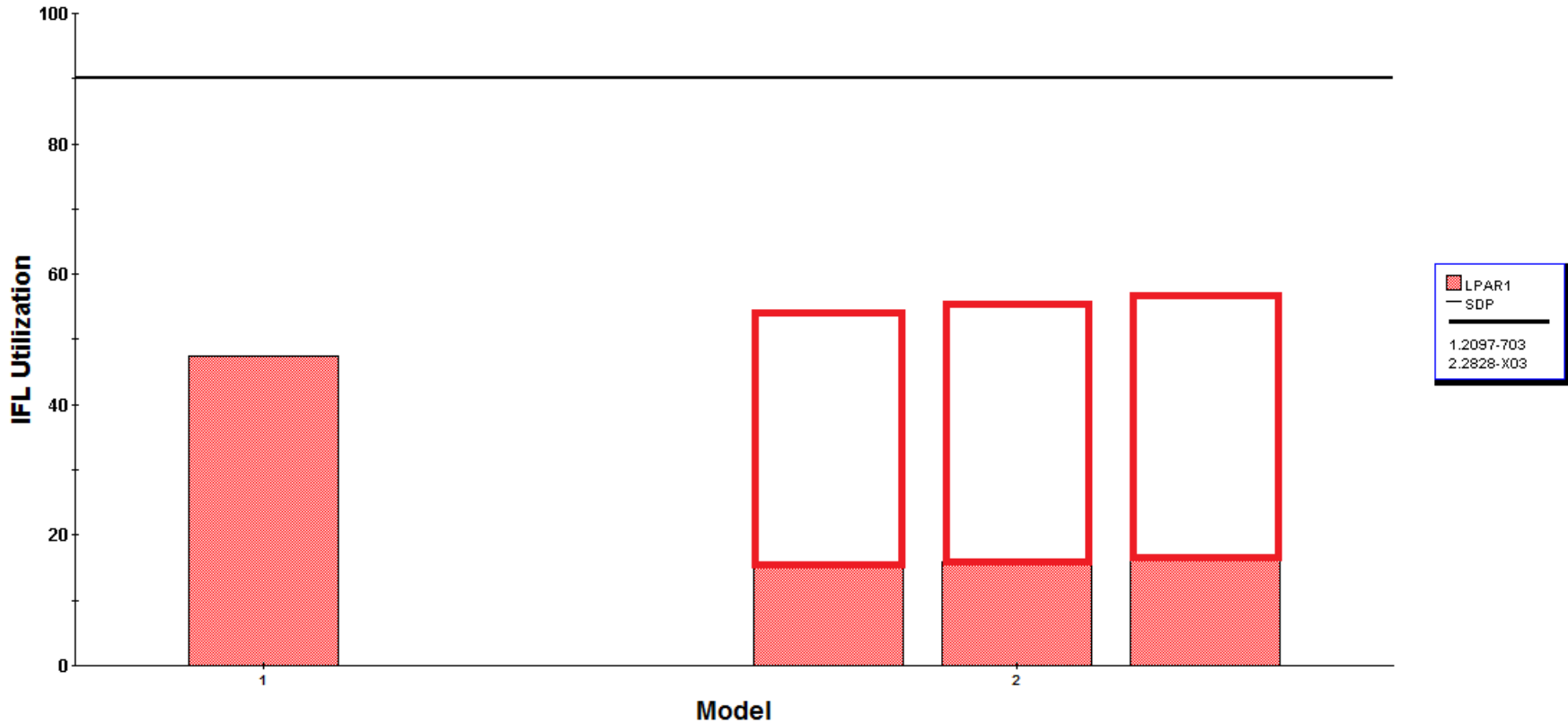
Legend:

- LPAR1 (Red bar)
- SDP (Horizontal line)

1.2097-703
2.2828-X03



CPC8962D IFL Utilization by System





Partition Detail Report

Based on LSPR Data for IBM System z Processors

Study ID: Not specified

Description: Loaded from Basic Mode Study D:\...z10EC.zpcr

z10 EC/700 Host = 2097-E12/700 with 11 CPs: GP=3 zAAP=3 zIIP=3 IFL=2

11 Active Partitions: GP=5 zAAP=3 zIIP=2 IFL=1

Capacity basis: 2094-701 @ 593,00 MIPS for a shared single-partition configuration

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

Include	Partition Identification					Partition Configuration					Partition Capacity	
	No.	Type	Name	SCP	Workload	Mode	LCPs	Weight	Weight%	CAP	Minimum	Maximum
✓	1	GP	LPAR2	z/OS-1.10*	Average	SHR	3	173	25,11%		571	2.275
✓		zIIP	LPAR2	z/OS-1.10*	Average	SHR	3	375	50,00%		1.178	2.356
✓	2	GP	LPAR4	z/OS-1.12*	Average	SHR	2	172	24,96%		572	1.528
✓		zAAP	LPAR4	z/OS-1.12*	Average	SHR	2	375	56,22%		1.326	1.572
✓	3	GP	LPAR5	z/OS-1.8*	Average	SHR	3	142	20,61%		469	2.275
✓		zIIP	LPAR5	z/OS-1.8*	Average	SHR	3	375	50,00%		1.178	2.356
✓	4	GP	LPAR6	z/OS-1.10*	Average	SHR	2	172	24,96%		572	1.528
✓		zAAP	LPAR6	z/OS-1.10*	Average	SHR	2	262	39,28%		926	1.572
✓	5	GP	LPAR7	z/OS-1.12*	Average	SHR	2	30	4,35%		100	1.528
✓		zAAP	LPAR7	z/OS-1.12*	Average	SHR	2	30	4,50%		106	1.572
✓		IFL	LPAR1	z/VM	Average/LV	SHR	2	900	100,00%		1.743	1.743

Capacity Summary by Pool

CP Pool	RCPs	Partitions	LCPs	SHR LCP:RCP	Capacity
GP	3	5	12	4,000	2.284
zAAP	3	3	6	2,000	2.359
zIIP	3	2	6	2,000	2.356
IFL	2	1	2	1,000	1.743
ICF	0	0	0		0
Totals	11	11	26		8.742



Partition Detail Report

Based on LSPR Data for IBM System z Processors

Study ID: Not specified

Description: Loaded from Basic Mode Study D:\...zBC12.zpcr
zBC12/H13 Host = 2828-X03 with 13 CPs: GP=3 zIIP=4 IFL=6

11 Active Partitions: GP=5 zIIP=5 IFL=1

Capacity basis: 2094-701 @ 593,00 MIPS for a shared single-partition configuration
Capacity for z/OS on z10 and later processors is represented with HiperDispatch turned ON

Include	Partition Identification					Partition Configuration					Partition Capacity	
	No.	Type	Name	SCP	Workload	Mode	LCPs	Weight	Weight%	CAP	Minimum	Maximum
✓	1	GP	LPAR2	z/OS-1.10*	Average	SHR	3	173	25,11%		485	1.930
✓		zIIP	LPAR2	z/OS-1.10*	Average	SHR	3	375	33,36%		1.042	2.343
✓	2	GP	LPAR4	z/OS-1.12*	Average	SHR	2	172	24,96%		474	1.266
✓		zIIP	LPAR4	z/OS-1.12*	Average	SHR	3	172	15,30%		494	2.420
✓	3	GP	LPAR5	z/OS-1.13	Average	SHR	3	142	20,61%		398	1.930
✓		zIIP	LPAR5	z/OS-1.13	Average	SHR	3	375	33,36%		1.042	2.343
✓	4	GP	LPAR6	z/OS-1.10*	Average	SHR	2	172	24,96%		474	1.266
✓		zIIP	LPAR6	z/OS-1.10*	Average	SHR	3	172	15,30%		494	2.420
✓	5	GP	LPAR7	z/OS-1.12*	Average	SHR	2	30	4,35%		83	1.266
✓		zIIP	LPAR7	z/OS-1.12*	Average	SHR	3	30	2,67%		86	2.420
✓		IFL	LPAR1	z/VM	Average/LV	SHR	6	900	100,00%		5.212	5.212

Capacity Summary by Pool

CP Pool	RCPs	Partitions	LCPs	SHR LCP:RCP	Capacity
GP	3	5	12	4,000	1.913
zAAP	0	0	0		0
zIIP	4	5	15	3,750	3.158
IFL	6	1	6	1,000	5.212
ICF	0	0	0		0
Totals	13	11	33		10.283



Conclusions

- zBC12 X03 with 3 ZIIPs for current workload
- DB workload = 982 CP + 1018 ZIIP = 2000 MIPS
- With 4 IFLs, IFLs would be 80% utilized - under assumption that same number of MIPS are needed for DB workload in z/OS and Linux on System z (for existing IFL workload + DB workload migrated from z/OS)
- 2 IFLs left for consolidate DB distributed
- After DB migration from z/OS to zLinux, 2 additional engines can be converted to IFLs

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