Issues That Arise in MLC Software Pricing

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Major Issues With Software Contracts

- Background
  - We review dozens of software contracts each year
  - We teach software pricing classes on-site and public
  - We consult on software contracts (IBM and ISVs) and audits
  - We have offering to run SCRT and provide recommendations to reduce the R4HA and other costs (SCRTPro)
  - ISV contracts often keep customers from expanding their capacity
- Agenda
  - MIPS vs MSUs
  - Increasing Capacity to Reduce MIPS
  - Country Multiplex Pricing (CMP)
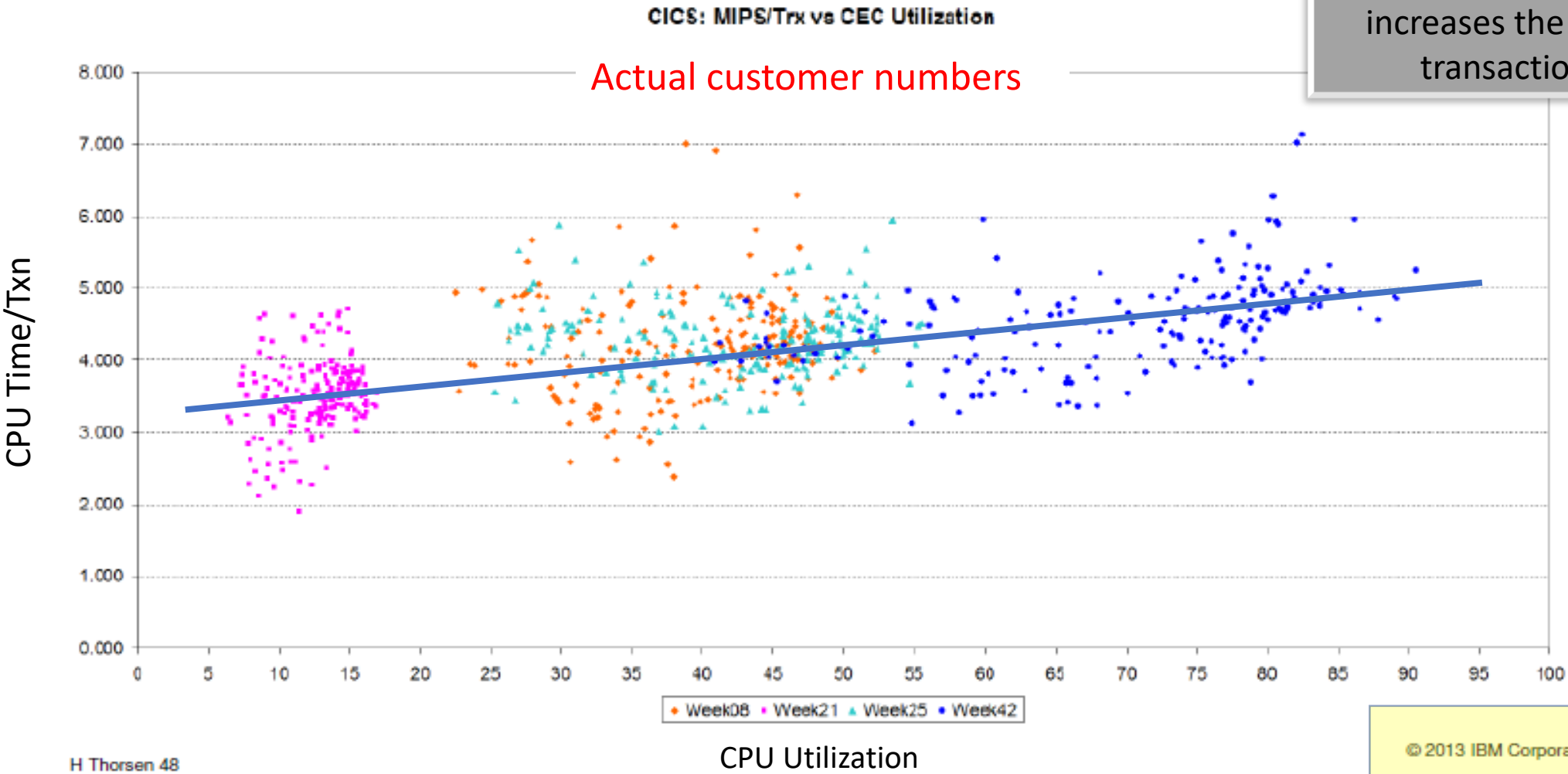 - Container Pricing

MIPS vs MSUs

- Too many contracts specify MIPS without defining them
- Which MIPS? Gartner/IBM/Cheryl Watson/calculated from MSUs?
- Which MSUs? R4HA/SCRT N5 or P5/ISV SCRT/CMP/Container?
- Solution: change contracts to use MSUs; specify how MSUs are determined; **use ISV SCRT facility!**

- Enterprise Systems Media: *Enterprise Executive 2016: Issue 4 –* [Mainframe Software Audits](#)

Increasing Capacity to Reduce MIPS

- CPU time used increases by 3-5% as the CPU utilization increases by 10%

- Solution: add excess capacity (e.g. go from 90% busy to 50% busy can reduce the peak MSUs by up to 20%)

- Problem: all IBM full-capacity and all ISV full-capacity products are show stoppers for this solution

- One example: USAA went from four zEC12-711 to z13-711 and MSUs went up; upgrading to z13-716s reduced MIPS by 9000 MIPS; upgrading to z13-726s reduced MIPS by another 4000 MIPS; See SHARE in Providence session 21045 by Todd Havekost

Less is more

CICS: MIPS/Trx vs CEC Utilization

Actual customer numbers

CPU Time/Txn

CPU Utilization

Week08   Week21   Week25   Week42

H Thorsen 48

Use of Excess Capacity

- When you add engines, the amount of cache increases, the CPU utilization goes down, the RNI decreases, and the cost of sub-capacity software goes down because the peak R4HA goes down

- This is one reason that sub-capacity processors are becoming more popular

- More and more companies are attempting this option

- Big complaint is ISVs who won't support sub-capacity pricing

- Solution: support sub-capacity pricing; **use ISV SCRT facility!**

Country Multiplex Pricing

- MANY customers want to go to CMP

- Result is that the R4HA is reduced

- IBM adjusts pricing during invoicing with a "base factor" so that their revenue doesn't go down

- But ISVs that use IBM's SCRT simply see the MSUs go down

- Most ISV contracts make no mention of CMP

- Solution: **use ISV SCRT facility and request AWLC report instead of CMLC!**

CMP – Different R4HA Calculation Method

- When using CMP, your peak R4HA is calculated by summing the MSUs for LPARs across ALL CPCs, *not* on a CPC-by-CPC basis.

- The *worst* case is that the CMP R4HA will be the same as the pre-CMP R4HA. In practice, it should nearly always be less.
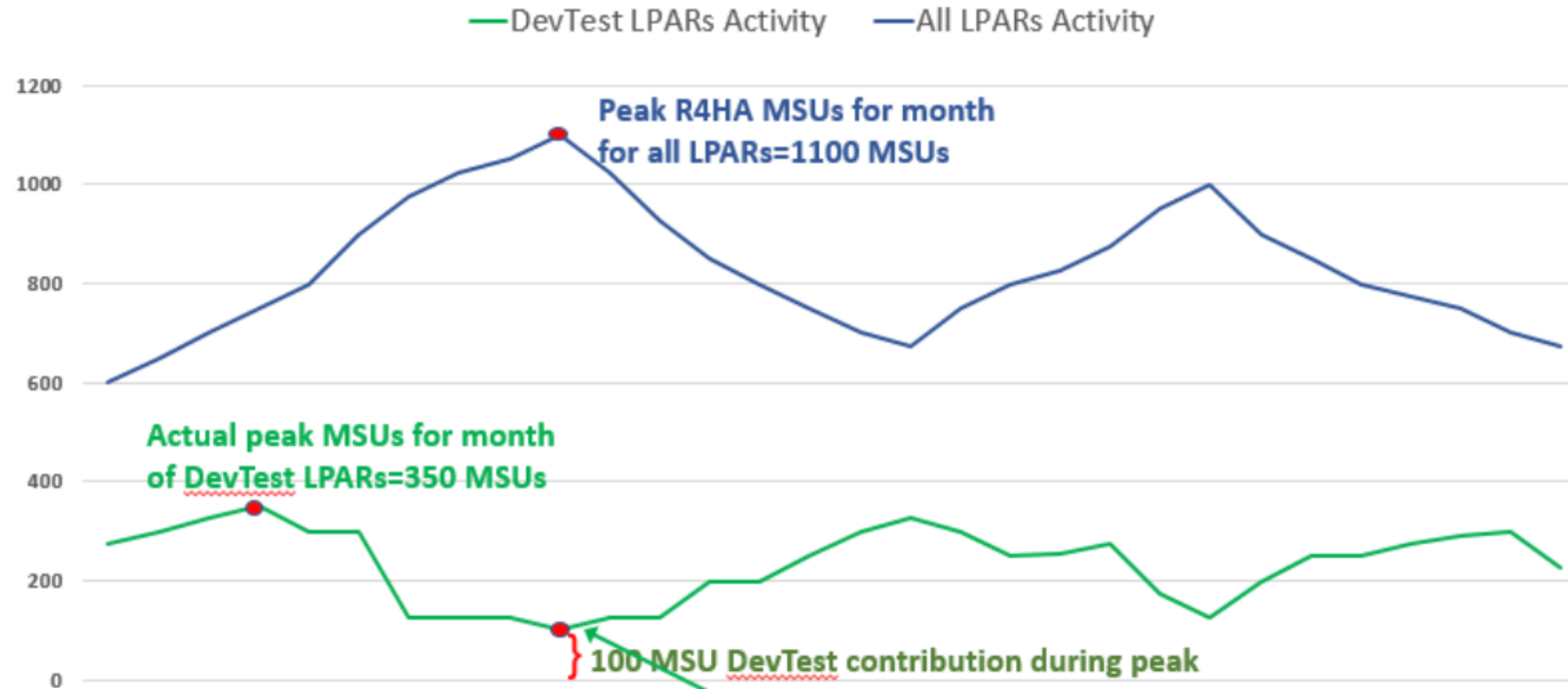
AWLC SUM = 1040 + 1052 + 669 = 2761
CMP SUM = 2277

	CPC₁						CPC₂					CPC₃				AWLC SUM	CMLC SUM
	LP₁	LP₂	LP₃	LP₄	AWLCS UM		LP₁	LP₂	LP₃	AWLCS UM		LP₁	LP₂	AWLCS UM			
0:00	55	232	13	563	863	0:00	217	101	392	710	0:00	148	183	331			1904
1:00	64	481	49	246	840	1:00	276	392	384	1052	1:00	71	62	133			2025
2:00	60	454	15	255	784	2:00	235	382	65	682	2:00	179	288	467			1933
3:00	73	279	38	342	732	3:00	166	269	202	637	3:00	348	321	669			2038
4:00	75	257	37	671	1040	4:00	108	218	347	673	4:00	260	115	375			2088
5:00	52	442	32	329	855	5:00	369	86	122	577	5:00	450	123	573			2005
6:00	61	415	17	172	665	6:00	315	342	123	780	6:00	241	74	315			1760
7:00	75	406	12	168	661	7:00	366	293	155	814	7:00	148	340	488			1963
8:00	66	465	12	159	702	8:00	117	64	100	281	8:00	103	363	466			1449
9:00	68	374	18	390	850	9:00	154	264	347	765	9:00	446	155	601			2216
10:00	63	350	50	571	1034	10:00	266	83	220	569	10:00	229	399	628			2231
11:00	66	395	22	382	865	11:00	339	120	336	795	11:00	244	373	617			2277
12:00	52	459	24	263	798	12:00	342	247	318	907	12:00	304	211	515			2220
Peak					1040					1052				669	2761	Peak	2277

Container Pricing

- LOTS of customers are interested in new container pricing, primary Dev/Test
- IBM says "Container Pricing ***does not directly impact*** the cost of unrelated workloads."
  - But it indirectly impacts them; primarily due to the CPU utilization
  - In the next slide, look at what happens when you let the developers go wild during peak periods
- The cost per MSU for traditional workload may increase (see last slide)
- If ISV uses IBM SCRT for charging; they may need to change
- Solution: **use ISV SCRT facility!**

DevTest Solution Example

DevTest LPARs Activity   **All LPARs Activity**

**Peak R4HA MSUs for month
for all LPARs=1100 MSUs**

**Actual peak MSUs for month
of DevTest LPARs=350 MSUs**

} **100 MSU DevTest contribution during peak**

In this example, actual peak for DevTest is seen as 350 MSUs
so up to 1050 MSUs permitted at no extra MLC cost (subject
to HW MIPs and zIPLA SW coverage being available)

Contribution of DevTest to peak R4HA used for billing. $ value
calculated by excluding from SCRT run and calculating delta versus
BAU total $ cost based on announcement letter terms – this
becomes the MLC $ cost for DevTest workload going forward.
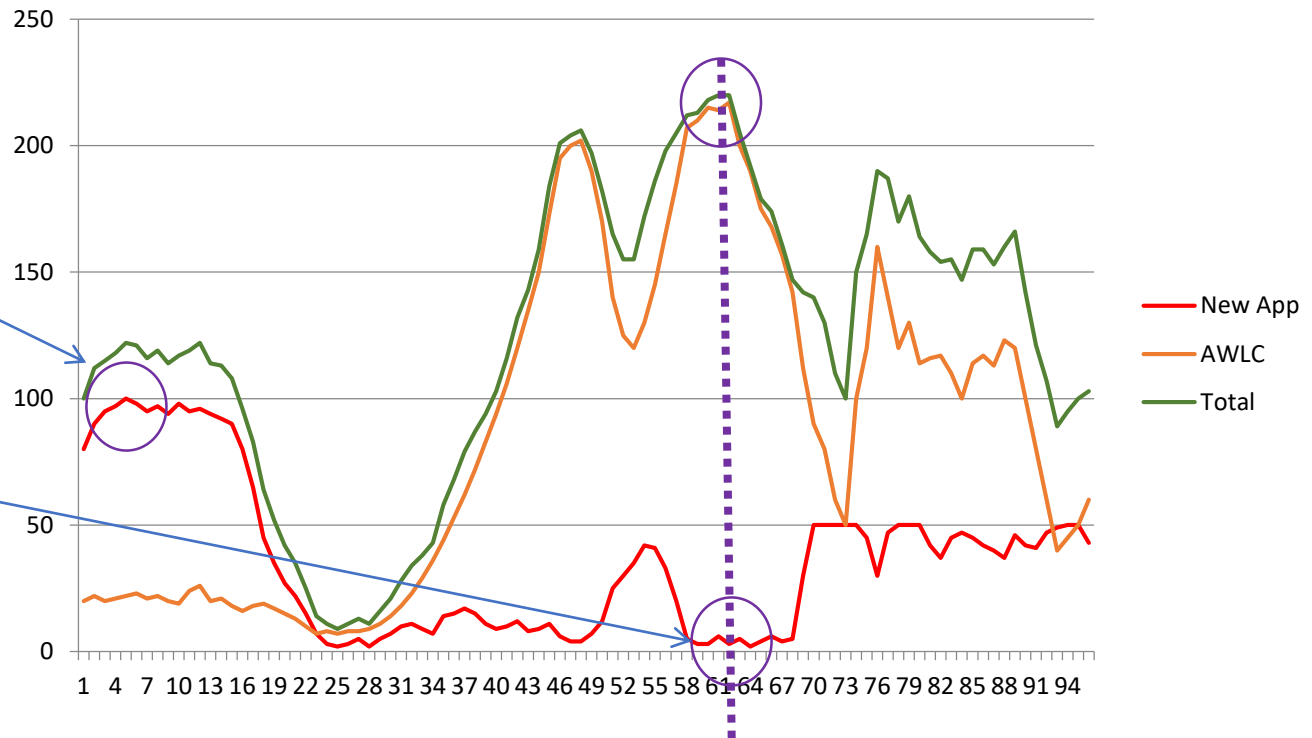
Container Pricing

- Traditional pricing may be best suited to applications that run outside the peak.

Peak MSUs for new application is 100 MSUs.

Contribution of new application to Peak R4HA is nearly nothing.

Running it in a container (with a 100 MSU peak) would presumably cost more than treating it the same as all your traditional work.
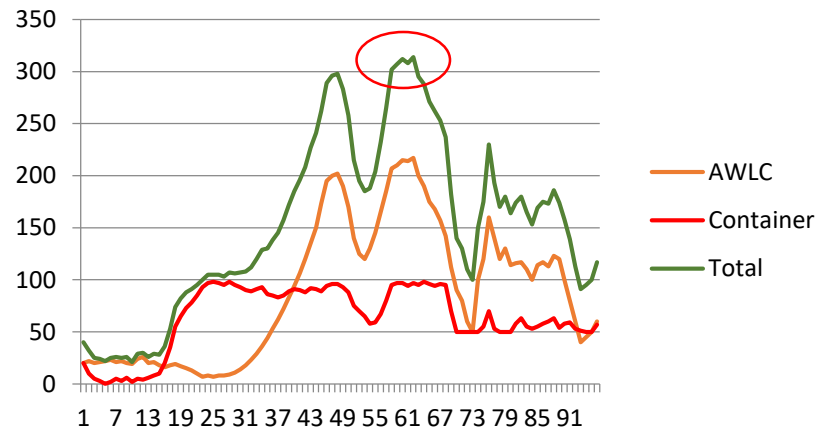
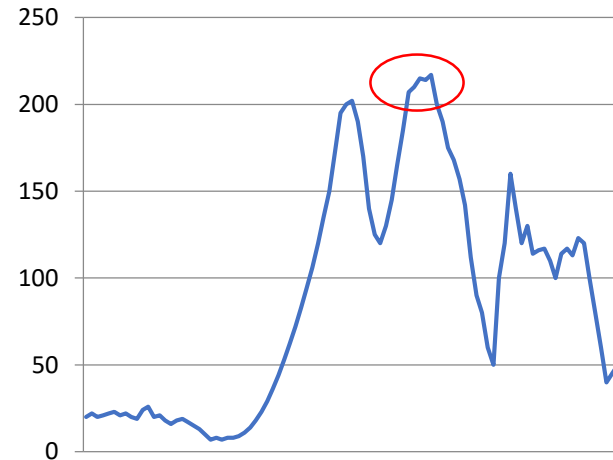**New Application Using R4HA Whitespace**

Container Pricing

- Container pricing *may* be best suited to applications that use a lot of capacity *in* the peak
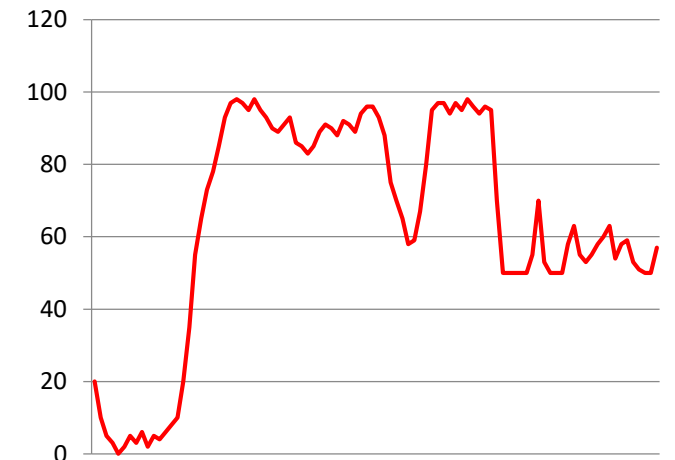

New Application Using Container

Traditional

Container

OR

- If you treated it as traditional work, the peak R4HA for ALL work would be 310 MSUs.

- If you use Container Pricing for the new application, your Peak R4HA for everything else would be 210 MSUs, PLUS something (???) for the container?

It's a New World

CMLC Incremental vs Average Costs