Roll Up for the Magical Mystery Tour of Software Costs

16962

David Schipper

Lead Product Manager

March 5, 2015

Abstract

Hey Dude, don’t make them mad.

Take an invoice and make it smaller.

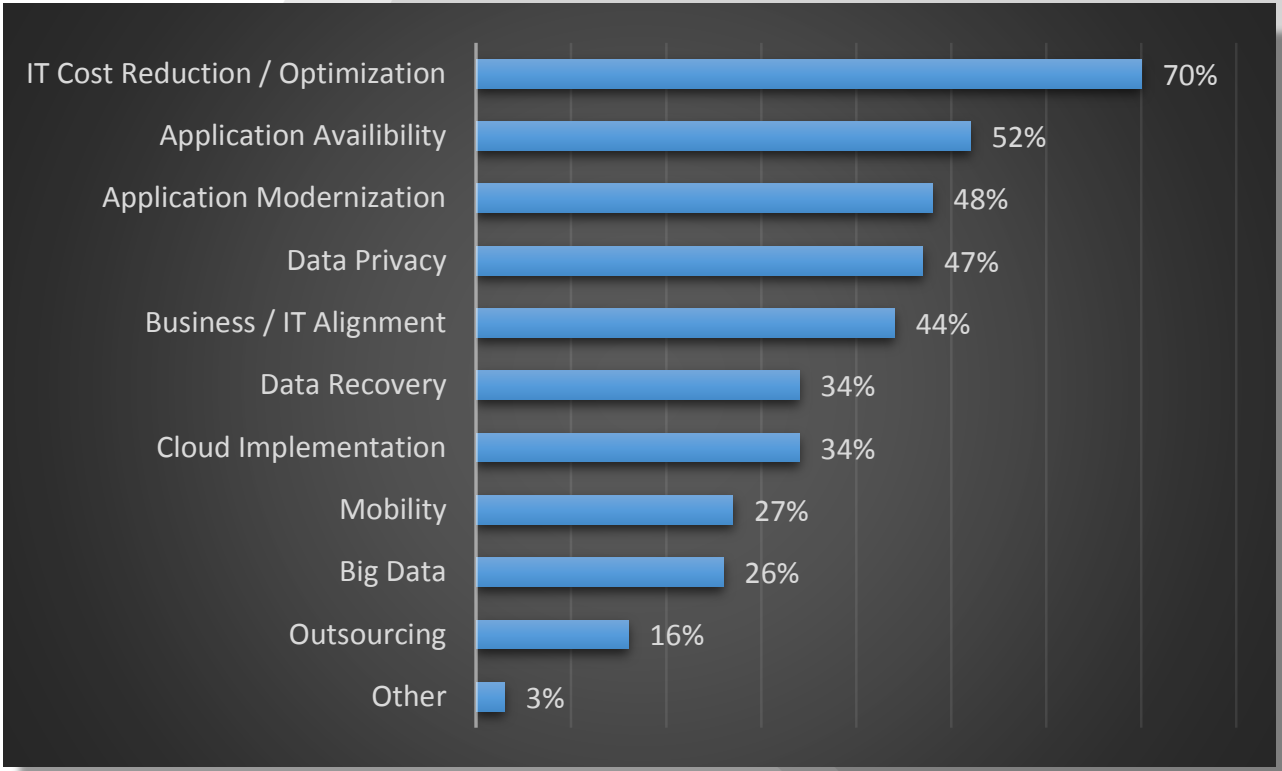
Remember to optimize software costs,

Then you can reduce your mainframe budget.

Agenda

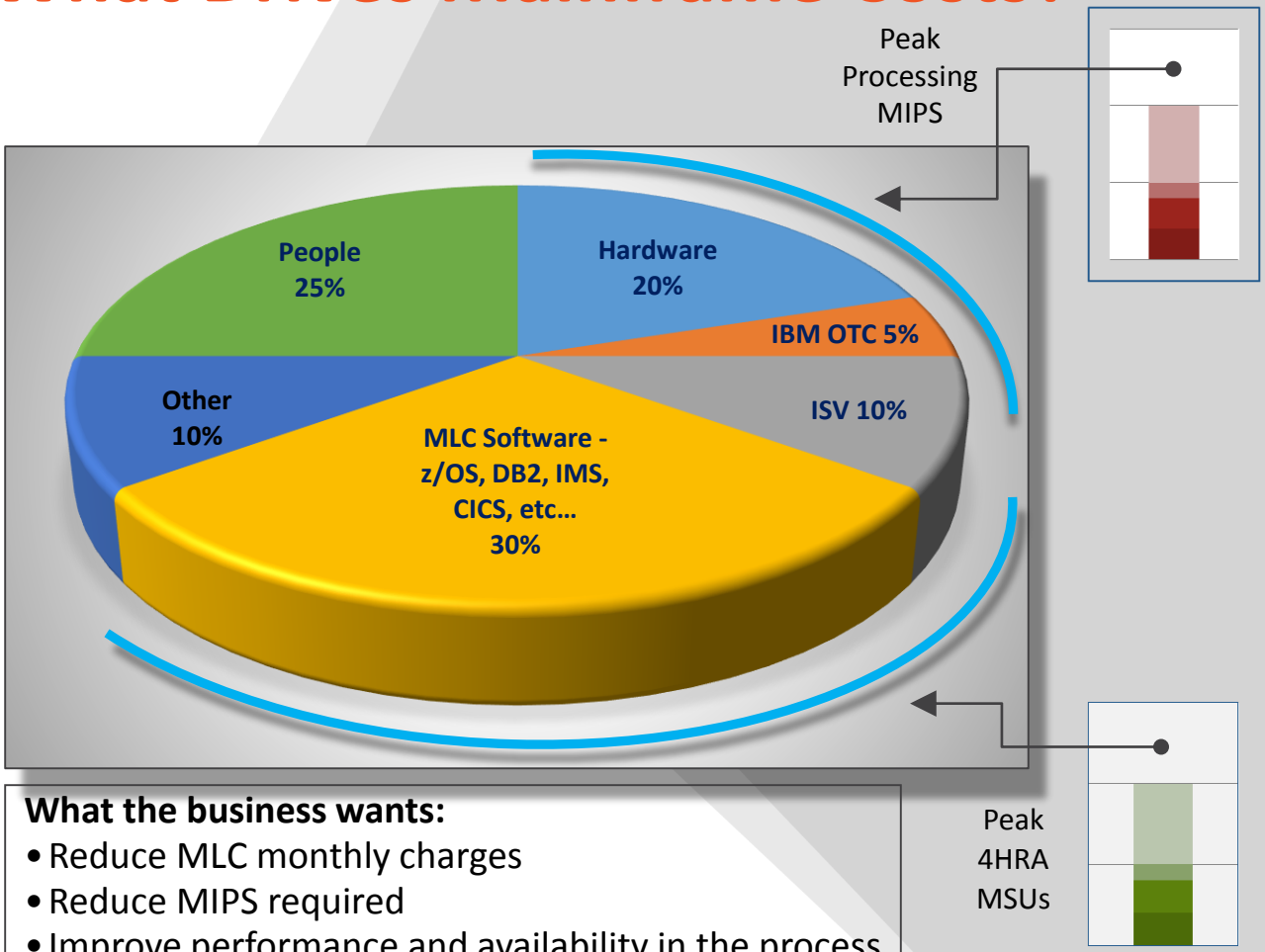
- Sub-capacity Pricing and Monthly License Charges (MLC)
- 10 Steps to Reducing Mainframe MLC Costs
- Analyze and Model
- Implement Capping
- Workload Placement

Survey Says…



Source: BMC Software 2014 Mainframe Survey

What Drives Mainframe Costs?



What the business wants:

- Reduce MLC monthly charges
- Reduce MIPS required
- Improve performance and availability in the process

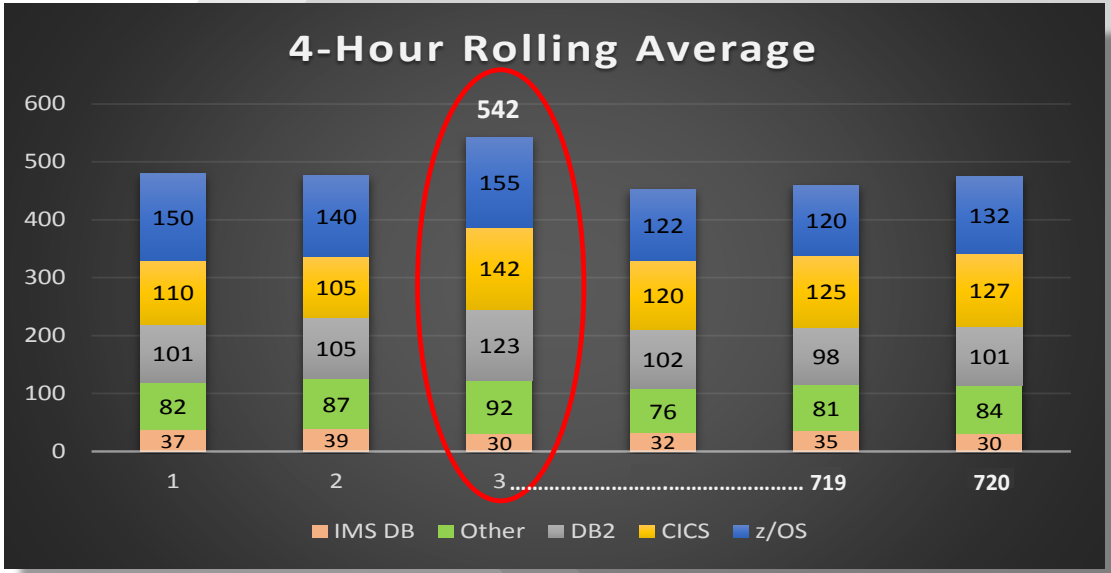
Sub-capacity pricing

IBM software charged on peak MSU usage

Not based on full machine capacity

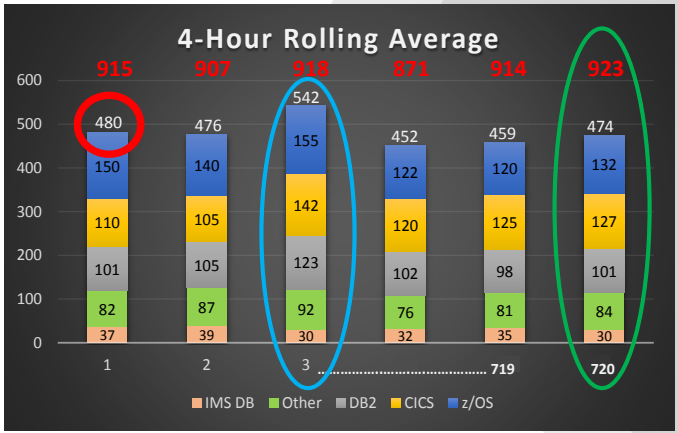
Key metric is the 4 Hour Rolling Average (4HRA)

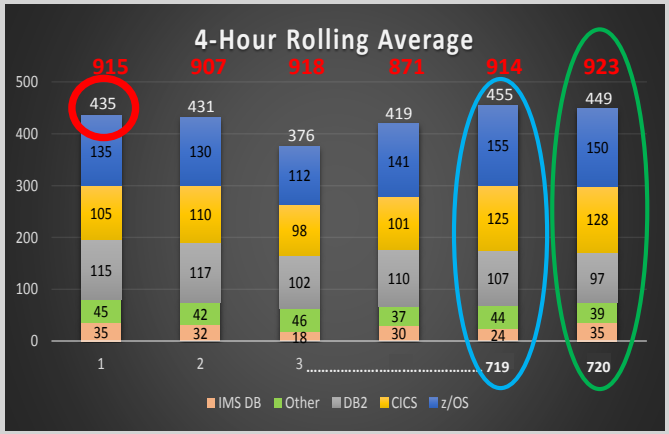
Sub-capacity pricing – Single LPAR



		% of Expense	% of MSU Peak
z/OS @ $85/MSU - 542 MSUs	$46,070	24%	29%
IMS DB @ $125/MSU - 542 MSUs	$67,750	35%	6%
DB2 @ $75/MSU - 542 MSUs	$40,650	21%	23%
CICS @ $72/MSU - 542 MSUs	$39,024	20%	26%
Other		0%	17%
Total	$193,494		

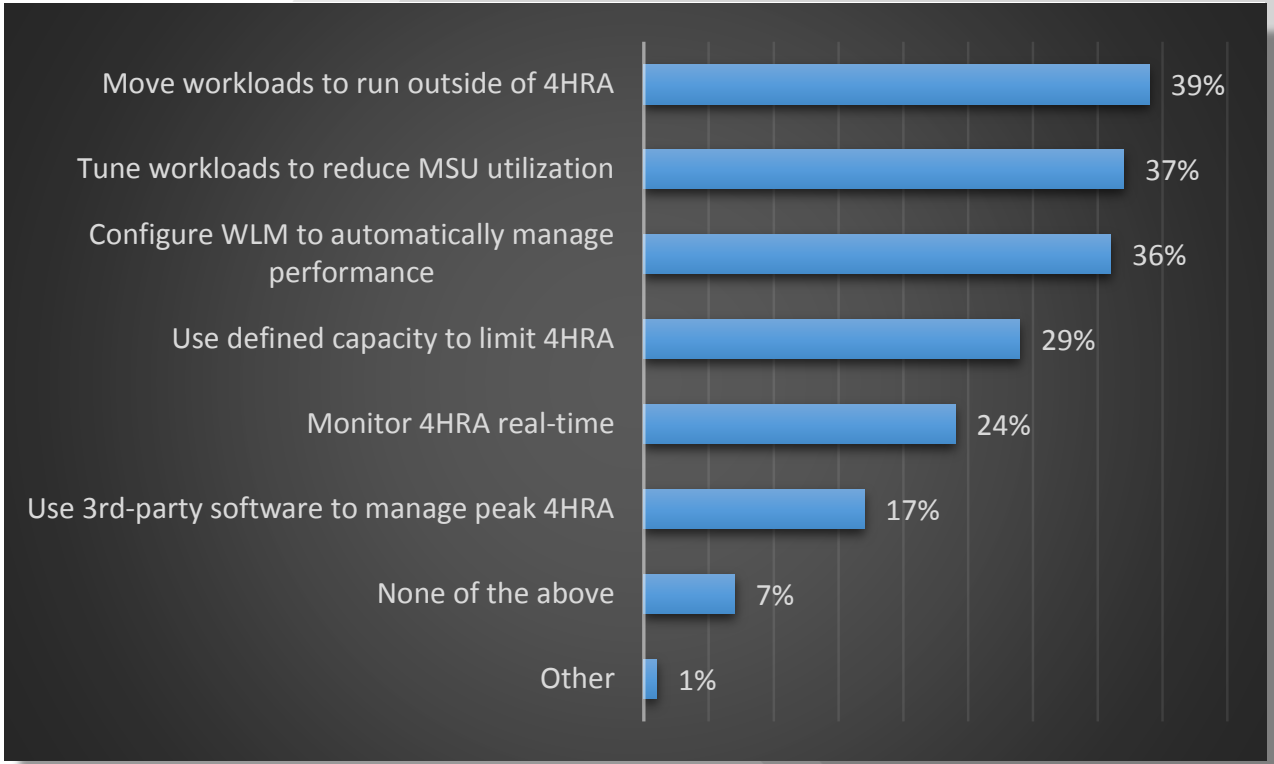
Sub-capacity pricing – *LPAR Aggregation*





		% of MLC Expense	% of MSU Peak
z/OS @ $85/MSU - 923 MSUs	$78,455	24%	31%
IMS DB @ $125/MSU - 923 MSUs	$115,375	35%	7%
DB2 @ $75/MSU - 923 MSUs	$69,225	21%	21%
CICS @ $72/MSU - 923 MSUs	$66,456	20%	28%
Other	$0	0%	13%
Total	$329,511		

Survey Says……



Source: BMC Software 2014 Mainframe Survey

10 Steps to Reducing Mainframe MLC Costs

1. Understand the Cost Base
2. Analyze Peak Workloads
3. Implement Capping
4. Review Workload Placement
5. Leverage Technology – the Benefit of Technical Currency
6. Review the SCRT Process
7. Manage the Entire Software Portfolio
8. Evaluate Possibilities to Qualify for Special-Situation Terms
9. Investigate Alternative Licensing Metrics
10. Plan Procurement Negotiation Strategy

Analyze

Take Action

Negotiate

Source: White paper by David G. Wilson President and General Manager, SZS Consulting, Ltd

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IBM's Software Cost Reporting Tool (SCRT)

MLC Product Name	MLC Product ID	Tool MSUs
z/OS V1	5694-A01	642
DB2 10 for z/OS	5605-DB2	579
DB2 V9 for z/OS	5635-DB2	642
DB2 UDB for z/OS V8	5625-DB2	579
DB2 UDB for OS/390 V7	5675-DB2	309
DB2 UDB for OS/390 V6	5645-DB2	109
CICS TS for z/OS V4	5655-S97	315
CICS TS for z/OS V3	5655-M15	287
CICS TS for OS/390 V2	5697-E93	212
CICS TS for OS/390	5655-147	140
CICS/ESA V4	5655-018	131
WebSphere MQ for z/OS V7	5655-R36	560
MQSeries for z/OS		
MQSeries for OS/		
MQSeries MVS/ES		

Difficult to understand…doesn't provide cost.

Just a reporting mechanism for IBM's billing system…

Does not identify opportunities for savings….

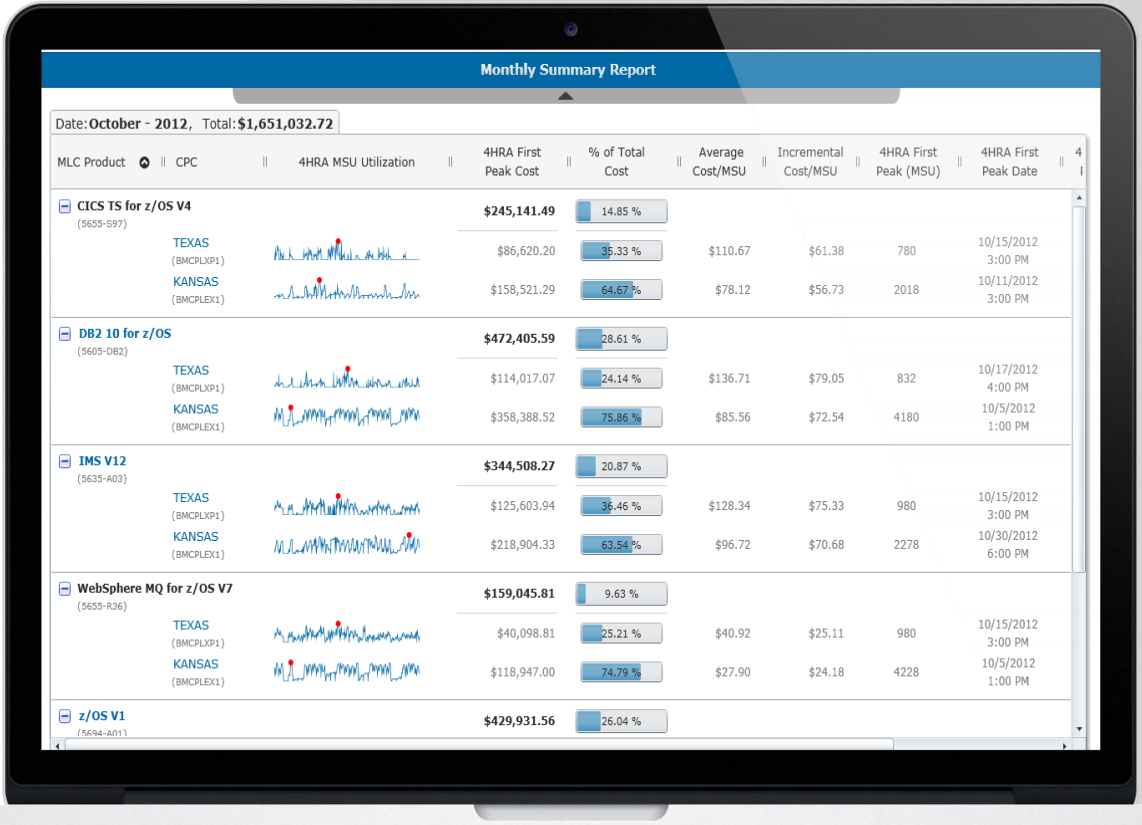
Product Name	Product ID	Highest	Date/Time	LPAR DB2A	LPAR DB2B	LPAR ESAJ	LPAR ESAM	LPAR IMSA
z/OS V1	5694-A01	642	19 Sep 2011 - 22:00 UTC	29	157	103	9	39
DB2 10 for z/OS	5605-DB2	579	19 Sep 2011 - 22:00 UTC	29	157	103	0	39
DB2 V9 for z/OS	5635-DB2	642	19 Sep 2011 - 22:00 UTC	29	157	103	9	39
DB2 UDB for z/OS V8	5625-DB2	579	19 Sep 2011 - 22:00 UTC	29	157	103	0	39
DB2 UDB for OS/390 V7	5675-DB2	309	22 Sep 2011 - 22:00 UTC	0	0	93	0	0
DB2 UDB for OS/390 V6	5645-DB2	109	08 Sep 2011 - 17:00 UTC	0	0	0	0	0
CICS TS for z/OS V4	5655-S97	315	29 Sep 2011 - 23:00 UTC	0	0	46	0	0
CICS TS for z/OS V3	5655-M15	287	06 Sep 2011 - 22:00 UTC	0	0	0	0	0
CICS TS for OS/390 V2	5697-E93	212	26 Sep 2011 - 23:00 UTC	0	0	28	0	0
CICS TS for OS/390	5655-147	140	14 Sep 2011 - 22:00 UTC	0	0	0	0	0
CICS/ESA V4	5655-018	131	08 Sep 2011 - 20:00 UTC	0	0	0	0	0

Analysis - Measure MLC so you can Manage it

BMC Cost Analyzer for zEnterprise® (CAzE)

- **Analyzes SMF records**
- **Creates an accurate cost model for insight and transparency into MLC**
- **Produces cost information by product, by CPC, by LPAR, average cost, incremental cost**
  - Detailed MLC and 4HRA reporting
  - Target workloads that are driving the peak 4HRA
- **What-if analysis to identify cost impact of MLC reduction activities**
  - Workload increase/decrease/move
  - Identify LPARs that could benefit from capping
  - Identify the cost/benefit of IT actions

Understand the Cost Base

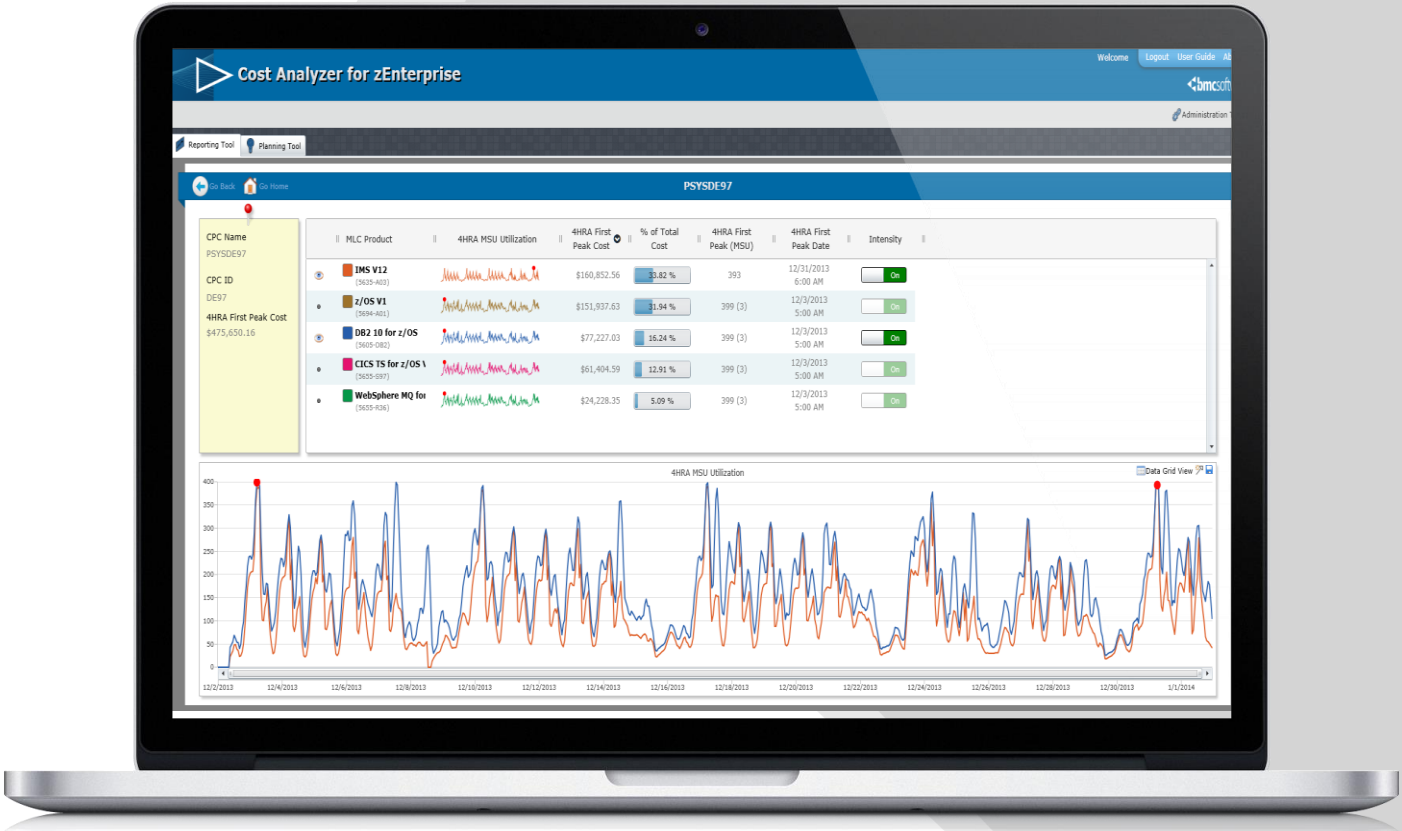


Monthly Summary Report

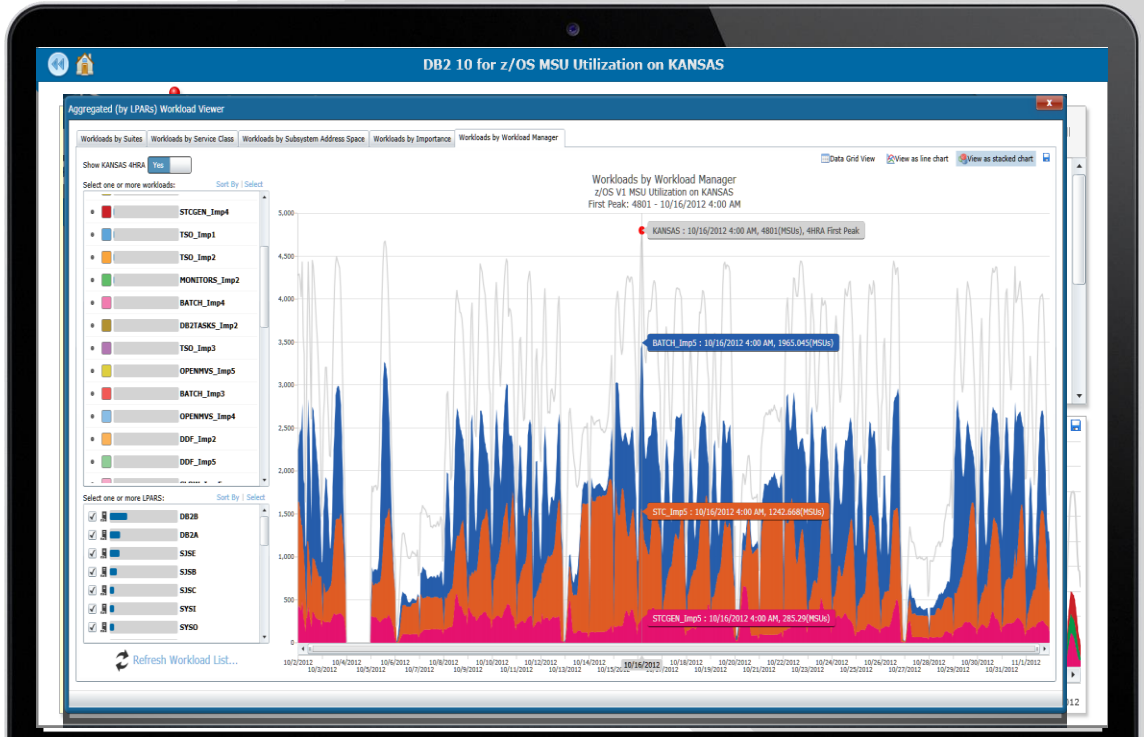
Date: October - 2012, Total: $1,651,032.72

MLC Product	CPC	4HRA MSU Utilization	4HRA First Peak Cost	% of Total Cost	Average Cost/MSU	Incremental Cost/MSU	4HRA First Peak (MSU)	4HRA First Peak Date
CICS TS for z/OS V4 (5655-S97)			$245,141.49	14.85 %				
	TEXAS (BMCPLXP1)		$86,620.20	35.33 %	$110.67	$61.38	780	10/15/2012 3:00 PM
	KANSAS (BMCPLEX1)		$158,521.29	64.67 %	$78.12	$56.73	2018	10/11/2012 3:00 PM
DB2 10 for z/OS (5605-DB2)			$472,405.59	28.61 %				
	TEXAS (BMCPLXP1)		$114,017.07	24.14 %	$136.71	$79.05	832	10/17/2012 4:00 PM
	KANSAS (BMCPLEX1)		$358,388.52	75.86 %	$85.56	$72.54	4180	10/5/2012 1:00 PM
IMS V12 (5635-A03)			$344,508.27	20.87 %				
	TEXAS (BMCPLXP1)		$125,603.94	36.46 %	$128.34	$75.33	980	10/15/2012 3:00 PM
	KANSAS (BMCPLEX1)		$218,904.33	63.54 %	$96.72	$70.68	2278	10/30/2012 6:00 PM
WebSphere MQ for z/OS V7 (5655-R36)			$159,045.81	9.63 %				
	TEXAS (BMCPLXP1)		$40,098.81	25.21 %	$40.92	$25.11	980	10/15/2012 3:00 PM
	KANSAS (BMCPLEX1)		$118,947.00	74.79 %	$27.90	$24.18	4228	10/5/2012 1:00 PM
z/OS V1 (5694-A01)			$429,931.56	26.04 %				

Understand the Cost Base - Products



Understand the Cost Base - LPAR Contribution



Evaluate Benefit of WLM capping

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Evaluate Benefit of WLM capping

Planning Tool Product Evaluation Summary

Plan: EMEA Capping Example, Date: **October - 2013**, Grand Total: **$1,444,079.82**, Workload Type: **Workloads by Workload Manager**

MLC Product	CPC	New First Peak Cost	% of Total Cost	Cost Change	New 1st Peak (MSU)	New 1st Peak Date	Old 1st Peak (MSU)	Old 1st Peak Date
CICS TS for z/OS V4 5655-S97		**$327,349.77**	**22.67 %**	**$0.00**				
	KANSAS (BMCPLEX1)	$276,221.85	84.38 %	$0.00	4214	10/2/2013 1:00 PM	4214	10/2/2013 1:00 PM
	TEXAS (BMCPLEX1)	$51,127.92	15.62 %	$0.00	780	10/15/2013 3:00 PM	780	10/15/2013 3:00 PM
DB2 10 for z/OS 5605-DB2		**$412,213.20**	**28.55 %**	**($3,627.00)**				
	KANSAS (BMCPLEX1)	$342,533.93	83.10 %	($3,720.78)	4090	10/5/2013 3:00 PM	4140	10/5/2013 1:00 PM
	TEXAS (BMCPLEX1)	$69,679.27	16.90 %	$93.78	832	10/17/2013 4:00 PM	832	10/17/2013 4:00 PM
IMS V12 5635-A03		**$294,531.93**	**20.40 %**	**$0.00**				
	KANSAS (BMCPLEX1)	$208,318.88	70.73 %	$0.00	2368	10/2/2013 2:00 AM	2368	10/2/2013 2:00 AM
	TEXAS (BMCPLEX1)	$86,213.05	29.27 %	$0.00	980	10/15/2013 3:00 PM	980	10/15/2013 3:00 PM
Tivoli NetView for z/OS V5 5697-ENV		**$79,079.76**	**5.48 %**	**($2,278.50)**				
	KANSAS (BMCPLEX1)	$64,506.96	81.57 %	($2,336.26)	4338	10/5/2013 3:00 PM	4513	10/16/2013 4:00 AM
	TEXAS (BMCPLEX1)	$14,572.80	18.43 %	$57.76	980	10/15/2013 3:00 PM	980	10/15/2013 3:00 PM
WebSphere MQ for z/OS V7 5655-R36		**$139,306.56**	**9.65 %**	**($1,209.00)**				
	KANSAS (BMCPLEX1)	$112,379.45	80.67 %	($1,240.55)	4090	10/5/2013 3:00 PM	4140	10/5/2013 1:00 PM
	TEXAS (BMCPLEX1)	$26,927.11	19.33 %	$31.55	980	10/15/2013 3:00 PM	980	10/15/2013 3:00 PM
z/OS V1 5694-A01		**$191,598.60**	**13.27 %**	**($4,068.75)**				
	KANSAS (BMCPLEX1)	$156,290.85	81.57 %	($4,467.71)	4338	10/5/2013 3:00 PM	4513	10/16/2013 4:00 AM
	TEXAS (BMCPLEX1)	$35,307.75	18.43 %	$398.96	980	10/15/2013 3:00 PM	980	10/15/2013 3:00 PM
	Grand Total For Month	$1,444,079.82		($11,765.30)	Savings			
				$582.05	Increase			
				($11,183.25)	Difference			

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Source: White paper by David G. Wilson President and General Manager, SZS Consulting, Ltd

Take Action – Implement Capping Why Cap?

- **To Limit Capacity**
  - Financial Objective
    - MSUs cost big money
    - Contractual considerations
  - Run Away Processing

An MLC product will be charged at the sum of the workload peak of all the LPARs on which that product resides.

Take Action – Implement Capping
The Capping Challenge

- It’s difficult to get it right
- It’s easy to get it wrong
- The results can leave scars

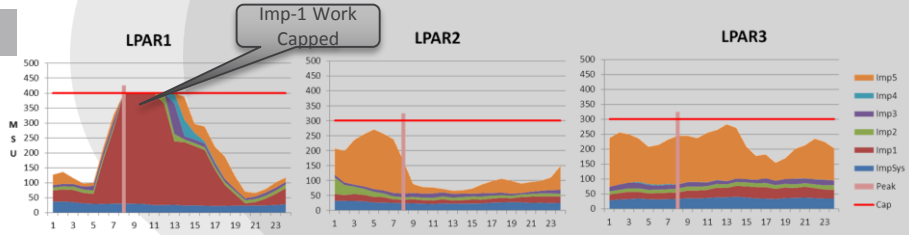
Take Action – Implement Capping

BMC Intelligent Capping for zEnterprise® (iCap)

- **Dynamically update capacity**
  - GCL and/or DC
  - Based on utilization needs, workload importance and iCap policies
- **Demand-based transfer of defined capacity**
  - From “sacrificial” LPARs/ Groups
  - To higher priority LPARs/Groups requiring higher defined capacity settings
  - Zero based re-allocation of MSU across LPARs and WLM Capacity Groups
- **Exploits capping “white space” and/or low priority workload**

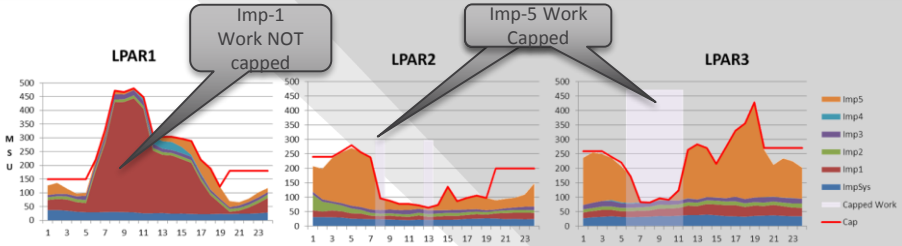
Using iCap – Before and After

Without iCap



Max 4HRA=811 MSU - Importance 1 workload capped

With iCap



MSULIMIT=650 - **Saving of 161 MSU** - **No high importance workload capped**

Take Action – Implement Capping
BMC Intelligent Capping for zEnterprise®

- **Simplifies and dynamically manages mainframe capacity capping**
  - LPAR and group settings
  - Reduces MLC costs
- **Mitigates business risk associated with workload capping**
  - Policy-driven
  - Multi-phase approach
  - Alerts & automation

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Take Action – Workload Placement

BMC Subsystem Optimizer for zEnterprize® (Subzero)

The Why…

- IBM requires that CICS, DB2, and/or IMS DB run on the same LPAR if a CICS transaction access DB2 or IMS DB
- Increases MLC since all are billed at the combined peak

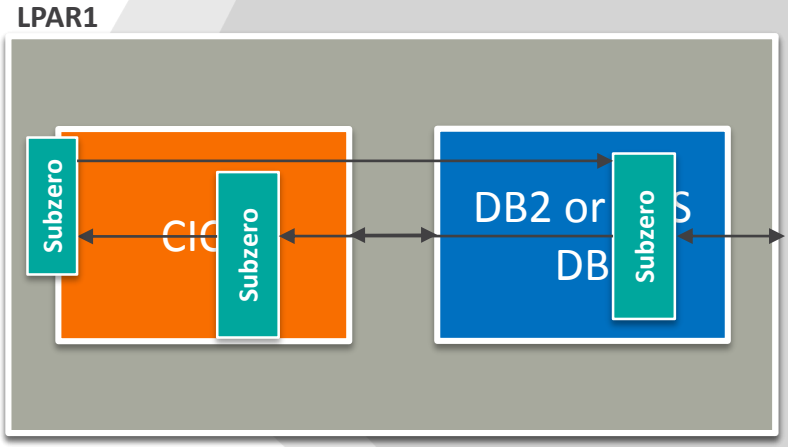
The How…

- Remove this IBM requirement and lower MLC
- No application code changes required
- Utilizes IBM published facilities

The What…

- Flexibility on where you can run CICS, IMS, and DB2
- Enhanced system redundancy and recovery options
- Further workload balancing options

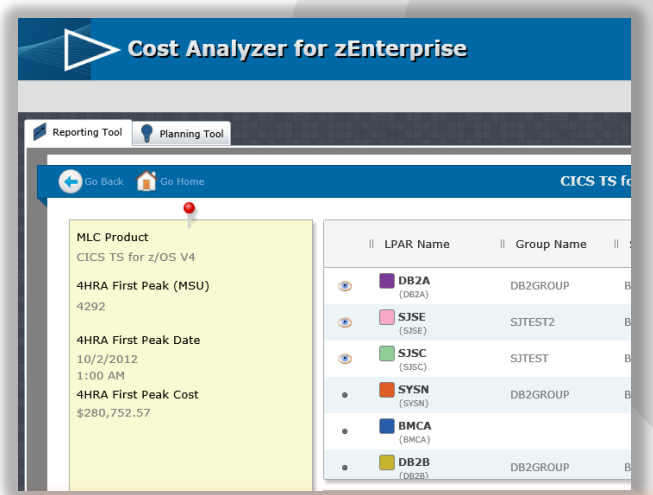
Take Action – Workload Placement
Subzero Basics

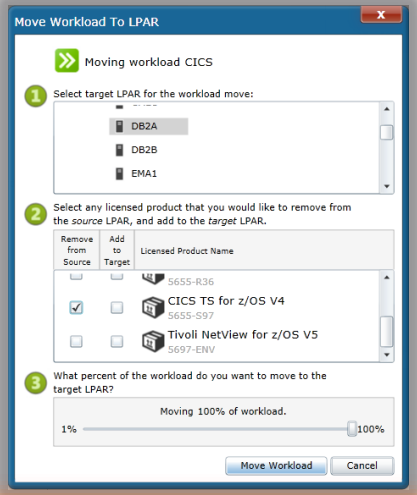


1. CICS application SQL or DL/I calls are intercepted by Subzero
2. Subzero routes the data access request to the appropriate DBMS
3. DB2/IMS DB processes the data request and returns the requested data
4. Subzero routes the result set back to the initiating CICS application

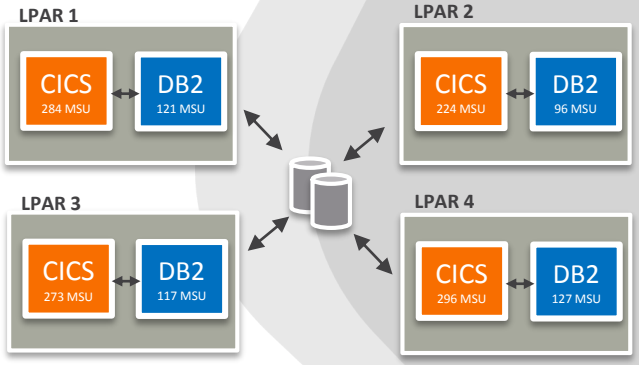
Model Subzero impact on MLC costs

Use BMC Cost Analyzer for zEnterprise® to model the Subzero environment and predict the savings that can be achieved



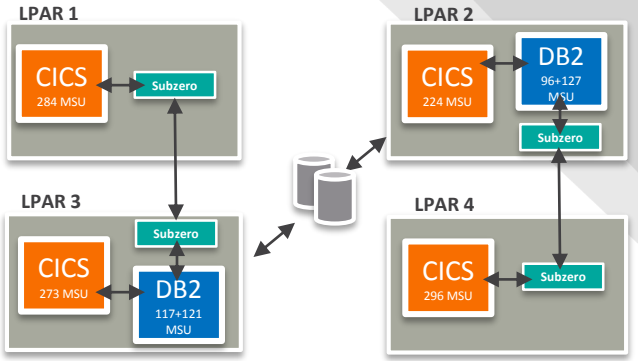


Subzero use case – CICS/DB2 data sharing



Without Subzero

LPAR 1	405
LPAR 2	320
LPAR 3	390
LPAR 4	423
Aggregate monthly peak R4	1538
z/OS @ $72/MSU - 1538 MSUs	$110,736
DB2 @ $75/MSU - 1538 MSUs	$115,350
CICS @ $72/MSU - 1538 MSUs	$110,736
Monthly MLC fee	$336,822

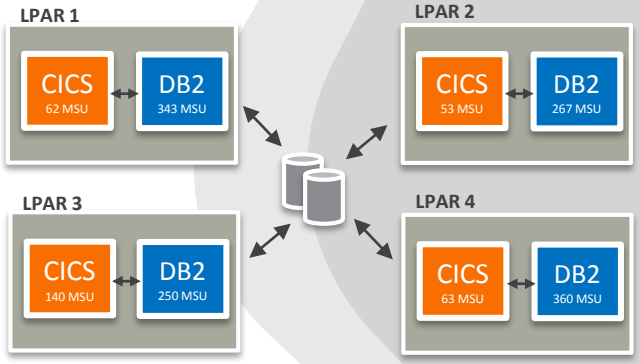


With Subzero

LPAR 1	284
LPAR 2	447
LPAR 3	511
LPAR 4	296
Add 3% for Subzero overhead	46
Aggregate monthly peak R4	1584
z/OS @ $72/MSU - 1584 MSUs	$114,022
DB2 @ $75/MSU - 958 MSUs	$71,843
CICS @ $72/MSU - 1584 MSUs	$114,022
Monthly MLC fee	$299,887
	-11%

Annual savings $443,220

Subzero use case – LPAR isolation



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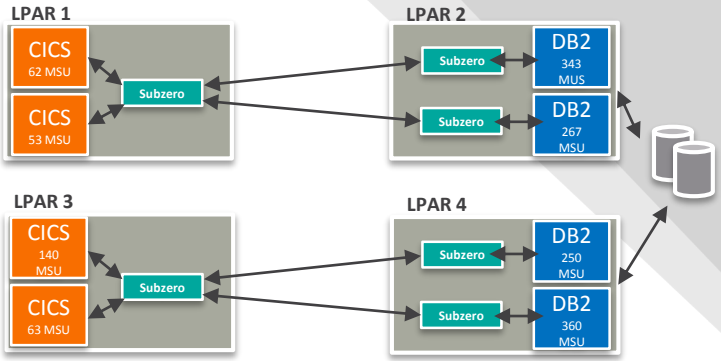


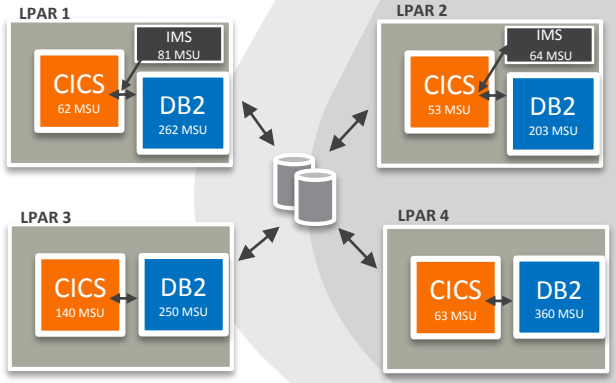
With Subzero

LPAR 1 - CICS	115
LPAR 3 - CICS	203
LPAR 2 - DB2	610
LPAR 4 - DB2	610
Add 3% for Subzero overhead	46
Aggregate monthly peak R4	1584

z/OS @ $72/MSU - 1584 MSUs	$114,058
DB2 @ $75/MSU - 1220 MSUs	$91,500
CICS @ $72/MSU - 318 MSUs	$22,896
Monthly MLC fee	$228,454
	-32%

Annual savings $1,300,416

Subzero use case – isolating IMS



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LPAR 2 - CICS/DB2/IMS	320
LPAR 3 - CICS/DB2	390
LPAR 4 - CICS/DB2	423
Aggregate monthly peak R4	1538

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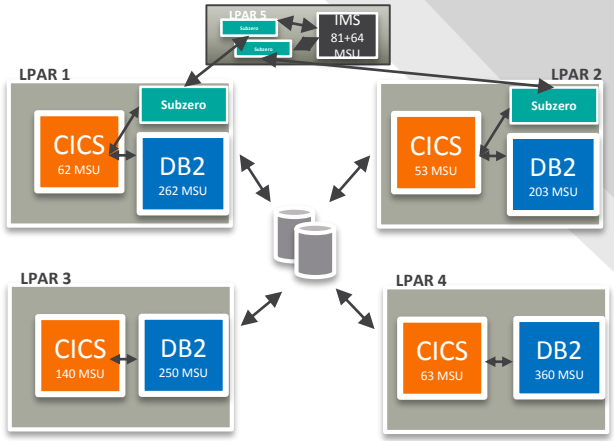
DB2 @ $75/MSU - 1538 MSUs	$115,350
CICS @ $72/MSU - 1538 MSUs	$110,736
IMS @ $132/MSU - 725 MSUs	$95,700
Monthly MLC fee	$432,522



With Subzero

LPAR 1 - CICS/DB2	324
LPAR 2 - CICS/DB2	256
LPAR 3 - CICS/DB2	390
LPAR 4 - CICS/DB2	423
LPAR 5 - IMS	145
Add 3% for Subzero overhead	46
Aggregate monthly peak R4	1584

z/OS @ $72/MSU - 1584 MSUs	$114,058
DB2 @ $75/MSU - 1393 MSUs	$104,475
CICS @ $72/MSU - 1393 MSUs	$100,296
IMS @ $132/MSU - 145 MSUs	$19,140
Monthly MLC fee	$337,969
	-22%

Annual savings $1,134,636

10 Steps to Reducing Mainframe MLC Costs

1. Understand the Cost Base
2. Analyze Peak Workloads

Analyze

3. Implement Capping
4. Review Workload Placement
5. Leverage Technology – the Benefit of Technical Currency
6. Review the SCRT Process

Take Action

7. Manage the Entire Software Portfolio
8. Evaluate Possibilities to Qualify for Special-Situation Terms
9. Investigate Alternative Licensing Metrics
10. Plan Procurement Negotiation Strategy

Negotiate

Source: White paper by David G. Wilson President and General Manager, SZS Consulting, Ltd

Summary – Reducing MLC

- Use a defined process
- Measure and model to know impact and success
- Implement a multi-pronged approach
- Think differently about workload placement
- Automate as much as possible

Lowering IBM MLC Costs

The BMC Software Investment

Cost Analyzer for *zEnterprise®*

- Foundation for understanding MLC
- Quickly identify MLC cost components
- Simulate options for MLC cost reduction

Application Accelerator for IMS

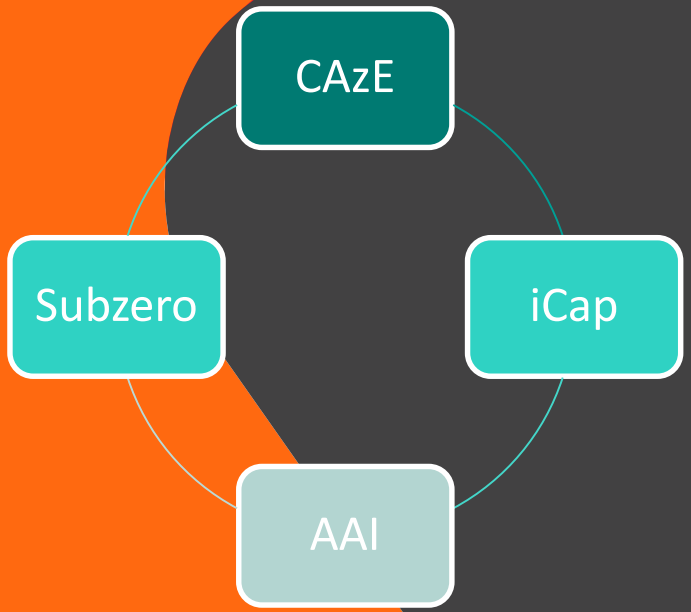
- Reduce IMS batch CPU consumption up to 50%
- Reduce IMS batch elapsed times up to 70%
- No IMS application changes

Intelligent Capping for *zEnterprise®*

- Cost optimization with soft capping
- Intelligent capping minimizes SLA risks
- Simulate mode for gradual implementation

Subsystem Optimizer for *zEnterprise®*

- Reduce CICS, DB2, and IMS MLC costs
- Increased operational flexibility
- No application changes



Thank You

Bring IT to Life.™