GSE UK Conference 2010: Session GC

z/OS Software Cost Optimization - Several Options for TCO Reduction
Introduction - Agenda

- Typical IBM Mainframe Expenditure Profile
- Software Asset Management Evolution
- IT & Software Asset Management Interaction
- Do You Know Your z/OS Software Portfolio?
- Software Cost Reduction: Why Bother?
- Market Comparisons: What Information Is Out There?
- New Mainframe Workloads & Others
- TCO Reduction Options:
  1) Sub-Capacity Pricing: VWLC
  2) Software Contract Negotiations
  3) MIPS/MSU Reduction Techniques
  4) Simple Product Replacement
  5) CPU Reduction: Application Tuning
  6) Considered Product Migration
Typical IBM Mainframe Expenditure Profile

- Software expenditure increases over time and by ~50% in 4 years
- zSeries servers might be a commodity, sourced only from IBM...
- Year-on-year, Mainframe personnel manage more resources!

Software expenditure is significant, so why not optimize usage?

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Historically, which business group handled software negotiations?
Historically, were all software purchases business case justified?
Today, TCO, ROI and compliance justify the need for a SAM process...

**Why is compliance mandatory, but cost reduction optional?**
Software Asset Management (SAM) Evolution #2

SAM can tell you more about your own business than you think...
SAM puts you on an even footing for equitable vendor negotiations
A successful SAM process will be self-funding, not another overhead

Many companies have delivered good cost savings with SAM!

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IT & Software Asset Management Interaction

Don’t lose sight of the big picture, IT Asset Management...

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Do You Know Your z/OS Software Portfolio?

Software usage compliance is just as good for you as it is for the ISV!

Duplicated or redundant software is typical after nn years MVS use...

Information is not power, it’s empowering; empower your business!

Software usage via Auto-Discovery is the best starting place for SAM

IBM acquires Ubiquity & ISOGON, reducing to 1 Tivoli product
IBM acquires Maximo for MRO Asset Management function

Software Asset Management should be evolutionary as opposed to a radical revolution. Inventory your environment, and then ISV negotiation becomes a whole lot easier...

Software usage compliance is just as good for you as it is for the ISV!
Duplicated or redundant software is typical after nn years MVS use...
Information is not power, it’s empowering; empower your business!
Software Cost Reduction: Why Should We Bother?

Sample IBM zSeries Server Pricing Configurations Using Industry Standard Pricing

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<th>Software Description</th>
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**IBM WLC Total Monthly Cost**
~£53,000 ~£86,000

**IBM WLC Annual Saving @ 10%**
~£63,000 ~£103,000

But, Industry Averages State ~$2,000-$5,000 (~£1,500-£3,500) Cost per Year for Software MIPS

**Total z/OS Software Annual Cost**
~£750,000 ~£1,500,000

**Total z/OS Annual Saving @ 10%**
~£75,000 ~£150,000

- Core z/OS products are a significant component of overall cost...
- Reducing MIPS/MSU consumption is of course the biggest saving!
- MIPS/MSU prices reduce year-on-year, but software stays the same

Even for a small user, 10% savings are conservative & worthwhile!
Market Comparisons: What Information Is Out There?

There is no “compare-the-market” web site, but:

- If you know what software you use, contract negotiations with the ISV will be much easier & you can have major influence in discussions
- If you’re using legacy products with stabilized function, search the market for alternatives, they do exist, maybe from smaller ISV’s with flexible pricing (E.g. Subscription based)
- When was the last time an ISV called you proactively and offered a no cost education session to safeguard you’re getting value from their and thus your software solution?

- You pay ~15-25% support costs per year, get “bang-for-your-buck”!
- ISV’s wait for “compelling events”, keep them “on their toes”...
- Collaboration is the key, a value based customer & ISV relationship!

It’s good to talk, so talk with the incumbent & perhaps other ISV’s...

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New Mainframe Workloads & Others

**zEnterprise 196 (z196)**

**System z Solution Editions:**
Cost efficient integrated offerings combining servers, Middleware, maintenance and storage:

- ACI (Electronic Payments)
- Application Development
- Chordiant (Customer Experience)
- Cloud Computing
- Data Warehousing (DB2)
- Enterprise Linux (Virtualization)
- GDPS (DR/Availability)
- SAP Applications (DB2)
- WebSphere (SOA)

The IBM System z Solution Edition Series offers special package pricing for their most popular solutions that is competitive with other ISV/IHV alternatives, delivering outstanding ongoing cost of ownership (TCO) with a low acquisition cost (TCA), but of course, there’s zNALC also....

**Saints or Sinners - Radar Screen Observations:**

- TurboHercules: Mainframe emulation for small users or DR solutions, building on Hercules foundations.
- NEON zPrime: Offloads CPU resources to speciality engines.
- Mantissa Corporation z86VM (z/Vos): Utilizes z/VM to potentially host Windows images.
- TmaxSoft OpenFrame: Rehost traditional Mainframe workloads on IFL engines.

Could zBX bring a meeting of IT Management minds? Mainframe, UNIX, Linux & Windows...

Choose the best TCO option from day #1 and research the market!

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Sub-Capacity Pricing: VWLC #1

Sub-Capacity Pricing Checklist:
- Obtain internal organizational support
- Engage your IBM account team, talk with them about your plans to investigate WLC scenarios
- Create a software inventory
- Consider Capacity Planning forecasts
- Define a “current” baseline CPC usage report
- Perform a Sub-capacity Analysis, either IBM SCPT/SCRT and/or LCS from Al Sherkow
- Determine WLC benefits for 1, 2 & 3 year terms, from planning and forecast data
- Decide whether WLC is right for you
- Engage your IBM account team, talk with them about WLC T’s & C’s

The worst question is the question not asked; start asking questions!
Communicate with your suppliers, start as you mean to go on...
Even if WLC is not for you; learn even more about your environment

Software savings: Sub-capacity planning is the best place to start!

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Sub-Capacity Pricing: VWLC #2

Workload Charges Summary:
- Grow hardware capacity without necessarily increasing software charges
- Support for most zSeries server configurations
- Once WLC is chosen, PSLC or ULC pricing structures no longer apply
- Lower cost for incremental growth
- Usage based “pay for what you use” pricing
- Full Capacity (CPC) WLC structure or
- Sub Capacity (LPAR) pricing for eligible products, z/OS, CICS, DB2, IMS, MQ, Debug Tool, COBOL, PL/I, SA, Netview, OPC/TWS, Domino, QMF, Encryption Facility...

Pay for capacity on a R4HA, not on the maximum capacity reached!
If MSU usage decreases or is seasonal, billing is proportional...
Most customers benefit from VWLC pricing, by ~5-10% per annum

Usage based pricing should apply to all ISV software, not just IBM...

This example is for a 2 LPAR 119 MSU CPC. LPARA has an R4HA of 73 MSUs, LPARB 52 MSUs and an aggregate of 98 MSUs. Thus the customer would be charged for 98 MSUs usage. The LPAR utilization capacity is the highest sum of measured four-hour rolling MSU averages for the LPARs in the CPC in which a sub-capacity eligible product runs concurrently during a given month. The peak interval is the highest utilization determined from the sum of the utilization for all LPARs in which a particular product ran in a given hour.

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**Sub-Capacity Pricing: VWLC Soft-Capping Evolution**

**VWLC Price vs. Performance Observations:**
- Some customers require “billing certainty”, the Defined Capacity (DC) metric introduces “soft-capping” for LPARs, which can impact performance!
- Aggregated granularity can be applied to multiple LPARs with the Group Capacity Limit (GCL) function, optimizing costs, but does not address the price vs. performance challenge...
- An IBM recognized VWLC optimization solution, AutoSoftCapping (ASC) monitors R4HA activity, allowing a customer to define an MSU resource usage policy, dynamically managing DC metrics, transferring MSU resource between LPARs!

- Only you can decide, what is most important, price or performance?
- Many customers find a good balance using standard VWLC & GCL...
- Cost optimization without performance impact is possible via ASC!

*By definition R4HA includes unused MSU resource, which can be used!*

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Good savings are possible, but balance risk with reward and beware of the compelling event; maybe consider deploying an external consultant.
MIPS/MSU Reduction Techniques

IBM Speciality Engines; zIIP & zAAP Introduction
- Requires z9, z10 or z196 hardware architecture
- zAAP was originally targeted for Java workloads, now includes XML parsing ability
- zIIP offers more MSU offload capability largely based on SRB enclave type applications
- IBM software that is zIIP eligible includes DB2 Connect, DB2 Data Serving, DRDA, Parallel Queries, DB2 Utilities LOAD, REORG, and REBUILD INDEX functions; Communication Server IPSec; XML System Services; Global Mirror (zGM); HiperSockets; Common Information Module (CIM)
- ISV software that is zIIP eligible include utility tools, SOA solutions, XML processing (e.g. SQL)

- zIIP/zAAP analysis is uncomplicated and based on your CPU usage
- A speculate to accumulate implementation, but ROI is short-term
- Delivers system-wide benefit, releasing General Purpose CPU cycles!

Arguably a workload runs for free on a zIIP or zAAP speciality engine...

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Simple Product Replacement

**Systems Management/Utility/Tool Observations:**
- Typically each and every product can be replaced by several competitive products.
- An incumbent product will have been purchased, OTC, IPLA, et al, or is on a monthly rental/lease; but most “smart” ISV’s will replace a product with subscription based licensing.
- An incumbent product might be decades old, not benefitting from enhancement, whereas another competitive product might have higher function, use less resources and be lower cost...
- From the larger ISV’s you might have nn software products installed; maybe converting just 1 or a few products might keep them on their toes and improve the relationship...
- Conversions are typically straightforward and are transparent to the business, with no risk.
- Sub-Capacity pricing should apply, so if you submit SCRT reports to IBM, the ISV should accept these also, for the relevant major IBM product; z/OS, DB2, CICS, MQ, et al...

*A better product for less cost, improved ISV relationships, why wouldn’t you?*

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CPU Reduction: Application Tuning

Application Tuning Observations:
- Many major ISV’s have announced a “MIPS Usage Assessment”, which inevitably uses one of their own software tools, that you might have installed
- Over time, business applications evolve, are modified and have interoperability with major subsystems and software (E.g. RDBMS, OLTP, Disk), and so although their logic might be OK, overall performance could be improved (E.g. Batch, Query, Search, Etc.)
- Do you have these “tuning” tools installed; Strobe, ExpeTune, APPTUNE, SQL Explorer, SmartTune, TRILOGexpert TriTune, Application Performance Analyzer Automation Assistant? Then, maybe find the time to use them...

- Significant cost savings possible, releasing General Purpose CPU...
- Cost saving is a by-product of a faster and optimized application!
- You should take credit and pride in optimizing your LOB application

Let Application Tuning become part of your evolving SAM discipline
Considered Product Replacement

**Considered Product Replacement Observations:**
- Typically each and every product can be replaced by several competitive products.
- An incumbent product will have been purchased, OTC, IPLA, et al, or is on a monthly rental/lease; but most “smart” ISV’s will replace a product with subscription based licensing.
- The further down this list we progress, the more complex, time consuming & thus risky is the conversion. They have been performed before, by ISV’s, the internal customer or consultancy companies such as RSM Partners, SystemWerx, Ithaca, but such migrations should only be considered as a last resort, for compelling business reasons.
- When policies & data require conversion, the GIGO (Garbage-In and Garbage-Out) principle applies. Clean-Up the current environment first; consider, if data requires conversion, it must be restored/recalled/recovered to its original non-proprietary “vanilla” status before displacing the incumbent product!

Anything is possible, but there are easier and less risky cost reduction options!
z/OS Software Cost Optimization: Summary

The longest and most difficult journey always starts with a simple first step...

Ground Zero: z/OS Software Inventory
Lease TADz for 1-3 Months (low cost)

Step 1: Sub-Capacity Pricing
Determine VWLC benefits

Step 2: Vendor Communication
Negotiate better/flexible costs

Step 3: MIPS/MSU Reduction
Investigate zIIP/zAAP/IFL et al

Step 4: Product Replacement
Pragmatic product swap-outs

Step 5: Application CPU Usage
Pragmatic performance tuning

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The IBM z/OS Software Cost Reduction Offerings

**Portfolio Review & Analysis (PRA):** An IBM service with a ~4 week duration that leverages from TADz (ITLCMz) software to project current z/OS software portfolio costs for 60 Months (5 Years). Outputs will also review software portfolio from a Replacement, Renegotiate, Removal and Rehosting viewpoint, perhaps suggesting IBM software products...

**Financial Management & Accounting Workshop (FMA):** An onsite workshop to analyse the existing customer environment (E.g. Hardware, Software, Manpower, Facilities, Processes, et al), while delivering a best practices recommendations summary for applying FMA methodology.

**Total Cost of Ownership Studies (zTCO/Eagle):** A “gratis” IBM service with a ~30 day duration that is specifically targeted to highlight which platform is best suited for the customers business applications. Typically zTCO (AKA Eagle) is initiated when there is pressure to decommission or commission the zSeries platform for cost saving reasons.

Not surprisingly, IBM are well versed in this area, being zSeries innovators...