

Sub-capacity Pricing Workload License Charges (WLC)

WLC Announcements April 2003



Key WLC Pricing Announcements



❑ Pricing enhancements for Workload License Charges

➤ April 2002

- Redefines WLC into an LPAR Utilization model for variable WLC products
- PSLC+ allows existing customers to remain on the PSLC price structure

➤ May 2003

- Entry point lowered from 45 MSUs to 3 MSUs for Variable priced products

Workload License Charges



- ❑ Software pricing model for zSeries machines
 - Pay for the software capacity needed
 - Utilize excess hardware capacity without software charges
- ❑ WLC pricing supports the following categories of products
 - Variable WLC products - VWLC
 - Flat WLC products - FWLC
 - Value unit pricing

WLC Pricing Changes - Value Units

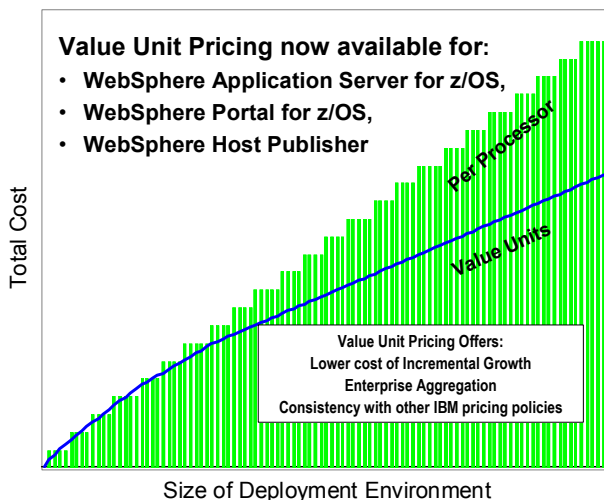


April Announcement Review

**"Value Unit Pricing and an Entry WebSphere
Application Server for z/OS V5"**

US - Annc Letter 203-093
EMEA, LA - Annc Letter ZA03-0127
Asia Pacific - Annc Letter AA03-3034

WebSphere for z/OS Pricing Metric Change



zSeries Server

		40 MSUs
		20 Value Units
CICS	CICS	
DB2	DB2	
IMS	IMS	WAS
MQ	MQ	MQ
z/OS	z/OS	z/OS

Entry Option for Selected WebSphere Family Products

purchase an "entry-level" license

z900 = 20 Value Units
z800 = 10, 20, 30 or 40 Value Units

WebSphere Metric Conversion Example



Customer's current engine-based entitlement will be converted to an equivalent Value Unit entitlement at no additional charge

Machine One

1C7 @ 247 MSUs
STANDARD BID
7 engine machine

license =
7 engines of
WebSphere
for z/OS

Machine Two

1C9 @ 302 MSUs
STANDARD BID
9 engine machine

license =
9 engines of
WebSphere
for z/OS

Conversion:

Machine One

7 of 7 engines =
100% of 247 MSU machine =
247 MSUs

Machine Two

9 of 9 engines =
100% of 302 MSU machine =
302 MSUs

**Aggregated MSUs = 549 MSUs
Converted to VUs = 154 VUs**

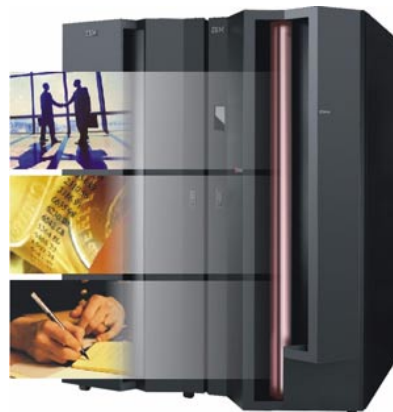
Applies to existing, engine-based WebSphere Application Server for z/OS licenses

**** Metric Conversion is at no charge to the customer ****

Pricing Change Summary



	Announced	Planned Implementation
Mainframe Charter	Now	8/22
Pricing Initiatives		
▪ Memory Pricing	Now	8/22
▪ IFL Pricing	Now	8/22
▪ Base Configuration Changes	Now	9/8
▪ Daily On/Off CoD Software Charges	Now	9/15
▪ Software Price/Performance Improvements for z990	Now	10/1
▪ WLC Pricing Enhancements	Now	10/1
▪ NALC Price Reduction	Now	10/1
▪ On/Off CoD for z990 IFL Engines	Now	10/31
▪ WebSphere Sub-Capacity SOD	Now	Planned By Year-End 2003
z990 On Demand Business Investment Promotion	Now	Planned for 9/9*



Sub-capacity Pricing Workload License Charges (WLC)

WLC Announcements May 2003



VWLC Pricing Changes



"Software Pricing for IBM z990 and Variable Workload Charges Enhancements"

US - Annc Letter 203-130
EMEA, LA - Annc Letter ZA03-0190
Asia Pacific - Annc Letter AA03-3046

WLC Terms and Conditions



☐ Prerequisites

- zSeries machines with z/OS, no other MVS-based operating system
- Customer provides call home and other required information

☐ Required process

- Obtain Sub-Capacity Reporting Tool (SCRT)
- Install any required service
- Collect SMF data required by SCRT
- Retain SMF data for a minimum of 6 months
- Use SCRT to process SMF data

Tools for Software Pricing



❑ WLC tool

- Planning tool used to obtain Sub-Capacity WLC estimate from IBM
- Processes SMF70 data from OS/390 or z/OS, any mainframe

❑ Sub-Capacity Reporting Tool

- Implementation tool for Implementing Sub-Capacity Workload License Charges (interim tool until ILM is available)
- Processes SMF70 and SMF89 records from z/OS on zSeries ONLY

z990 Software Pricing: Monthly License Charges (MLC)



z990

OS/390	OS/390
PSLC* only	

z990

z/OS	OS/390
PSLC* or Full-Cap WLC	

z990

z/OS	z/OS
PSLC* or Full-Cap WLC or Sub-Cap WLC	

The z990 Server has the same MLC pricing options as z900

* On machines with PSLC, Usage License Charges (ULC) is a valid alternative for pricing CICS, DB2, IMS, and MQSeries

z990 Hardware and Software Models



Hardware Model	Max Installable CPs
2084-A08	8
2084-B16	16
2084-C24	24
2084-D32	32

hardware model is not an indicator of machine capacity

Software Model	MSU Rating	Number of Installed CPs	Software Model	MSU Rating	Number of Installed CPs
2084-301	77	1	2084-317	886	17
2084-302	147	2	2084-318	927	18
2084-303	213	3	2084-319	973	19
2084-304	277	4	2084-320	1018	20
2084-305	337	5	2084-321	1062	21
2084-306	395	6	2084-322	1106	22
2084-307	451	7	2084-323	1149	23
2084-308	503	8	2084-324	1192	24
2084-309	551	9	2084-325	1234	25
2084-310	601	10	2084-326	1276	26
2084-311	647	11	2084-327	1317	27
2084-312	691	12	2084-328	1358	28
2084-313	733	13	2084-329	1398	29
2084-314	772	14	2084-330	1436	30
2084-315	810	15	2084-331	1474	31
2084-316	844	16	2084-332	1512	32

Base Charge for Variable WLC



- ❑ The Variable WLC base charge changed from 45 MSUs to 3 MSUs
 - Effective July 1, 2003
 - Impacts all Variable WLC products, such as: z/OS, DB2, CICS, IMS, MQSeries
 - Applies to all WLC environments: z990, z900 or z800 in a WLC-Qualifying Parallel Sysplex environment
- ❑ Benefits:
 - Provides more granularity for existing Variable WLC product licenses
 - Allows more granularity for new Variable WLC product licenses

Base Charge for Variable WLC



■ New VWLC Structure:

- Base (3 MSUs) - reduced from 45 MSUs (7/1/03)
- Level 0 (4 MSUs - 45 MSUs) - (7/1/03)
- Level 1 (46 MSUs - 175 MSUs)
- Level 2 (176 MSUs - 315 MSUs)
- Level 3 (316 MSUs - 575 MSUs)
- Level 4 (576 MSUs - 875 MSUs)
- Level 5 (876 MSUs - 1315 MSUs)
- Level 6 (1316 MSUs - 1975 MSUs) - Oct. 1, 2002
- Level 7 (1976 MSUs +) - Oct. 1, 2002

Sub-capacity Pricing Workload License Charges (WLC)

Sub-Capacity Reporting Tool (SCRT)



Sub-Capacity Announcement



- ❑ **Workload License Charges**
 - First available on September 30, 2001 to eligible z/OS customers
 - WLC sub-capacity is based on LPAR **defined capacity**
 - Changes announced on April 30, 2002 (Effective July 2)
 - WLC sub-capacity adds **LPAR utilization capacity** which relies on LPAR rolling 4-hour average utilization and requires a WLM service to enable z/OS to collect and record rolling 4-hour average utilization data for native z/OS partitions
 - **LPAR utilization capacity** is the highest **combined** rolling 4-hour average LPAR utilization for the LPARs in which a VWLC product runs concurrently during a given month

SCRT Version 5



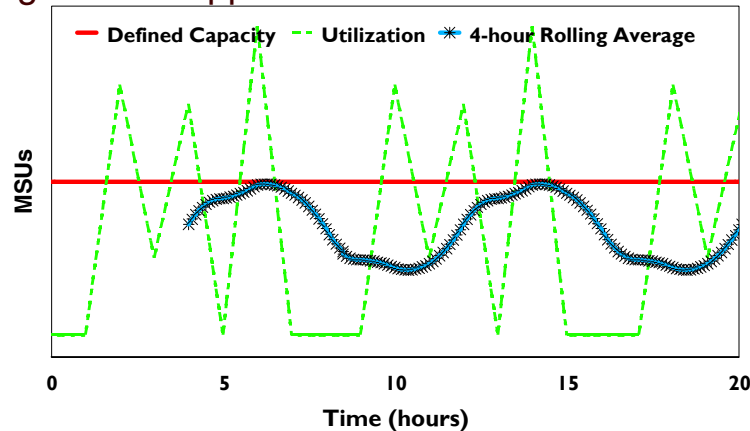
- ❑ **Supports Sub-Capacity WLC and WebSphere Entry Option**
- ❑ **General Availability on Friday 23 May 2003**
- ❑ **Download SCRT from:** <http://ibm.com/zseries/swprice/scrt>
- ❑ **New Features/Functions:**
 - Support for z990 machines
 - Support Entry Option products
 - Usability Improvements
 - Better error reporting
 - Clearer reports
- ❑ **Get Help on SCRT using "Ask Me" function on website**
- **Technical assistance**

LPAR Defined Capacity to Utilization



Rolling 4-hour average tracked by Workload Manager

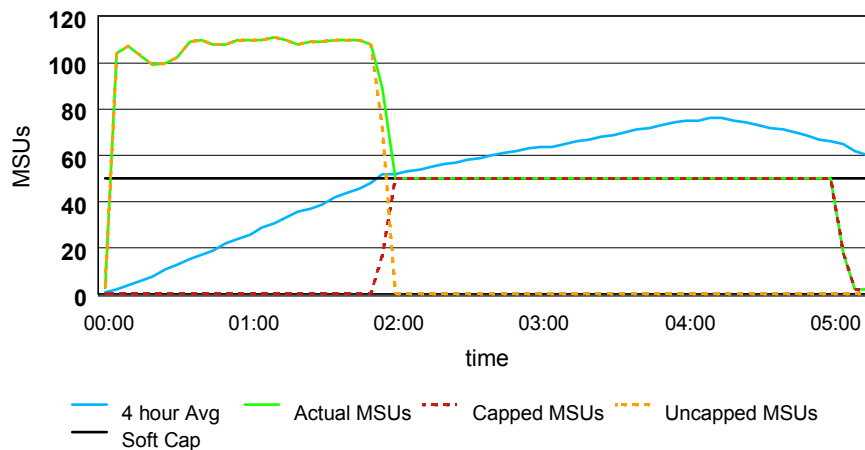
- Rolling 4-hour average not permitted to exceed defined capacity
- If 4-hour average exceeds defined capacity, LPAR gets soft capped



4-Hour Rolling Average Following IPL



Defined capacity limit enforcement



SCRT Algorithm



Hour	1	1	2	2	3	3	...	719	719	720	720
LPAR	A	B	A	B	A	B		A	B	A	B
roll 4hr avg*	70	30	75	30	50	50		100	30	100	10
z/OS	yes	yes	yes	yes	yes	yes		yes	yes	yes	yes
DB2	yes		yes		yes						

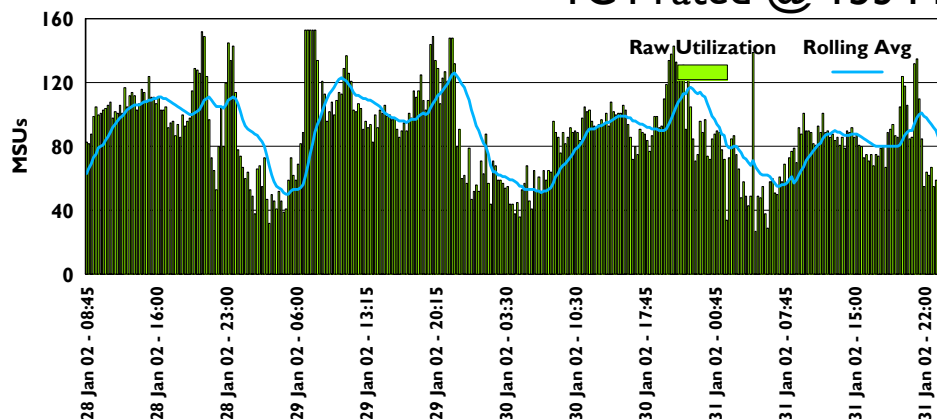
"z/OS peak interval = hour 719, z/OS is 130" --- TRUE
 "DB2 peak interval = hour 2, DB2 is 75" --- TRUE
 "z/OS Runs in LPAR A and B, add A (100) + B (50), z/OS is 150" --- FALSE
 "DB2 Runs in LPAR A, LPAR A peaks at 100, DB2 is 100" --- FALSE

Rolling 4-Hour Average Utilization



No defined capacity

IC4 rated @ 153 MSUs

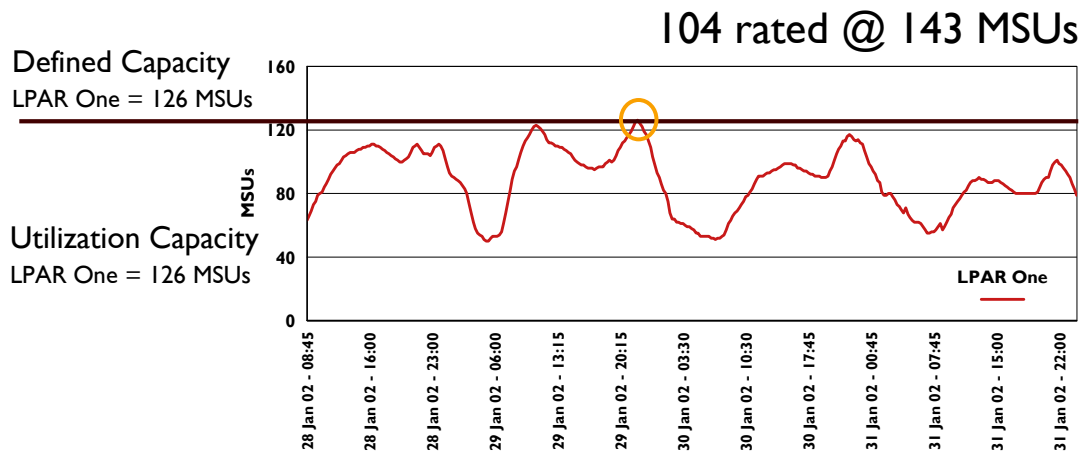


Rolling 4-Hour Average Utilization Smooths Out Peaks in Raw Utilization
Allows for Varied Peaks, Bases Software Charges on More Moderate Measure

Example Shows:

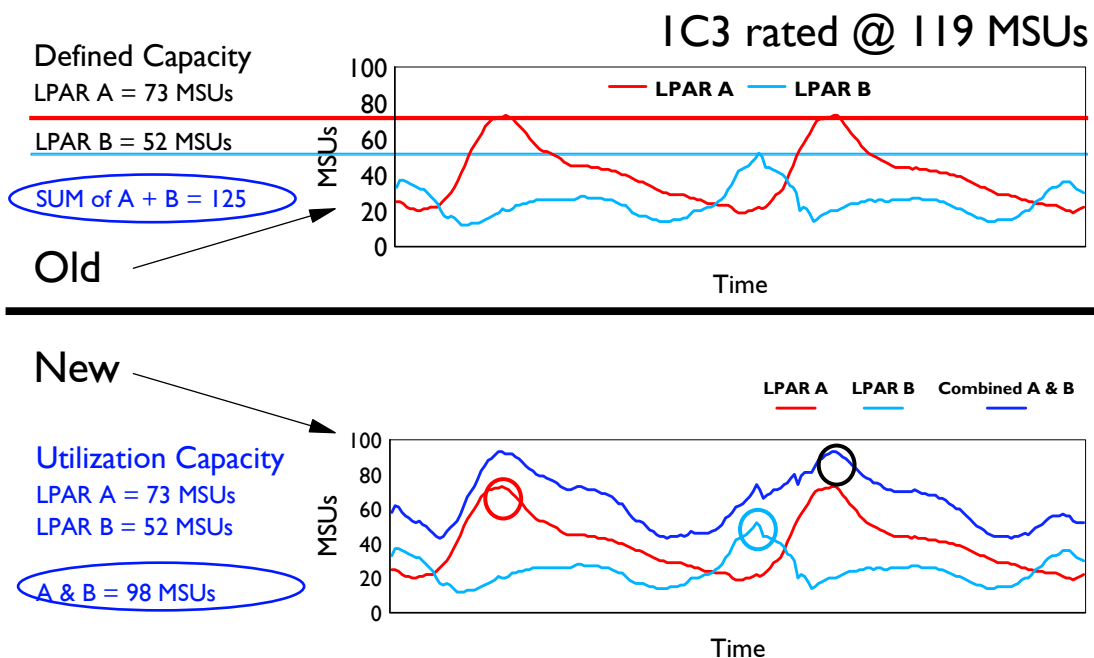
- Peak Utilization @ 153 MSUs (machine maxed out)
- Highest Rolling 4-Hour Average Utilization @ 126 MSUs (27 MSUs of White Space)

Single LPAR: Old versus New



- ▲ In a Single LPAR Environment, the new and old terms result in the same MSUs
- ▲ LPAR(s) are still required for sub-capacity WLC (Basic Mode not supported)
- ▲ Defined Capacity still available to manage LPAR Utilization

Comparison of Old vs New WLC Terms

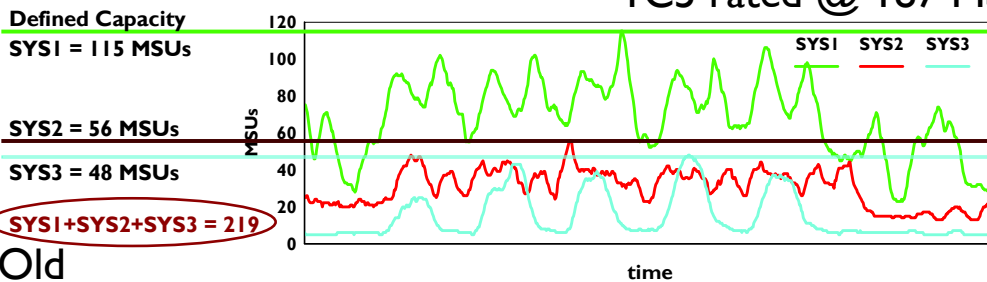


Three LPAR Example: Old versus New



z/OS calculation

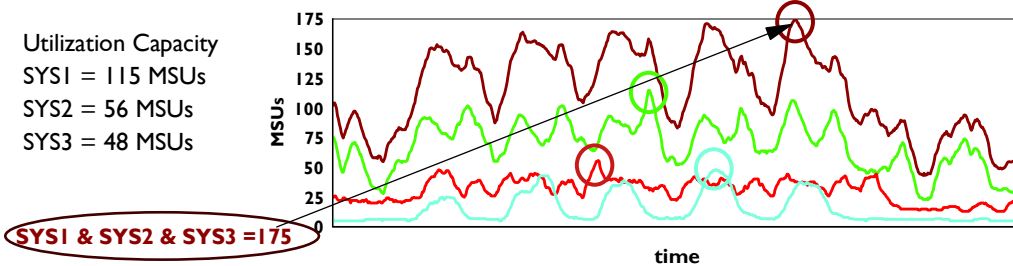
IC5 rated @ 187 MSUs



Old

New

Utilization Capacity
 SYS1 = 115 MSUs
 SYS2 = 56 MSUs
 SYS3 = 48 MSUs



Three LPAR Example: New Continued

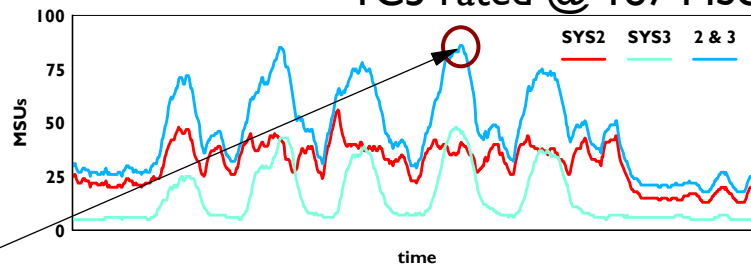


IC5 rated @ 187 MSUs

**Utilization Capacity
for Product Running in
SYS2 and SYS3 only**

SYS2 = 56 MSUs
 SYS3 = 48 MSUs

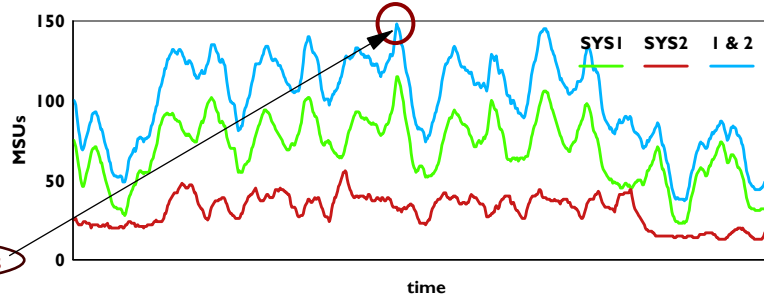
SYS2 & SYS3 = 86 MSUs



**Utilization Capacity
for Product Running in
SYS1 and SYS2 only**

SYS1 = 115 MSUs
 SYS2 = 56 MSUs

SYS1 & SYS2 = 148 MSUs



Impact of Defined Capacity



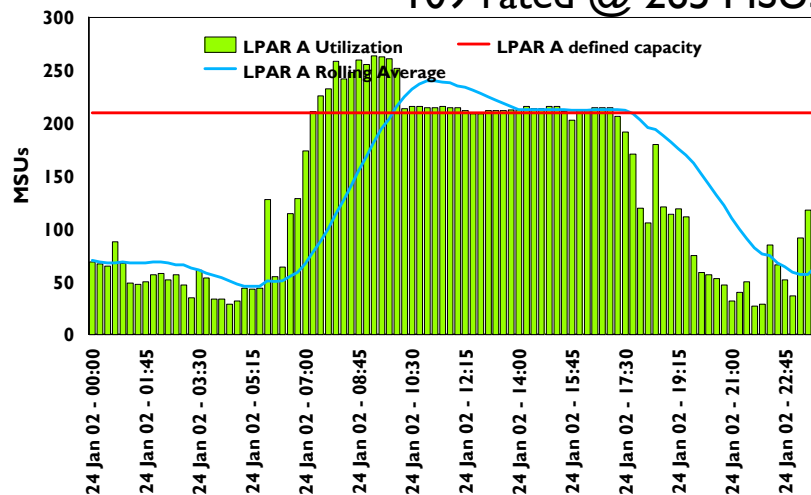
109 rated @ 265 MSUs

LPAR A with
Defined Capacity
@ 210 MSUs

Softcapping Begins
24 Jan @ 10:30

Softcapping Ends
24 Jan @ 17:30

Highest Rolling
4-Hour Average
@ 240 MSUs



- ▲ Defined Capacity still available to manage LPAR Utilization
- ▲ Despite Softcapping, Rolling 4-Hour Average May Exceed Defined Capacity
- ▲ Reported MSUs will Not Exceed Defined Capacity

Service Required



- ❑ **WLM- APAR 55509**
 - Until available, you need to establish a defined capacity for each LPAR to prompt WLM to collect utilization data
- ❑ **WLM - APAR OW50998, APAR OW52306** - corrects minor discrepancies between announced and calculated (SRM) machine capacity
- ❑ **WLM - APARs OW49277, OW48894, OW47277** - to improve rolling 4-hour average and softcapping algorithms
- ❑ **SMF - APAR OW50959 & DB2 APAR PQ51040** - used together to reduce overhead to write SMF89 DB2 records
- ❑ **IMS APAR PQ46529** - corrects data error when IMS cuts SMF89 records
- ❑ **CMF** - if using CMF to generate SMF70 records, contact BMC Support to ensure the correct CMF level/service

Sub-Capacity Pricing

Sub-Capacity Reporting Tool (SCRT)



SCRT Website



Bookmarks Location: <http://www-1.ibm.com/servers/eserver/zseries/swprice/scrt/> What's Related

IBM Search

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Software Pricing

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- EWLC
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- PSLC
- IPLA
- Announcements
- Library
- WLC Tool
- Sub-Capacity Reporting Tool

Value Unit Converter Tool

WLC Product Listing

Sub-Capacity Reporting Tool
For Reporting on zSeries Software License Requirements

Sub-Capacity Reporting Tool Overview

The Sub-Capacity Reporting Tool (SCRT) allows you to generate Sub-Capacity reports. You must submit your Sub-Capacity report(s) to IBM each month in order to qualify for sub-capacity Workload License Charges and/or Entry Option Value Unit pricing.

Prior to downloading SCRT, you will be asked to provide your e-mail address and company name. IBM will use your e-mail address to send you updates about planned changes to SCRT, new versions of SCRT and other news related to Workload License Charges.

Effective immediately, only [SCRT V5](#) or higher reports will be accepted by IBM.

NEW [SCRT Support](#)—New PTFs—Updated May 2003

Where to Send the Sub-Capacity Report

EUROPE, MIDDLE EAST, AFRICA
DENMARK, ICELAND: mlcadm@dk.ibm.com
NORWAY: mlcadm@no.ibm.com
SWEDEN: mlcadm@se.ibm.com
FINLAND, ESTONIA, LATVIA, LITHUANIA: mlcadm@fi.ibm.com
SPAIN, PORTUGAL: spc@es.ibm.com
NETHERLANDS: s390sw@nl.ibm.com
FRANCE, JORDAN, KUWAIT, UAE: spcsw@fr.ibm.com
GERMANY: wlc@de.ibm.com

Download Tool:

- [Download SCRT V5.1](#) (Updated 23 May 2003)

More on SCRT Tool:

- [SCRT User Guide](#) (Updated 16 June 2003)
- [SCRT Instructions](#) (Updated 18 Oct 2002)

SCRT User's Guide



Note that until specific Workload Manager (WLM) PTFs are available, the SCRT requires that you set a defined capacity for any LPAR in which a native z/OS image runs.

For more information, see the following Web site:

<http://www.ibm.com/zseries/swprice/scrt>

Sub-Capacity Reporting Tool



☐ Get started with WLC

- Use the updated Sub-Capacity Reporting Tool (SCRT) Version 5.1, Available May 23, 2003
- <http://www.ibm.com/zseries/swprice/scrt>
 - Report remains virtually unchanged
 - Collect data if in November, submit November Sub-Capacity Report in December (2nd - 9th)
 - Changes on the report are effective the 1st of January

☐ New billing news

- SCRT-related changes become effective one month following Sub-Capacity Report submission
 - Minimizes need for bill corrections

SCRT Configuration Requirements



- ❑ SCRT V5.1 relies on LPAR rolling 4-hour average utilization and will require WLM service (which is not yet available) to enable z/OS to collect and record rolling 4-hour average utilization data for native z/OS partitions
- ❑ In the interim period, IBM has a recommended a temporary workaround to be implemented one full calendar month prior to the execution of SCRT V5.1
 - If you rely on defined capacity to control your LPAR utilization or to establish a static LPAR capacity - set a defined capacity at your desired level
 - In all other situations, set a defined capacity at 600 MSUs which will allow allow z/OS to collect utilization data without actually impacting LPAR utilization

Software Set-up



- ❑ SMF Requirements
 - Collect SMF 70 and 89 records
 - All z/OS images in z900 machines
- ❑ Data collection requirements
 - A full month of data
- ❑ SMF 70 records considerations
 - Requires RMF
 - Other softwares (BMC's CMF)

Sub-Capacity Reporting Process



- ❑ **Submit Data to IBM:**
 - Sub-Capacity Report
 - Call Home Data
- ❑ **Sub-Capacity Report**
 - Customer to provide required data
 - Sub-Capacity Reporting Tool will:
 - Analyze and Report on 30 days of SMF data on z900 Machine
- ❑ **Call Home Data**
 - Utilize existing Call Home Facility (no change to facility)
 - Send data once per week

Sub-Capacity Reporting Tool (SCRT)



- ❑ **SCRT is a reporting tool**
 - Compiles and reports customer data
 - Highest MSU level per product, LPAR data
 - Notes some errors
 - Does not enforce WLC T's and C's
- ❑ **Instructions and User Guide available on the SCRT site**
<http://www.ibm.com/servers/eserver/zseries/swprice/scrt/>

SCRT Overview (Continued)



- ❑ Download SCRT from the zSeries SWPrice website
- ❑ Run SCRT for each zSeries machine
 - Tool outputs a flat, comma-separated-value, text file
- ❑ View and edit Sub-Capacity Report output
- ❑ Output includes information on LPAR capacities and VWLC products
 - host: use XEDIT or other text editor
 - desktop: use Microsoft Excel, Lotus 1-2-3 or text editor

Products not Producing SMF Type 89



```
//NO89 DD * NON-89 PRODUCT SECTION
*
* FOR EACH PRODUCT LISTED, YOU MUST ENTER ONE OF THESE 3 OPTIONS:
*
* 1. ENTER *ALL IF THE PRODUCT RUNS IN ALL LPARS IN THE INPUT SMF
* DATA FILE.
* 2. ENTER *NONE IF THE PRODUCT RUNS IN NONE OF THE LPARS IN THE
* INPUT SMF DATA FILE.
* 3. ENTER A LIST OF LPAR NAMES SEPARATED BY COMMAS OF THE LPARS IN
* WHICH THE PRODUCT RUNS. (YOU MAY CONTINUE ONTO THE NEXT LINE BY
* ENDING THE PRIOR LINE WITH A COMMA.)
*
* NOTE: IF YOU HAVE THE SAME LPAR NAME ON DIFFERENT CPCS, AND YOU
* NEED TO DISTINGUISH BETWEEN THEM, THE FOLLOWING SYNTAX WILL
* ALLOW IT. FOR EXAMPLE: YOU HAVE 57XX-XXX RUNNING IN LPARA
* ON CPC 2064-12345, BUT NOT IN LPARA ON 2064-98765. SPECIFY:
* 57XX-XXX=2064-12345:LPARA
```

Products not Producing SMF Type 89



* NETVIEW PERF MONITOR V2
5655-043=
* TIVOLI NETVIEW FOR Z/OS
5697-ENV=
* TIVOLI NETVIEW FOR OS/390
5697-B82=
* TIVOLI WORKLOAD SCHEDULER FOR Z/OS
5697-WSZ=
* OPC V2
5697-OPC=
* SYSTEM AUTOMATION FOR OS/390
5645-005=
* SYSTEM AUTOMATION OS/390 V2
5645-006=
* LOTUS DOMINO FOR S/390
5655-B86=
* COBOL FOR OS/390 & VM V2
5648-A25=
* VA PL/I FOR OS/390 V2
5655-B22=
* IBM ENTERPRISE PL/I FOR Z/OS AND OS/390 V3
5655-H31=
* IBM ENTERPRISE COBOL FOR Z/OS AND OS/390 V3
5655-G53=
* QMF MVS VERSION 3 01010042
5706-254=