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APPENDIX L. PARALLEL SYSPLEX LICENSE CHARGES

PARALLEL SYSPLEX ENVIRONMENT

To qualify for Parallel Sysplex license charges you must have two or more machines in Group A actively coupled using the applicable coupling links and facility in Group B and operating the programs in Group C. On an annual basis, upon IBM's request, the Government will provide IBM with a completed IBM Sysplex Verification Package (available at http://www-03.ibm.com/servers/eserver/zseries/swprice/sysplex/sysplex_valid.html) for any year during which the Government receives PSLC pricing.

Parallel Sysplex license charges will be based on the sum of the service units (shown as million service units per hour (MSU)) of all machines in a Parallel Sysplex environment on which a program is used.

To be actively coupled, the following criteria must be met:

1. All machines in the Parallel Sysplex must be physically attached via coupling links to a common Coupling Facility from Group B of this Exhibit. In addition, time synchronization must be provided using either timer links to a common Sysplex Timer or coupling links transporting Server Time Protocol ("STP") timing information in an STP Coordinated Timing Network ("CTN").

Note: If a Coupling Facility is divided into multiple logical partitions (LPAR's), all machines must be attached to the same Coupling Facility LPAR.

2. All z/OS, zOS.e, OS/390 and MVS/ESA V5 images that comprise the Parallel Sysplex environment must have at least one common systems enablement function activated to use the Coupling Facility across all images in the sysplex. Eligible systems enablement functions are listed below:

- A. Application Data Sharing including:
 - a. IMS/TM: with IMS DB or DB2
 - b. CICS: with IMS DB or DB2 or VSAM RLS
 - c. TSO and DB2 data sharing
 - d. An eligible Independent Software Vendor's Data Base from Group C of this exhibit.
- B. GRS Star Implementation
- C. JES2 Checkpoint in the Coupling Facility
- D. RACF database caching
- E. SmartBatch multisystem processing
- F. VTAM Generic Resources
- G. VTAM MULTINODE Persistent Sessions

- H. Automated tape sharing and switching
- I. System logger SYSLOG (OPERLOG)
- J. System logger LOGREC
- K. System logger Resource Recovery Services

3. The configuration and operating modes described in this exhibit must be the normal mode of operations for this environment. The z/OS, z/OS.e, OS/390 and MVS Image(s) participating in the above Sysplex function(s) must account for at least 50% of the total z/OS, z/OS.e, OS/390 and MVS workload on each machine. A machine can only be in one Parallel Sysplex for pricing purposes. If the machine is partitioned, and the partitions are in different qualifying Parallel Sysplexes, the customer may select which Parallel Sysplex the machine will be included in for billing.

Increases in any IBM System z Program PSLC charges, due to changes in the MSU rating for any machine that they are licensed to, will be in effect for a minimum period of one month.

The Government has a choice of selecting either, if available, but not both, Workload License Charges ("WLC") or Parallel Sysplex License Charges ("PSLC") for all IBM Programs on a machine that has z/OS or z/OS.e licensed to it. However:

1. IBM Programs with WLC may not be licensed to the same machine as IBM Programs with PSLC;
2. once the Government selects WLC, the Government may not switch back to PSLC without prior IBM approval, which IBM may grant in its sole discretion; and
3. WLC Programs and PSLC Programs may not be aggregated together for pricing purposes.

Additional information regarding the technical aspects of Parallel Sysplex aggregation and detailed information on tools, processes and procedures may be found at the Sysplex Aggregation website at the following URL: <http://ibm.com/zseries/swprice/sysplex/>

PSLC OPTION

1. Between April 1, 2002 and September 30, 2002, you may elect PSLC or aggregated PSLC, as applicable, ("PSLC Option"), for Programs on any of the following:

- A. A System z9, z990 or z900 with Workload License Charges ("WLC").
- B. A System z9, z990 or z900 when z/OS is being installed.
- C. A WLC-eligible z890 or z800 in a Parallel Sysplex.

You may not make these elections retroactively.

2. On or after October 1, 2002, you may elect the PSLC Option if any of the following conditions occur:

- A. You install a standalone System z9, z990 or z900 with z/OS, unless the System z9, z990 or z900 is replacing a machine with WLC.
- B. You move a WLC-eligible System z9 or zSeries machine into a Parallel Sysplex that consists only of machines with PSLC and, optionally, zSeries Entry License Charges ("zELC").

- C. You move a System z9, z990 or z900 with z/OS and the PSLC Option out of a Parallel Sysplex, i.e., a z900 becomes a standalone machine.
- D. You install z/OS on a standalone System z9, z990 or z900 with PSLC.
- E. You install z/OS or z/OS.e on a System z9 or zSeries machine with PSLC, and that machine is in a Parallel Sysplex that consists only of machines with PSLC and, optionally, zELC.
3. Under this option,
- A. The Programs may remain on PSLC until such time as you elect a different type of charge. However, in the case of standalone z890s or z800s, the only eligible charge is zELC;
- B. Programs on all WLC-eligible System z9 or zSeries machines in a Parallel Sysplex must have PSLC, except for z890s or z800s with zELC;
- C. You may also elect other charging options, such as those covered in the IBM System z9, eServer zSeries and S/390 Usage Pricing Charges and the IBM System z9, eServer zSeries and S/390 New Application License Charges,
- D. You may not elect the Workload License Charges Transition Program - Parallel Sysplex or the Workload License Charges Transition Program - Standalone Machine ; and
- E. If you change Program charges on a machine to WLC, the Workload License Charges -IBM System z9 and eServer zSeries Workload License Charges applies, and you must accept its terms at that time, if you have not already done so.

Group A

For IBM, Amdahl and HDS product information, see <http://www.ibm.com/zseries/library/swpriceinfo/>

(See Machines with PSLC=Yes or PSLC=Agg in the PSLC column. Note: In order for an IBM 2066 Machine to be eligible, refer to Appendix V)

Group B

Qualifying Coupling Facilities may be one of the following:

1. Standalone Coupling Facilities on IBM or other manufacturers' machines, as listed in the Machines column of the Standalone Coupling Facilities section on <http://www.ibm.com/zseries/library/swpriceinfo/> Amdahl, Compaq, Fujitsu, HDS, Hitachi, and Olivetti machines must have the external coupling link features installed and operational.
2. Processors (machines) in which LPARs may be configured to act as Coupling Facilities as listed in the appropriate manufacturer's section on <http://www.ibm.com/zseries/library/swpriceinfo/> Machines which qualify are designated by the letters "CF" in the Coupling Facility column.

The following specific conditions apply to these processors (machines):

For IBM:

A machine with an Internal Coupling Facility (ICF), or

A 9672, 2064, 2066, 2084, 2086, or 2096 with one or more central electronic complexes (CECs) or logical partitions running the Coupling Facility control code, or

A 9021 with engineering change 228270 or later installed, and a logical partition running the Coupling Facility control code.

For Amdahl:

A machine with the following installed and operational:

Amdahl Parallel Sysplex Migration Feature (PSMF), or

Amdahl Coupling Control Code and external coupling link features, or

For Millennium machines, Amdahl Internal Coupling Server feature and external coupling link features.

For Comparex:

A C2000 or M3000 machine, or

A M2000 machine with the Voyager Coupling Code and external coupling link features installed and operational.

For Fujitsu:

A machine with the following installed and operational:

Fujitsu Parallel Sysplex Migration Feature (PSMF), or

Amdahl Coupling Control Code and external coupling link features, or

for Millennium Global Server machines, Fujitsu Internal Coupling Server feature and external coupling link features.

For HDS and Olivetti:

A Pilot or Trinium machine, or

A Skyline machine with the Voyager Coupling Code and external coupling link features installed and operational.

For Hitachi:

A GP7560 or GP7600 machine, or

A GP7580 machine with the Voyager Coupling Code and external coupling link features installed and operational.

Group C ²

The following programs at the stated release level or higher, or subsequent versions, are required.

Description Program Number

EITHER

z/OS.e (z/OS.e itself is not eligible for PSLC) 5655-G52

OR

Z/OS 5694-A01

OR



OS/390	5645-001
OR	
OS/390 V2	5647-A01
OR	
MVS/ESA Version 5 Release 2.2, and DFSMS/MVS Version 1 Release 3 with full function or any of the alternatives 1 through 5, and ACF/VTAM Version 4 Release 3 for MVS/ESA	JES2 5655-068, or JES3 5655-069 5695-DF1 5695-117
OR	
MVS/ESA Version 5 Release 1, and DFSMS Version 1 Release 2, and ACF/VTAM Version 4 Release 2 for MVS/ESA	JES2 5655-068, or JES3 5655-069 5695-DF1 5695-117
A Parallel Data Base Manager - one of the following:	
IMS/ESA Version 5 with IMS DB feature	5695-176
IBM Database 2 for MVS/ESA Version 4	5695-DB2
ADAPLEX+ ³	
ORACLE7 Parallel Server for MVS ⁴	
CA-IDMS Rel 14.0 ⁵	
CA-Datacom Rel 9.0 ⁵	
A Parallel Transaction Manager - one of the following:	
CICS/ESA Version 4	5655-018
IMS/ESA Version 5 with IMS/TM feature	5695-176

² Any variation to this list of programs must be agreed to in writing by IBM.

³ A product of Software AG.

⁴ A product of Oracle Corp.

⁵ A product of Computer Associates Corp.

