

Aggregated Sysplex Pricing

IBM allows monthly license charge software licenses to be aggregated across a **qualified Parallel Sysplex** when certain criteria are met.

To qualify, machines must comply with the criteria in each of the following four categories: hardware, software, operation and verification. Machines that meet all of the criteria are known as 'actively coupled'. Please use the navigation links above to access the details for each of these categories.

On **19 September 2017** the Sysplex Calculator (PLEXCALC) tool was revised. Any customers who have previously downloaded the calculator should be sure to download the updated release. The "Release date" stated in the PlexCalc report is 2 August 2017.

On 19 September 2005 IBM announced some new information and updated tooling related to Parallel Sysplex Aggregation:

- creation of a Redpaper™ (updated as of 3 Jan 2006) entitled, ["z/OS System Programmers Guide to: Parallel Sysplex Aggregation"](#)
- clarification of the aggregation verification process, in a new document called, ['Sysplex Verification Package'](#) (updated as of 4 April 2012)
- revision of our tool, [Sysplex Calculator \(PLEXCALC\)](#)

Once you build a qualified Parallel Sysplex, to qualify for aggregation benefits you must elect the same aggregation-capable pricing metric for all machines in the qualified Parallel Sysplex (i.e., [Workload License Charges](#) or [Parallel Sysplex License Charges](#)).

You can find additional information about the technical aspects of Parallel Sysplex in the following locations:

- [Parallel Sysplex Website](#)
- [OS/390 Parallel Sysplex Configuration Volume 1: Overview \(SG24-5637\)](#)
- [Merging Systems into a Sysplex \(SG24-6818\)](#)

Hardware Criteria to be considered 'actively coupled':

You must have two or more eligible mainframes that are physically attached via coupling links to a common Coupling Facility. 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 (LPARs), all mainframes must be attached to the same Coupling Facility LPAR.

Eligible Mainframes

Eligible Mainframes are listed in the appropriate manufacturer's page on the [Mainframe Exhibits section of the z Systems Software Contracts web site](#) with one of the following notations:

- "PSLC=YES" in the PSLC column
- "PSLC=Aggr. Only" in the PSLC column
- "WLC" or "(A)" in the WLC column

Coupling Facility list

Qualifying Coupling Facilities may be one of the following:

- Standalone Coupling Facilities on IBM or other manufacturers' mainframes, as listed in the Machine column of the Standalone Coupling Facility entry on the [Mainframe Exhibits section of the z Systems Software Contracts web site](#). Amdahl, Compares, Fujitsu, HDS, Hitachi, and Olivetti machines must have the external coupling link features installed and operational.
- Mainframes in which LPARs may be configured to act as Coupling Facilities, as listed in the appropriate manufacturer's entry on the [Mainframe Exhibits section of the z Systems Software Contracts web site](#). Mainframes which qualify are designated by the letters "CF" in the Coupling Facility column.

In the case where an LPAR is configured as a Coupling Facility, the following specific conditions apply to the mainframes where the Coupling Facility LPAR exists:

For IBM:

- A machine with an Internal Coupling Facility (ICF), or
- 3906, 2964, 2965, 2827, 2828, 2817, 2818, 2097, 2098, 2094, 2096, 2084, 2086, 2064, 2066, or 9672 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.

Software Criteria to be considered 'actively coupled':

All images that comprise the Parallel Sysplex environment must run an eligible operating system. In addition, each image in the sysplex must have at least one eligible systems enablement function common and activated to use the coupling facility.

Eligible Operating Systems:

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

- z/OS V2 (5650-ZOS)
- z/OS V1(5694-A01)
- z/OS.e (5655-G52)
- OS/390 V2 (5647-A01)
- OS/390 V1 (5645-001)
- MVS/ESA V5 (5655-068)

Eligible Systems Enablement functions:

- Application Data Sharing including:
 1. IMS/TM: with IMS DB or DB2
 2. CICS: with IMS DB or DB2 or VSAM RLS
 3. TSO and DB2 data sharing
 4. An eligible Independent Software Vendors Data Base
- **WebSphere MQ shared message queues (added 2 Nov 2004)**
- **HSM common recall queues (added 2 Nov 2004)**
- **Enhanced catalog sharing (added 2 Nov 2004)**
- GRS Star Implementation
- JES2 Checkpoint in the coupling facility
- RACF database caching
- SmartBatch multisystem processing
- Automated tape sharing and switching (no longer available after z/OS V1.1)
- VTAM Generic Resources
- VTAM MULTINODE Persistent Sessions
- System logger SYSLOG (OPERLOG)
- System logger LOGREC
- System logger Resource Recovery Services

Independent Software Vendors Data Base list

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

- ADAPLEX+*
- ORACLE7 Parallel Server for MVS**
- CA-IDMS Rel 14.0***
- CA-Datacom Rel 9.0***

* = A product of Software AG.

** = A product of Oracle Corp.

*** = A product of Computer Associates Corp.

Operational Criteria to be considered 'actively coupled':

The configuration and operating modes described on this website must be the normal mode of operation for this environment.

The images participating in the sysplex and running the selected systems enablement function must account for at least 50% of the total z/OS, z/OS.e, OS/390 and MVS workload on each machine in the Parallel Sysplex. A mainframe can only be in one Parallel Sysplex for aggregation purposes.

z Systems Application Assist Processors (zAAPs) and System z9 Integrated Information Processors (zIIPs) are included as part of the calculation for this 50 percent criterion. Internal Coupling Facility (ICF) engines and Integrated Facility for Linux (IFL) engines are not included as part of the calculation since they are not running z/OS.

Verification Criteria to be considered 'actively coupled':

The customer must notify IBM when they build a new Parallel Sysplex which qualifies for aggregated pricing. If all terms and conditions are met, aggregated Parallel Sysplex pricing will apply on receipt of the notification.

The customer must notify IBM when they add an additional mainframe into an existing qualified Parallel Sysplex. If all terms and conditions are met, aggregated Parallel Sysplex pricing will apply on receipt of the notification.

Customers that do not meet the criteria for 'actively coupled' are not entitled to the benefits of aggregated Parallel Sysplex pricing.

For guidance and compliance, IBM may require verification of these criteria via a completed [Sysplex Verification Package](#) (PDF, 80KB). This package was last updated on 4 April 2012.