Processor Value Unit (PVU) Licensing for Select IBM Middleware

Answers to Frequently Asked Questions

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What is Processor Value Unit (PVU) Licensing

Q01: What is a Processor Value Unit (PVU)?
A: A Processor Value Unit (PVU) is a unit of measure used to differentiate licensing of middleware based on distributed processor technology (defined within the PVU table by Processor Vendor, Brand, Type and Processor Model Number at http://www.ibm.com/software/lotus/passportadvantage/pvu_licensing_for_customers.html).

IBM continues to define a processor for purposes of PVU-based licensing to be each processor core on a chip. Each software Program has a specific price per PVU. IBM introduced PVUs in 2006 in order to better reflect the relative value a customer can receive when running a workload on any particular processor technology.

Q02: Are Processor Value Units transferable among servers?
A: Yes, Processor Value Units *for the same program* are fully transferable among servers within the enterprise. When transferring to a server with processor cores with a different PVU per core requirement, additional or fewer PVU licenses may be required. If additional PVU licenses are required, the customer must acquire additional PVU licenses for deployment to ensure compliance.

Q03: What is the part number structure for programs using the PVU metric?
A: The Passport Advantage part number structure of License plus 12 months of Software Subscription & Support (S&S), S&S renewal, S&S Reinstatement, and trade-up licenses (where offered) is consistent across PVU and Passport Advantage program offerings.

Q04: Some part numbers are only available in minimum order quantities of 10 PVU. Why?
A: The prices of a few Processor Value Unit programs are so low that when using the quantity of 1 they would yield prices of less than one U.S. dollar. These products are also typically acquired in large numbers. Therefore, a 10 Processor Value Unit minimum was created for ease of ordering, billing, and administration. Tivoli Storage Manager is an example of a product with these types of parts.

How to determine PVU licensing Requirements

Q05: What determines the required PVU entitlements for a Software license?
A: The required PVU entitlements for the middleware Software license are determined by the multiplication of (A) the PVU per core rating and (B) the total number of processor cores of the server on which the middleware is installed. For example, 2 cores * 50 PVU per core = 100 PVU.

(A) PVU per core rating
IBM's PVU metric is used to differentiate the processor technology on which the middleware is installed. A PVU per processor core rating is assigned to each processor technology, as represented in the IBM PVU table for servers (for desktops, laptops and workstations, please refer to the assigned section in this FAQ).

A processor technology and the corresponding PVU per core rating are characterized by five attributes:

1. Processor Vendor: AMD, HP, Fujitsu, IBM, Intel or (Oracle) Sun
2. Processor Brand: i.e. Itanium, Opteron, POWER6, Xeon, etc.
3. Processor Type: i.e. One-core, Dual-core (two cores per socket), Quad-core, etc.
4. Processor Socket: Maximum sockets possible on server.
5. Processor Model Number: in some cases, such as for Intel Xeon chips, the processor model number is required as shown in the PVU Table.

(B) Total number of processor cores

The total number of processor cores is determined by the multiplication of all the processor chips (or sockets) on the server and the number of processor cores for each chip (or socket).

For example, an IBM System x3550 M2 two socket server with Intel Quad-core Xeon series 5500 processor chips (i.e. four processor cores per chip) has a total of eight cores (two chips times four cores per chip). The PVU requirements for this server are 560 PVU: 70 PVU per core (see FAQ re: PVU per core rating) times 8 processor cores.

Q06: Does IBM continue to define a "processor" to be the processor "core"?

A: Yes. As in all previous announcements, IBM always has and continues to define a processor to be the processor core. Customers are required to acquire software licenses for all activated processor cores available for use on the server. With Processor Value Unit (PVU) licensing, customers acquire PVU licenses based on the number and type of processor cores.

Different hardware vendors have different definitions of a processor. For all server brands except IBM Power Systems (formerly System i and System p), the processor count provided by the server vendor must be adjusted for the number of cores on a chip. For example, an IBM System x3550 M2 two socket server with Intel Quad-core Xeon chips, actually has eight processor cores (2 chips times 4 cores per chip). Conversely, an IBM Power System 550 with eight processors (8-way) has eight processor cores (four chips times 2 cores per chip).

Oftentimes the term "processor core" is referred to simply as a core.

How to find PVU per Core licensing Requirements for a Server

Q07: What determines the required PVU per core rating (per core requirement)?

A: IBM's PVU per core rating is based on the processor technology (defined by Processor Vendor, Brand, Type and Processor Model Number) on which the customer is running the software. A PVU per processor core rating is assigned to each processor technology, as represented in the IBM PVU table for servers.

Q08: What is the PVU table and where can I find it?

A: The PVU table is the reference point for the PVU per core rating assigned to a given processor technology (defined by Processor Vendor, Brand, Type, and Processor Model

Number). The most current table can always be found at http://www.ibm.com/software/lotus/passportadvantage/pvu_licensing_for_customers.html.

Q09: How often is the PVU table updated?
A: The PVU table is periodically updated as new processor technologies become available. The date stamp at the bottom of the table indicates the day it was published.

Q10: When do I need to know the processor model number and how do I find it?
A: While the processor model number is one of the attributes that specifically defines a processor technology, it is currently necessary to determine the appropriate PVU per core requirement only for Intel processors (x86 only). It is currently not required for other processor vendors' technologies. A processor model discovery tool is available to help you determine what processor model number is on your server. Please refer to http://www.ibm.com/software/lotus/passportadvantage/x86_server_processor_model_number_discovery_guide.html.

Q11: What tools can I use to help determine the required PVU entitlements?
A: If you already know the processor model, you can just refer to the PVU Table. If you only know the server vendor and server model number, you can refer to the Guide to Identifying your Processor Technology. This guide shows the processor core families and the PVU assignments for the most popular servers commonly sold today. This guide is not intended to replace or substitute for the PVU Table, which is the official source of PVU per Core requirements for servers. It is intended to provide guidance when you know the server model, but you do not know the processor technology. The Guide to Identifying Your Processor is available at http://www.ibm.com/software/lotus/passportadvantage/guide_to_identifying_processor_family.html.

The Processor Value Unit calculator tool will help you compute the correct number of PVUs after asking you a series of questions. It is available at https://www.ibm.com/software/howtobuy/passportadvantage/valueunitcalculator/vucalc.wss.

How to find PVU per Core licensing Requirements for a Laptop, Desktop and Workstation

Q12: What determines the required PVU per core rating for a laptop, desktop and workstation (per core requirement)?
A: For laptops, desktops and workstations with AMD or Intel® x86 processors, the PVU per core requirement is 100 PVU per core for all single-core processor technology and 50 PVU per core for all multi-core processor technology - except for multi-core Intel® Core™ i3, i5, and i7 processor technologies which are 70 PVU per core.

Why is IBM using PVU Licensing

Q13: Why is IBM using Processor Value Units?
A: In today's environment where different processor core technologies can have significantly different workload performance characteristics, it has become important for IBM and other middleware vendors to reflect these performance differences in

software licensing. For instance, a customer would need more relatively slower processor cores to run a particular workload than they would using faster processor cores. The price a customer pays should fairly represent the potential value they can receive from those systems, which comes from the amount of possible work the processor can perform.

IBM's Processor Value Unit structure enables relative simplicity in software licensing in response to rapidly evolving hardware technologies. The two primary technology changes which created the impetus for PVU licensing were the widespread adoption of multi-core chip technology (multiple processor cores on a single silicon chip) and the evolution and increasingly widespread adoption of virtualization technologies. IBM's PVU structure provides a foundation for middleware licensing which can adapt to these advances more easily. In addition, PVU licensing provides customers with increased licensing flexibility and granularity, and reduces the impact of software licensing on system design decisions.

Q14: How does IBM assign PVU per core requirements for new technology?
A: As IBM places new processor technologies in the Processor Value Unit structure, the key objective is to continue to deliver software price performance improvements. When assigning PVU per core requirements the relative processor performance is assessed using a number of different industry standard benchmarks. These benchmarks may include both transaction processing (e.g. TPC-C) and processor based (e.g. SPECint and SPECjbb) standard benchmarks. Market conditions and the desire to maintain a relatively simple structure are also factors influencing the assignment of Processor Value Units.

Q15: Can I see my PVU Software Subscription & Support entitlements on Passport Advantage Online?
A: Yes. When you look at your active Software Subscription & Support entitlements on Passport Advantage Online, they will be shown as PVU entitlements.

Other Related Information

Compliance and Entitlements

Q16: Does IBM reserve the right to audit a customer?
A: Yes, IBM has the right to audit a customer's compliance in accordance with the Passport Advantage and Passport Advantage Express Agreements.

Q17: Are there license management tools available to assist customers in determining software entitlements?
A: Customers can use the IBM License Metric Tool (ILMT), which is free, to track their IBM program entitlements. Additionally, for a fee customers can substitute Tivoli Asset Discovery for Distributed (TAD4D) which has additional functions.

Q18: Is a compliance tool such as IBM License Metric Tool (ILMT) required?

A: Use of the IBM License Metric Tool (ILMT) is only required for sub-capacity licensing. For more information, please refer to the sub-capacity FAQ.

Q19: Where can I find more information on ILMT and/or subcapacity licensing?
A: For subcapacity: http://www.ibm.com/software/lotus/passportadvantage/subcaplicensing.html,
For ILMT: http://www.ibm.com/software/lotus/passportadvantage/ibmlicensemetrictool.html.

Q20: What is the status of my existing Passport Advantage 'per processor' entitlements?
A: IBM has two types of program entitlements in Passport Advantage:
1) Subscription and Support (S&S, previously called Software Maintenance) entitlements
- When IBM transitioned to using the PVU metric, S&S entitlements were automatically converted using a ratio of 1 per processor license equals 100 PVU licenses upon annual S&S renewal. Passport Advantage account records for software S&S entitlements have been converted to PVU.

2) License entitlements:
- Previously acquired per processor license entitlements can be used on an "as if converted" basis using a ratio of 1 per processor license equals 100 PVU licenses.

Q21: If I moved a per processor license to a processor core with a higher rating than 100 PVU (e.g. POWER6 at 120 PVU), how can I be sure I am still in compliance?
A: Customers with per processor License entitlements can either use 1 per processor license and an additional 20 PVU for each POWER6 processor core, or six per processor licenses for every five POWER6 processor cores.

Q22: Do I always have to license to the full capacity of the server?
A: No, you may be able to take advantage of subcapacity licensing if you satisfy the requirements. For more information, please, refer to the subcapacity FAQ at http://www.ibm.com/software/lotus/passportadvantage/subcaplicensing.html.