



IBM Software

# Processor Value Unit Licensing for Middleware

***Evolving The Structure To Provide a Foundation For The Future***

Current as of May 22, 2007



# Agenda

- Current Marketplace
- Why IBM introduced Processor Value Units
- PVU licensing
- Using sub-capacity licensing with PVUs
- Benefits of the PVU structure

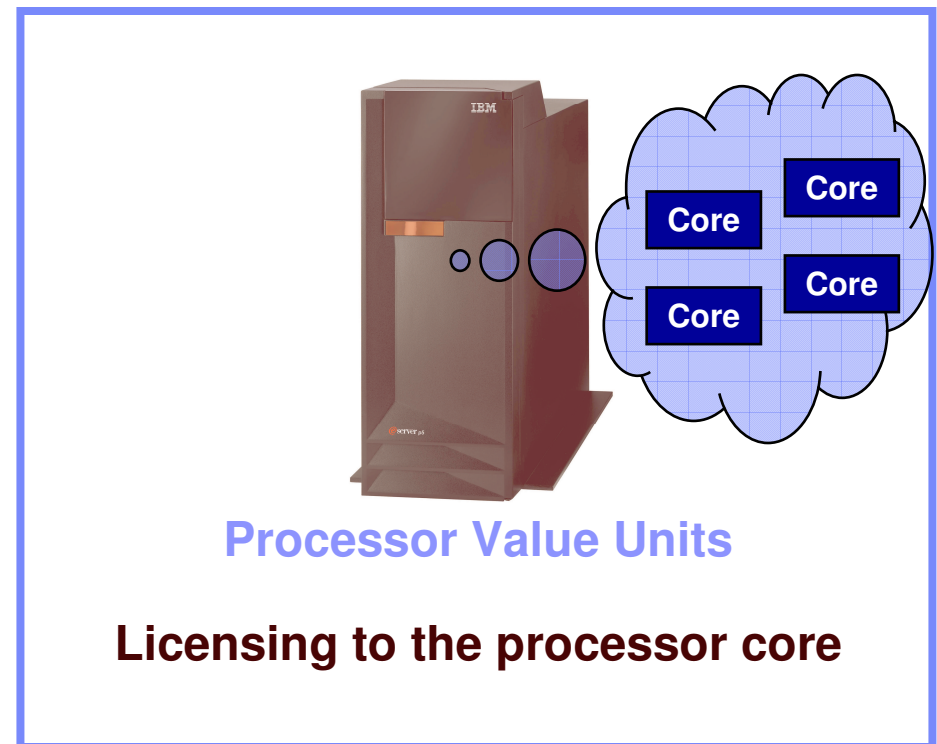
# Middleware Is Licensed In Primarily Two Ways

In general, two licensing models predominate today:



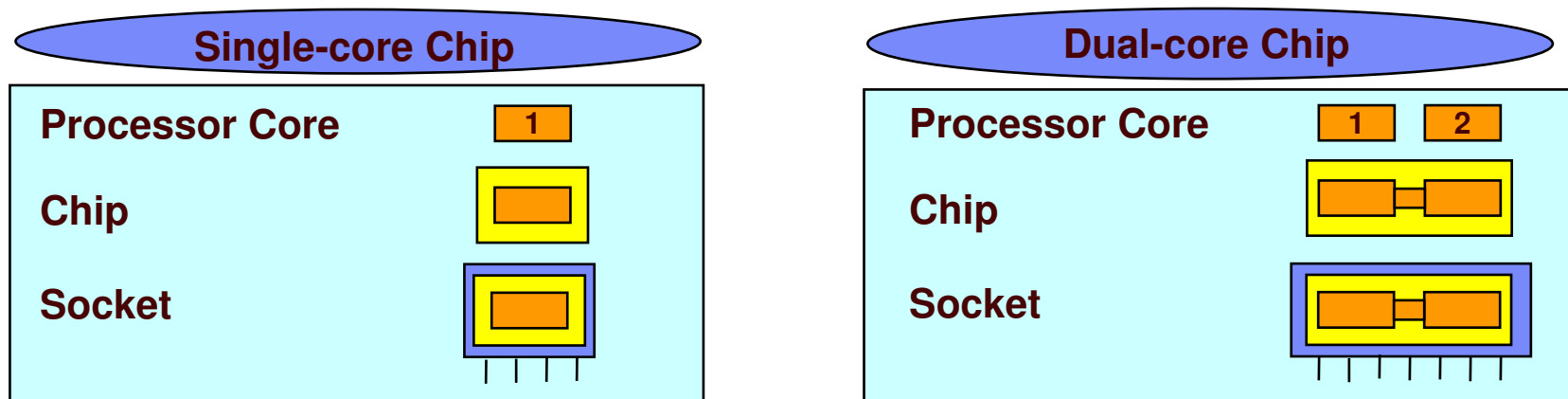
**Per User**

**One license per user  
20 users = 20 licenses**



## Why IBM Introduced PVUs

- Processor Definition is Important in Middleware Licensing
- The *processor core* is the functional unit on which software executes
  - ▶ Multi-core chips have more than one processor core on the chip



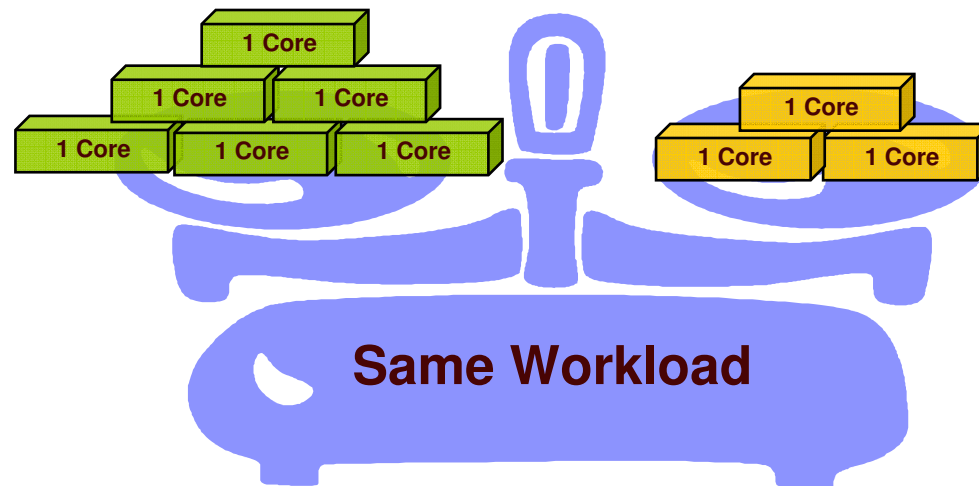
**IBM Software continues to define a processor = core**

**As do most Middleware Vendors...eg. Oracle and BEA**

**However, some Hardware Vendors . . . Intel, AMD, and Sun define  
processor = chip**

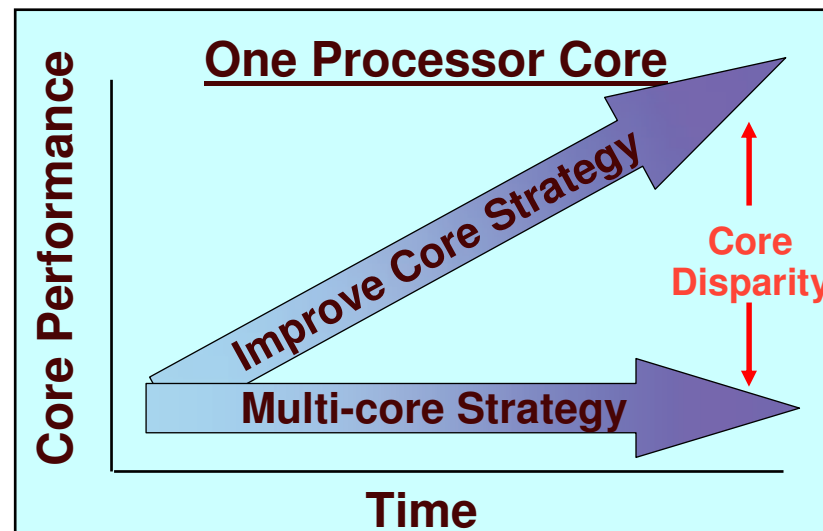
## Processor Cores Are Not All Created Equal Today

- The number of processor cores required for a given workload varies by processor technology



## In The Future, Processor Core Performance Differences Will Increase

- The performance gap is growing between processor core technologies as a result of diverging strategies
  - ▶ Core performance improvement
  - ▶ Flat core performance, but increase cores per chip



## Current Marketplace for Processor Value Unit Licensing

Multi-core technology has created a number of challenges for customers

- Processor cores are not always getting faster
- Unique licensing requirements needed for differing technologies
- More complex software licensing structures result
- Virtualization technologies gaining wider adoption

## In This Environment, the Marketplace Needs

- **Simplicity**
  - ▶ Obtain benefits of fractional licenses without calculating fractions
  
- **More flexibility through granularity**
  - ▶ Especially for multi-core chips
  - ▶ Leverage sub-capacity licensing
  - ▶ Continued software price performance improvements
  
- **Licensing which can adapt to virtualization**



## Processor Value Unit Licensing

- IBM distributed middleware is licensed in Processor Value Units (PVUs)
  - ▶ Each processor core assigned a specific number of Processor Value Units
    - Acquire the appropriate number of PVUs for each processor core
    - Each middleware program has a unique price per PVU
    - PVUs are transferable among systems by product within the enterprise

### Chip Type

**Power6™**

**Single-core (All Platforms)**

**RISC Dual-core\***

**x86 Dual- and Quad-core, Power5 Quad-core**

**RISC Sun T1 Octi-core**

### PVU Entitlements per Processor Core

120

100

100

50

30

\* Power PC 970 dual-core and Power5 quad-core chips require 50 PVUs per processor core and POWER6™ requires 120 PVUs

# Processor Value Unit Licensing Basics

- PVUs have a simple comparison to the previous per processor licenses

Per Processor Entitlements  
x 100

= Processor Value Unit Entitlements

Per Processor Price  
/100

= Processor Value Unit Price

- Customer price remains unchanged!

<b>Example</b>	<b>Per Processor Pricing</b>	<i>Conversion Factor</i>	<b>Processor Value Unit Pricing</b>
WAS ND on Power5 Dual-core Chip			
<b>Licenses for 2 Processor Cores</b>	2.00	<i>x 100</i>	200
<b>Price per License*</b>	<u>\$15,500</u>	<i>/ 100</i>	<u>\$155</u>
<b>Price for 2 Processor Cores</b>	<u>\$31,000</u>	<i>No Change</i>	<u>\$31,000</u>

\* Suggested Retail Price

## New Licenses Are In PVUs

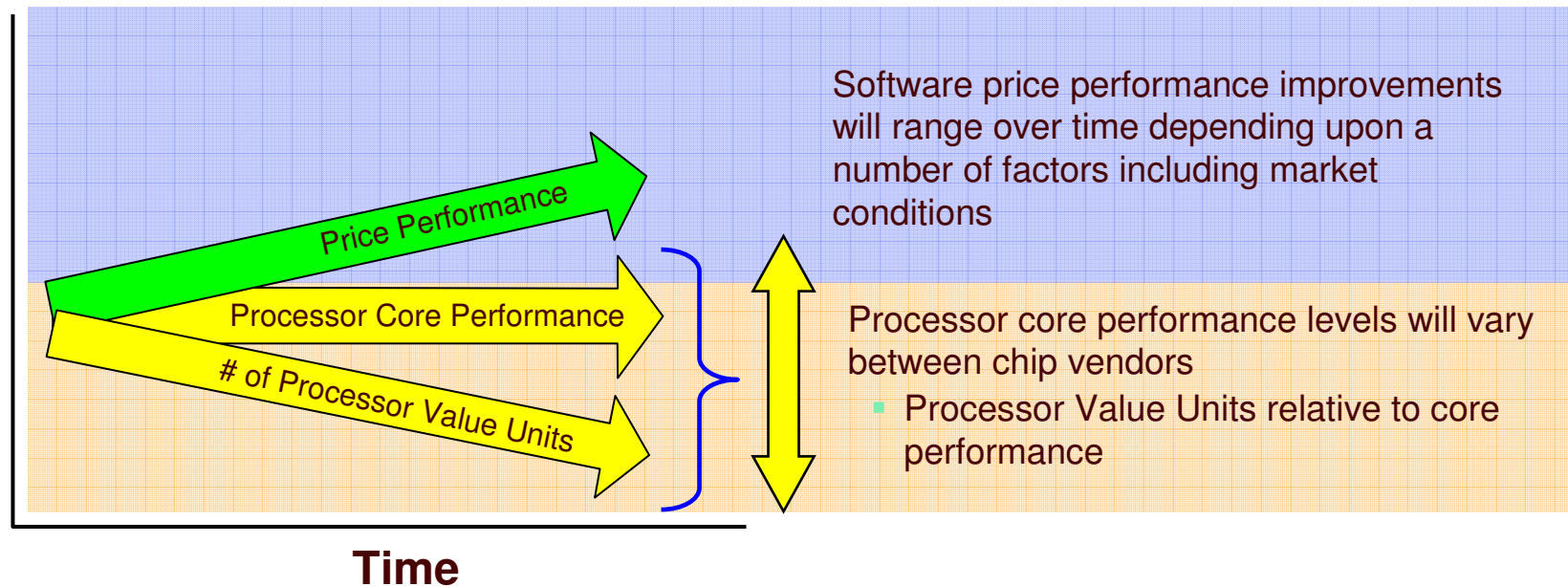
- All new middleware licenses will be in PVUs
  - ▶ New product acquisitions
    - Includes first 12 mos. maintenance
  - ▶ Maintenance renewals
- Existing per processor licenses can be compared to PVU licenses by using the conversion factor of 100

Existing per Processor  
Entitlements x 100

= Equivalent Processor Value  
Unit Entitlements

## Processor Value Units Provide Flexibility Through Granularity

- Continue licensing at the processor core level
  - ▶ Adaptable to any change in processor core performance
  - ▶ Granularity to address changing technology
- Flexibility to deliver software price performance improvements



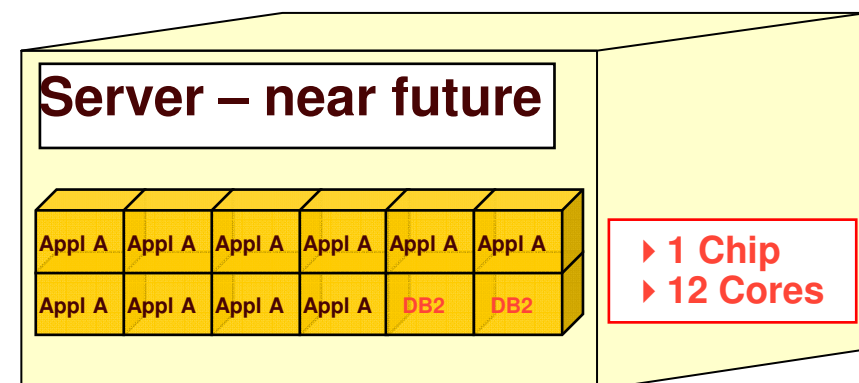
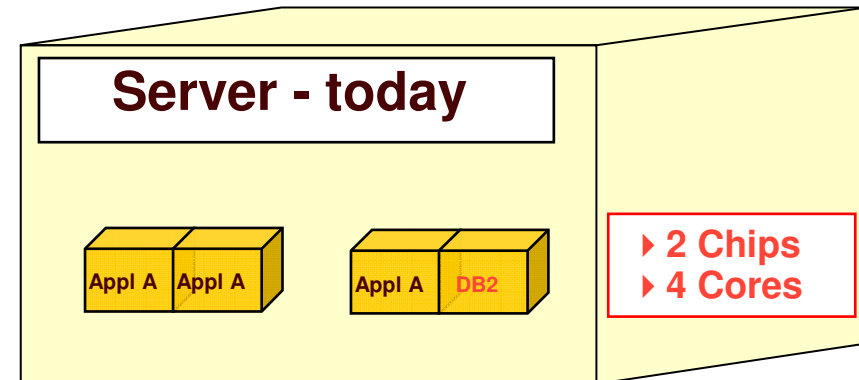
## New Processors Assigned Processor Value Units To Deliver Software Price Performance Improvements

- Over time, new processors will be differentiated based on relative performance, among other factors
- Overall framework balances precision and simplicity
- Will publish all [Processor Value Unit requirements](#)

<u>Chip Type</u>	PVU Entitlements per Processor Core
POWER6™	120
Single Core (All Chips)	100
PA-RISC, Power4, Power5, SPARC IV, SPARC IV+, SPARC64 VI Dual-core RISC	100
Power5 Quad-core Module	50
x86 Dual-core	50
x86 Quad-core	50
RISC Sun T1 Octi-core	30

## Customers Need More Licensing Granularity

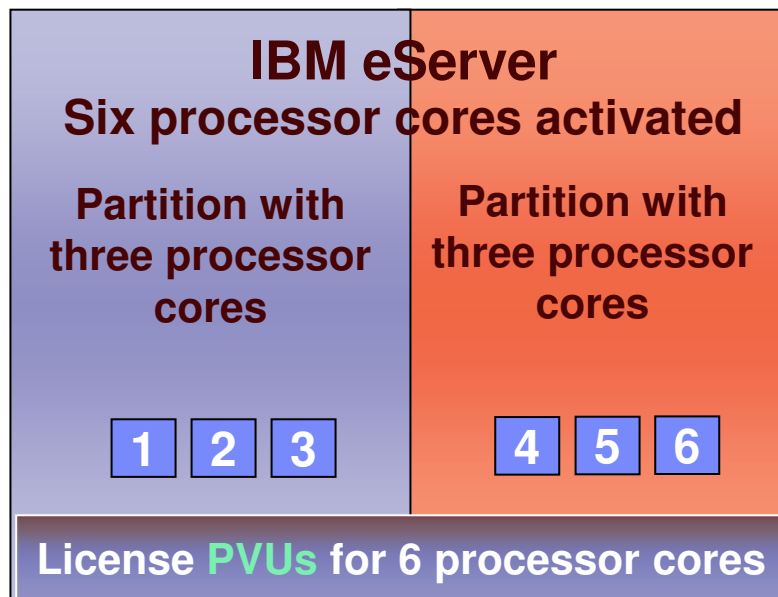
- Leverage the performance of the processor core
- Increasing use of virtualization
  - ▶ Reduce costs
  - ▶ Increase flexibility
- Enables consolidation and the adoption of new hardware technologies
  - ▶ Sub-capacity licensing



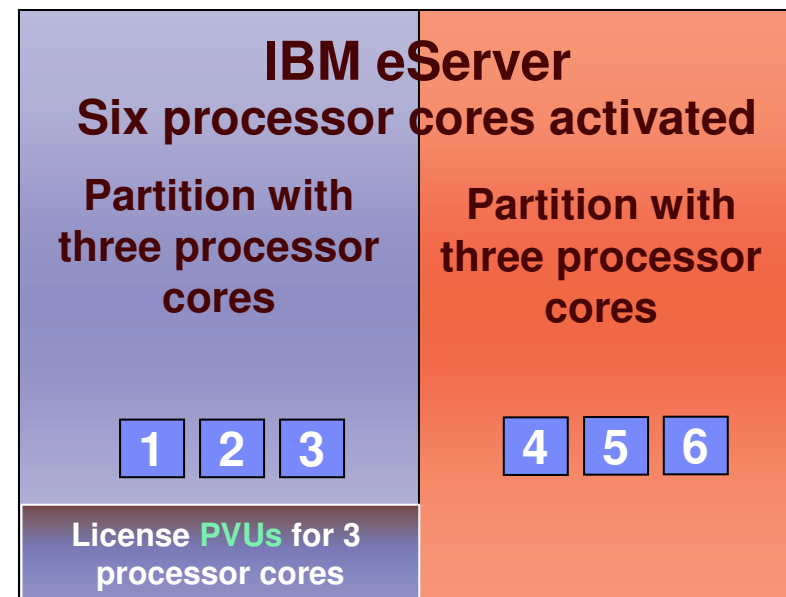
# Sub-capacity Licensing Leverages PVUs In Virtualized Environments

What is sub-capacity licensing?

## *Full Capacity*



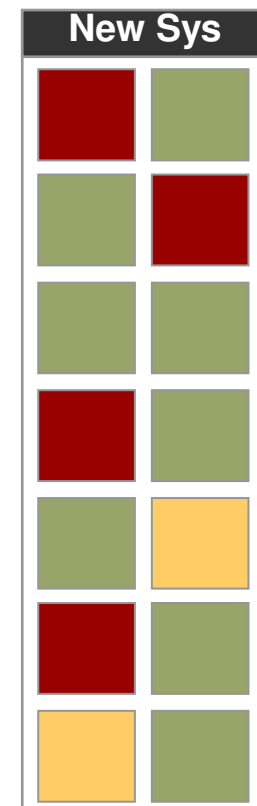
## *Sub-capacity*



- Applicable only to SW that uses Processor Value Unit metrics
- Full capacity requires PVU entitlements for all activated processor cores in a server
- Sub-capacity licensing limits the PVU entitlements to the number of processor cores in the partition(s) that are available to the software

## Sub-capacity for Distributed Systems

- **Sub-capacity licensing available for selected offerings that run on:**
  - AIX, i5/OS, OS/400, Linux (Power)
  - HP-UX (PA-RISC, Itanium)
  - Linux x86 with VMware ESX Server 2.5 & GSX 3.1
  - Linux zSeries
  - Solaris 8, 9 & 10 (UltraSPARC)
  - Windows (x86 with VMware ESX Server 2.5 & GSX 3.1, Microsoft Virtual Server)
  - List of participating offerings on [Passport Advantage](#)
- **Track compliance using IBM Tivoli License Compliance Manager for IBM Software V2.2 or V2.3**
  - Free version to support IBM software that supports selected partitioning technologies

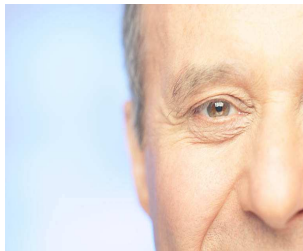




## IBM supplies a tool to help with compliance

- IBM Tivoli License Compliance Manager for IBM V2.2 or V2.3
  - ▶ All sub-capacity customers will track sub-capacity usage
  - ▶ Tracks potential high water mark usage
  - ▶ Review usage and report to IBM quarterly

1



Install IBM Tivoli

License Compliance Manager

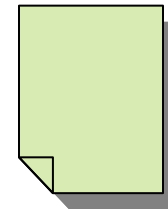
2



Register Admin

Server

3



Generate &amp; Submit

Report (Quarterly)

*Please note: Customers are responsible for the installation of IBM Tivoli License Compliance Manager for IBM Software and for the server it runs on. If they require assistance, Tivoli has a Quick Start Services engagement available for a fee.*

## Benefits Of The Processor Value Unit Structure

- Simplifies the licensing structure
  - ▶ Avoids fractional licensing or processor factors for multi-core chips
- Provides flexibility and granularity
  - ▶ Enables sub-capacity licensing at processor core
  - ▶ Positions for future
    - Continue to deliver software price performance improvements
  - ▶ Licenses are transferable across distributed systems
- Provides clarity to middleware licensing
  - ▶ Over time, new processors will be differentiated based on relative performance
  - ▶ No price changes for middleware on existing processors





## Processor Value Unit Licensing for Middleware

