What's New in 2009?

Trends that impact distributed software licensing & pricing

IBM Software Group

Server Market Environment

- Server Processor Technologies
  - Chip vendors stacking more processor cores on a single chip/socket (quad, hexa, octi)
  - Most x86 servers in 2009 will be 8-core -- quad-cores with two sockets
- Customers
  - Adoption of Server Virtualization growing rapidly
    - Desire to improve traditionally low utilization rates (5-10% for x86, 15-20% for RISC)
    - 'Going Green' -- reduction in server sprawl cost (floor space, power, cooling, management)
  - Customers routinely refresh server hardware every 3-4 years to avoid rising hardware maintenance costs
  - Replacing older 4-core servers (dual-core, two socket) with new 8-core servers
    - PVU requirements increase
    - Customers can benefit from sub-capacity licensing

Delete the word “Processor” from your vocabulary

- “Processor” has many meanings in the industry today
  - Can be core, chip or socket
  - This leads to a great deal of confusion
  - You must ask how many cores are on the server when “processor” is used
- IBM SW defines processor as a core
  - We *only* accept that definition
  - We do not use another vendor’s or a customer’s own definition
- Since it is confusing, don’t use the word “processor” by itself
  - Instead, use the term “core” or “processor core”
  - Or, use the term “chip” or “processor chip” if that is what is being referred to

The key question is: how many cores are on the server?

PVU announcement: Intel's new "Nehalem" chip

- What is Intel's new "Nehalem" processor chip?
  - Next generation Intel Xeon multi-core processor chips for servers
  - Will become the standard Intel processor:
    - Available now in Dual- and Quad-core versions
    - Hexa and Octi-core versions expected in 2010-11

- Announced by Intel on March 30, 2009
  - Uses the Xeon brand name, just like previous Intel x86 server chips
    - Available now for 1 and 2 socket servers
    - Expected to be available on 4 socket servers in 2010

- Significant performance improvements
  - Fewer processor cores required for equivalent workload

- PVU licensing: requires 70 PVUs per core

Processor Model Numbers used to determine PVU requirement for new Xeon (Nehalem)

- 70 PVUs per core for Intel Xeon Nehalem processor technology
  - 35xx series (3500 to 3599)
  - 55xx series (5500 to 5599)
- 50 PVUs per core for previous generation Intel Xeon – *No change*
  - 34xx series and prior (3000 to 3499)
  - 54xx series and prior (5000 to 5499)
  - All existing AMD Opteron multi-core processor technologies
- Refer to the PVU table for model number requirements (excerpt below)

Table of Processor Value Units (PVU Table) per core

Processor Technologies									
		Processor Type							
Processor Vendor	Processor Brand	One-Core (1)	Multi-Core: Dual-Core (2)	Multi-Core: Quad-Core (4)	Multi-Core: Hexa-Core (6)	Multi-Core: Octi-Core (8)	IFL Engine	Processor Model Number [1]	PVUs per Core
Intel®	Xeon®		■	■				3500 to 3599,[6] 5500 to 5599 [6]	70
Intel®	Xeon®		■	■	■			3000 to 3499, 5000 to 5499, 7000 to 7499	50
AMD	Opteron		■	■				All Existing	50

- For complete PVU table listing please visit the PVU website

Significant performance improvements...fewer cores required

- Software value for software products priced on Processor Value Units (PVUs) is based on processor capacity available
  - The price scales to the software value received
- New Intel processor chips pack more cores per chip and more processing capacity per core
  - Replacing old for new 2 socket servers will double cores
  - Total capacity of entire server will increase significantly more than 2X
- With capacity planning, many customers will see a reduction in the number of PVU software licenses required on Intel Nehalem
  - Customers require fewer cores to run a constant workload
  - Customers can use IBM sub-capacity (Virtualization) licensing to limit processing capacity available

Software Value is Based on Processor Capacity Available