Oracle Licensing: Hard Partitioning and Disaster Recovery
By Stephen Pinson

When licensing Oracle products, many businesses fail to understand the licensing requirements for virtual technologies and disaster recovery. These licensing mistakes can result in significant unbudgeted expenses related to Oracle software licensing.

(1) Virtualization:

Virtualized hardware is now fairly pervasive in the IT world. But, incorrectly virtualizing an environment can have catastrophic effects to a business during an Oracle audit. For example, choosing the wrong partitioning solution for a virtualized environment is the most common mistake we see in an Oracle audit.

What is partitioning?

Oracle defines partitioning as an event which "occurs when the CPUs on a server are separated into individual sections where each section acts as a separate system." Oracle categorizes server partitioning into two groups: (1) soft partitioning, and (2) hard partitioning.

1. **Soft Partitioning** – "Soft partitioning segments the operating system using OS resource managers. The operating system limits the number of CPUs where an [Oracle software] is running by creating areas where CPU resources are allocated to applications within the same operating system. The administrator can set the number of CPUs to the number of licensed CPUs. This is a flexible way of managing data processing resources since the CPU capacity can be changed fairly easily, as additional resource is needed. Examples of such partitioning type include: Solaris 9 Resource Containers, AIX Workload Manager, HP Process Resource Manager, Affinity Management, Oracle VM, VMware, etc."

2. **Hard Partitioning** – "Hard partitioning physically segments a server, by taking a single large server and separating it into distinct smaller systems. Each separated system acts as a physically independent, self-contained server, typically with its own CPUs, operating system, separate boot area, memory, input/output subsystem and network resources. Approved hard partitioning technologies include: Physical Domains (also known as PDomains, Dynamic Domains, or Dynamic System Domains), Solaris Zones (also known as Solaris Containers, capped Zones/Containers only), IBM's LPAR (adds DLPAR with AIX 5.2), IBM's Micro-Partitions (capped partitions only), vPar, nPar, Integrity Virtual Machine (capped partitions only), Secure Resource Partitions (capped partitions only), Fujitsu's PPAR."

Unless a virtual server has an approved hard partition, the licensee must purchase sufficient licenses to cover the entire physical environment. Therefore, companies that use VMWare, AIX Workload Manager, or other soft partition technologies will not reduce the number of licenses Oracle requires.

VMWare Example:

VMWare is one of the most popular partitioning methods used by businesses, because of its flexibility and ease of partitioning. Although VMWare offers guidance on licensing Oracle software, that guidance potentially conflicts with Oracle's licensing requirements. It is important to recognize that vendors and consultants are not authorities when the question involves legal interpretation of a software licensing agreement or other licensing rules. Typically, Oracle does not recognize virtual storage separations as a sufficient physical separation for licensing purposes. In a clustered environment, businesses must generally license the whole cluster, not merely the physical hosts that have Oracle products installed.

When calculating the number of licenses required, Oracle uses a formula that contains a core factor, which is not always intuitive. It is easy for businesses to miscalculate the number of licenses Oracle requires.

Architectural Solutions:

There are several architectural solutions to solve this licensing core issue, such as the following (this is not an exhaustive list):

1. Consolidating all Oracle products onto the fewest numbers of physical hosts to limit the number of required licenses.
2. Using an approved hard partitioning technology.
3. Using an Oracle Appliance such as Oracle Database Appliance to license fewer cores.

(2) Disaster Recovery Scenarios

Many people mistakenly believe that they do not have to license their disaster recovery systems running Oracle products. Although Oracle does not require a license for a backup file copy of an Oracle Database, a business cannot pre-install an Oracle script (Oracle installation binaries) onto a disaster recovery server without requiring additional licensing. Without a contractual licensing exception, servers with Oracle products must be licensed based on the processor and core processing factor.

Oracle generally includes contract language that gives its customers the right to test physical copies of backups for Oracle products on an unlicensed computer for a certain amount of time, not to exceed a certain amount of days of testing per calendar year. Generally, up to four times, not exceeding 2 days per testing. If a server is on for any part of a day, Oracle counts that as a whole day. Therefore, if a business tested a server four times per year, for fifteen minutes each time, Oracle would consider the server licensable because the business exceeded the maximum test time.

Running Oracle products on virtualized and DR servers offers flexibility and other potential advantages but can expose a business to high financial risks. The internal and external Oracle sales teams do not always do a sufficient job of listening to the customers' requirements and recommending the best licensing structures.   Oracle has a healthy audit practice, and is often aggressive during the audit process. A company should seek the help of experienced legal counsel to guide them through the contracting and audit process because of the possibility of copyright infringement claims. Experienced counsel can help determine your licensing needs, and help navigate the business through the contracting and audit process when those situations arise.

About the author Stephen Pinson:

Stephen represents clients involved with intellectual property and technology disputes. Specifically, he defends clients in software licensing and copyright infringement matters. Prior to joining the firm, Stephen practiced in high-stakes securities litigation, regulation, and enforcement actions. He spent the majority of his time prosecuting and defending large corporate clients, institutional investors, and Wall Street firms.

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