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**Oracle License Optimization:  
A Guide for Software Asset  
Management Professionals**



## The Oracle Software Environment

Oracle have hundreds of different products on many different platforms including on-premise and cloud, but broadly split them into two categories – technology products and applications.

Whilst there are many categories of technology products, for the purposes of this white paper we will be looking at the licensing implications of the four major ones you are likely to be utilizing: Database, Middleware, E-Business Suite and the recently launched Java subscriptions.

### Technology: Oracle Database

Oracle Database is the number one DBMS for market share worldwide. It is available in a number of different editions that Oracle say are "...designed to meet various development and deployment scenarios". These include:

- Enterprise Edition – offers industry-leading scalability and reliability for both clustered and single system configurations.
- Standard Edition 2 – this edition can only be used on servers with a maximum of two processor sockets.
- Personal Edition – this is a single user version of the Oracle database. It tends to be used in development scenarios where an individual test instance is required.
- Exadata, Database Appliance – Oracle's 'engineered systems' environments where infrastructure and software come together to create an integrated database environment.

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## Technology: Middleware

Oracle Middleware, or to give it its official title, Oracle Fusion Middleware, is "...a collection of standards-based software products that spans a range of tools and services: from Java EE and developer tools, to integration services, identity management, business intelligence, and collaboration...".

Middleware is the software that connects components or enterprise applications. It lies between the operating system and the applications on each side of a distributed computer network and typically, Middleware supports complex, distributed business software applications.

Middleware is also the infrastructure that facilitates creation of business applications, and provides core services like concurrency, transactions, threading, messaging, and the SCA framework for service-oriented architecture (SOA) applications. It also provides security and enables high availability functionality to your enterprise.

It includes web servers, application servers, content management systems, and similar tools that support application development and delivery.

## Technology: Java

Oracle introduced a support subscription model for its Java programming language in early 2019 to "provide more flexibility" to its customers. With a paid subscription, commercial customers can continue to receive security updates and patches for their Java estates, paying a monthly fee based upon price banding for desktops or servers. You can get more information about [Oracle Java licensing](#) from the Certero website, including how to identify and document your JDK and SDK estates.

## Technology: E-Business Suite

Oracle E-Business Suite (EBS), is a collection of business applications made up of a large number of distinct software modules. These include: Oracle Financials, Oracle CRM, Oracle Supply Chain Application, Oracle Logistics, Oracle Order Management and Human Resources (HRMS). The most common pitfalls with E-Business Suite is to license the underlying Oracle database twice, or to fall foul of the restrictive use rights for products like Business Intelligence Publisher.

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## Oracle Software Licensing

Oracle offers both term and perpetual licenses for all its products. A perpetual license is a one-time license fee that allows continued use of the software program for as long as you comply with all terms of the license agreement.

A term license is for a specific, limited period of time, during which you are allowed to access and use the software.

License metrics are selected carefully to reflect the functionality the product offers and the value the customer receives from utilizing that functionality. Essentially, a license metric determines how the software usage is being measured when Oracle licenses a product to a customer.

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## How Oracle software is licensed

### Technology product licensing

Oracle's technology products are primarily licensed using two metrics: Named User Plus and Processor; although customers may have maintained 'older' metrics in line with historical licensing.

The Named User Plus metric is used in environments where users and/or devices can be easily identified and counted. All human users and non-human operated devices that are accessing the software must be licensed.

The Processor metric is used in environments where the software users cannot be easily identified and counted, like internet-based applications. It is also used when it is more cost effective than Named User Plus licenses.

To calculate the number of required licenses, you need to multiply the total number of cores of the processor by a core processor licensing factor specified on the Oracle Processor Core Factor Table, which can be found at <http://www.oracle.com/us/corporate/contracts/processor-core-factor-table-070634.pdf>.

### Application licensing

To provide flexibility and predictability, all application products are available under at least one of the following three licensing models:

Component pricing – user-based and usage-based metrics.

Custom Applications Suite (CAS) pricing – custom suite user metric.

Enterprise pricing – Enterprise wide metric defined by measurements such as revenue or costs.

These allow customers, in a single order, to mix and match licenses that best fit their operating environment.

## Types of Oracle agreement

Oracle uses a combination of written agreements to license its software. The overarching license rights are described in the Oracle Master Agreement (OMA) – this was previously called the Oracle Licensing and Services Agreement (OLSA) - and the rights regarding specific products and services are described in the Ordering Document.

Specifically, the OMA is the agreement that details the standard rights granted, ownership, restrictions, warranties, disclaimers, confidentialities, etc., as it relates to all Oracle products and services. The Ordering Document describes the specific products, types of licenses, number of users, level of support, and discounts (if any), a customer has ordered and will receive.

Oracle Master Agreements and Ordering Documents grant you specific rights to use Oracle software and receive any services you have ordered, and your rights are limited to those rights that are expressly granted. All other rights in the programs are reserved by Oracle.

## Oracle license reviews and audits

Like all software vendors, Oracle needs to protect its IP and so within your OMA you will find a specific clause relating to its right to audit. Typically, 45 days' notice is the standard time you will be forewarned that Oracle intends to audit you.

The OMA gives Oracle "access to information" and normally they will request you run their scripts on your systems to ascertain your usage of their software. Changes to the audit clause stipulate that customers agree to provide "reasonable assistance" and that now includes, but is not limited to, "Oracle data measurement tools". If they discover you are non-compliant, you will be asked to purchase extra licenses to remedy this. Typically, you will be charged for these without the discount you were given for your original purchases.

As well as an official audit though, Oracle will also request a license 'review'. This is not the same as an audit and contractually, you are not obliged to cooperate. However, it would be wise to engage with Oracle to maintain a good working relationship.

As of 2018, Oracle had two internal divisions that dealt with audits and reviews: SIA and LMS.

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## Oracle Software Investment Advisory

Oracle Software Investment Advisory (SIA) provides a customer with “access to the advice, data, and deployment visibility needed to optimize the Oracle assets” and covers such areas as licensing solutions, optimization and entitlement intelligence. SIA’s focus is not on initiating or running Oracle audits, however their findings may not rule out an audit in future.

## License Management Services

LMS, or License Management Services, offers a more audit based approach “that promotes the management, governance and awareness of the proper use and distribution of Oracle systems”. However, LMS is the official auditor and reviewer of Oracle licenses, but cannot offer discounts if you need to purchase additional licenses as a result of their audit or review findings.

## Oracle Licensing Made Simple

Oracle licensing is, as the previous section suggest, quite complex. If you would like a simplified version, read our [Oracle Licensing Made Simple](#) guide.

## Common Oracle Licensing Issues

Due to the complex nature of the Oracle environment and licensing terms it is very easy to unwittingly find yourself non-compliant and liable for additional license costs as well as potential fines. Some of the most common reasons for this are outlined below.

### Misunderstanding licensing terminology and agreements

This is obviously a non-technical issue and stems from the complexity of the Oracle environment. Oracle license agreements are regularly tailored for individual customers. While this can provide flexibility at the outset, it can cause problems going forward, as changes to your IT estate can unwittingly leave you in licensing compliance breach.

Another recurring area of misunderstanding concerns the interpretation of cores and processors. It is tempting to consider these two as the same, but they are not. A processor can consist of one or more cores and as you need to multiply the total number of cores of the processor by a core processor licensing factor (specified on the Oracle Processor Core Factor Table) to calculate the number of licenses you require for Oracle technology products, making a mistake here can prove very costly.

A final area concerns the many different types of license that are available for different Oracle products and their associated 'rules'. We have mentioned the major current ones in the previous section, but added to this are a large number of types that, although no longer available, your organization could still be using. Confusion often arises over the treatment of these license types with many organizations making the mistake of treating them all the same and using the wrong metric to measure usage.

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## Single user has multiple user accounts

One of the Oracle technology product's main licensing types is Named User Plus. This means, for example, that for every user of a database, you must have a license. So far, so good, but problems can easily arise when the same user accesses a different Oracle database. Although their existing license already covers them for this, without the right processes in place, it is all too easy for another license to be allocated to them.

These multiple user accounts consume licenses that could be utilized by another member of staff and so ultimately can leave you non-compliant. All these duplicates need to be removed to prevent unnecessary license utilization.

## Lack of centralized inventory

Due to the complexity of the Oracle environment and the nature of modern global IT infrastructures, many organizations do not know which products they have installed. Even where they do, visibility of which edition or version is being used is not apparent. As there is a huge cost difference between certain editions, this lack of knowledge can be very costly.

Many Oracle options are enabled by default, even if you are not licensed for them. So, inadvertently using an option will activate it for licensing purposes and will immediately leave you non-compliant.

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## Tracking usage

Being able to track the usage of your installed software is vital in ensuring that you remain compliant. From accurately knowing the number of Named users who are actually using the software, through to correctly measuring the right metrics, you need to be aware of what is going on across your IT estate.

Having access to this type of detailed information will enable you to show Oracle, at the time of an audit, that you know how their software is being used by your organization and be able to defend against the 'false positives' that auditing scripts can sometimes produce.

A further benefit of this information is you will be able to see which named users are actually using the software and if they are not (say for example if they have left or changed roles), you will be able to recycle their license for use by somebody else. This license re-harvesting can help save you a lot of money.

## Bugs and errors

Oracle, like every other vendor, sometimes publishes support notes about bugs which are erroneously triggering usage of a feature. Some customers will be unaware of this and see a compliance issue where there is none!

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## Java subscriptions

When Oracle launched their Java support subscription model, organizations had to reassess their Oracle Java estates and identify what was open-source, what was proprietary Oracle and also which deployments were part of 'bundled' licensing, such as Oracle WebLogic or included with other vendors like SAP or IBM. Open source is still an option for customers and gets them around the need to pay for a support subscription, but it comes with its own security challenges which may not be appropriate for all businesses.

Java users should also remember that older downloads under the original OTN are still governed by those agreements, so a perpetual right to use the product remains, regardless of current support subscription status.

However, this all changes with Java 11 upwards, where commercial customers are now signing up to an agreement which stipulates that "once the subscription terminates or expires all use of the software acquired through the subscription must end".

You can, of course, still use Java under a newer OTN agreement. However, this has substantially changed and now only allows certain uses, such as personal or development.

Ultimately, we expect that customers will see Java being tagged onto Oracle audits as part of the general process, so it's going to be necessary to fully understand Java estates to avoid unexpected additional costs.

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## Indirect access

One area where many organizations are increasingly finding themselves non-compliant is indirect access. This is with where an application accesses an Oracle database or data, typically through a single user account.

In many cases, these users will need a valid Named user license to ensure the company remains compliant. You need to be able to identify and manage any instances of indirect access to help prevent potential problems at the time of a true-up/audit.

## Virtualization

Virtualization offers a great way to cut costs but is fraught with potential licensing time bombs that could incur expense greater than the original savings. This is prevalent in the Oracle world due to Oracle's very tight definition as to what it recognizes as virtualization.

Oracle focuses on partitioning and state that there are "several hardware and software virtualization technologies available that deliver partitioning".

According to Oracle there are two types of partitioning – hard and soft. Soft partitioning divides the OS using OS resource managers. Oracle explicitly states that "soft partitioning...is not permitted as a means to determine or limit the number of software licenses required for any given server or cluster of servers."

What exactly does this mean? Well, if you implemented, say, VMware on a cluster and you run Oracle on any machine in that cluster, you will need to license every single machine in the cluster – not just the server it is installed on. In addition, where technologies like VMWare allow live migration across clusters and even whole data centers, the problem becomes much bigger and then customers are faced with an even larger potential footprint to license.







As you can imagine, this will be pretty expensive and quickly eradicate the virtualization savings. We have come across many sites who have made just this mistake and usually it is only picked up during an audit, leading to large true-up costs and fines.

Hard partitioning is where a single server is separated physically into 'distinct' smaller systems, acting as physical, independent and self-contained servers.

Oracle has specifically identified and approved a number of these technologies that it recognizes for licensing purposes:

- Physical Domains – also known as PDomains, Dynamic Domains or Dynamic System Domains.
- Solaris Zones – also known as Solaris containers, capped zones/containers only.
- IBM LPAR – plus DLPAR with AIX 5.2.
- IBM Micro-partitions – capped partitions only.
- vPAR.
- nPAR.
- Integrity virtual machine – capped partitions only.
- Secure resource partitions – capped partitions only.
- Fujitsu PPAR.
- Oracle Linux KVM.

Linux KVM is a recent (October 2019) addition to the policy and requires customers to adhere to a specific process via the Oracle Linux Virtualization Manager in order to meet the hard-partitioning requirements.

Oracle VM Server can also be used, but the rules for this are precise and complex and should be investigated thoroughly before implementation.

Bearing all these facts in mind, it is no wonder virtualization is one of the key reasons organizations become non-compliant.



## Maintaining support

Oracle require customers to maintain technical support as part of, amongst other things, a “Matching Service Level” policy; this can be quite complex and users of Oracle software can fall foul of lapsed support agreements where a portion of their estate is under support and other areas are not. This leads to hefty reinstatement fees and back support charges, adding unforeseen software costs.

## Creating an OSW report

The Oracle Server Worksheet (OSW) is the report you have to submit to LMS that details:

- Which Oracle products you have installed.
- What license metric is applied to each.
- The infrastructure the licenses are assigned to.

The OSW is then sent to Oracle LMS who will compare it against the licenses you have bought to see if there is any shortfall.

Obviously creating the OSW can be a time-consuming and complex task, depending on how you create it and your knowledge of your Oracle software installations. Ultimately, you will need accurate and up-to-date data to ensure you are not in a weak position when you come to negotiate with LMS about any claimed shortfall in licenses.

One way this process can be accelerated is by utilizing an automated tool that can discover and inventory all your Oracle software, as well as monitoring and reporting on all its usage over a 12 month period.

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## Managing Oracle Licensing with Certero

Certero has designed a solution to assist organizations with Oracle deployments to improve the management of their estate.

### Certero for Oracle

Certero for Oracle is a license management solution for organizations that want complete visibility and control of all Oracle instances on their estate. It covers license management for Oracle including:

- Databases.
- Middleware.
- Java.
- E-Business Suite.

It can seamlessly integrate with other products on Certero's single, unified platform, or can be used alongside an existing third-party product as a stand-alone tool. With Certero for Oracle, all of the complex licensing rules, entitlements and options are automatically reconciled, quickly establishing a safe and trusted Effective License Position (ELP), and providing complete and accurate visibility should Oracle LMS request an audit.

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## Discovery and Inventory

Certero for Oracle offers:

- Strong multi-source capability for discovering potential Oracle installations.
- Unique and non-intrusive in-depth inventory of discovered instances.
- Wealth of product inventory information available.

## Entitlement

Certero for Oracle supports a range of Oracle agreement and order document types, such as OMA, OLSA, MSLA, Term (Subscription) and ULAs (Unlimited License Agreements). In addition it supports:

- Precise representation of Order Documents Oracle products.
- Multi-regional aspects of agreements.
- Concessions such as License Shelving.
- License Migrations.
- Product Replacements.
- Term (subscription) or perpetual licenses.
- Non-standard or bespoke product Minimums that may have been secured from Oracle.
- Specific Hosting Licenses.
- Generic Hosting Licenses.
- Other "ring-fencing" of entitlement.



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## Effective License Position

Achieving your Effective License Position (ELP) is an important step in proving your compliance as well as optimizing your license position. Certero for Oracle will help with this as it offers:

- Support for:
  - Virtualization technologies and Oracle's definition of Hard and Soft partitioning.
  - Oracle's Database Business Continuity methods.
  - Oracle RAC (Real Application Clusters) nodes.
  - Various Oracle Database Editions including Personal, Standard Edition, Standard Edition One, Standard Edition 2 and Enterprise.
  - Java components such as JDK and RTE.
  - Hardware and user-based licensing metrics.
  - Standard and non-standard processor core factors.
- Recognition of:
  - The difference between installed and used products.
  - "False positive" reporting for some products that are, in fact, not in use where some other solutions fail.
  - ASFU and other Restricted Use licenses.
  - Multi-user licensing, which is performed "properly" and does not just rely on user-counts like other solutions.
  - Provides a unique, dynamic capability to capture Oracle named users.
  - Allows for explicit definition of named users.
  - Ring-fencing entitlement and related usage.
- Evidence for:
  - Reporting that shows the background technical detail which resulted in the ELP data presented.
  - Options and Management pack usage with summary views of features, dates and times.
  - Building a licensing "story" to track movement of licenses over time and trend your data to predict future usage.

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### Support for all virtualization instances

Certero for Oracle automatically reports and visualizes when an Oracle server is added to a cluster. This gives the organization the ability to manage changes and mitigate risk against un-budgeted costs to the business. The system offers extensive platform support, for example: Sun Solaris, Linux, Windows and HP-UX etc.

### Easy reporting

- Set alerts, create and share knowledge with the reporting engine.
- Advanced Oracle discovery identifies all current instances, providing the evidence needed to prove that no software has been missed.
- Ensure your inventory is accurate and Oracle instances are known.

## Oracle License Management Services

### Oracle License review

Our Oracle license compliance review is a comprehensive investigation of Oracle license and usage conditions, including an assessment of current Oracle technology license grants, contracts and support arrangements. This delivers a detailed report, highlighting areas of your over or under-compliance and analysis of contractual terms and conditions:

- License grants and support agreements held.
- Business systems that run on Oracle software.
- Level of usage of Oracle software deployed.
- Future requirements and trends.
- Level of compliance with current Oracle licenses.
- Recommendations regarding future licensing requirements.

To deliver this service, we will deploy Certero for Oracle to discover the installation and usage of Oracle products and reconcile your entitlements.

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Managed Service Component	Offering
Certero for Oracle	Yes
Configuration & Inventory Management	Yes
Initial Entitlement On-Boarding *	Yes
Upgrade Service	Yes
Education	Yes
Administration (Addition of new licenses) *	Yes
Licensing Help Desk	Yes
Vendor Audit Readiness and Mobilization *	Yes
Service Delivery Management	Monthly
Frequent On-Site Consultancy	Quarterly
Creation of Effective License Positions *	Quarterly
License Optimization Service (observations, recommendations, commercial risk, business risk, mitigation suggestions, suggested	Annual
Cost Management Information *	Quarterly

## Certero Oracle Managed Service

Service components are subject to contractually agreed service levels and KPI's. The service offerings are geared around the level of integration, or touchpoints, a customer wishes to have in respect to SAM services. As all Managed Services are built using pre-defined Service Components, it is easy to add or (in some cases) remove Service Components as the service may evolve over time and as the demands of the customer change.

Each managed service offering comprises a base level of service which is built from the default Service Components for that service offering. This allows you to select the level of service that suites your needs depending on various factors. You can then choose to include optional Service Components into the overall managed service offering.

If you are ready to take control of your Oracle licensing, [speak to a Certero Oracle expert today](#) and let us help you choose the best way forward.




## About Certero

The unified SAM and ITAM platform you can trust to deliver.

*"With Certero, it's just a better experience"*

Certero deliver [as-a-service] IT Hardware, Software, SaaS and Cloud Asset Management solutions and services, to help enable organizations to digitally transform their IT. We do this by challenging the traditional, outdated delivery method of disappointing point solutions, and instead deliver true unification across all platforms, from mobile to mainframe to cloud, delivered as SaaS in days, not months or years. Combined with our self-service solutions we support organizations to drive digital transformation agendas through increased efficiency and automation. With businesses in the UK, USA and Australia, Certero is a customer first company with a passion for customer success, earning the trust of some of the leading global brands across the finance, manufacturing, health, retail and technology sectors. That's why Certero is viewed number one, year on year for customer service as well as having the highest scores for product capabilities, making Certero a safe, trusted partner to help with your digitally transformation.



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