

Oracle Licensing

Executive Summary

This whitepaper is designed to help an organization's Executive and IT leadership understand how to maintain software license and subscription compliance with Oracle software and hardware products. If your organization is currently being audited, or expects to be audited soon, please see our companion whitepaper Oracle Audit Defense by Miro Consulting, [located here](#), and contact us as soon as possible.

Challenges

- Due to changes in Oracle policies and rules, managing Oracle Licensing and maintaining compliance can prove challenging.
- Oracle Audits are not getting any less frequent and unbudgeted out-of-compliance fees can range into the millions of dollars.
- Most organizations are out of compliance in one or more ways, but do not realize it. Oracle always considers audit settlements to be about resolving compliance issues and not about negotiating discount, so they will always push for low discounts for licenses purchased under settlement agreements.

Opportunities

- Compliance issues can be largely mitigated by organizations which engage in a comprehensive expert review of their Oracle usage and entitlements before being notified of an audit.
- Organizations may uncover opportunities for substantial cost savings and cost avoidance during a license review process.
- Having a robust software asset management program with documented procedures for audit notices, and properly trained personnel, can greatly improve vendor negotiation outcomes.

About This Whitepaper

This whitepaper is written for Executive and IT decision makers who have a familiarity with software licensing, the Oracle corporation, and its most commonly used products, including hardware, software, and cloud-based services. It will broadly cover types of licenses, contracts, services, support, and the most common issues that cause an organization to be out of compliance.

For a list of standard (non-discounted) pricing for Oracle products, please visit the [Oracle pricing page here](#).

About Oracle

“Oracle Corporation is an American multinational computer technology corporation headquartered in Redwood Shores, California. The company specializes primarily in developing and marketing database software and technology, cloud engineered systems, and enterprise software products — particularly its own brands of database management systems. In 2018, Oracle was the third-largest software maker by revenue, after Microsoft and Alphabet.

The company also develops and builds tools for database development and systems of mid-tier, Enterprise Resource Planning (ERP), Customer Relationship Management (CRM), and Supply Chain Management (SCM) software.” – Wikipedia

About Miro Consulting

The author of this whitepaper, Miro Consulting, is a leading global provider of software asset management and subscription services for Oracle, Microsoft, IBM, and Salesforce. We specialize in license management, audit advisory, contract negotiation tactics, support management, and cloud migration services. Learn more at [MiroConsulting.com](#)

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License Procurement Options

Once you better understand the needs of your current- or near- future environment, you may need to acquire additional licensing. Fortunately, there are more purchasing options today than have ever existed before.

Obtaining a Software License



Purchasing (Considered a “Perpetual” license)

This consists of buying a license through Oracle or an Oracle reseller. However, it is important to note that a software license is a ‘right-to-use’ product. You do not own software from a vendor, you own the ‘right to use’ the software in a very specific way. However, you will own this right even if you choose to discontinue support on those licenses.

You do not own software from a vendor; you own the ‘right-to-use’ the software in a very specific way.

BRING-YOUR-OWN-LICENSE (BYOL)	<ul style="list-style-type: none">• If you have already invested in perpetual licensing, but you wish to switch your deployment of licenses from your on-premise environment to a cloud environment, you are permitted to do so for use of the original product license that you purchased.
CUSTOM METRICS	<ul style="list-style-type: none">• Oracle is willing to consider an organization’s request for a custom metric as long as the organization’s intended use cannot be reasonably addressed by any of the standard metrics available for the particular product. A custom metric is a way of licensing a software product that’s different than how it’s normally licensed. For example, a product that is usually licensed by server cores may instead be licensed by number of named users.



Subscriptions

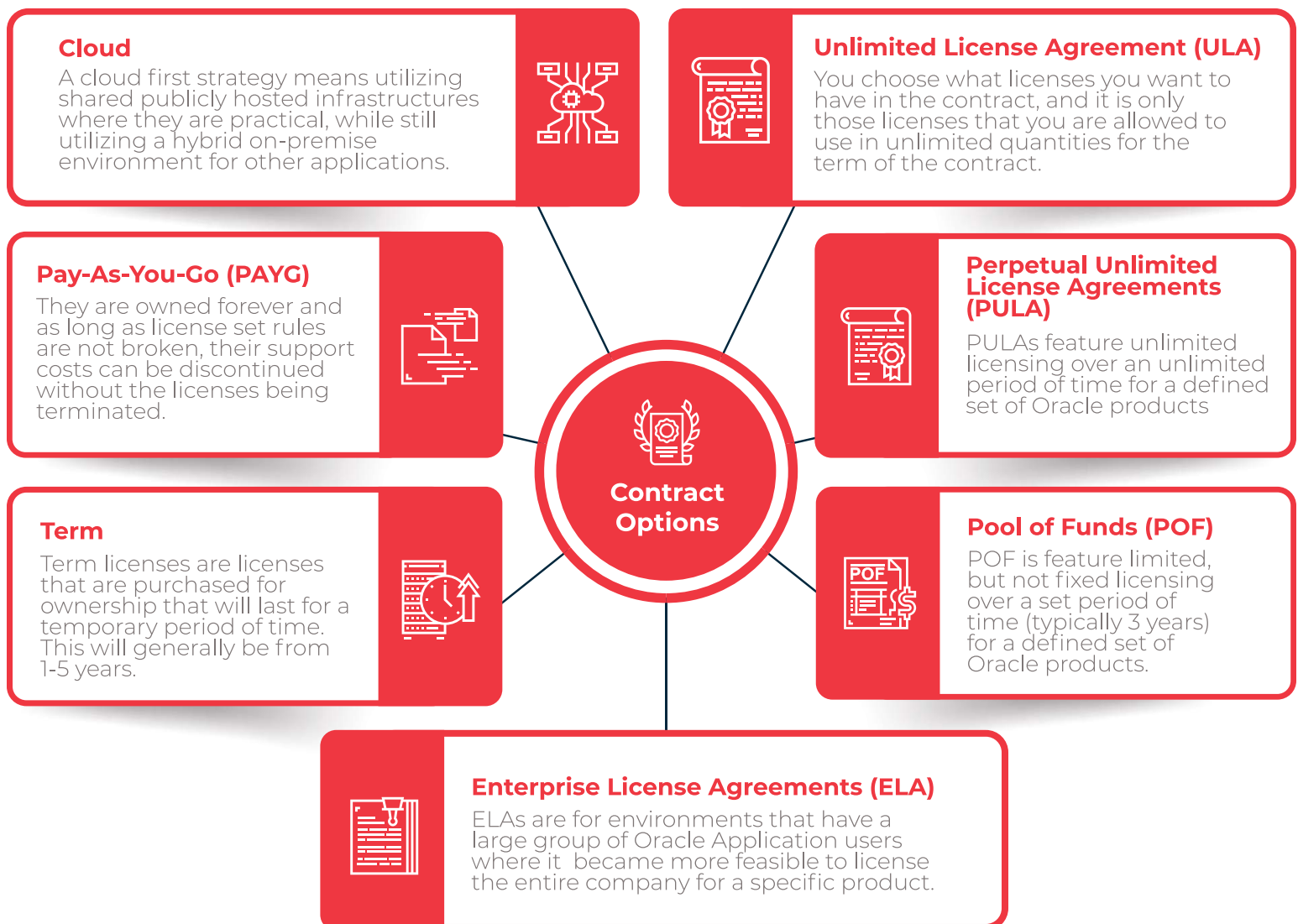
This consists of acquiring the right to use a product through the subscription of a service that includes the right to utilize a software, in a very specific way, for the duration of the subscription. Such services can include Oracle themselves or a third-party entity that has the authority to provide use of Oracle’s software as part of the solution of the service. Support costs are included within the price of subscription and cannot be separated out nor discontinued while maintaining the service. NetSuite, the Oracle CRM product, is licensed this way, for example.



License Acquisition Options

The obvious desire of most Oracle clients is to get the best possible price. However, it is also critical to ensure that you're getting all of the best concessions, and that those options meet your current and future needs. It is always important to position yourself with the most options for the evolution of your organization's needs. In most cases, it is not possible to know exactly what a company will need to do with their licensing in the future, which is why you should avoid locking yourself into a single path.

You should avoid locking yourself into a single path.





Cloud

Many companies are developing “Cloud First” strategies. A cloud first strategy means utilizing shared publicly hosted infrastructures where they are practical, while still utilizing a hybrid on-premise environment for other applications. Cloud first doesn’t mean “cloud only”. This is a sounder approach than simply assuming that all business solutions will move to a Cloud platform. Whether or not a solution should be run from an on-premise environment or from the Cloud depends upon the specific business and functionality requirements of the solution.



Utilizing shared publicly hosted infrastructures



Utilizing a hybrid on-premise environment for other applications

Overall, there are many good reasons to leverage a Cloud solution, but it is important to see it as just another consideration along the path of implementing a new solution for your organization.

ADVANTAGES

- Can be quick and easy to create a new server
- No need to worry about hardware upgrades
- Can be less expensive than on-premise solutions

DISADVANTAGES

- It can be more expensive than on-premise solutions
- Telecommunication costs can be higher
- Security can be an issue
- Fewer options are available in the event of company downturns
- May not meet regulatory compliance standards

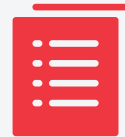


Unlimited License Agreement (ULA)

ULAs are exactly what they sound like. Many organizations are under the impression a ULA lets you use any product license whenever you want during the term of the contract. It does not, and it never did.

The contract is meant for large use cases, where the cost is greater than a million dollars a year for at least three years. You choose what licenses you want to have in the contract, and it is only those licenses that you are allowed to use in unlimited quantities for the term of the contract. There are, however, situations where some product licenses you choose could also have a cap to their usage.

These contracts can contain some of the most customized language of any Oracle contract - particularly around divestitures, mergers, and acquisitions. They are generally for Oracle Technology products, but not always. When the term of the contract is over, you have the option to renew or certify. But a renewal is not an extension of the term of the current contract.



You choose what licenses you want to have in the contract

>1M

Where the cost is greater than a million dollars a year



Minimum three year contract



Option to renew or certify when the term of the contract is over

A renewal is actually a new ULA contract entirely that remains in effect, in addition to the previous contract. The support from the old contract will roll over - at prior cost - into the new contract. If you choose to certify, then you must supply all information relating to your current usage of the products licensed within the ULA. It will

then lock in those specific amounts that will represent your ownership into the future at the same support cost and limitations of usage as was originally negotiated. These contracts can be useful for companies that are growing.



Perpetual Unlimited License Agreements (PULA)

PULAs feature unlimited licensing over an unlimited period of time for a defined set of Oracle products.

Unlike a ULA, a PULA is a one-time event that does not require certification, but it is a higher cost than a ULA.

This still requires an initial purchase, but the organization can 'draw down' funds as they buy products from a set list over a set period of time (even perpetually). It's important to note, however, support needs to be paid each year on the original purchase date.



Unlimited Licensing



No Certification



Draw Down



Pool of Funds (POF)

POF is feature limited, but not fixed licensing over a set period of time (typically 3 years) for a defined set of Oracle products.



Set period of typically 3 years



Defined set of Oracle products

LIMITATIONS	<ul style="list-style-type: none"> Licensing limitations: a set amount of credit given to decrement license quantities used from
FIXED COST	<ul style="list-style-type: none"> Fixed license and support cost established at the beginning of POF
QUANTITIES	<ul style="list-style-type: none"> License quantities in use or intended to be used are declared every 12 months and at the end of the POF agreement
REMOVAL	<ul style="list-style-type: none"> License quantities declared on each LDR (License Declaration Report) form become fixed quantities purchased under the POF contract and cannot be subsequently removed or swapped for another license
SUPPORT	<ul style="list-style-type: none"> Technical Support for programs included in the Pool of Funds agreement is fixed and cannot be reduced at the end of term even if the full credit is not utilized or if the actual deployed license quantities are below the quantities already declared on previous LDRs
REFUND	<ul style="list-style-type: none"> There will be no refund available for any unused portion of the credit
SETTLEMENT MECHANISM	<ul style="list-style-type: none"> Used by Oracle as settlement mechanism for audits where both parties disagree as to the product and quantities of shortfalls.



Enterprise License Agreements (ELA)

ELAs are for environments that have a large group of Oracle Application users where it became more feasible to license the entire company for a specific product. These contracts will typically utilize enterprise metrics such as “Enterprise Employee” and “Enterprise \$M in Revenue.”

These contracts carry the requirement of annual reporting on Revenues or Employees (or similar metrics) and paying for incremental expansion due to company’s growth.



For environments that have a large group of Oracle Application users



Required annual reporting on Revenues or Employees



Pay for incremental expansion due to company’s growth



Term

Term licenses are licenses that are purchased for ownership that will last for a temporary period of time. This will generally be from 1-5 years. The actual cost of the license is reduced from the list price of the perpetual license depending upon how short the period of ownership. Support costs are still calculated on list price of the perpetual license.

These licenses are very useful for short-term projects or for licensing servers that are sun-setting. When the period ends, the license gets removed from support contracts and any costs related to them go away.



**purchased for ownership for
period of ~1-5 years**



**The actual cost of the license is
reduced depending on period of
ownership**



**Useful for short-
term projects**



Pay-As-You-Go (PAYG)

Perpetual licenses are the most common on-premise licenses purchased. They are owned forever and as long as license set rules are not broken, their support costs can be discontinued without the licenses being terminated. It is important to note that Perpetual licenses are best not considered 'Full Use', as there are built-in limitations of all licenses.

These licenses can be purchased as needed, but pricing and concessions would need to be negotiated for each transaction. They can be applied against an on-premise environment or a cloud environment, although the amount required per environment may not be the same.



Owned forever and as long as license set rules are not broken



Support costs can be discontinued without the licenses being terminated



Licenses can be purchased as needed



Oracle Product Categories

Perpetual Licensing (License Purchase)

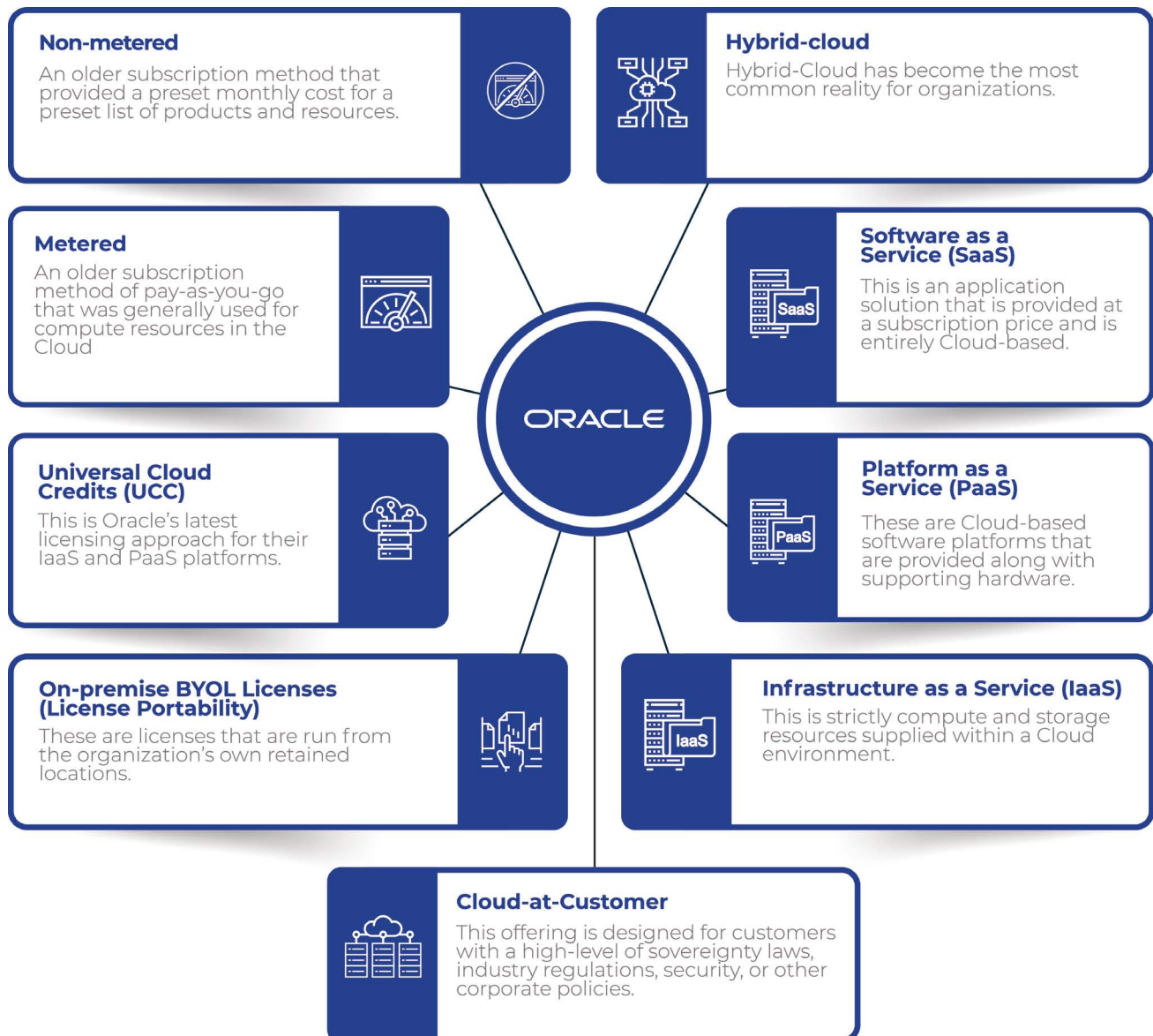
The majority of Oracle's software is all still available for on-premise use, particularly the Technology stack that includes products like Oracle Database and WebLogic. This is expected to remain the case for the foreseeable future. However, newer versions of software may appear in the Oracle Cloud first, prior to becoming available at the on-premise level. There are some applications which are appearing in Oracle Cloud that will not be available on-premise.

ADVANTAGES

- The greatest advantage of perpetual licensing is in its portability and ability to have support discontinued (in certain situations).
- This can be very useful should a company need to dramatically cut costs.

DISADVANTAGES

- A disadvantage of perpetual licensing can be the upfront licensing costs.



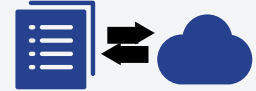


Hybrid-cloud

Hybrid-Cloud has become the most common reality for organizations. Most organizations of a medium-to-large size will have some IT solutions that must remain on-premise due to functionality or business constraints.



Gives a higher level of flexibility to choose the right solution for specific tasks



If you have a base of on-premise licenses then you can apply them against the Cloud, or use them to support an on-premise solution

ADVANTAGES

- Hybrid solutions allow you to maintain a higher level of flexibility to choose the best environment and solution which most effectively addresses specific business problems.
- If you have a base of on-premise licenses then you can apply them against the Cloud, or use them to support an on-premise solution.

DISADVANTAGES

- Hybrid solutions require you to maintain two different environments in some manner.
- You may also find it more difficult to integrate any on-premise with Cloud due to potential latency challenges, as it is vital organizations evaluate the additional network bandwidth requirements that such solutions would likely need.



Software as a Service (SAAS)

This is an application solution that is provided at a subscription price and is entirely Cloud-based. It involves all aspects of the solution, including both hardware and software. Startups or small organizations are better positioned to support an all Cloud-based set of IT solutions, since they have no legacy applications, and can more easily shift from any they actively have in place.



**Entirely Cloudbased,
provided at a
subscription price**



**Good for Startups or
small organizations**

ADVANTAGES

- Generally provides a complete offering that addresses a particular business need. Example: Salesforce
- These usually offer a good level of basic customizations to modify the solution so that it best fits the need for your organization

DISADVANTAGES

- Basic customization of the solution is usually limited to the modification or creation of reports and fields
- If heavy customizations were made to an on-premise application solution, it is less likely to work the same way in a SaaS Cloud version of the on-premise application



Platform as a Service (PAAS)

These are Cloud-based software platforms that are provided along with supporting hardware. They are typically a platform in which to provide customized solutions, but are not generally a complete solution within themselves. Rather, they might be considered a utility-type solution. Example: Database Software as a Platform.



Cloud-based software platforms that are provided along with supporting hardware



More to be considered a utility-type solution

ADVANTAGES

- Software licenses and hardware are all supplied under a single subscription
- You can apply on-premise Oracle licenses to many PaaS Cloud services
- This allows you to extend your on-premise software investment to the Oracle Cloud

DISADVANTAGES

- Requires the latest version of Database to be in use, which can eliminate some solutions that are not feasible to convert to the newest version

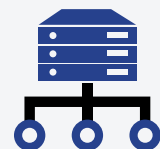


Infrastructure as a Service (IaaS)

This is strictly compute and storage resources supplied within a Cloud environment. This is similar to other Cloud IaaS environments, but Oracle IaaS is designed to run Oracle products the best.



Strictly compute and storage resources supplied within a Cloud environment



Easy and quick to allocate more server compute resources

ADVANTAGES

- You can apply your Oracle licenses against this environment in a manner that closely matches the performance characteristics of an on-premise solution while potentially leveraging the latest server technology that is maintained within Public Clouds
- You can choose a solution that leverages the shared compute fabric or a bare metal solution which enables you to get more control at the hardware level
- Easy and quick to allocate more server compute resources

DISADVANTAGES

- This is subscription based and your usage must be predictable and spread evenly across the individual months of the term of the contract.



On-premise BYOL Licenses (License Portability)

These are licenses that are run from the organization's own retained locations. This is the ability to take a perpetual license and allocate it for use within a Cloud platform



Licenses that are run from the organization's own retained locations



Ability to take a perpetual license and allocate it for use within a Cloud platform

ADVANTAGES

- Leverage existing investment in on-premise licenses by moving them to the cloud

DISADVANTAGES

- Oracle authorized Cloud platforms do not calculate required licenses exactly the same as in an on-premise environment.



Universal Cloud Credits (UCC)

This is Oracle's latest licensing approach for their IaaS and PaaS platforms. UCC is an entirely metered subscription service that, by default, requires you to forecast your intended Cloud use at least one year in advance. Such a forecast would essentially take the form of a monthly spend.



**Entirely metered
subscription service**



**Takes the form of a
monthly spend**

ADVANTAGES

- The spend is not locked into a particular product available on those platforms, as your monies can be applied to any of the products
- Forecasted spend is averaged across the 12 months or term of the subscription contract

DISADVANTAGES

- During the term of the contract you cannot apply unused monies to future months nor can you pull future monies to support months that exceed their forecasted limits
- During heavy use months the organization will pay for any overages separate from their contracts and upwards of 1.5 times the contracted hourly rate for products

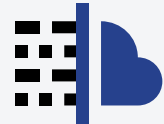


Metered

An older subscription method of pay-as-you-go that was generally used for compute resources in the Cloud, this was replaced by Universal Cloud Credits, but may still be part of current contracts.



**An older
subscription
method of pay-as-
you-go**



**Replaced by
Universal Cloud
Credits**



Non-metered

An older subscription method that provided a preset monthly cost for a preset list of products and resources. Most commonly used with PaaS products. This was replaced by Universal Credits, but previously activated subscriptions can sometimes be renewed for Non-Metered.



**An older subscription
method that provided
a preset monthly cost**



**Was replaced by
Universal Credits**



Cloud-at-Customer

Properly referred to as “Exadata Cloud@Customer”, this offering is designed for those customers with a high-level of sovereignty laws, industry regulations, security, or other corporate policies. So high, in fact, that their deployments must be onsite. This is even if the decision was made to outsource the management of all of their deployments. What Cloud@Customer does is relieve the customer of the management and support of the Oracle Database while retaining a dedicated resource on-premise.



Designed for specific customers.



Meant to relieve customer of the Oracle Database.

ADVANTAGES

- Experience the full Oracle public cloud in your own data centers – just like Exadata Cloud but on-premise
- Enables organizations to meet regulatory, data sovereignty, and other requirements while utilizing Oracle’s Cloud Infrastructure and Oracle Fusion applications
- High-performance, scalable solutions with unique Oracle Database optimizations and hardened security

DISADVANTAGES

- Minimum version of Oracle Database required: 11.2.0.4, 12.1.0.2, 12.2.0.1, (with proper support) 18c currently in Sustaining Support), or 19c – so not good for legacy deployments
- Additional physical requirements, including a 1 GbE connections with Layer 3 security for management and two 10 or 40 GbE connections for infrastructure per control plane
- Additional logical requirements, including DNS forwarding, SMTP forwarding, IP addresses, and dedicated subnets (recommended)



Licensing Production Servers vs. Non-Production Servers

Failover

This configuration consists of an inactive failover server node that is clustered with at least one other production server node with both accessing the same disk subsystem



Development Server Licensing

The servers are licensed the same way a production server would be licensed but they generally utilize the Named User Plus metric



Licensing Production Servers vs. Non-Production Servers

Backup

Today, Oracle requires backups contain only data, without binaries, and cannot be stored where binaries are running or exist unless fully licensed



Disaster Recovery

Oracle defines Data Recovery Methods as part of their written policy



Standby

Oracle's Data Recovery Methods have evolved over the years and now solutions most often fall under a "Standby or Mirroring" configuration



Copying, Synching, or Mirroring

Requires both the DR server and the primary server to be licensed for the same options and the same metrics





Development Server Licensing

- Oracle requires development servers to be licensed unless it is in use to develop a brand-new solution that has not been released to any production users and is not being used to support any production environment that is currently running
- As soon as it is released to production, it must then be licensed
- The servers are licensed the same way a production server would be licensed, but since there is typically a much smaller user count for development servers, they generally utilize the Named User Plus metric



Requires development servers to be licensed



Unless it is in use to develop a brand-new solution that has not been released to any production users



and is not being used to support any production environment that is currently running.



As soon as it is released to production, it must then be licensed



Disaster Recovery

- Oracle defines Data Recovery Methods as part of their written policy
- Not all methods are true disaster recovery solutions since some configurations require all components to exist within the same datacenter



Oracle defines Data Recovery Methods as part of their written policy

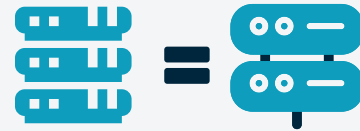


Not all methods are true disaster recovery solutions



Copying, Synching, or Mirroring

Oracle views many solutions as qualifying for their Standby configuration definition, which requires both the DR server and the primary server to be licensed for the same options and the same metrics



Requires both the DR server and the primary server to be licensed for the same options and metrics

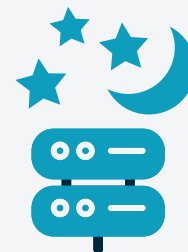


Standby

- **Oracle's Data Recovery Methods have evolved over the years and now solutions most often fall under a "Standby or Mirroring" configuration, even though most organizations identify their own solutions as a "Failover" configuration,** which have specific requirements defined by Oracle that are often not met by the organization's actual usage.
- If you simply copy a production database to a development server nightly, it is considered to be a "Standby" configuration and the development server would need to be licensed using the same metrics and licenses used on the production server



Has specific requirements defined by Oracle that are often not met by the organization's actual usage

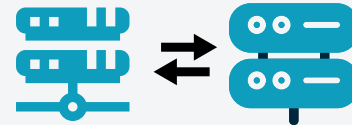


Copying a production database to a development server nightly, it is considered to be a "Standby" configuration



Backup

- The simple “backup” method has evolved. Oracle used to allow a backup of an Oracle database to include binaries which could be stored anywhere as long as it was not in an accessible format.
- Today, Oracle requires backups contain only data, without binaries, and cannot be stored where binaries are running or exist



Oracle requires that backups contain only data, without binaries



Cannot be stored where binaries are running or exist unless fully licensed



Failover

- This configuration consists of an inactive failover server node that is clustered with at least one other production server node with both accessing the same disk subsystem
- There can be only one inactive failover server node within the same cluster
- When a failure occurs in the production server node, the failover server node takes its place until the production node is brought back online
- If the failover configuration meets Oracle's requirements, then it does not require a license as long as it does not act as an active production node for no more than 10 calendar days per year.
- Fractional daily usage is rounded up to full days and includes maintenance and testing uses



Can be only one inactive failover server node within the same cluster

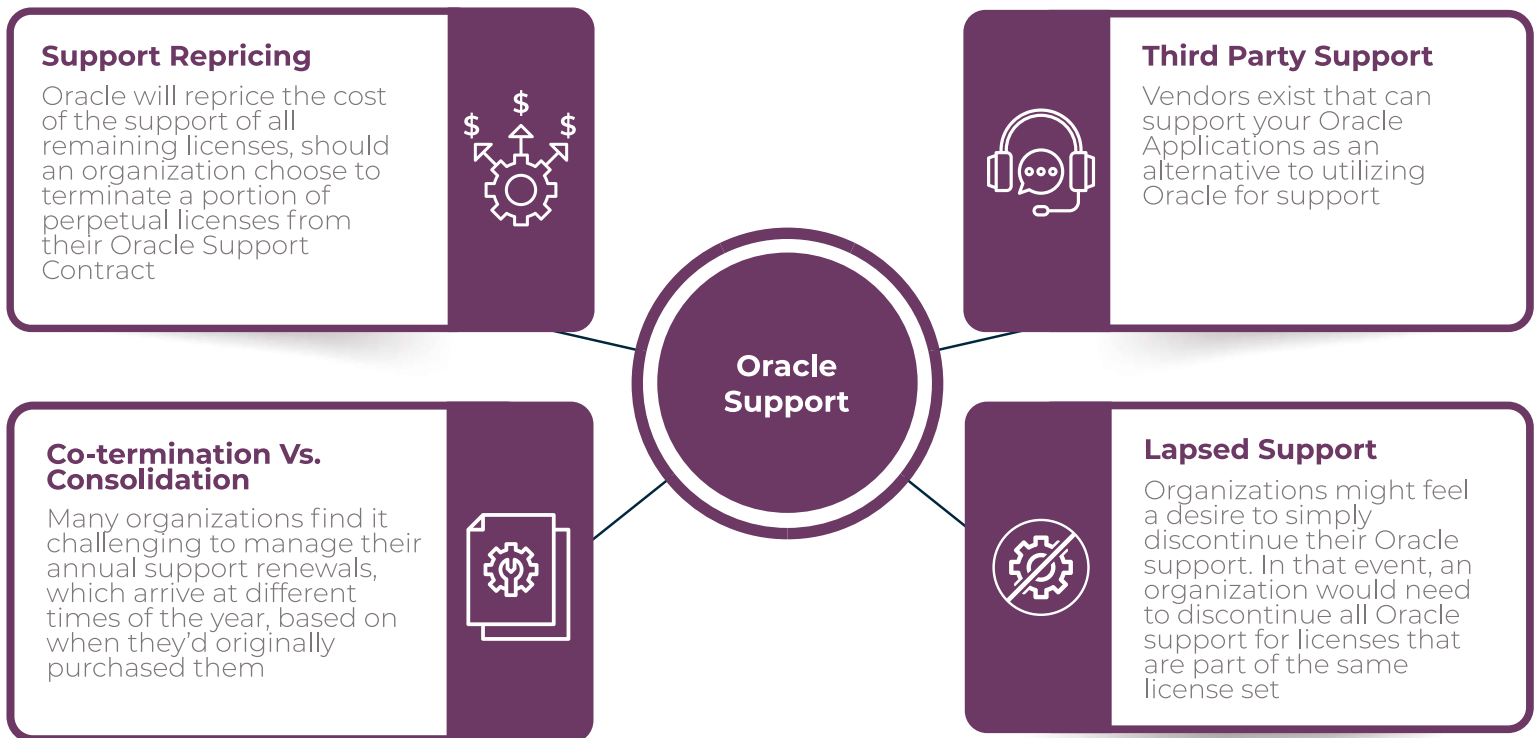


Does not require a license as long as it does not act as an active production node for no more than 10 calendar days per year



Oracle Support

Oracle automatically requires support for any new perpetual licensing unless you have previously discontinued support on all of your licensing. The support cost for any subscription services is built into the subscription charges.





Third Party Support

- Vendors exist that can support your Oracle Applications as an alternative to utilizing Oracle for support.
- These vendors are not affiliated with Oracle Corporation, which leads to limitations to their support capabilities.
- The support they provide can be more than adequate for significantly less cost, and it could be ideal for legacy applications.
- **Once an organization discontinues Oracle Support on their licenses, it can become cost prohibitive to reinstate such support due to Oracle penalty charges, particularly if the support has been discontinued for years.**



Vendors that are not affiliated with Oracle Corporation can support your Oracle Applications

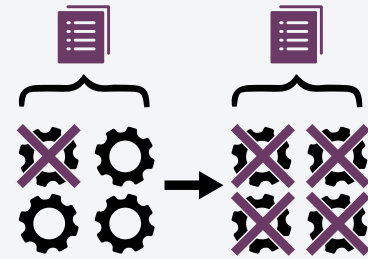


Can cost significantly less



Lapsed Support

- Organizations might feel a desire to simply discontinue their Oracle support. In that event, an organization would need to discontinue all Oracle support for licenses that are part of the same license set.
- Oracle does not allow an organization to use supported Database EE licenses and unsupported Database SE licenses, since they would never truly know which version or server is generating the issue or question.
- It's not possible to selectively discontinue support on a line-item within a particular Support Renewal contract.
- It is possible to terminate selected licenses so that they can never use them again, but it is not possible to pick a license and just stop paying support for it
- Once support is no longer being paid on a license set, then it is no longer possible to upgrade that license, or use any patches or newer versions of the product that come out after the date the support was discontinued
- Due to all of these rules, any such changes should be planned carefully in order to avoid any license compliance issues that may be created as a result of such action.



Discontinued Oracle support results in the need to discontinue all Oracle support for licenses that are part of the same license set



UPGRADE



PATCHES



NEW VERSION

Once support discontinued on a license set, can no longer upgrade, use patches, or use newer versions



Co-termination Vs. Consolidation

- Many organizations find it challenging to manage their annual support renewals, which arrive at different times of the year, based on when they'd originally purchased them.
- Consolidating them all into a single support contract may seem logical, but doing so limits what can be done with those licenses.
- You can co-terminate your contracts so they have the same renewal date, but remain on separate contracts



Annual support renewals arrive at different times of the year, making it a challenge to manage



By co-terminating, contracts have the same renewal date, while still on separate contracts



Support Repricing

- Should an organization choose to terminate a portion of perpetual licenses from their Oracle Support Contract, Oracle will reprice the cost of the support of all remaining licenses since the organization is breaking the original bundle and, therefore, original discounting



When terminating a portion of perpetual licenses from the Oracle Support Contract, Oracle will reprice



Audits

Organizations which have received a formal audit letter, or expect to in the near future, should also download the Oracle Audit Guide by Miro Consulting.

Oracle has the right to audit companies that utilize Oracle software to ensure they are using the software in the manner in which it is licensed and in the proper quantity to cover the deployment of the software.

Common Audit Triggers

BUSINESS CHANGES	<ul style="list-style-type: none">• Publicly visible growth• Acquisitions, mergers and restructurings, especially if such activity is coupled with no recent license purchases• Oracle will always view business growth as a reason for more licensing
COMMUNICATIONS WITH ORACLE	<ul style="list-style-type: none">• Someone at the organization may have asked Oracle a question• Someone shared information with an Oracle contact about areas of Oracle licensing that are challenging to many organizations

In today's hectic environments of on-premise datacenters and cloud sites, it is extremely easy to accidentally expand software usage without addressing the impact to software licensing. Even if an organization's physical environment has not changed, an organization can inadvertently put themselves out of software compliance through a software upgrade.

Oracle's policies and interpretations of their policies frequently evolve as technologies advance. It is critical that companies do periodic internal audits to verify their software compliance status. These should be conducted once a year for most environments.



Change Management

With change, Oracle's own evolving licensing requirements can produce a significant amount of confusion among their customers. It is critical to understand how certain decisions and changes can trigger license compliance concerns with Oracle.

All organizations are constantly going through some form of change. Change varies with each organization over time. Organizations grow, downsize, or reorganize. A constant effort is required to evolve faster than competitors while keeping their customer base interested and engaged. No area changes more frequently than an organization's use of information technology. This type of change can occur at a daunting speed, which is why careful planning is more important than ever to avoid unforeseen costs resulting from such actions.



Change Management (CONTINUED)

Existing Compliance Status

Before formally executing changes, organizations need to consider their current Oracle License Compliance status. Even if an organization has made no changes to their datacenter environment or their usage of Oracle software, the evolution of Oracle licensing policies can still impact your Oracle license compliance status. It's possible that Oracle will no longer accept a type of usage that they had allowed in the past.

Technology Advancements

Advancements in technology and how organizations use technology have the biggest impact on the evolution of licensing policies. This occurs with many software vendors, not just Oracle. Even if an organization never upgraded their Oracle software, remaining on the same hardware over the years would be difficult.

Unannounced Changes in Rule Interpretations

Oracle, as do many other vendors, requires their organization to ensure they are maintaining their own software license compliance. Oracle typically does not announce changes to their policies if they feel that the core concept of their policy has not changed. Miro refers to Oracle's approach to these situations as a change in interpretation of a policy rather than a change in policy. An example of this would be licensing within a VMware environment.

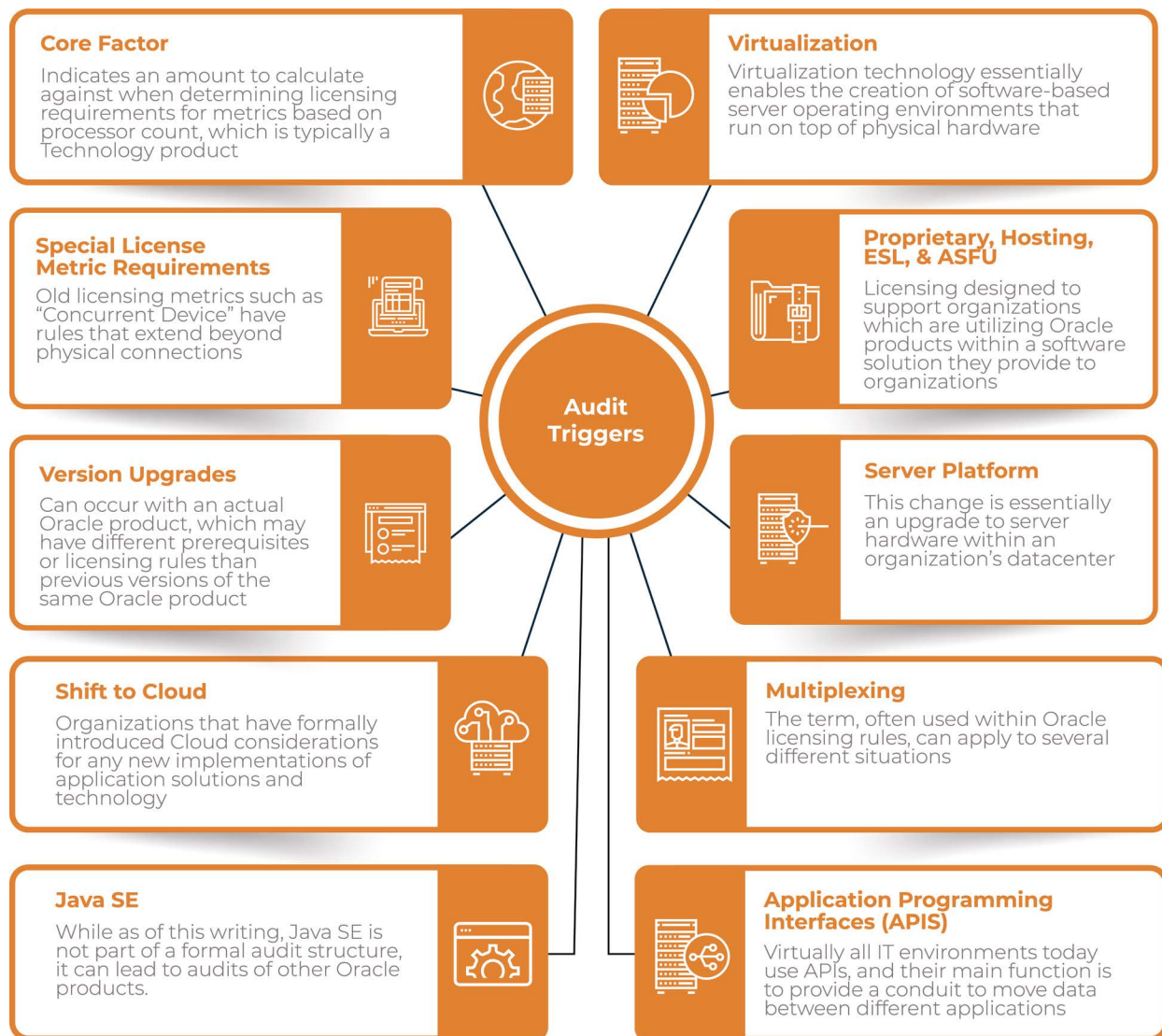
The core policy is that Oracle does not recognize the software's ability to separate processing resources for licensing purposes and documents it as such. However, they do accept certain types of separation practices around the use of a VMware platform, but the parameters of those practices have continued to evolve with the addition of new features and capabilities added to new versions of the VMware software.

Even if an organization has made no changes to their datacenter environment or their usage of Oracle software, the evolution of Oracle licensing policies can still impact your Oracle license compliance status.

Possible Technology and Usage Changes that can Drive Software Licensing Issues

It is vital to identify your Oracle license compliance status in the current environment before making changes. With this, you can address any software license compliance issues as a part of the design for the future environment. It's unwise invest in this upgrade, only to later face an audit settlement which can cost significantly more money, and possibly require changes to a design which was difficult and time consuming to develop.

The following topics are commonly at the heart of Oracle software license issues for most organizations.





Virtualization

- Virtualization technology essentially enables the creation of software-based server operating environments that run on top of physical hardware
 - Virtual servers are easier to deploy and manage, in addition to balancing workloads
 - This enhanced flexibility can complicate licensing the Oracle Technology products deployed on them
 - VMware is the most popular, but there are others, including Oracle's own virtualization products
 - Oracle's policies may seem the most stringent against VMware, but the reality is that Oracle is very strict regarding all virtualization software, including their own Virtualization Stack
 - Virtualization enables the ability to cluster servers in a manner that allows the easy relocation of the software running within them
- Oracle's concern stems from the easy ability to shift and expand the use of processing resources because many Oracle licensing metrics are based on the underlying physical processing hardware
 - **Oracle does not recognize VMware's features which enable it to dedicate processors to server sessions**
 - Oracle will accept similar features on the Oracle VM platform, but only on a single un-clustered server
 - Many IBM Servers have virtualization technology built into the hardware, which Oracle limits for a few of the same reasons it limits Oracle VM and VMware



Virtualization technology essentially enables the creation of software-based server operating environments



Proprietary Hosting, Embedded Software License (ESL), and Application Specific Full Use (ASFU)

- These are licensing situations that are designed to support organizations which are utilizing Oracle products within a software solution they provide to organizations
- In the past, it was common practice to see ESL and ASFU licensing in use, but much of that licensing has been replaced by solutions that are of a SaaS variety and are accessed from the Internet rather than installing locally
- SaaS solutions most often fall under the Oracle label of “Proprietary Hosting.”
- Oracle is not the only vendor that uses this classification, as Microsoft and IBM do so as well
- A key part of Oracle’s definition is that the solution is a one-to-many, and not a custom solution for just a single organization’s use



These are licensing situations that are designed to support organizations

- It is very common for organizations to not realize that they have implemented such a solution for their organizations, and are unaware that it requires special licensing concessions
- These solutions can only reside on the organization’s own equipment or on an Oracle Cloud platform, and cannot reside on a third party’s systems, like AWS (Amazon Web Services)
- Oracle contracts do not automatically allow such use in their standard language



Server Platform

- This change is essentially an upgrade to server hardware within an organization's datacenter
- Organizations may decide to switch from one server manufacturer to another, and such a change could put you out of compliance if the Processor Core Factor is different
- Core factors can vary between server vendors, and even between different server models from the same vendor, and it is important to consider the potential impact during the design phase
- Organizations frequently buy servers with more processors than they need because they got a great deal on the hardware, but fail to factor in the software licensing cost of running with those extra processors



Changing from one server manufacturer to another, could put you out of compliance

- Oracle does not consider it acceptable for excess processing power to be disabled in the BIOS
- Virtualization options between server platforms vary and the difference can put you out of compliance if you assume that the rules are handled the same across platforms

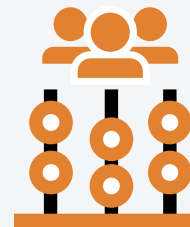


Multiplexing

- The term, often used within Oracle licensing rules, can apply to several different situations
- For Oracle, users or devices need to be counted on the front end, rather than by the number of connections an application establishes with a database.
- From the database side, it may seem like there are few users, but the reality is, there may be 1,000 people connecting to the database through an application's 20 multiplexed connections, therefore Oracle requires counting the 1,000 users from the front-end



Devices need to be counted on the front end, rather than by the number of connections an application with a database.



Oracle requires counting the 1,000 users from the frontend

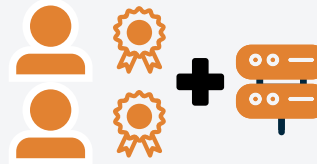


Application Programming Interfaces (APIs)

- Virtually all IT environments today use APIs, and their main function is to provide a conduit to move data between different applications
- The significance of APIs to licensing involves the aforementioned topic of multiplexing, where some organizations do not realize that an API can mask users that require Oracle software licenses since they do not log in directly
- Usage may require per user licensing on a processor metric for certain servers, and depending on how the data is exchanged, it may eliminate the need for additional licensing



APIs main function is to provide a conduit to move data between different applications

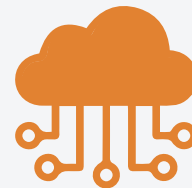


Usage may require per user licensing on a processor metric for certain servers



Shift to Cloud

- Organizations that have formally introduced Cloud considerations for any new implementations of application solutions and technology
- They may consider the use of a Cloud-based solution before committing to a solution that must be housed within their own datacenter
- There are many variables to consider in such decisions, but one variable will always be the impact on software licensing
- Cloud solutions come in many different forms and licensing scenarios, and organizations can leverage current perpetual licensing, include licensing in Cloud subscriptions, or utilize a combination of the two



They may consider the use of a Cloud-based solution before committing to a solution that must be housed within their own data center



One variable to consider will always be the impact on software licensing

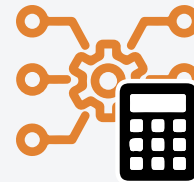


Version Upgrades

- Can occur with an actual Oracle product (Ex. Java, DBSE), which may have different prerequisites or licensing rules than previous versions of the same Oracle product
- Can also occur when organizations upgrade versions of other software within a computing environment (ex. VMware), which introduce new features and capabilities that may alter the way Oracle calculates licensing requirements



May have different prerequisites or licensing rules than previous versions of the same Oracle product



Introduce new features and capabilities that may alter the way Oracle calculates licensing requirements



Special License Metric Requirements

- Old licensing metrics such as “Concurrent Device” have rules that extend beyond physical connections, as to current “Named User Plus” licensing when used as the sole metric for an environment
- These extended “users” would be external users or contributors of data
- Such data contributions can consist of flat files imported into a database, whose true contributors would be difficult to count

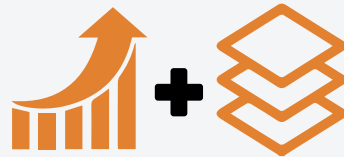


These extended “users” would be external users or contributors of data



Core Factor

- Relates to Oracle's use of a table that indicates an amount to calculate against when determining licensing requirements for metrics based on processor count, which is typically a Technology product
- Originally introduced as a way to better allocate the performance of multicore processors at the core level, as different vendor's processors had different performance characteristics
- Currently it is less about actual performance and more about Oracle's characterization of competing platforms
- The use of a core factor can vary depending upon the environment to which the licenses are being applied
- Oracle approved Cloud vendors (Amazon and Microsoft) have specific calculation requirements for determining the number of licenses needed within those compute environments



Currently it is less about actual performance and more about Oracle's characterization of competing platforms



Java SE

- While as of this writing, Java SE is not part of a formal audit structure, it can lead to audits of other Oracle products.
- As a Technology product, Java SE is subject to the same rules involving core-factor, Proprietary Hosting, and virtualization as other Technology products, notably Oracle Database. This means that the very same strategies that would apply to Oracle Database licensing apply to Java SE licensing.
- Per Oracle's own rules, no licensing is required for development use, personal use, Oracle approved product use, and/or Oracle Cloud Infrastructure use.
- Oracle has stated that "For purposes of clarity, the 'to develop' grant includes using the Programs to run profilers, debuggers and Integrated Development Environments (IDE Tools) where the primary purpose of the IDE Tools is profiling, debugging and source code editing Applications."
- "Oracle approved product use" essentially refers to products such as the e-Business Suite products which use the Java platform. The included Java license is restricted to the use of the Oracle Application.
- The use of third-party tools built on the Java platform require investigation by your organization.
- Recently, the Account Teams at Oracle have included "back usage" to the quotes for Java SE. These are caused by the downloads of licensable upgrades. And Oracle keeps track of these.
- In Java SE 17, the JDK can be downloaded as a separate element. This allows the customer to deploy only the portions of Java SE that are necessary.



The same strategies that would apply to Oracle Database licensing apply to Java SE licensing.

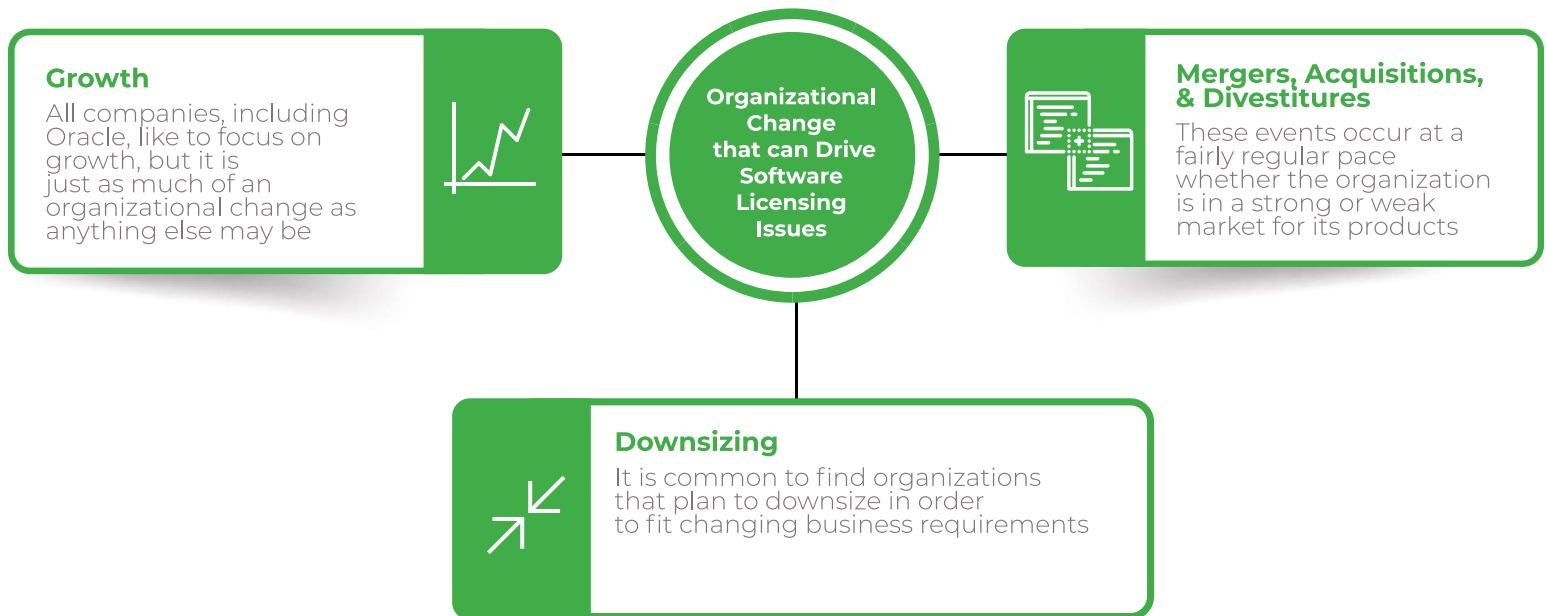


The use of third-party tools built on the Java platform require investigation by your organization.



Organizational Changes that can Drive Software Licensing Issues

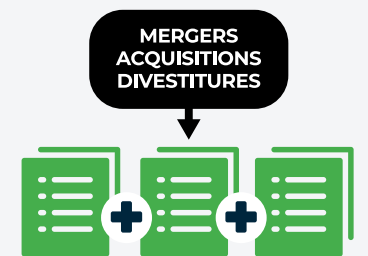
Organizational changes are one of the primary types of events that can cause software licensing issues. These include merges, acquisitions, divestitures, downsizing and business growth.





Mergers, Acquisitions, and Divestitures

- These events occur at a fairly regular pace whether the organization is in a strong or weak market for its products
- Licensing is something that many organizations fail to plan for and consider in the details of the organizational change
- It is important to note that organizations, such as Oracle, pay close attention to the business activity of their client base, and their contractual language typically includes specific language related to M&A and divestitures
- There is a high probability some portion of either the buyer and/or seller's Oracle software licensing contracts include some type of special language related to M&A and divestitures, which can be heavily customized with specific requirements
- This type of event will **likely** have an impact on an organization's Oracle software licensing, and in many cases such an event can trigger additional licensing requirements
- Organizations may find out months later that they acquired a company that was not compliant with their Oracle software at the time of acquisition, and depending upon how agreements are structured, such a finding can fall on the buyer or the seller

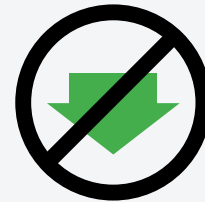


These type of events can trigger additional licensing requirements

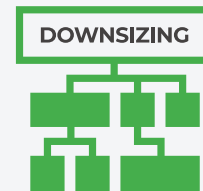


Downsizing

- It is common to find organizations that plan to downsize in order to fit a changing marketplace, and since most are not trying to do it overnight, so there is planning involved
- Many underestimate the challenges in trying to reduce their licensing support costs for a shrinking environment
- Organizations often establish new software licensing contracts thinking they can shrink their usage and costs as part of the plan, but Oracle's policies favor growth and do not have a mechanism to assist their customers in downsizing, so any downsizing initiatives need to be carefully planned



Oracle does not support downsizing, so any downsizing initiatives need to be carefully planned



Detailed planning, and challenges are involved when reducing licensing support costs



Growth

- All companies, including Oracle, like to focus on growth, but it is just as much of an organizational change as anything else may be
- Oracle may assume an organization's growth is a clear trigger for additional licensing, and in many cases they may or may not be correct, but with the power of server hardware today, which may not be true
- If true growth is becoming a reality, then it is important to consider how it may specifically impact the organization's software licensing needs in the future and plan accordingly



With growth, it is important to consider how it may impact software licensing needs



Software Asset Management (SAM) Tools

SAM Tools come in many different flavors. They can be simple scanning tools all the way up to full multivendor contract management systems and everything in between.

Many organizations hope that the use of such a tool will resolve all of their software license compliance issues and concerns they no longer need to manage it. This is absolutely **not true** for the following reasons:

Limited Detection

No tool can identify all software products, and correctly calculate their licensing requirements.

Rules & Policy Limitations

Many licensing rules that cannot be calculated through the physical existence of the software.

Certification

Any tools that may be “certified” by Oracle are not certified to identify software compliance; they are “certified” to collect base information, and only on certain products.

Custom Metrics

In particular scenarios where it makes sense, Oracle allows the use of custom metrics. Such metrics would have special counting requirements that no software could possibly know, or be prepared to allocate properly.

Changes in Rule Interpretations

Oracle evolves the interpretations of their licensing policies, which means there are no changes to the current policy documents. There is no way for a tool vendor to become aware of this in order to make such changes to their software, since Oracle has not officially changed a rule, only the interpretation of the rule.

Hosting Restrictions

Many organizations have outsourced some or all of their datacenters to third-party hosting sites, which do not allow organizations to run tools within their environments.

Security Restrictions

Due to the heightened security requirements within many organizations, tools cannot reach all portions of the organization without requiring many more deployments of the tools or adjustments – even temporary ones – to the security protocols.

Incomplete Scanning

Even though a tool may discover information, it is important that an organization verify everything reported. For various reasons, tools may miss, or not have access, to servers that have software. There is no way to know unless you review all of the information that is reported by the tool.

When does a tool make sense?

For most organizations, a tool can be helpful to try and gather information from large environments with hundreds, even thousands, of servers. This is particularly true if a company has little IT resources of their own. Even though they can collect some of the information, it is important to review that information to ensure it is actually correct. All identification of software compliance should be confirmed by your own team or through the use of a vendor such as Miro.

Conclusion

We hope you have found this document helpful in understanding the complexities of software licensing. The purpose of this document is to inform IT and non-IT readers of the nuances and complexities of software licensing, and the importance of maintaining a compliant environment. Miro has worked with nearly 1,000 companies worldwide in uncovering these (and many more) compliance issues, devoting nearly 200,000 hours over the last two decades to uncovering these compliance issues (and more), implementing solutions which lower the total cost of ownership, optimize environments, and strategize for the future.

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