



Welcome to Madora's Oracle licence training online.

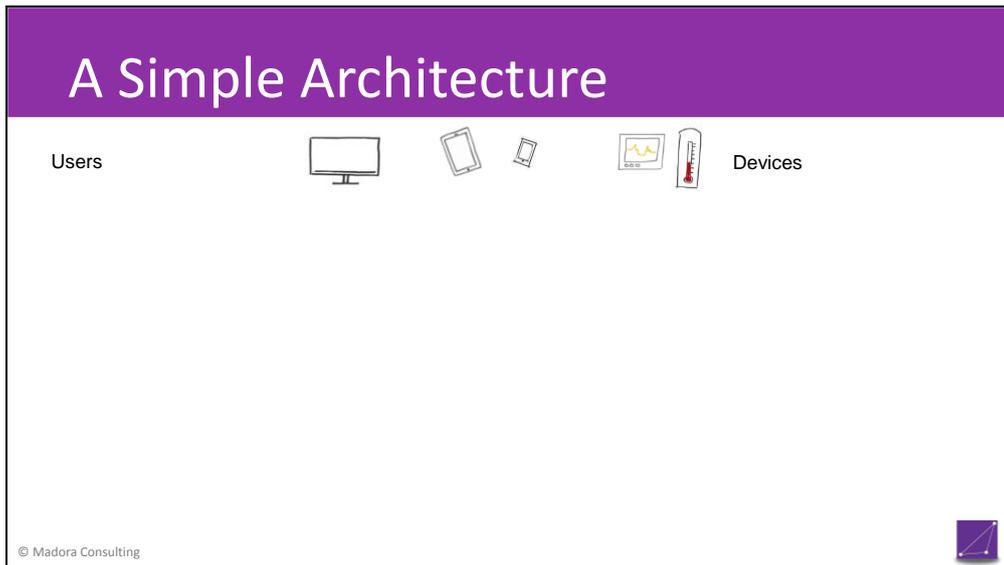
This is your course workbook for the introduction and module 1 and will include all the information you need to complete this section of the course.



If you need help

Send an email to training@madora.co.uk and we will get back to you within 1 working day

If you have any questions at all, no matter how trivial, please contact us straight away. We are here to help and want to make sure you get the most out of this course.

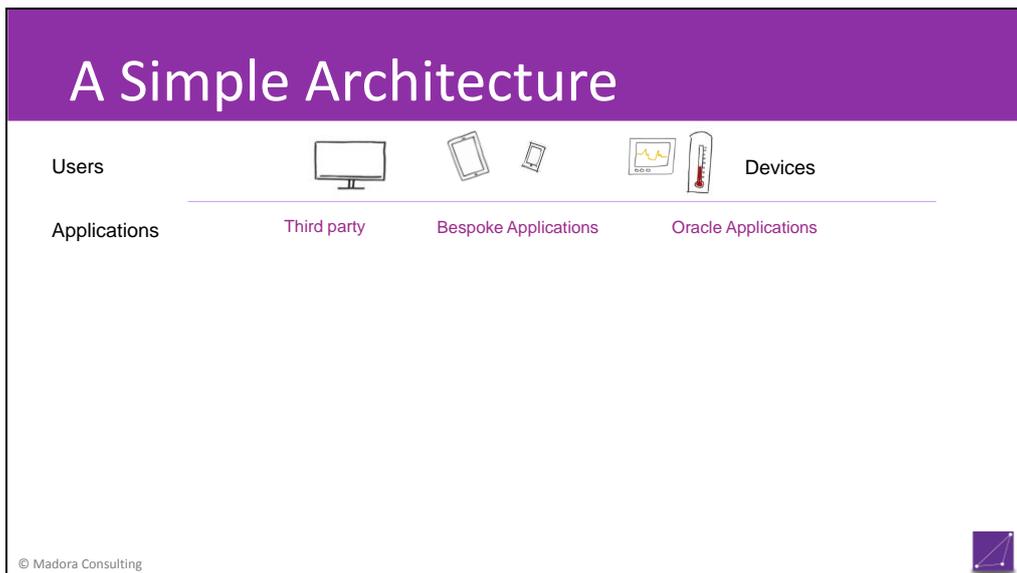


The Oracle database is either licensed by servers, based on the size of the server or the number of users who are accessing the database and there are many different types of users that need to be counted, such as users logging in or connected devices, for example a temperature measuring device that is sending regular information into the database or a user that is adding data in from a handheld device such as meter reader.

There have been different metrics over the years for a user with different terms and conditions and this will determine who is authorised to use the database and when.

There have also been different types of server based licensing.

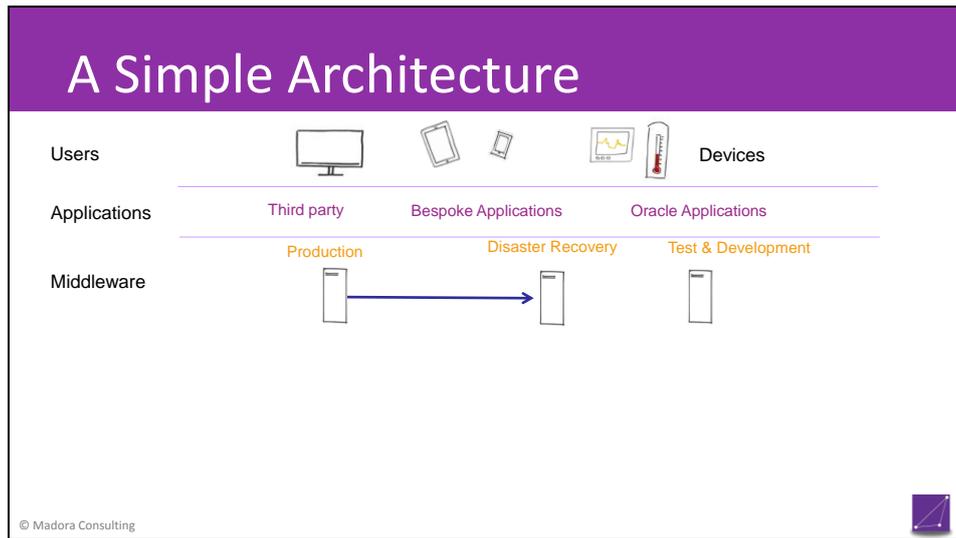
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Many applications have Oracle database, middleware and tools underpinning them. These include; in-house created or bespoke, Oracle’s own applications and third party written, some of which may have Oracle database embedded or provided as part of the application.

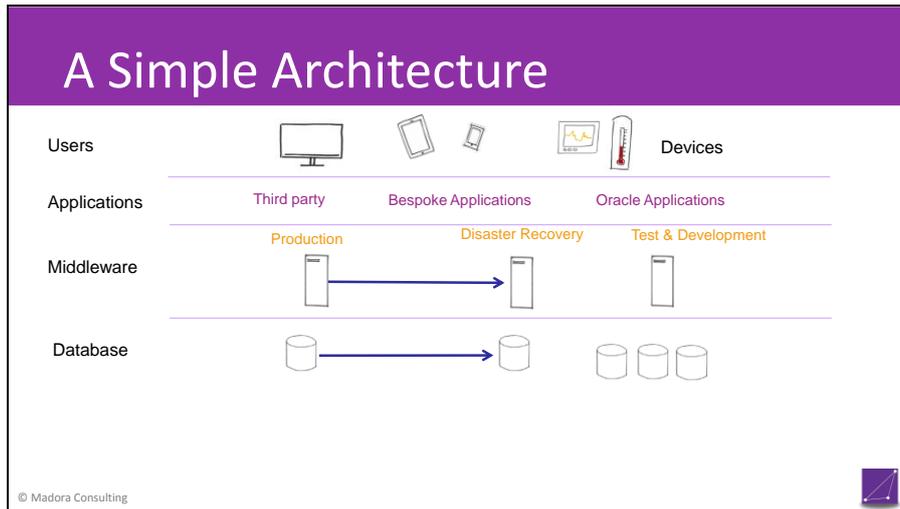
All may have different licensing styles and use different metrics.

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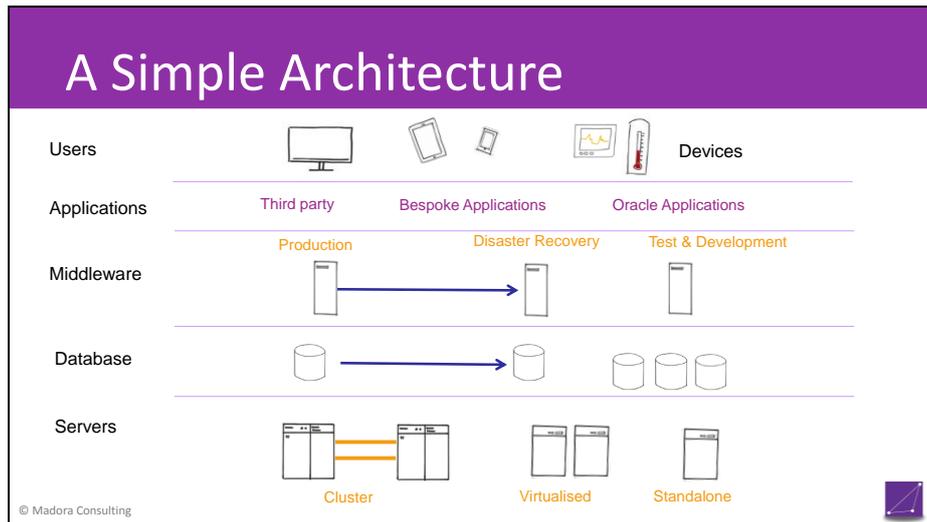
Middleware connects the applications to the database. This area will include Oracle’s traditional Internet Application Server, Weblogic, which was purchased from BEA and the newer Fusion Middleware products such as Service Oriented Architecture (SOA) Suite. There are some licensing differences, such as the minimum number of users required, but generally the middleware is licensed either by Processor or Named User Plus in the same way as the database.

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Database is what Oracle is famous for and is generally the start of any licensing discussion. There may be one or several database instances running together on a server, but the number of instances is not taken into account when the licences are calculated. There are several editions of the database and these have different licensing methods. Generally the version of the database is irrelevant, except in a few circumstances, and does not affect the required number of licences.

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What is important is the server details. Oracle database is licensed by servers or users, so we need to know what size and type of server the database is running on.

Complexity is added by virtualisation, clustering, disaster recovery and where the users are located. We will cover all these areas in detail in the additional modules.

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Basic Oracle Database Licensing

- **What needs licensing?**
 - **Products**
 - **Metrics**
 - **Calculating the number of licences**

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What needs to be licensed?

Database Family

- Enterprise Edition and Options
- Enterprise Management Packs

Middleware Family

- Weblogic Products
- Internet Applications Server (iAS) and Options

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There are several other products which need to be licensed to **match** the Enterprise Edition of the database.

The full list of current options is shown below:

- Active data Guard
- Advanced Analytics
- Advanced Compression
- Advanced Security
- Database In-Memory Multitenant
- Database Vault
- Label Security
- OLAP
- Partitioning
- Real Application Clusters (RAC)
- Real Application Clusters One Node
- Real Application Testing
- Spatial and Graph
- Times Ten Application-Tier Database Cache
- Several industry Data Models

The full list of Enterprise Management Packs is shown below:

- Cloud Management Pack for Oracle Database
- Database Lifecycle Management Pack
- Data Masking and Subsetting Pack
- Diagnostics Pack
- Tuning Pack

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Database Editions

**Enterprise
Edition**

**Standard
Edition**

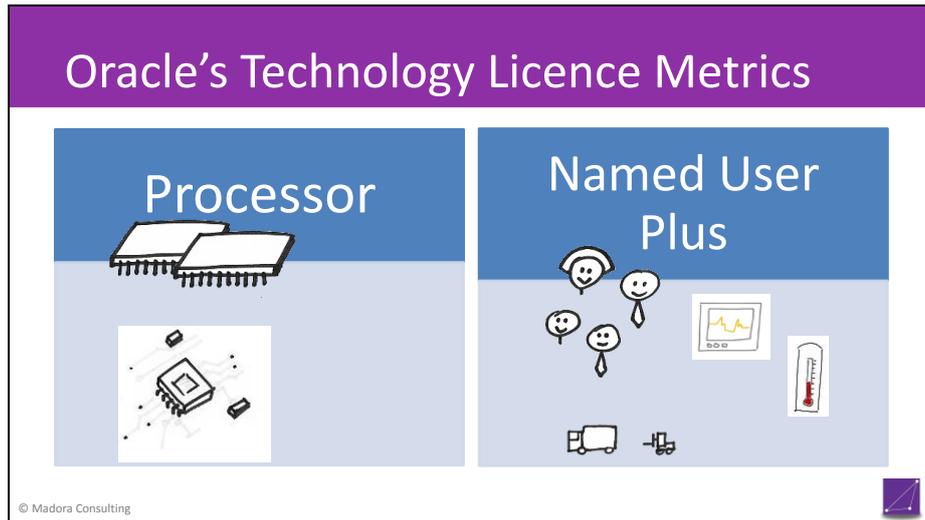
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The two main editions that are available to purchase are Enterprise Edition and Standard Edition, now Standard Edition Two. This was released in December 2015 and replaced Standard Edition and Standard Edition One. We will cover the licensing of Standard Edition in Module Two.

Return to the video

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There are two ways of licensing Oracle technology, or database, and middleware. Either by the size and power of the server or by the number of users.

If the preferred method is by the server, this allows for an unlimited number of users on the server, this will be needed if the users can't be counted or if the servers is open to the Internet or if there are high numbers of users.

Named User Plus would usually be chosen for small number of users that can easily be counted, perhaps for a development department. There are minimum numbers required and we will go into the details in Module 2.

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Processor Calculations

Based on Physical Server

- Don't need to count the number of database instances or number of virtual servers
- Need to know the server and processor type and the number of processors there are in the server?
- Then calculate the total number of cores

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Work out how many total cores there are on the server.

Once we have found out the number of cores, we multiply by the core factor provided by Oracle.

Lots of servers have Intel or AMD processors and the core factor is 0.5.

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How to Calculate Licensable Processors

1. Once we've found out the number of cores on the server
2. Then multiply that total number of cores by a core factor provided by Oracle

$$\text{Processors} = \Sigma \text{ Cores in Server} * \text{Core Factor}$$

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Work out how many total cores there are on the server, then multiply by the core factor to work out the number of licensable processors required. Lots of servers have Intel or AMD processors and the core factor is 0.5.

For example 8 total cores multiplied by 0.5, gives 4 and that is the number of processor licences you need to buy.

This is provided in a table which is regularly updated and is available on their website.

<http://www.oracle.com/us/corporate/contracts/processor-core-factor-table-070634.pdf>

An example is also shown on the next page.

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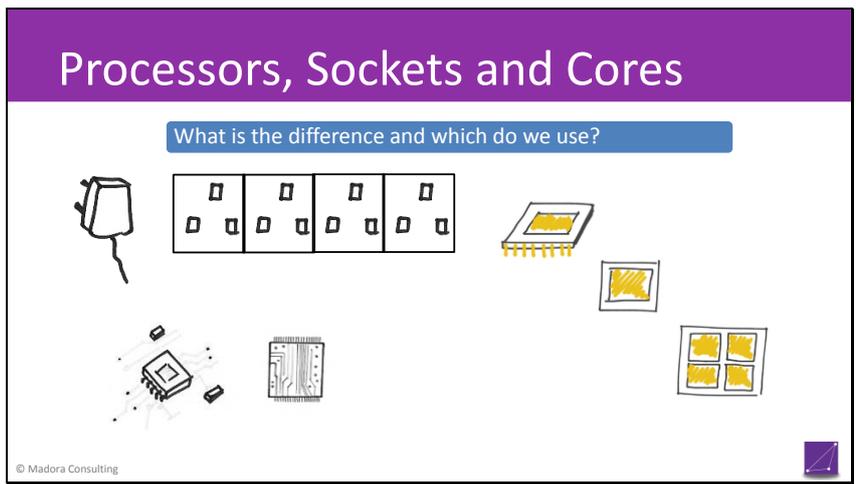
Oracle Processor Core Factor Table

Effective Date: March 18, 2008

| Vendor and Processor | Core Processor Licensing Factor |
|--|---------------------------------|
| Sun and Fujitsu UltraSPARC T1 processor (1.0 or 1.2 GHz) | |
| Only named servers including: Sun Fire T1000 Server, SPARC Enterprise T1000 Server*, with 6 or 8-core 1.0 GHz UltraSPARC T1 processor | 0.25 |
| Sun Fire T2000 Server, SPARC Enterprise T2000 Server*, with 4, 6, or 8-core 1.0 GHz, or 8 core 1.2 GHz UltraSPARC T1 processor | |
| Sun Netra T2000, 1.0 or 1.2 GHz UltraSPARC T1 processor | 0.25 |
| SPARC T3 processor | 0.25 |
| Sun and Fujitsu UltraSPARC T1 1.4 GHz | |
| Only named servers including: Sun Fire T2000 Server and SPARC Enterprise T2000 Server*, with 8-core, 1.4 GHz UltraSPARC T1 processor | 0.5 |
| Sun T6300, 1.4 GHz UltraSPARC T1 processor | 0.5 |
| AMD Opteron Models 13XX, 23XX, 24XX, 32XX, 41XX, 42XX, 43XX, 61XX, 62XX, 63XX, 83XX, 84XX or earlier Multicore chips | 0.5 |
| Intel Xeon Series 56XX, Series 65XX, Series 75XX, Series E7-28XX, E7-28XX v2, Series E7-48XX, E7-48XX v2, E7-48XX v3, Series E7-88XX, E7-88XX v2, E7-88XX v3, Series E5-24XX, E5-24XX v3, Series E5-26XX, E5-26XX v2, Series E5-46XX, E5-46XX v2, E5-46XX v3, E3-15XX v5, Series E5-16XX, Series E3-12XX, E3-12XX v2, E3-12XX v3, E3-12XX v4, E5-26XX v3, E5-24XX v2, E5-14XX v3, E5-14XX v2, E5-16XX v3 and E5-15XX v2 or earlier Multicore chips | 0.5 |
| Intel Itanium Series 93XX or earlier Multicore chips (For servers purchased prior to Dec 1st, 2010) | 0.5 |
| Intel or AMD Desktop, Laptop/Notebook, or Netbook Multicore chips | 0.5 |
| Sun UltraSPARC T2+ | 0.5 |
| SPARC64 VII+ | 0.5 |
| SPARC64 X, SPARC64 X+ | 0.5 |
| SPARC T4 processor | 0.5 |
| SPARC T5 | 0.5 |
| SPARC M5, SPARC M6, SPARC M7 | 0.5 |
| Sun and Fujitsu SPARC64 VI, VII | |
| Sun UltraSPARC IV, IV+, or earlier Multicore chips | 0.75 |
| Sun UltraSPARC T2 | 0.75 |
| HP PA-RISC | 0.75 |
| IBM POWER5+ or earlier Multicore chips | 0.75 |
| All Single Core Chips | |
| Intel Itanium Series 93XX (For servers purchased on or after Dec 1st, 2010) | 1.0 |
| Intel Itanium Series 95XX | 1.0 |
| IBM POWER6 | 1.0 |
| IBM POWER7, IBM POWER7+ | 1.0 |
| IBM POWER8 | 1.0 |
| IBM System z (z10 and earlier) | 1.0 |
| All Other Multicore chips | 1.0 |

* SPARC Enterprise T1000 and SPARC Enterprise T2000 Servers may be sold and branded by Oracle, Sun Microsystems, Fujitsu or Fujitsu Siemens.

Please see Statement of Change on the next page



As the database is licensed based on the server it is running on, we need to work out how many licensable processors we have, which may not always be obvious and can be confused by terminology, such as sockets, cores, CPUs or processors.

Most servers will have details of the number of processors they were sold with and also the number of cores there are for each processor.

Multiply the two together, for Enterprise Edition, we need to know the total number of cores.

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Have a go at working some out yourself.

Use some of the servers you know, perhaps from your own organisation

What is a typical processor?

-As examples; HP and Dell are common. Some HP servers have Intel Xeon chips with perhaps an 6 core or a 12 core processor

For a server with 1, 6 core processor – count 1 x 6 cores or if it has 2 processors each with 12 cores, then it's 2 x 12.

Then apply the core factor of 0.5.

Send us some examples of your own with your calculations....

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This is your opportunity to practice calculating the number of processor licences need for Database Enterprise Edition and also the list of options shown below, which needs to match. So the number of processor licences you have calculated for Database Enterprise Edition would also be the exactly same if you need to purchase any of the products shown here.

The full list of current options is shown below:

- Multitenant
- Real Application Clusters (RAC)
- Real Application Clusters One Node
- Active data Guard
- Partitioning
- Real Application Testing
- Advanced Compression
- Advanced Security
- Label Security
- Database Vault
- OLAP
- Advanced Analytics
- Spatial and Graph
- Times Ten Application-Tier Database Cache
- Database In-Memory
- Several industry Data Models

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Exercise One – there are a few hints on the video if you get stuck

Exercise One -1

HP DL385p Gen8 AMD Opteron 6320 (2.8GHz)

2 x 8-core Processor



How many processor licences are needed for Enterprise Edition?

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Write your answer below, it may also be worth putting in your workings so that you can refer back in future

Exercise One - 2

HP DL385p Gen8 AMD Opteron 6308 (3.5GHz)

8 x 4-core Processor



How many processor licences are needed for Enterprise Edition?

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Write your answer below

Exercise One - 3



DELL PowerEdge T110II Tower Server

Two quad-core Intel Xeon processor or

How many processor licences are needed for Enterprise Edition?

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Write your answer below

Exercise One - 4



DELL PowerEdge T110II Tower Server

Four dual-core Intel Core processor

How many processor licences are needed for Enterprise Edition?

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Write your answer below

Exercise One – 5



**HPE ProLiant DL360 Gen9
Intel Xeon E5-2620v3 6-Core
2.40GHz (1 processor)**

How many processor licences are needed for Enterprise Edition?

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Write your answer below

Exercise One – 6



**DELL PowerEdge T20 Tower
Server – 1 processor
With Xeon E3-1225v3 4-
Core**

How many processor licences are needed for Enterprise Edition?

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Write your answer below

Exercise One – 7



**HPE ProLiant DL360
Gen9 Intel Xeon E5-
2670v3 12-Core
2.40GHz (2 processors)**

How many processor licences are needed for Enterprise Edition?

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Write your answer below

Exercise One – 8



**HPE ProLiant ML310e
Gen8 – 1 processor
With Intel i3-4330
3.50GHz 2-Core**

How many processor licences are needed for Enterprise Edition?

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Write your answer below

Go back to the video for the answers

That's the end of module 1, we hope you found it useful. Don't forget if you have any questions, send us an email to training@madora.co.uk

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Useful Resources

Jane.mcculloch@madora.co.uk

www.oracle.com

- Software Investment Guide
- Database Licensing
- Core Factor Table
- Licensing Software in a Cloud Environment
- Partitioning Policy
- Data Recovery

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You may also find these resources of help if you would like to do some extra reading.

The next module will move on to cover Standard Edition and Named User Plus licensing for the database and how the Middleware is licensed. Hope to see you there 😊

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