

# Oracle VM

Der Ausweg aus dem Virtualisierungs-Dilemma



06/12/2016 13:56:31

## Das Dilemma



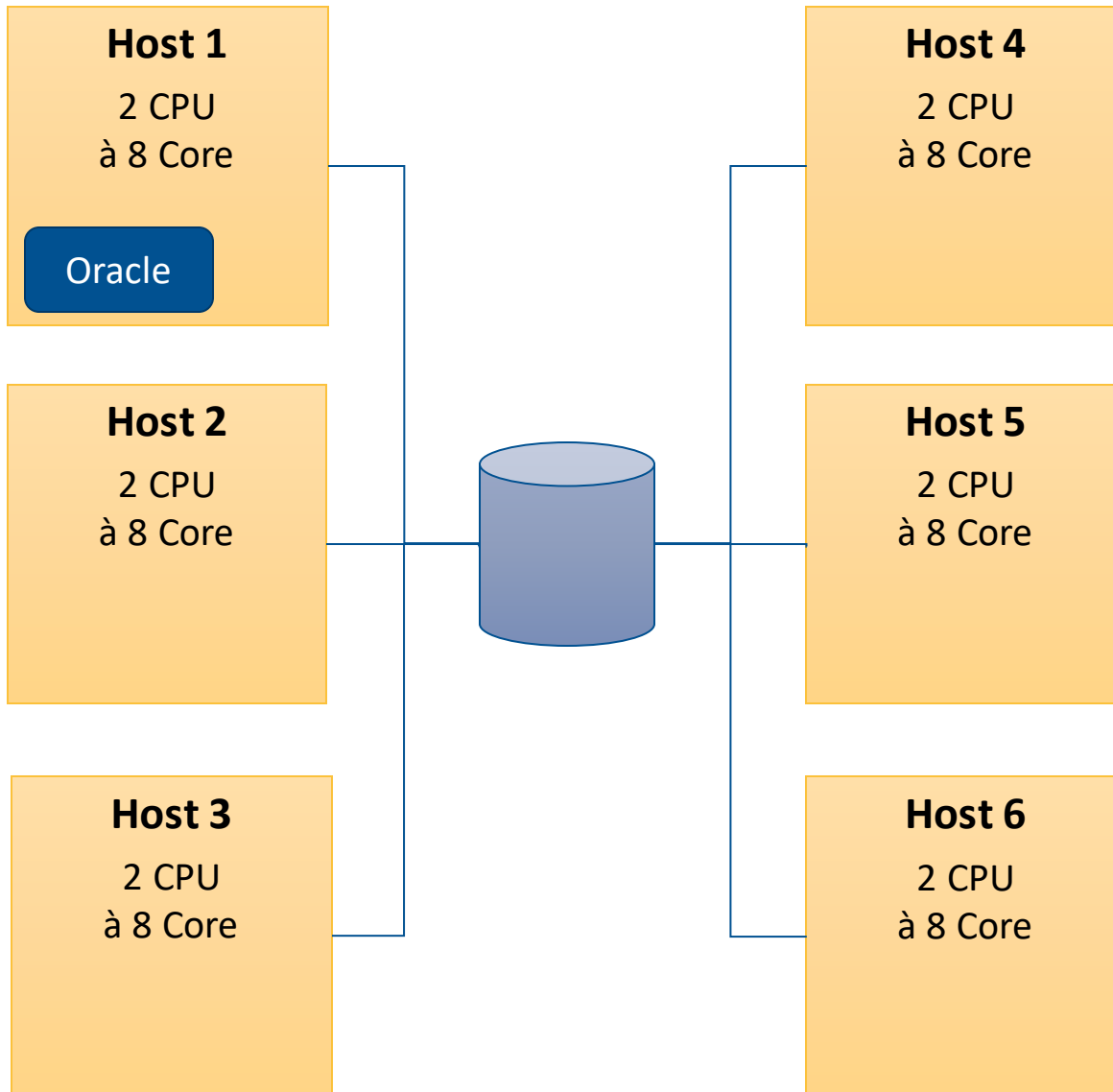


Ist der Ruf erst ruiniert, lebt es sich ganz ungeniert!

Wahrscheinlich Kabarettist Werner Kroll, 1945



# Oracle Lizenzierung in virtualisierten Umgebungen: das Dilemma

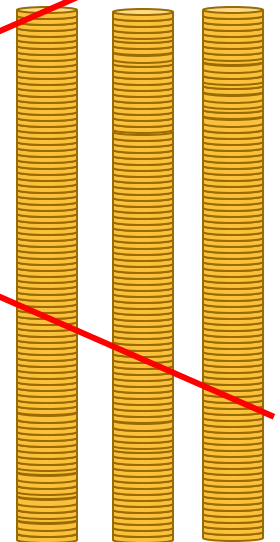


## Oracle Database Standard Edition 2 Prozessorlizenzen



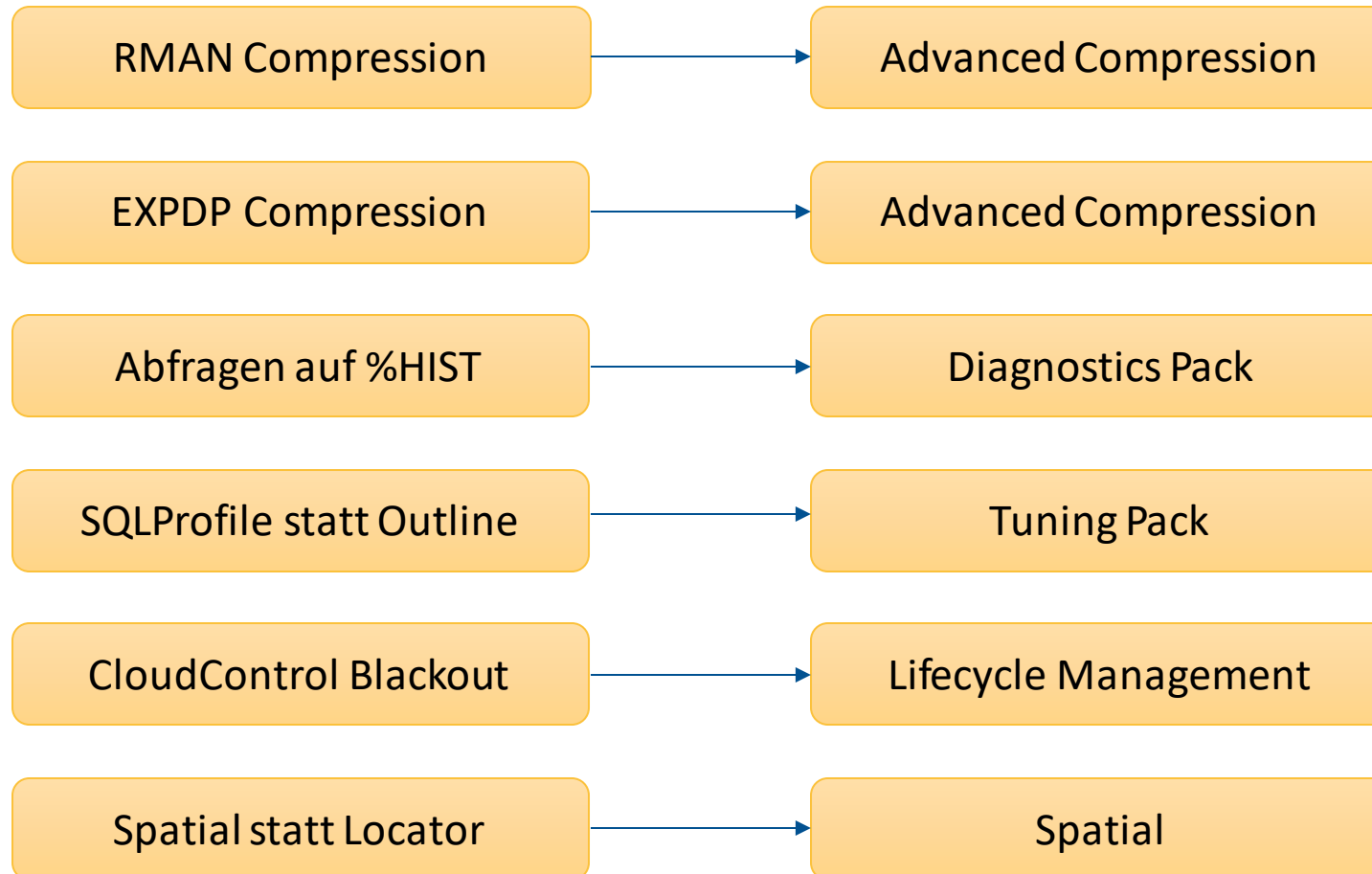
180.000 €

## ~~Oracle Database Enterprise Edition Prozessorlizenzen~~

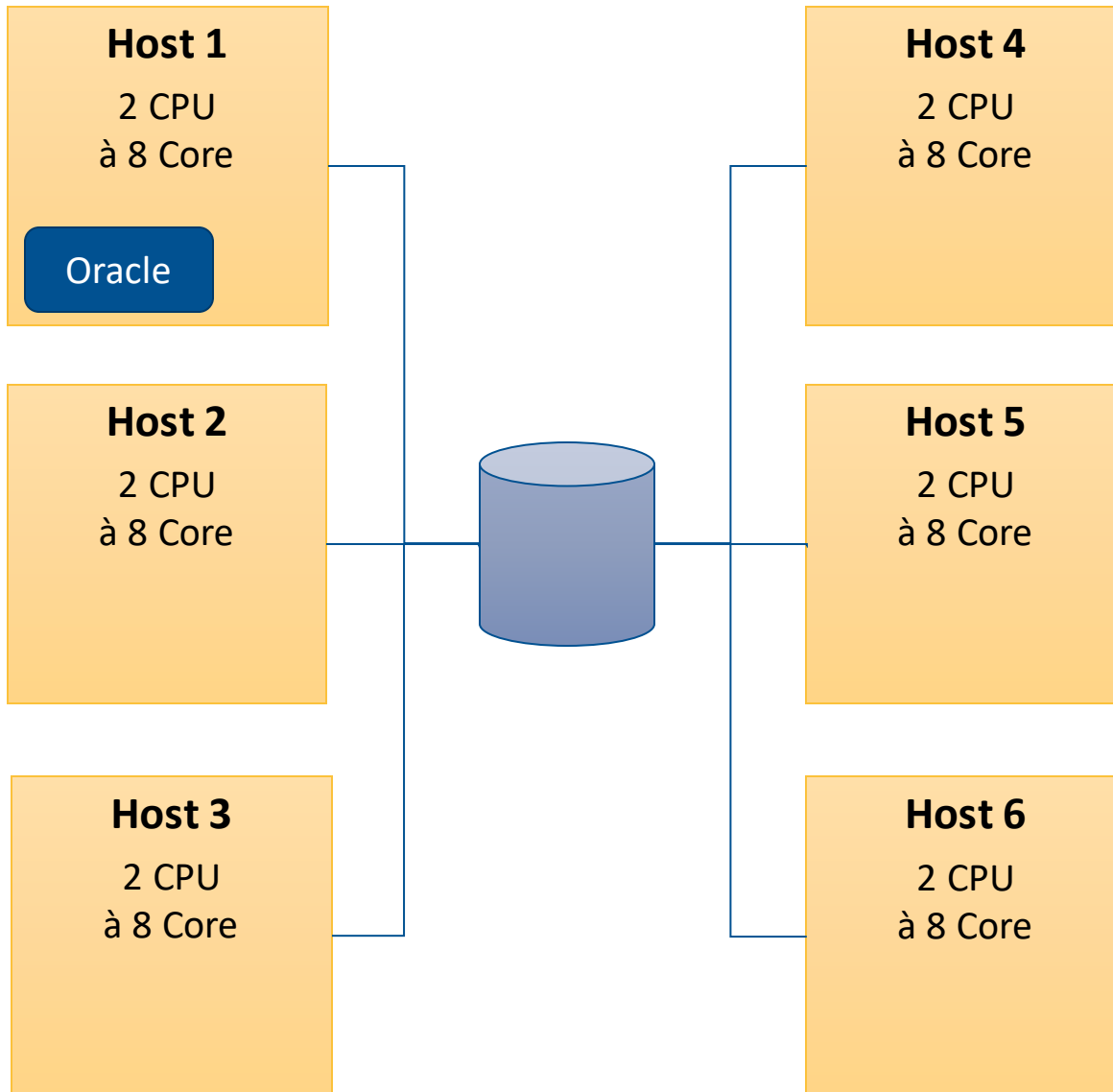


1.920.000 €

Gaaanz sicher keine Enterprise Features verwendet?



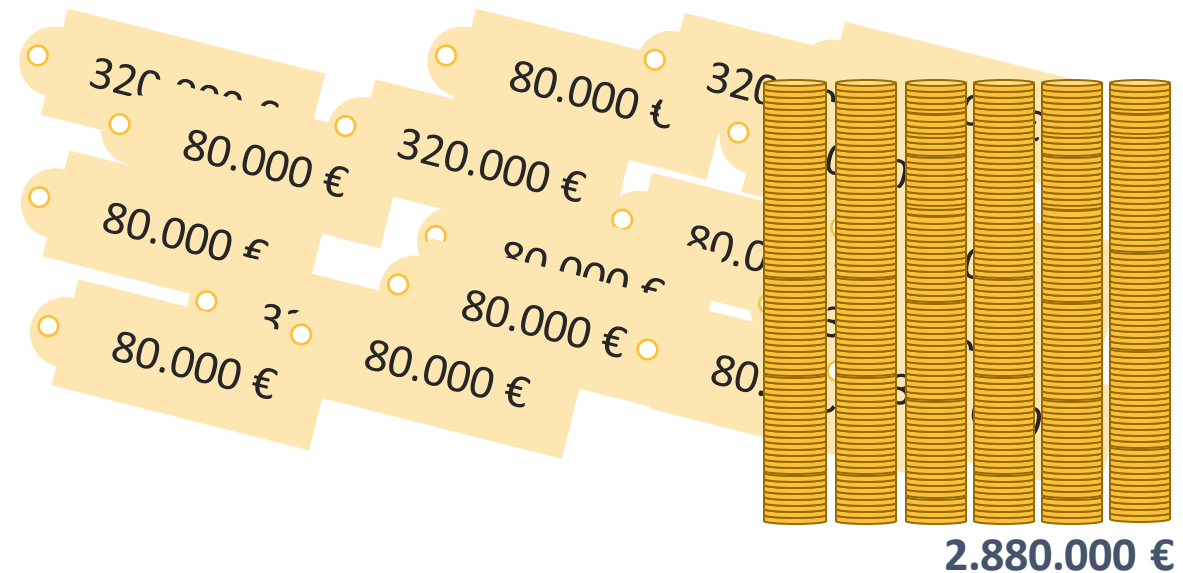
# Oracle Lizenzierung in virtualisierten Umgebungen: Das Dilemma



## Oracle Database Standard Edition 2 Prozessor



## Oracle Database Enterprise Edition Prozessor

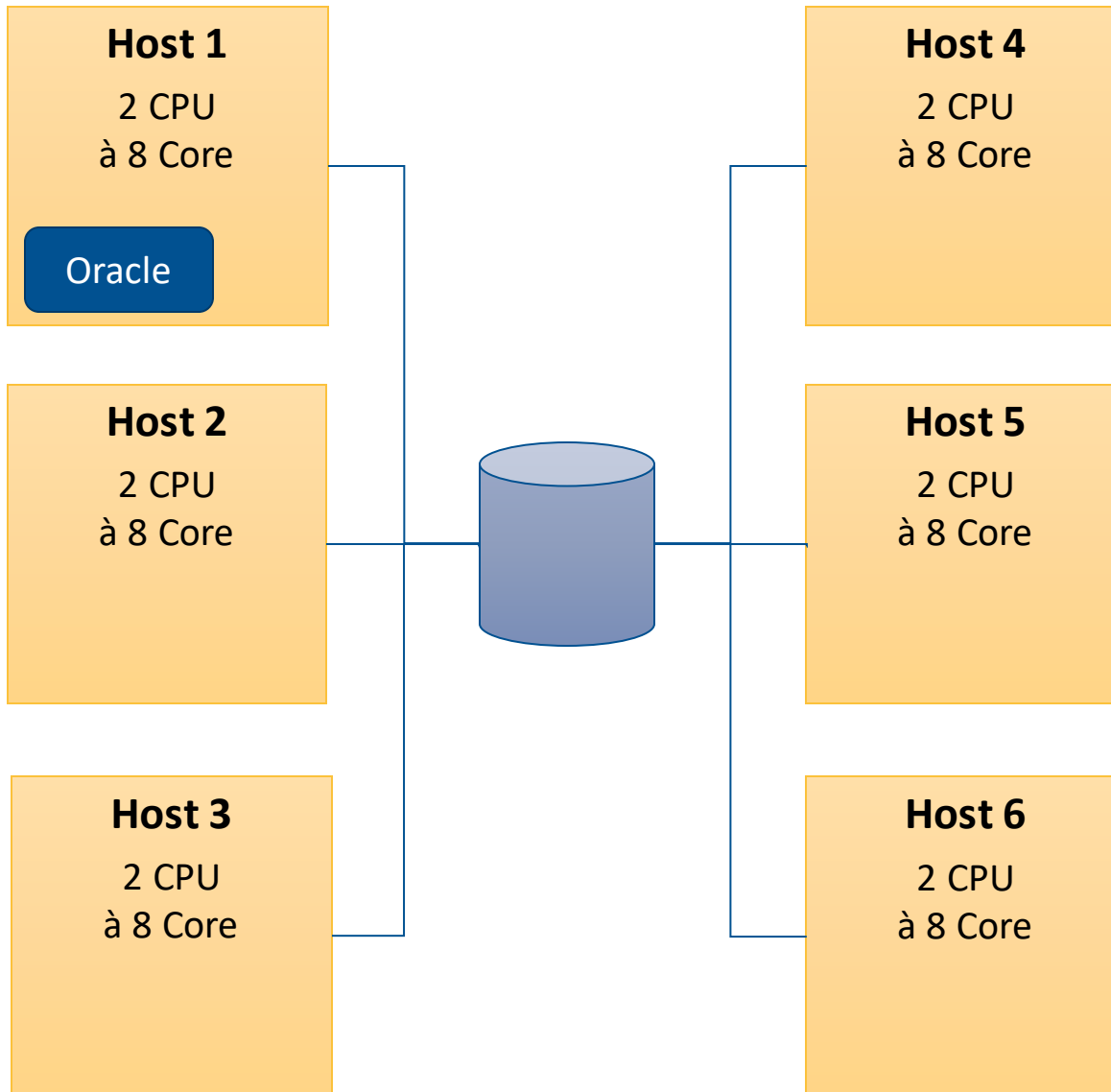






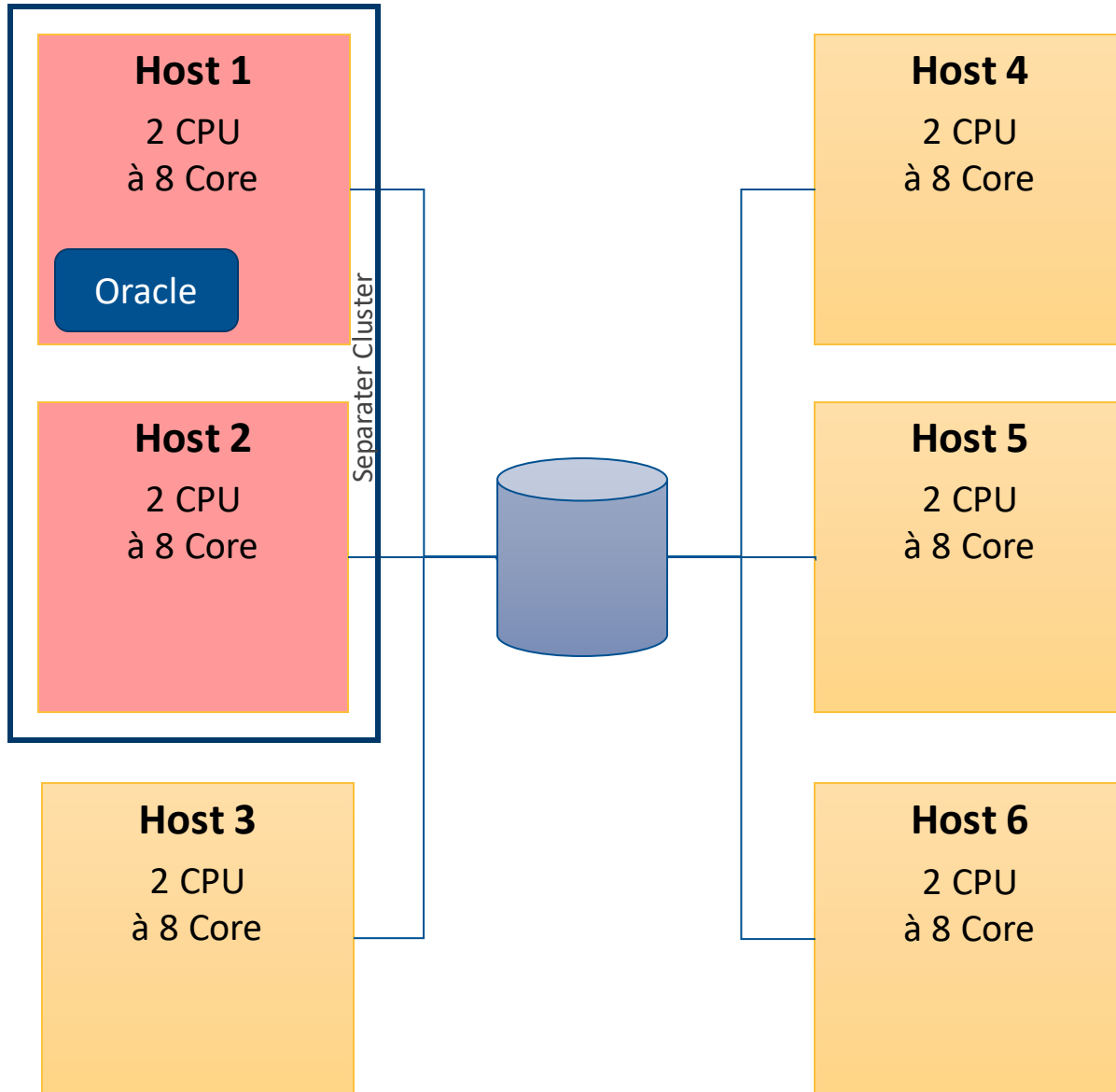


# Oracle Lizenzierung in virtualisierten Umgebungen: Das Dilemma



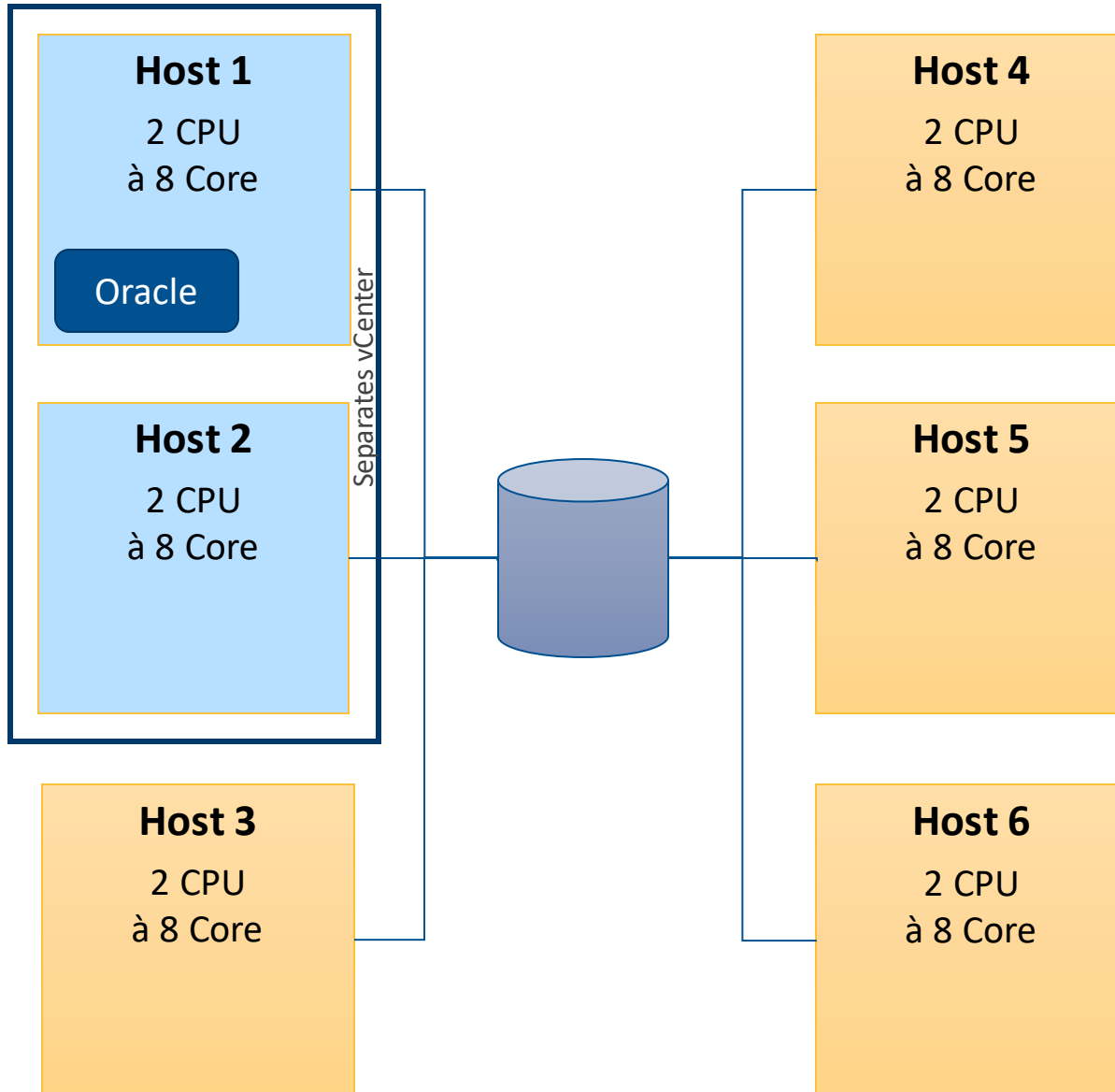


# Oracle Lizenzierung in virtualisierten Umgebungen: Das Dilemma



Separater Cluster: <= VMware 5.0

# Oracle Lizenzierung in virtualisierten Umgebungen: Das Dilemma

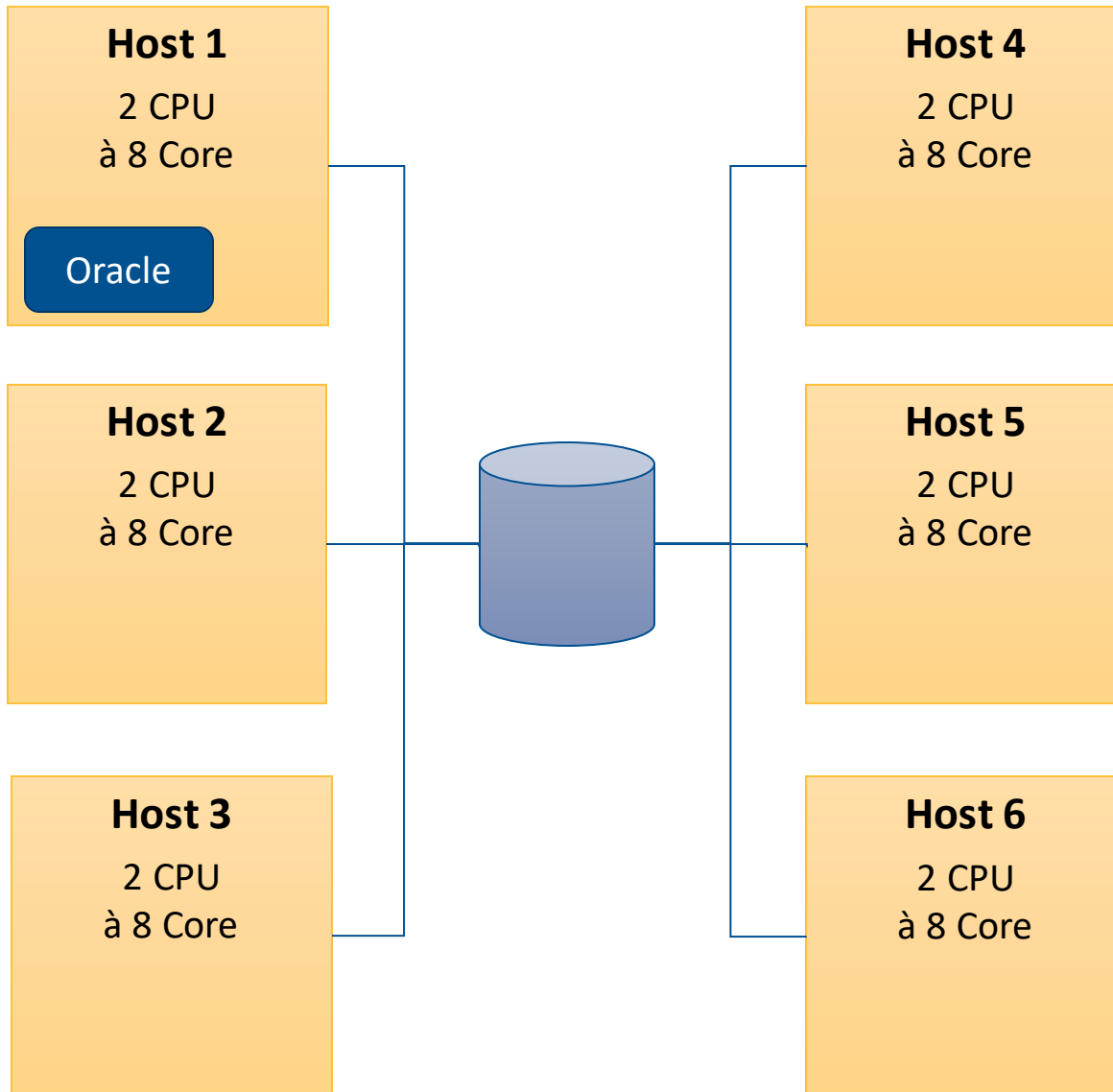


Separater Cluster: <= VMware 5.0

Separates vCenter: <= VMware 5.5



# Oracle Lizenzierung in virtualisierten Umgebungen: Das Dilemma

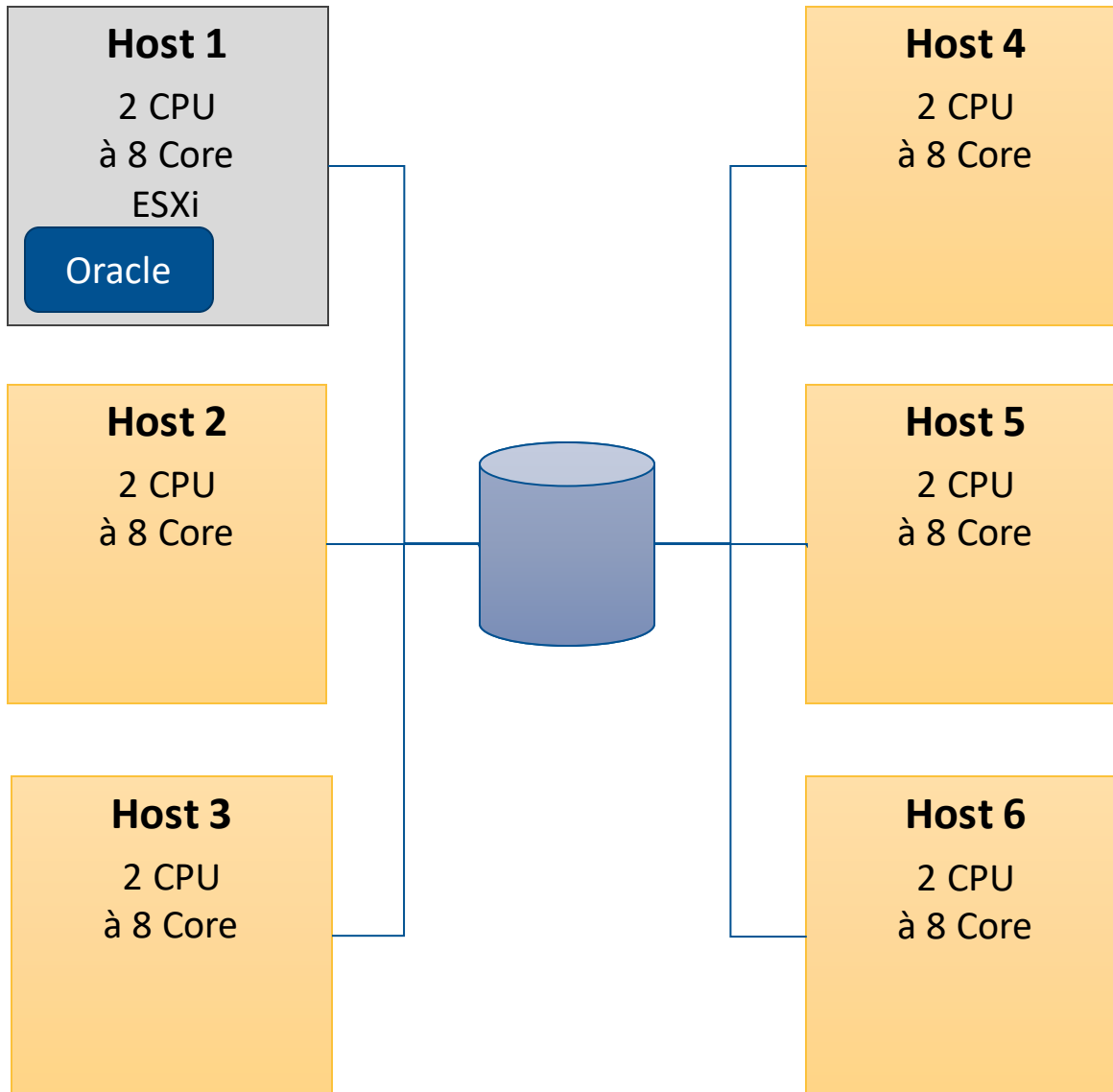


Separater Cluster: <= VMware 5.0

Separates vCenter: <= VMware 5.5

VMware >= 6.0

# Oracle Lizenzierung in virtualisierten Umgebungen: Das Dilemma



Separater Cluster: <= VMware 5.0

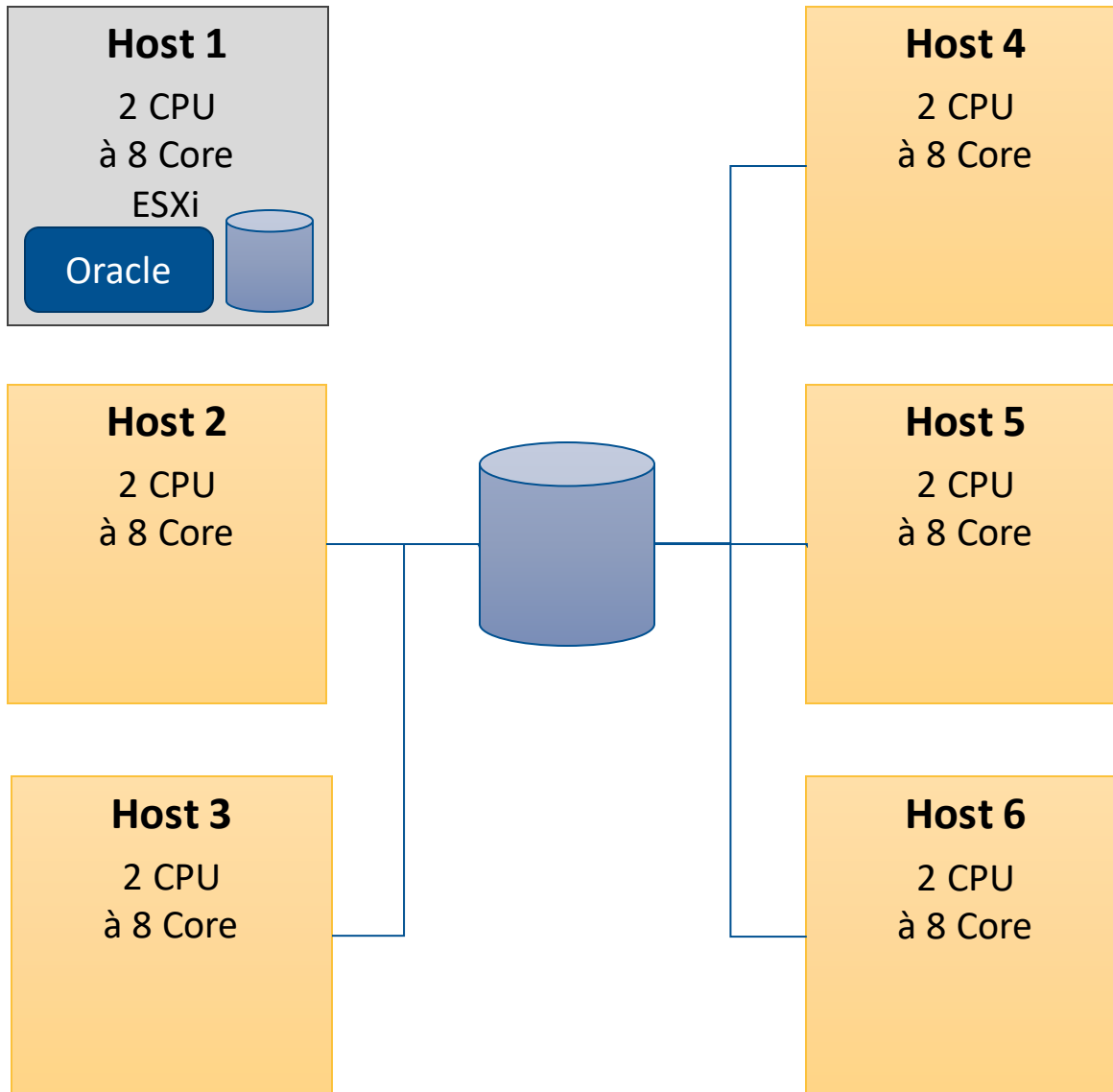
Separates vCenter: <= VMware 5.5

VMware >= 6.0

Shared Storage !



# Oracle Lizenzierung in virtualisierten Umgebungen: Das Dilemma



Separater Cluster: <= VMware 5.0

Separates vCenter: <= VMware 5.5

VMware >= 6.0

Shared Storage !

ESXi + Local Storage

Wer hat VMware im Einsatz?

Wer hat HyperV im Einsatz?

Wer möchte eine zusätzliche Virtualisierungsplattform betreiben?





Wer kennt Oracle VM bereits?

Wer hat Oracle VM im Einsatz?

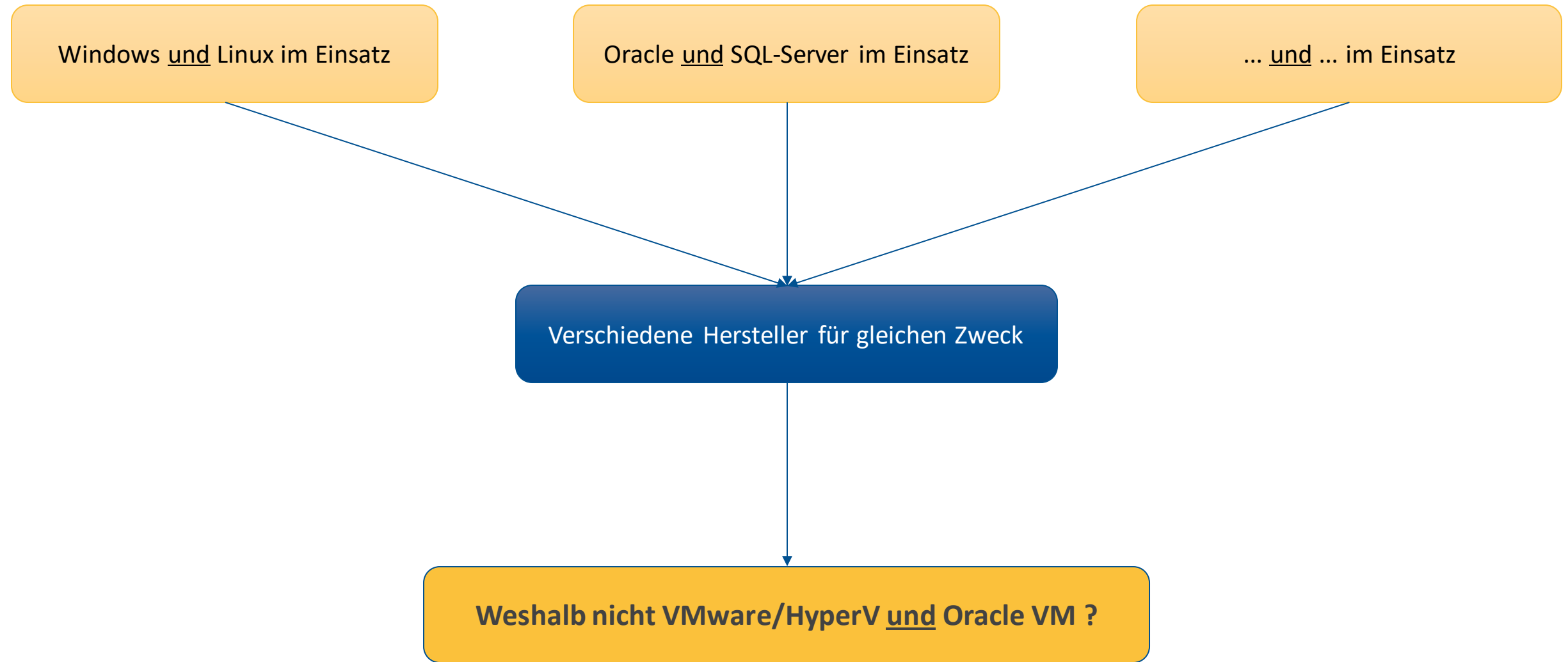




Vorurteile überwinden

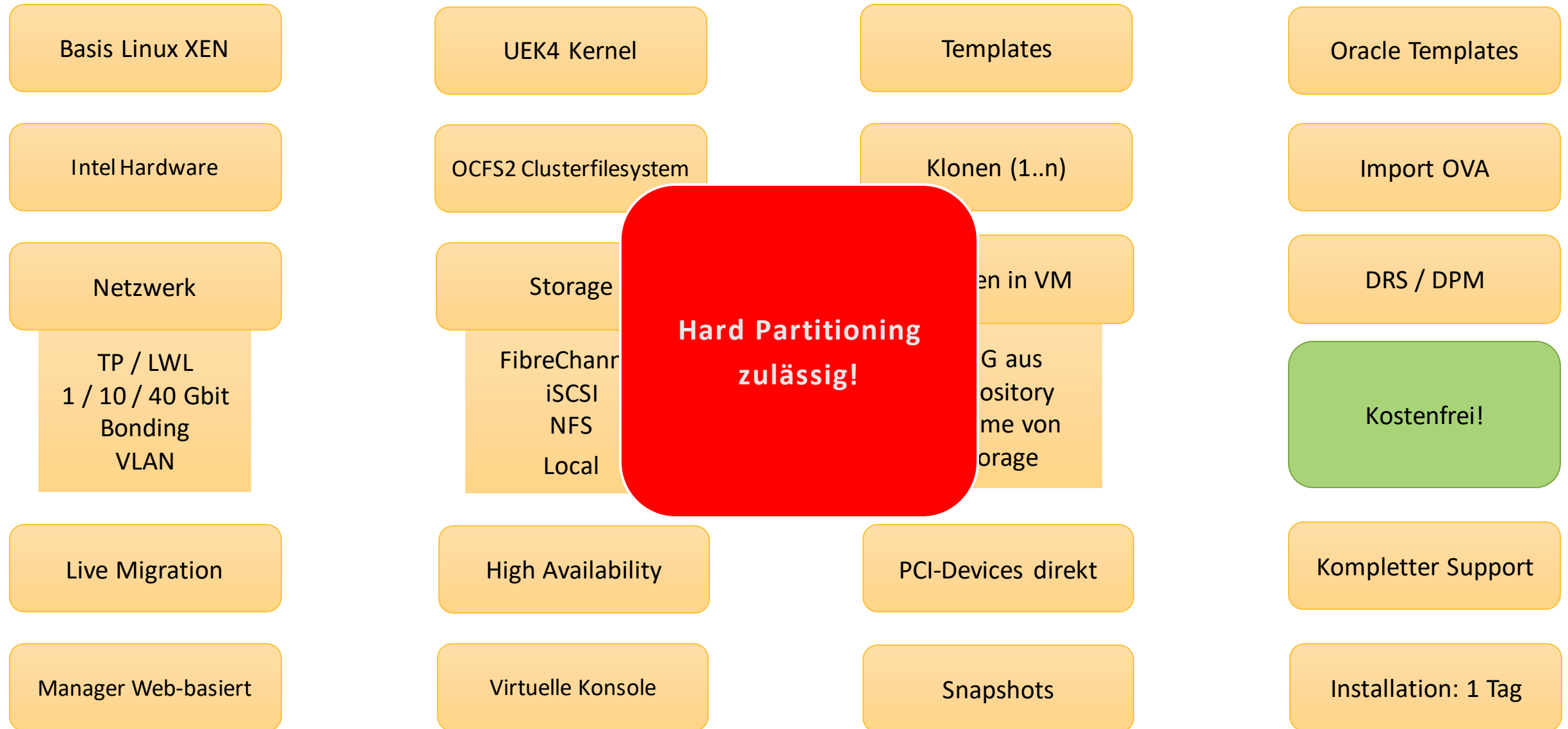


## Warum denn kein Oracle VM?





# Oracle VM (x86) im Überblick



# Oracle VM (x86) im Überblick

Basis Linux XEN

UEK4 Kernel

Intel Hardware

OCFS2 Clusterfilesystem

Netzwerk

**Hard Partitioning  
zulässig!**

Virtuelle Konsole



Import OVA

templates

Oracle Templates

Klonen (1..n)

Platten in VM

VMs

Installation: 1 Tag

Kompletter Support

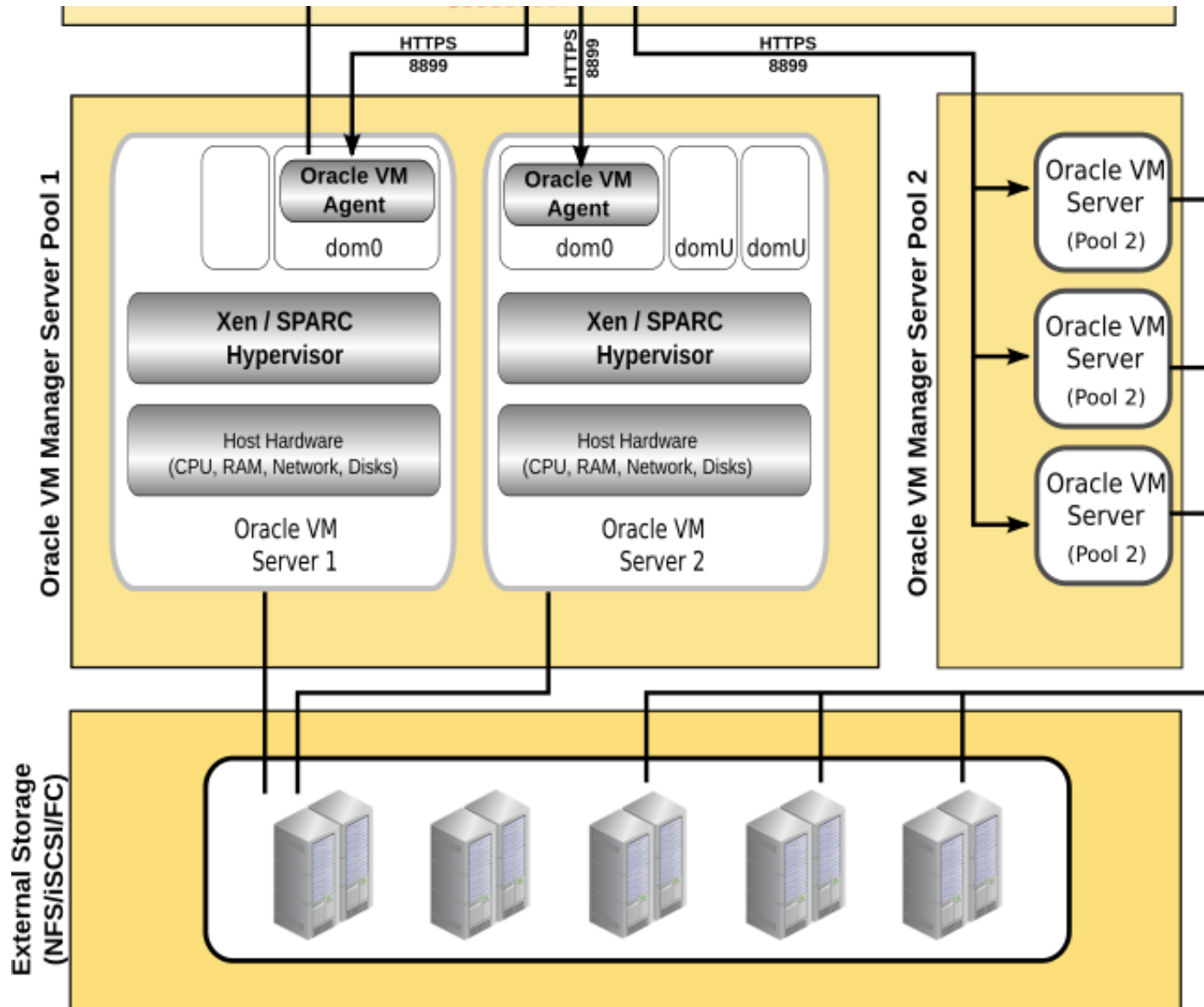
PCI-Devices direkt

Snanshots

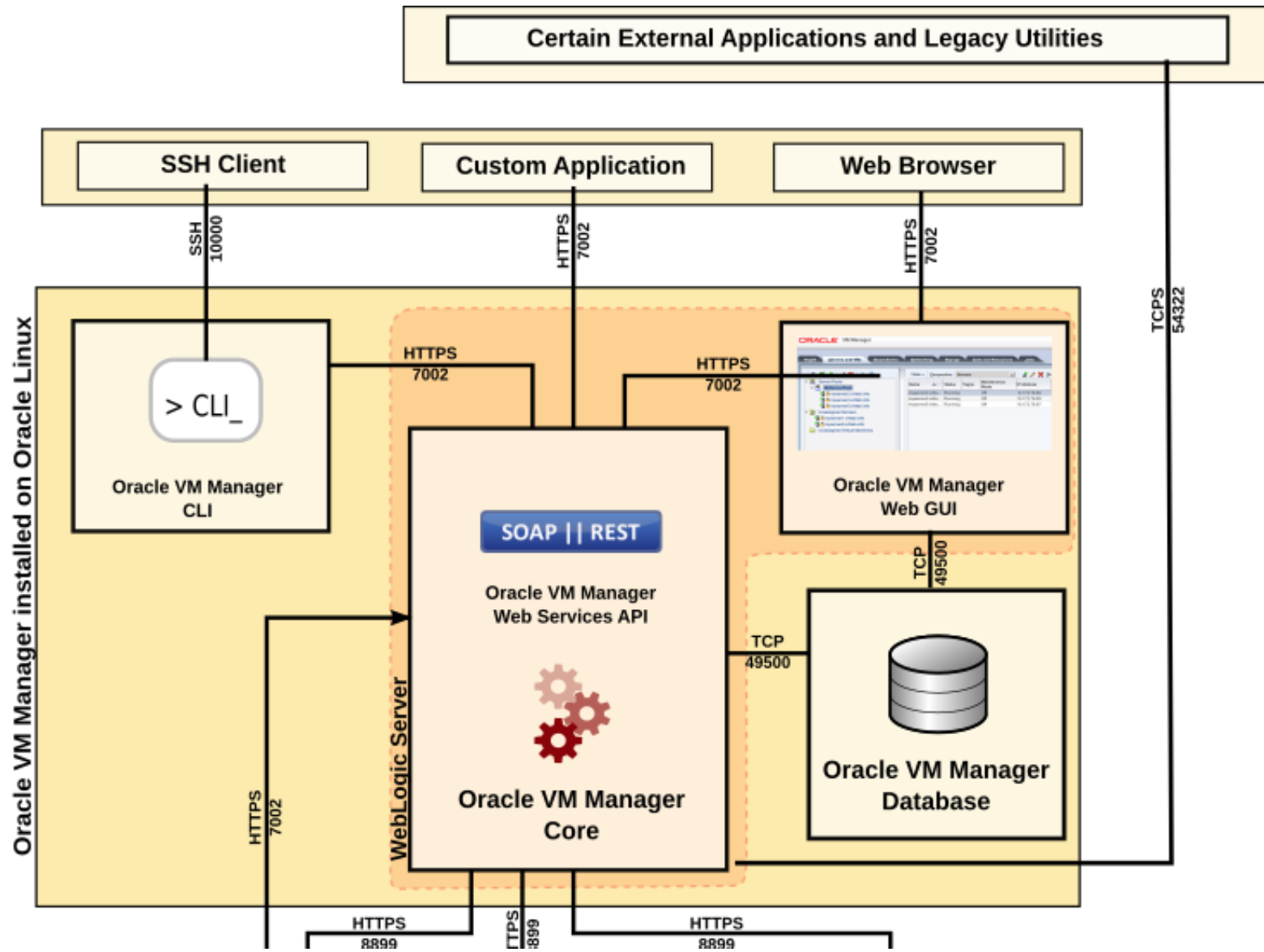
DRS / DPM

Kostentfrei!

# Oracle VM Architektur







# Unterstützte Betriebssysteme

## Oracle Linux

Version 7

Version 6

Version 5

Version 4

## RedHat Linux

Version 7

Version 6

Version 5

Version 4

## Windows

Version 10

Version 8

Version 7

Vista

Server 2016

Server 2012

Server 2008

Server 2003

## Solaris

Version 11

Version 10

## Andere

Anderes Windows

Anderes Linux

Anderes Solaris

„None“

# Oracle VM Screenshots

ORACLE VM Manager

Logged in as: admin [Logout](#) [Settings](#) [Help](#)

Health Servers and VMs Repositories Networking Storage Reports and Resources Jobs

View Perspective: Virtual Machines

Name	Status	Tag(s)	Event Severity	Server	Max. Memory (MB)	Memory (MB)	Max. Processors	Processors	Keymap	Operating System
AO...	Running	Dev,V: Börni	Informational	m2vm2.merlin-z...	6144	6144	4	4	de	Oracle Linux 7
AO...	Running	Test,V: Börni	Informational	m2vm1.merlin-z...	6144	6144	4	4	de	Oracle Linux 7
AP...	Stopped	V: Thomas B	Informational	m2vm3.merlin-z...	2048	2048	4	4	de	Oracle Linux 7
Ast...	Running		Informational	m2vm3.merlin-z...	6072	6072	4	4	de	Oracle Linux 6
DN...	Running	Test	Informational	m2vm3.merlin-z...	2048	2048	4	4	de	Oracle Linux 7
Dis...	Running	Dev	Informational	m2vm1.merlin-z...	4096	4096	2	2	de	Oracle Linux 5
Dis...	Stopped		Informational		4096	4096	2	2	de	Oracle Linux 5
Fer...	Running		Informational	m2vm1.merlin-z...	4096	4096	4	4	de	Oracle Linux 5
HB...	Running	Prod	Informational	m2vm3.merlin-z...	2048	2048	2	2	de	Oracle Linux 6
HBf...	Running	Prod	Informational	m2vm1.merlin-z...	8192	8192	4	4	de	Oracle Linux 6
OL...	Running	Test	Informational	m2vm1.merlin-z...	8192	6144	4	4	de	Oracle Linux 7
OL...	Running	Test	Informational	m2vm1.merlin-z...	8192	6144	4	4	de	Oracle Linux 7
OL...	Stopped		Informational		4096	4096	4	4	en-us	Oracle Linux 7
SW...	Running	Dev	Informational	m2vm2.merlin-z...	4096	2048	4	4	de	Oracle Linux 7
SW...	Running		Informational	m2vm2.merlin-z...	4096	2048	4	4	de	Oracle Linux 7
SW...	Stopped	Dev	Informational		4096	2048	4	4	de	Oracle Linux 7
TF...	Running	Dev	Informational	m2vm3.merlin-z...	8192	6144	4	4	de	Oracle Linux 7
TO ...	Stopped	Test	Informational		4096	4096	2	2	en-us	Oracle Linux 7
TO ...	Stopped	Test	Informational		4096	4096	4	4	en-us	Microsoft Windows...
WI...	Stopped	Test	Informational	m2vm3.merlin-z...	4096	4096	4	4	de	Microsoft Windows...
db_...	Stopped		Informational		16384	16384	8	8	en-us	Oracle Solaris 11
db_...	Running		Informational	m2vm1.merlin-z...	8192	8192	6	6	en-us	Oracle Linux 6
m2...	Running		Informational	m2vm1.merlin-z...	4096	4096	4	4	de	Microsoft Windows...
m2...	Running		Informational	m2vm3.merlin-z...	8192	8192	4	4	de	Oracle Linux 5
m2...	Running		Informational	m2vm3.merlin-z...	6144	6144	4	4	de	Oracle Linux 5
m2...	Running		Informational	m2vm1.merlin-z...	12288	12288	8	8	de	Oracle Linux 5
m2...	Running		Informational	m2vm3.merlin-z...	6144	6144	4	4	de	Oracle Linux 5
m2...	Running		Informational	m2vm2.merlin-z...	24576	16384	8	8	de	Oracle Linux 6
m2...	Running		Informational	m2vm3.merlin-z...	6144	6144	6	6	de	Oracle Linux 5
m2...	Running		Informational	m2vm3.merlin-z...	4096	4096	4	4	de	Oracle Linux 6



# Oracle VM Screenshots

ORACLE VM Manager

Logged in as: admin [Logout](#) [Settings](#) [Help](#)

Health Servers and VMs **Repositories** Networking Storage Reports and Resources Jobs

☒ Show My Repositories  
☐ Show All Repositories

**Repositories**

- VM Repo SAS Dell
  - ISOs
  - VM Files
  - VM Templates
  - Virtual Appliances
  - Virtual Disks
- VM Repo SAS Infortrend
  - ISOs
  - VM Files
  - VM Templates
  - Virtual Appliances
  - Virtual Disks

View Perspective: Repositories

Name	File System	File System Size (GiB)				
		Free	Used	Total	Apparent	Capacity (%)
VM Repo SAS Dell	0004fb00000500004a1312d980d49b68 [fs on VM Re...	1246.46	2849.54	4096.0	4298.31	104.9
VM Repo SAS Infortrend	0004fb00000500005071b8a5e721e4e0 [fs on VM Re...	311.32	2481.99	2793.31	6196.97	221.9

Columns Hidden 1

# Oracle VM Screenshots

**ORACLE** VM Manager Logged in as: admin [Logout](#) [Settings](#) [Help](#)

**Health** **Servers and VMs** **Repositories** **Networking** **Storage** **Reports and Resources** **Jobs**

**Networks** **VLAN Interfaces** **Virtual NICs**

View

Name ▲▼	ID	Intra-Network Server	Network Channels					Description
			Server Management	Cluster Heartbeat	Live Migrate	Storage	Virtual Machine	
LiveMigrate	10ff8b5d69				√			
Management Heartbeat	c0a81e00		√	√				
m2Intern Admin Vertrieb	105fe5e4ba						√	
m2Intern Entwicklung	10171c6a8e						√	
m2Intern Servernetz	10875aa385						√	
m2Internet	103e56861d						√	

# Oracle VM Screenshots

ORACLE VM Manager

Logged in as: admin [Logout](#) [Settings](#) [Help](#)

Health Servers and VMs Repositories **Networking** Storage Reports and Resources Jobs

Networks **VLAN Interfaces** Virtual NICs

Server Pools

- Oracle VM-Pool
  - m2vm1.merlin-zwo.intern
    - bond0 on m2vm1.merlin-zwo.intern
    - bond1 on m2vm1.merlin-zwo.intern**
    - em2 on m2vm1.merlin-zwo.intern
  - m2vm2.merlin-zwo.intern
    - bond0 on m2vm2.merlin-zwo.intern
    - bond1 on m2vm2.merlin-zwo.intern
    - em2 on m2vm2.merlin-zwo.intern
  - m2vm3.merlin-zwo.intern
    - bond0 on m2vm3.merlin-zwo.intern
    - bond1 on m2vm3.merlin-zwo.intern
    - em2 on m2vm3.merlin-zwo.intern
- Unassigned Servers

View + - ?

Name	VLAN ID	Server Pool	Server	Port	MTU	Network	Addressing			Description
							Type	IP Address	Netmask	
bond1.100 on m2v...	100	Oracle VM-...	m2vm1.merl...	bond1 on m2vm1...	1500	m2Intern Admin ...				
bond1.101 on m2v...	101	Oracle VM-...	m2vm1.merl...	bond1 on m2vm1...	1500	m2Intern Entwic...				
bond1.116 on m2v...	116	Oracle VM-...	m2vm1.merl...	bond1 on m2vm1...	1500	LiveMigrate	Static	10.30.150.15	255.255.255.0	



# Oracle VM Screenshots

**ORACLE** VM Manager Logged in as: admin [Logout](#) [Settings](#) [Help](#)

**Health** **Servers and VMs** **Repositories** **Networking** **Storage** **Reports and Resources** **Jobs**

File Servers

SAN Servers

Unmanaged FibreChannel Storage Arra

**FibreChannel Volume Group**

Unmanaged iSCSI Storage Array

iSCSI Volume Group



Local File Systems

Shared File Systems

View ▾ Perspective: **Physical Disks** ▾

Name ▲ ▾	Event Severity	Size (GiB)	Server	Status	Shareable	Description
▶ VM PoolFS	Informational	25.0	m2vm1.merlin-zwo....		No	
▶ VM Repo SAS ...	Informational	4096.0	m2vm1.merlin-zwo....		Yes	
▶ VM Repo SAS I...	Informational	2793.31	m2vm1.merlin-zwo....		Yes	
▶ m2vm1 Boot	Informational	16.0	m2vm1.merlin-zwo....		No	
▶ m2vm2 Boot	Informational	16.0	m2vm2.merlin-zwo....		No	
▶ m2vm3 Boot	Informational	16.0	m2vm3.merlin-zwo....		No	

# Oracle VM Screenshots

 **Create Virtual Machine** 

Create Virtual Machine

Set up Networks

Arrange Disks

Boot Options

Tags(Optional)

\* Server Pool:  
Server:  
\* Repository:  
\* Name:  
  
Description:



Oracle VM-Pool  
m2vm1.merlin-zwo.intern  
VM Repo SAS Dell  
DOAG  
☒ Enable High Availability ⓘ  
☐ Enable Huge Pages ⓘ

Operating System:  
Mouse Device Type:  
Keymap:  
Domain Type:  
Start Policy:  
Max. Memory (MB):  
Memory (MB):  
Max. Processors:  
Processors:  
Priority:  
Processor Cap %:  
Restart Action On Crash:

Oracle Linux 7  
OS Default  
de (German)  
Xen HVM PV Drivers  
Best Server  
16384  
8192  
8 ⓘ  
4  
50  
100  
Restart ⓘ

Cancel

Next

 **Create Virtual Machine** 

Create Virtual Machine

**Set up Networks**

Arrange Disks

Boot Options

Tags(Optional)

Slot	MAC Address	Network	Action
0		m2Intern Servernetz	✗
1		m2Intern Admin Vertrieb	✗

Add a Virtual NIC to this Virtual Machine:

☒ Dynamically Assign MAC

☐ Specify MAC Address:

Network:

Create Virtual Machine








Set up Networks

Arrange Disks

Boot Options

Tags(Optional)

Set the slot positions for your ISOs and disks:

Slot	Disk Type	Name	Size (GiB)	Actions
0	Virtual Disk	racinnen_mgmt_disk	32.0	   
1	Physical Disk	Empty	N/A	
2	CD/DVD	Empty CDROM	0.0	 
3	Empty			
4	Empty			
5	Empty			
6	Empty			
7	Empty			
8	Empty			

Previous

Cancel

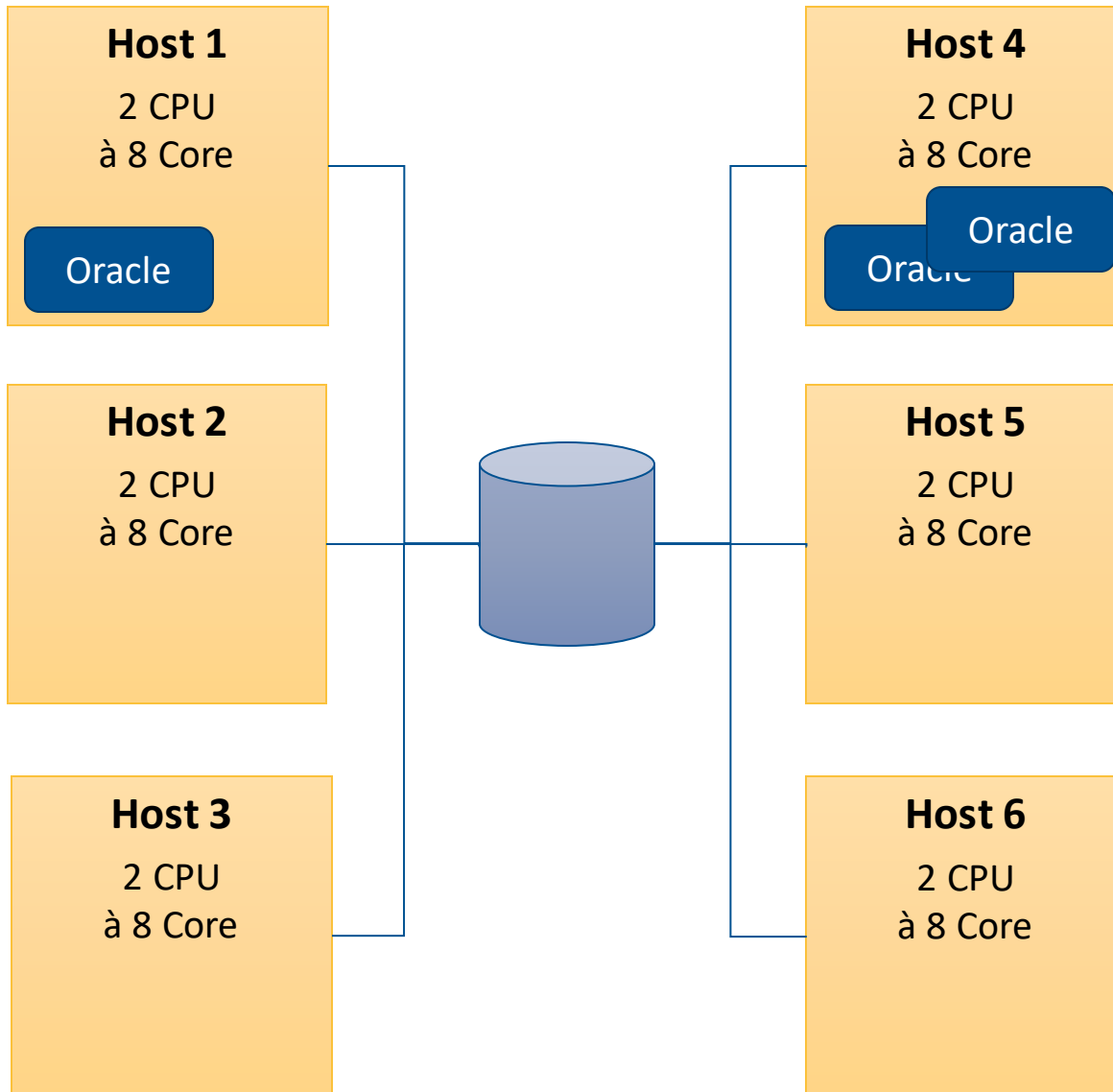
Next



Das Positive sehen



## Oracle VM (x86) spezielle Lizenzierungsregeln



### Oracle Database Standard Edition 2 Prozessorlizenzen

30.000 €  
30.000 €  
30.000 €

### Oracle Database Enterprise Edition Prozessorlizenzen

320.000 €  
320.000 €  
320.000 €

## CPU Pinning

vCPUs müssen an physikalische Cores oder Threads gepinnt werden.

vCPUs werden dadurch nicht auf anderen physikalischen CPUs scheduled.

### # xm info

```
...  
nr_cpus           : 16  
nr_nodes          : 1  
cores_per_socket  : 8  
threads_per_core  : 2  
cpu_mhz           : 2800  
...
```

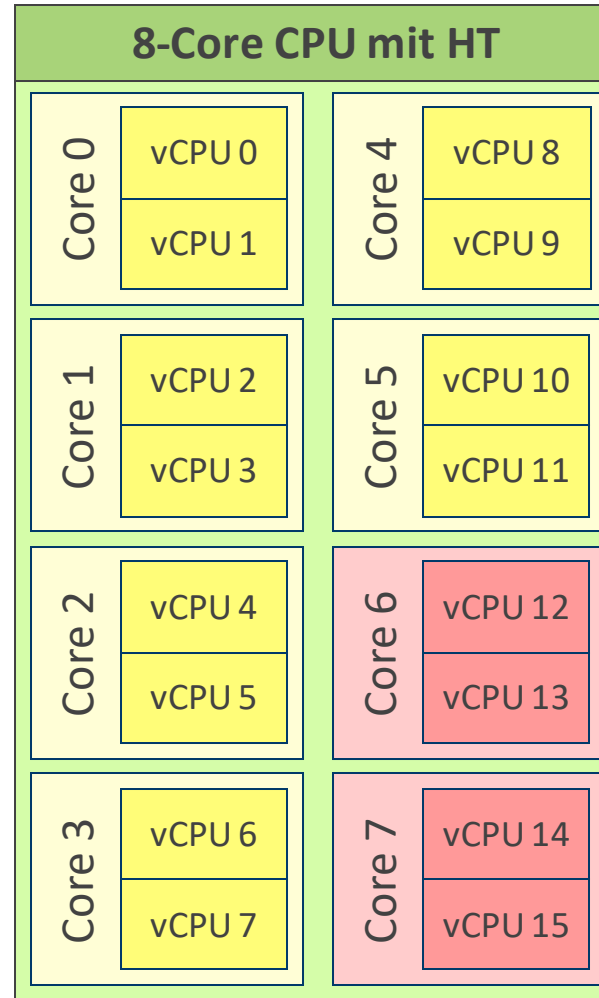
### # xenpm get-cpu-topology

CPU	core	socket	node
CPU0	0	0	0
CPU1	0	0	0
CPU2	1	0	0
CPU3	1	0	0
CPU4	2	0	0
CPU5	2	0	0
CPU6	3	0	0
CPU7	3	0	0
CPU8	4	0	0
CPU9	4	0	0
CPU10	5	0	0
CPU11	5	0	0
CPU12	6	0	0
CPU13	6	0	0
CPU14	7	0	0
CPU15	7	0	0

# Oracle VM Hard Partitioning

## # xenpm get-cpu-topology

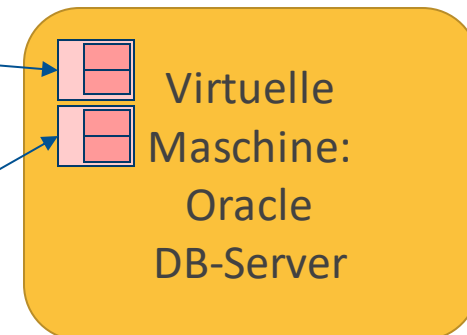
CPU	core	socket	node
CPU0	0	0	0
CPU1	0	0	0
CPU2	1	0	0
CPU3	1	0	0
CPU4	2	0	0
CPU5	2	0	0
CPU6	3	0	0
CPU7	3	0	0
CPU8	4	0	0
CPU9	4	0	0
CPU10	5	0	0
CPU11	5	0	0
CPU12	6	0	0
CPU13	6	0	0
CPU14	7	0	0
CPU15	7	0	0



## CPU Pinning

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## Oracle VM Hard Partitioning

### # xenpm get-cpu-topology

CPU	core	socket	node
CPU0	0	0	0
CPU1	0	0	0
CPU2	1	0	0
CPU3	1	0	0
CPU4	2	0	0
CPU5	2	0	0
CPU6	3	0	0
CPU7	3	0	0
CPU8	4	0	0
CPU9	4	0	0
CPU10	5	0	0
CPU11	5	0	0
CPU12	6	0	0
CPU13	6	0	0
CPU14	7	0	0
CPU15	7	0	0

```
./ovm_vmcontrol -u admin -h localhost -v DOAG -c getvcpu
Oracle VM VM Control utility 2.1.
Enter your OVM Manager password:
Connecting to OVM Manager using Web Service.
Connected.
OVM Manager version: 3.4.3.1511
Command : getvcpu
Getting pinned CPU list...
No CPU pinned for VM 'DOAG'
```

Oracle VM3 Utilities notwendig: Patch ID 13602094

## Oracle VM Hard Partitioning

### # xenpm get-cpu-topology

CPU	core	socket	node
CPU0	0	0	0
CPU1	0	0	0
CPU2	1	0	0
CPU3	1	0	0
CPU4	2	0	0
CPU5	2	0	0
CPU6	3	0	0
CPU7	3	0	0
CPU8	4	0	0
CPU9	4	0	0
CPU10	5	0	0
CPU11	5	0	0
<b>CPU12</b>	<b>6</b>	<b>0</b>	<b>0</b>
<b>CPU13</b>	<b>6</b>	<b>0</b>	<b>0</b>
<b>CPU14</b>	<b>7</b>	<b>0</b>	<b>0</b>
<b>CPU15</b>	<b>7</b>	<b>0</b>	<b>0</b>

```
./ovm_vmcontrol -u admin -h localhost -v DOAG -c setvcpu -s 12-15
```

Oracle VM VM Control utility 2.1.

Enter your OVM Manager password:

Connecting to OVM Manager using Web Service.

Connected.

OVN Manager version: 3.4.3.1511

Command : setvcpu

**Pinning vCPU '12-15' to VM 'DOAG'**

**Pin vCPU succeed.**

```
./ovm_vmcontrol -u admin -h localhost -v DOAG -c getvcpu
```

Oracle VM VM Control utility 2.1.

Enter your OVM Manager password:

Connecting to OVM Manager using Web Service.

Connected.

OVN Manager version: 3.4.3.1511

Command : getvcpu

Getting pinned CPU list...

**Current pinned CPU:12-15**

xm vcpu-list

Name	ID	VCPU	CPU	State	Time(s)	CPU Affinity
.....						
0004fb000006000005dd9d58fadcaf90	19	0	15	-b-	280475.8	12-15
0004fb000006000005dd9d58fadcaf90	19	1	13	-b-	247162.2	12-15
0004fb000006000005dd9d58fadcaf90	19	2	15	-b-	71951.7	12-15
0004fb000006000005dd9d58fadcaf90	19	3	14	-b-	58059.3	12-15
.....						

### CPU Pinning

vCPUs **müssen** an physikalische Cores oder Threads gepinnt werden.  
vCPUs werden dadurch nicht auf anderen physikalischen CPUs scheduled.

### Live Migration

Live Migration einer gepinnten virtuellen Maschine auf einen anderen Oracle VM Server ist **nicht erlaubt!**

### DRS und DPM

DRS (Distributed Resource Scheduler) und DPM (Distributed Power Management) **müssen ausgeschaltet sein!**

### Manuelle Migration

VM herunterfahren – VM auf anderen Server verschieben – VM wieder starten **ist erlaubt.**

### High Availability

Eine VM als hochverfügbar zu markieren (automatischer Neustart nach einem Ausfall) **ist erlaubt.**





## Oracle Dokument partitioning-070609.pdf

### Soft Partitioning:

Examples of such partitioning type include: Solaris 9 Resource Containers, AIX Workload Manager, HP Process Resource Manager, Affinity Management, **Oracle VM, and VMware.**

Unless explicitly stated elsewhere in this document, **soft partitioning** (including features/functionality of any technologies listed as examples above) **is not permitted** as a means **to determine or limit the number of software licenses required** for any given server or cluster of servers.

### Hard Partitioning:

Approved hard partitioning technologies include: **Physical Domains** (also known as PDomains, Dynamic Domains, or Dynamic System Domains), **Solaris Zones** (also known as Solaris Containers, capped Zones/Containers only), **IBM's LPAR** (adds DLPAR with AIX 5.2), **IBM's Micro-Partitions** (capped partitions only), **vPar** (capped partitions only), **nPar**, **Integrity Virtual Machine** (capped partitions only), **Secure Resource Partitions** (capped partitions only), **Fujitsu's PPAR**. All approved hard partitioning technologies must have a capped or a maximum number of cores/processors for the given partition.

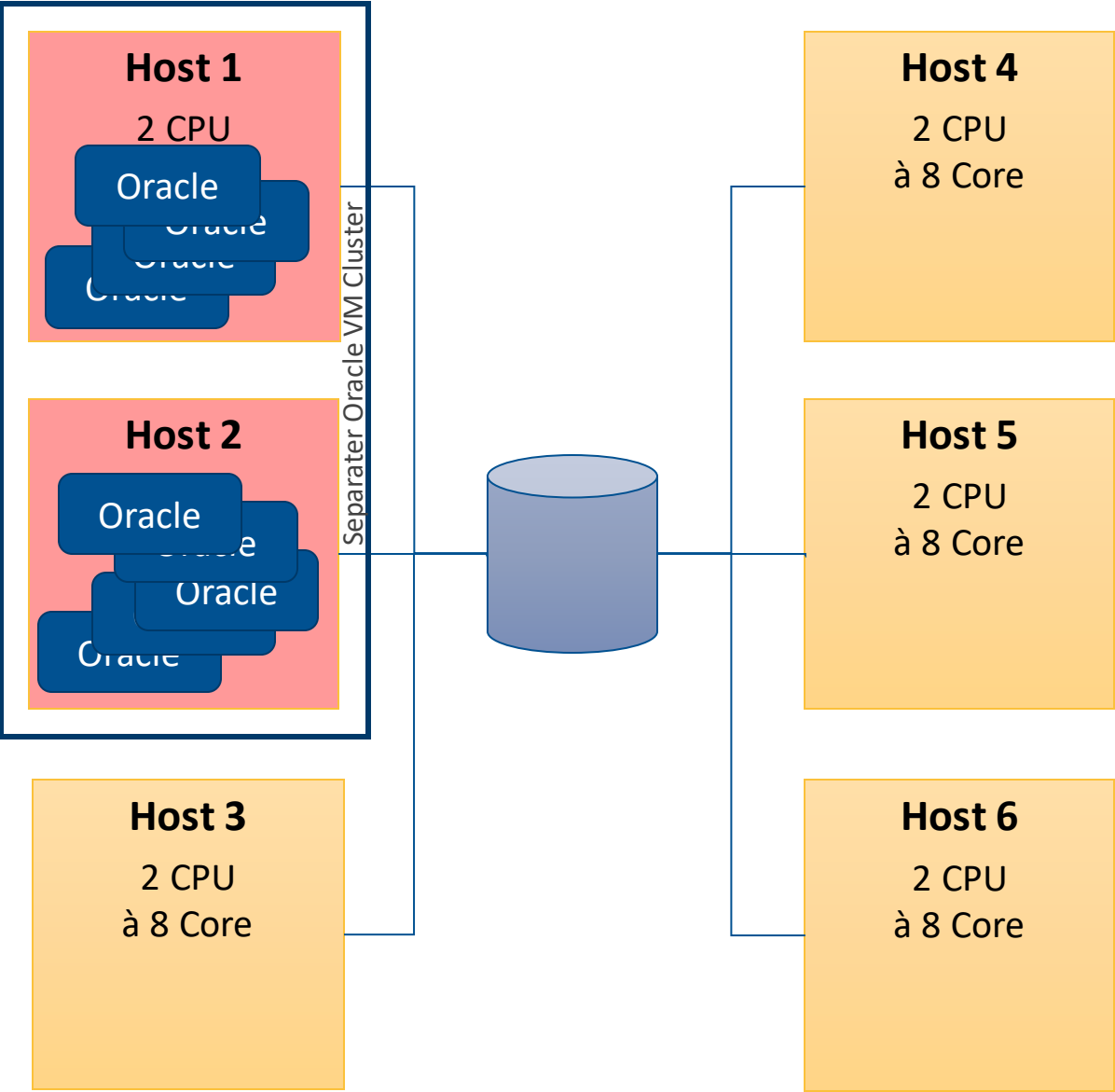
**Oracle VM Server may be used as hard partitioning technology only as described in the following documents:**

- Oracle VM Server for x86, only if specific cores are allocated per the following document:
  - <http://www.oracle.com/technetwork/server-storage/vm/ovm-hardpart-168217.pdf>

Die Chancen nutzen



# Zusätzliche Oracle VM Umgebung: Lizenzierung



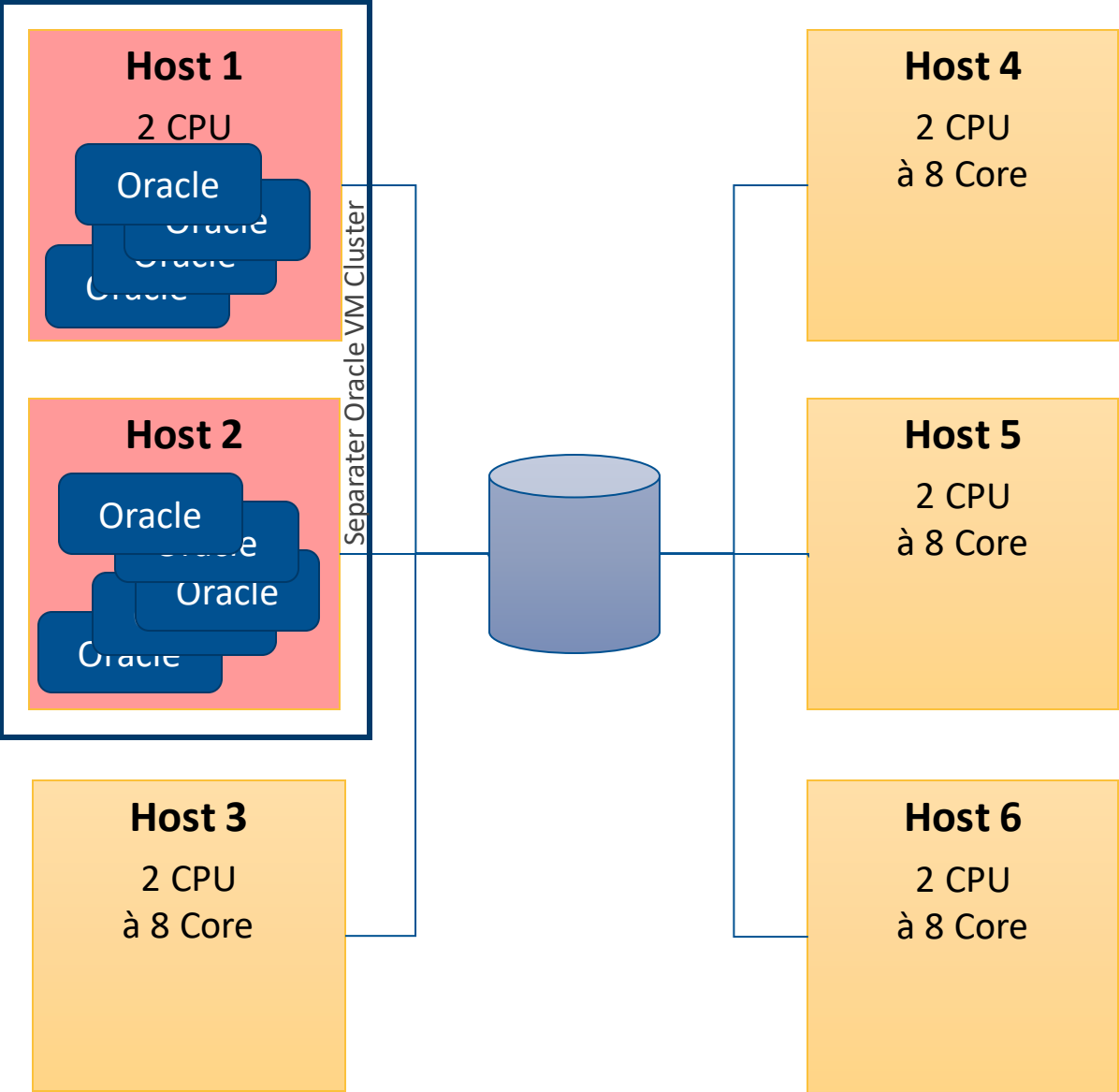
## Separater Oracle VM Cluster

Lizenzierung Oracle Database SE2 CPU	
Oracle VM	VMware komplett
Lizenzen  60.000 €	Lizenzen  180.000 €
Support  13.200 €	Support  39.600 €

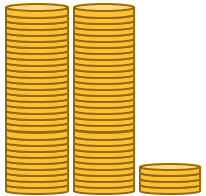
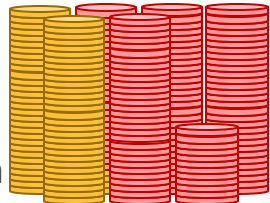


Differenz 1. Jahr 146.400 €

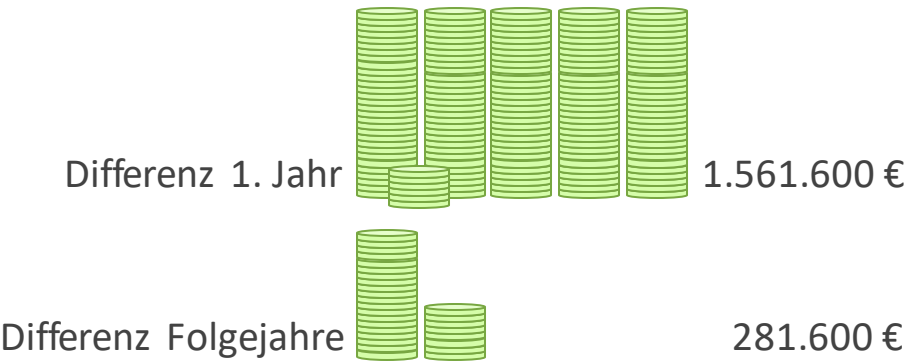
Differenz Folgejahre 26.400 €

# Zusätzliche Oracle VM Umgebung: Lizenzierung



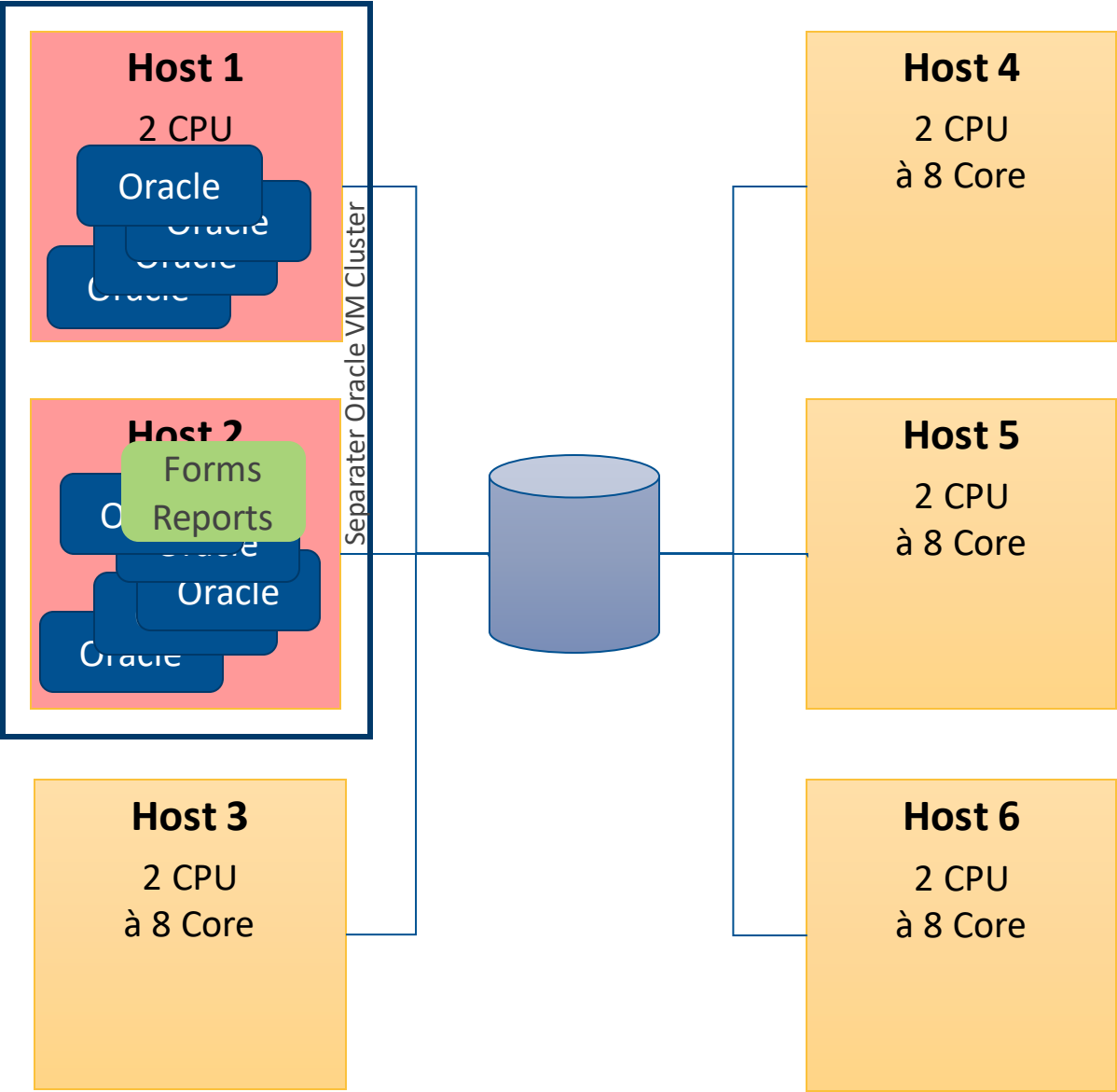
## Separater Oracle VM Cluster

Lizenzierung Oracle Database EE CPU	
Oracle VM	VMware komplett
Lizenzen  640.000 €	Lizenzen  1.920.000 €
Support  140.800 €	Support  422.400 €





# Zusätzliche Oracle VM Umgebung: Lizenzierung



## Separater Oracle VM Cluster

Oracle Forms / Reports 10 NUP auf 4 vCPU gepinnt	
Oracle VM	VMware komplett
Lizenzen 4.000 €	Lizenzen 192.000 €
Support 880 €	Support 42.240 €

**Faktor 48 !**

Differenz 1. Jahr 229.360 €

Differenz Folgejahre 41.360 €

## Zusätzliche Oracle VM Umgebung: Gegenüberstellung Kosten 5 Jahre

VMware	
4 Server à 2 CPU à 8 Core	
Oracle Standard Edition 2	
Oracle Forms + Reports <del>10 NUP</del> -> 320 NUP	

SE2 Lizenzen: 8 x 15.000 €	120.000 €
SE2 Wartung und Support 22% x 5	132.000 €
Forms + Reports 320 NUP x 400 €	128.000 €
<u>F+R Wartung und Support 22% x 5</u>	<u>140.800 €</u>
Summe	520.800 €

Oracle VM	
3 Server à 2 CPU à 8 Core für VMware	
2 Server à 2 CPU à 8 Core für Oracle VM (+1 Server)	
Oracle Standard Edition 2	
Oracle Forms + Reports 10 NUP (Hard Partition)	

SE2 Lizenzen: 4 x 15.000 €	60.000 €
SE2 Wartung und Support 22% x 5	66.000 €
Forms + Reports 10 NUP x 400 €	4.000 €
F+R Wartung und Support 22% x 5	4.400 €
<u>1 zusätzlicher Server inkl. Support</u>	<u>12.000 €</u>
Summe	146.400 €

Einsparung 5 Jahre:	374.400 €
Einsparung pro Jahr:	74.880 €

## Zusätzliche Oracle VM Umgebung: Gegenüberstellung Kosten 5 Jahre

VMware	
4 Server à 2 CPU à 8 Core	
Oracle Enterprise Edition	
Oracle Forms + Reports <del>10 NUP</del> -> 320 NUP	

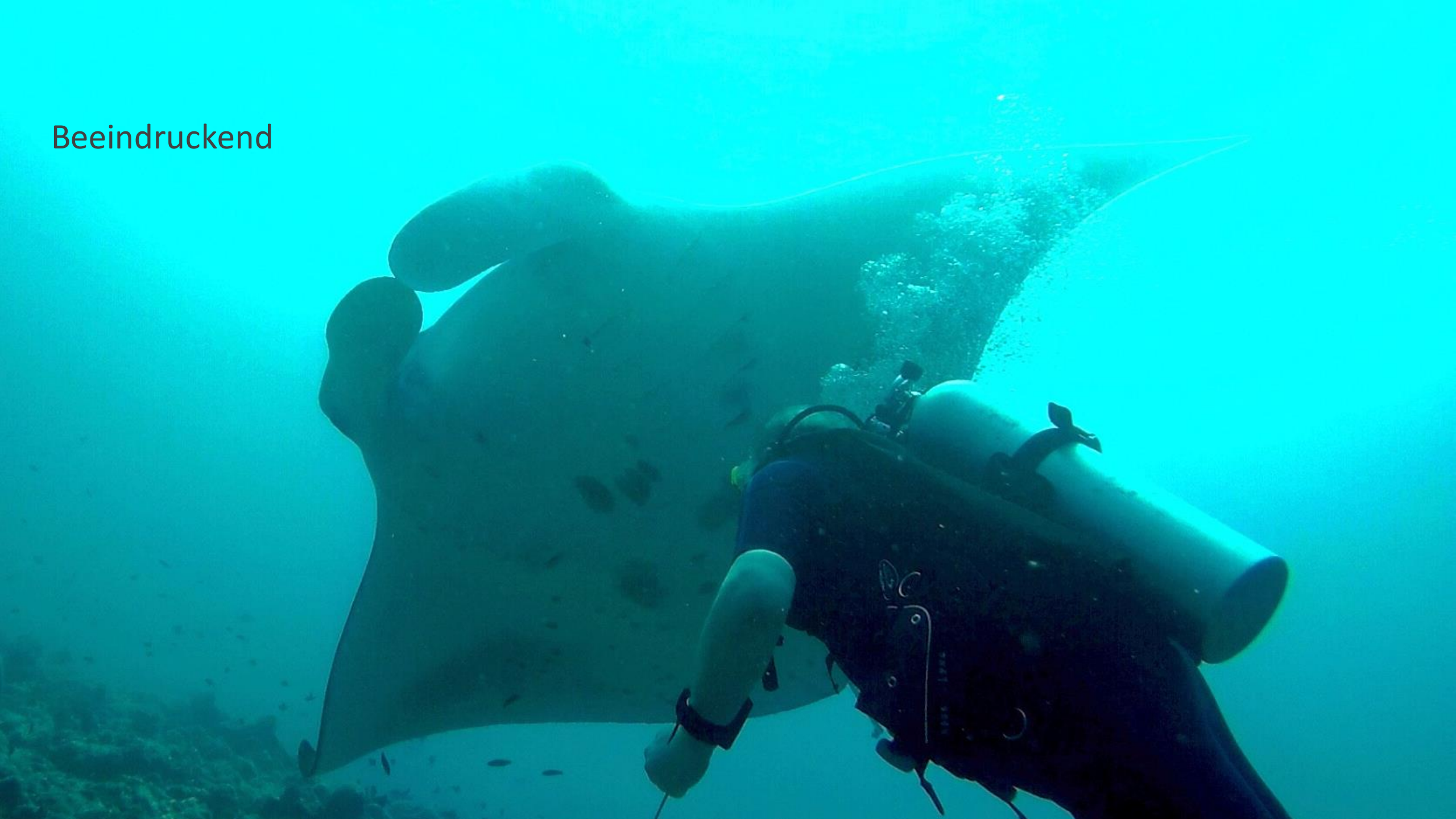
EE Lizenzen: 32 x 40.000 €	1.280.000 €
EE Wartung und Support 22% x 5	1.408.000 €
Forms + Reports 320 NUP x 400 €	128.000 €
<u>F+R Wartung und Support 22% x 5</u>	<u>140.800 €</u>
Summe	2.956.800 €

Oracle VM	
3 Server à 2 CPU à 8 Core für VMware	
2 Server à 2 CPU à 8 Core für Oracle VM (+1 Server)	
Oracle Enterprise Edition	
Oracle Forms + Reports 10 NUP (Hard Partition)	

EE Lizenzen: 16 x 40.000 €	640.000 €
EE Wartung und Support 22% x 5	704.000 €
Forms + Reports 10 NUP x 400 €	4.000 €
F+R Wartung und Support 22% x 5	4.400 €
<u>1 zusätzlicher Server inkl. Support</u>	<u>12.000 €</u>
Summe	1.364.400 €

Differenz:	1.592.400 €
Einsparung pro Jahr:	318.480 €

Beeindruckend





Wohin mit den gesparten Lizenzkosten?



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InfoDesign *2nd*

Letzte Worte



## Oracle VM

Funktionsumfang analog VMware

Hardware analog VMware

Schnelle Installation

Stabil und performant

Kostenfrei (Support optional)

Lizenzkosten im Griff behalten

## merlin.zwo

Regelmäßiges, unabhängiges Lizenzaudit

Vorbereitung auf Lizenzaudit

Begleitung durch Lizenzaudit

Einsparungen im 7stelligen Bereich

Konsolidierung vorhandener Lizenzen

# Oracle VM Templates

Download Package

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Oracle VM Template for Oracle Enterprise Manager Cloud Control|

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All Commercial Linux/VM 1-Click Courseware Documentation

**DLP: Oracle VM Template for Oracle Enterprise Manager Cloud Control 13.2.0.0.0**

**DLP: Oracle VM Template for Oracle Enterprise Manager Cloud Control 13.1.0.0.0**

**DLP: Oracle VM Template for Oracle Enterprise Manager Cloud Control 12.1.0.5.0**

**DLP: Oracle VM Template for Oracle Enterprise Manager Cloud Control 12.1.0.4.0**

**DLP: Oracle VM Template for Deploying Oracle Enterprise Manager Cloud Control on ODA 13.2.0.0.0**

**DLP: Oracle VM Template for Deploying Oracle Enterprise Manager Cloud Control on ODA 12.1.0.4.0**

**DLP: Oracle VM Template for Deploying Oracle Enterprise Manager Cloud Control on ODA 12.1.0.3.0**

**DLP: Oracle VM VirtualBox for Oracle Enterprise Manager Cloud Control 13.2.0.0.0**

**DLP: Oracle VM VirtualBox for Oracle Enterprise Manager Cloud Control 13.1.0.0.0**



**DLP: Oracle VM VirtualBox for Oracle Enterprise Manager Cloud Control 12.1.0.5.0**

**DLP: Oracle VM VirtualBox for Oracle Enterprise Manager Cloud Control 12.1.0.4.0**



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To continue, select the Platform/Language for each individual Release. If the item is a Documentation Release, there will be no need to select a Platform. To remove an item from the Selected Software Cart, please uncheck the box next to the title.

<input checked="" type="checkbox"/> Selected Software	Terms and Restrictions	Platforms / Languages	Size
<input checked="" type="checkbox"/> Oracle VM Templates for Oracle Database - RAC 12c 12.2.0.1.0 	Oracle Standard Terms and Restrictions		
<input checked="" type="checkbox"/> DB/RAC OVM Templates 12.2.0.1		Linux x86-64 	8.0 GB

<https://edelivery.oracle.com>

### Oracle Partitioning Policy

- <http://www.oracle.com/us/corporate/pricing/partitioning-070609.pdf>

### Hard-Partitioning Regeln für Oracle VM Server for x86

- <http://www.oracle.com/technetwork/server-storage/vm/ovm-hardpart-168217.pdf>

Hier sind auch die speziellen Lizenzierungsregeln für Oracle VM aufgeführt

### Oracle VM3 Utilities: Patch ID 13602094

### VMware:

- <https://blogs.vmware.com/apps/2017/01/oracle-vmware-vsan-dispelling-licensing-myths.html>

### Disaster Recovery:

- Oracle VM 3: Getting Started with Disaster Recovery using Oracle Site Guard (Doc ID 1959182.1)

### Migration VMware nach Oracle VM:

- <http://www.oracle.com/technetwork/server-storage/vm/ovm-migration-3708320.pdf>

Fragen?



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