SAM Monthly Best Practices Webinars

Session 1: FNMS 2021R1 & Oracle Optimization reports

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Inform IT. Transform IT.

Agenda

- Introduction to the SAM Best Practices Monthly webinars
- FNMS 2021 R1 in details
- Deep dive on Oracle optimization reports

SAM Best Practices Webinars

- **Logistics**
  - Monthly (last Thursday of the month, 10:00 AM Central time)
  - Register here
  - Vote here for prioritizing topics
  - Find next session announcement, links to recording and used PowerPoints in the Community Hub (Events and Webinars section)
- **Goal and Approach**
  - News will be shared (10-15 minutes)
  - A deep dive will be delivered by a SAM expert, with hands-on demos and real data
  - Session will be recorded
  - Answers will be captured and answered… potentially offline if time does not permit
  - Session will be organized / presented by Nicolas Rousseau, Senior Product Manager, 20 years in SAM, 8 years in Flexera Services

News: FNMS 2021 R1, released this week!

- **Delivery: Both on Premised and SaaS**
- **Highlights**
  - List below covers additions since 2020R2… SaaS customers got incremental updates
  - Oracle
    - Optimization reports
    - Amazon Oracle RDS inventory Collection
    - Oracle Fusion Middleware data collection is Oracle verified. Flexera was the first Fusion Middleware verified Publisher! This leads to WebCenter and WebLogic editions recognition. Enhanced Oracle rules (for better management of Cloud consumption calculations (number of vCPU per socket…)
  - Microsoft
    - Microsoft Hybrid Use Supported, including product specific point rules
    - "Client Secret" support for Office 365 Connector (no more token!)
  - IBM
    - IBM on Kubernetes License consumption report from IBM License Service Consumption
  - Enhancement of the agent's data collection
    - Inventory of Kubernetes containers
    - Collection of Unix Java versions, down to build level and linked to installation path
    - Enhanced recognition for Toad
  - Enhancement of Purchase processing (all needed columns added, etc.)
- **Find all details on all releases**
  - Flexera Feature By Release Portal

Oracle Optimization Reports

Business Need

- **Oracle is useful… and broadly used by all large companies**
- **Oracle is expensive (official Public price for Oracle Enteprise Edition: USD 47K**
- **Oracle has complex rules**
  - To reflect technology evolutions (vMotion: VMs move across Hosts (in clusters), Clusters or vCenters now) => Nice “soft partitioning” rules.
  - Check out this post on that never ending licensing to technology adaptation
- **Official rule implementation has variations**
  - Variations may come from contractual negotiations, commitments that affinity rules are used…
  - Most applied is: “Cluster level Soft Partitioning” (vCenter 5.0 rule), official id now “All vCenters” (vCenter 6.0+)
- **Soft Partitioning represent an incredible cost and risk**
  - Advanced Compression activated in one 2 core VM in a 500 cores cluster triggers a cost of:

*500*0.5*11,500= USD 2,87 millions!*

Oracle Optimization Reports

Details

- Oracle License Optimization on Clusters (Released in 2021 R1)
  - Full Documentation (can be ran from the report)
  - Analyzes, cluster per cluster, the number of VMs consuming the Oracle Processor licenses
  - Calculates the potential or realized optimization value (licensed vs. installed cores)
  - Gives more details on which VMs are consuming (and should be moved in case of waste)
- Oracle Licenses Consumption Details and Optimizations (Released in 2021 R1)
  - Full documentation
  - Shows in a tree view (sort on the “Path” column to re-establish hierarchy)
  - The vCenter, Cluster, Hosts, VMs, Computers involved in Oracle license consumption
  - Provides the details (consuming applications and instances, cost center, corporate unit…)
  - Computes license costs, charge back value (Cluster consumption rolled down to installed VMs)
  - Provides information on possible optimization and recommendations (VM installed cores vs. host licensed cores, potential saving or realized optimization.

Oracle Optimization Reports

Details

- Oracle License Consumption Summary At All Levels (September)
  - Comparison for Oracle Processor licenses consumption for the various soft partitioning levels
    - Cluster Level (default in FNMS)
    - vCenter level, and additional cost versus cluster level
    - “All vCenters” level and additional cost versus vCenter level
    - ESX Host Hard Partitioning and saving vs. cluster level soft partitioning
- Oracle License Consumption Details At All Partitioning Levels (September)
  - Also perform “what if?” analysis on soft partitioning levels
  - Shows all the details on the installed and consuming devices (tree view)
  - Provides no optimization nor charge back calculations
  - For each ESX server provides consumption if soft partitioning was applied at Cluster, vCenter, “All vCenters” level
- Oracle Options Virtualization Target Architecture (September)
  - Analysis Oracle Options consumption on VMWare clustered VMs and provides the optimal architecture
  - VMs are regrouped by consistent installed and used options
  - Possibility to define the grouping level based on location level
    - Typically, a large IT organization cannot regroup VMs across data centers and domains

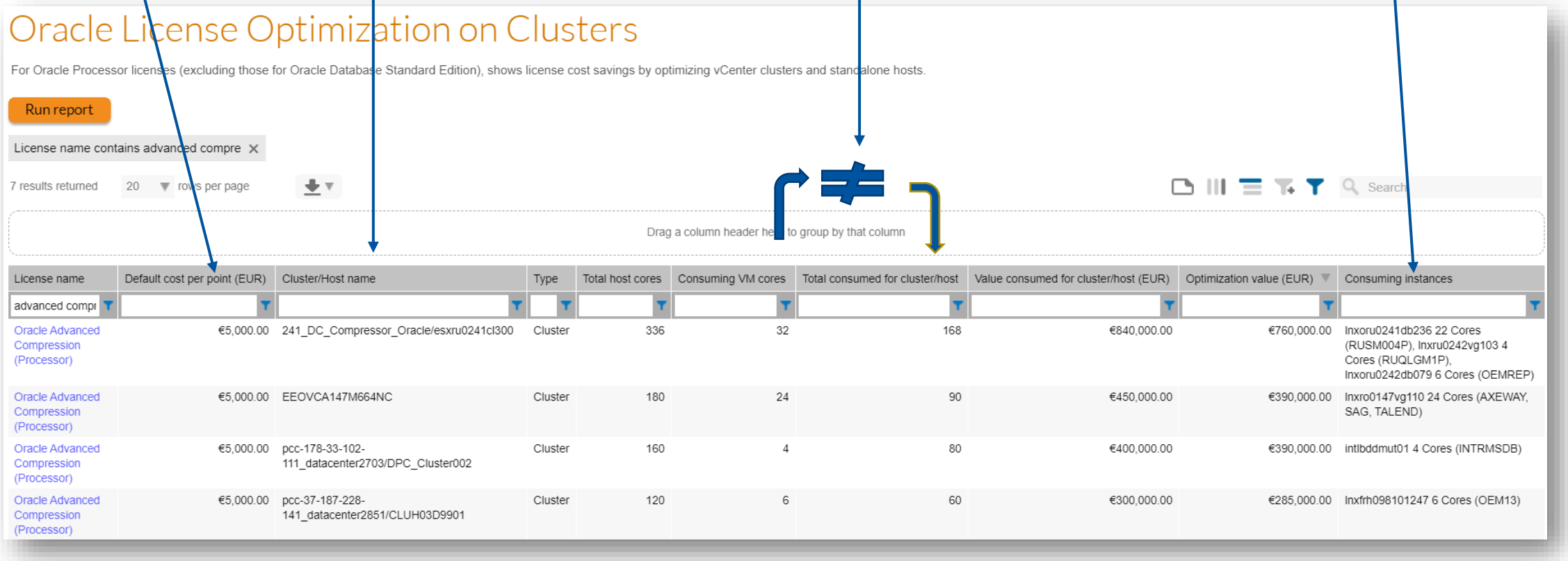
Oracle License Optimization on Clusters

Price is the actual entitlement price or a default 5000 price

Each row represents a cluster or un-clustered host

Installed Cores are compared to licensed cores to evaluate potential optimization

Consuming instances that can be moved are identified



Oracle License Optimization on Clusters

For Oracle Processor licenses (excluding those for Oracle Database Standard Edition), shows license cost savings by optimizing vCenter clusters and standalone hosts.

Run report

License name contains advanced compre ×

7 results returned 20 rows per page

Drag a column header here to group by that column

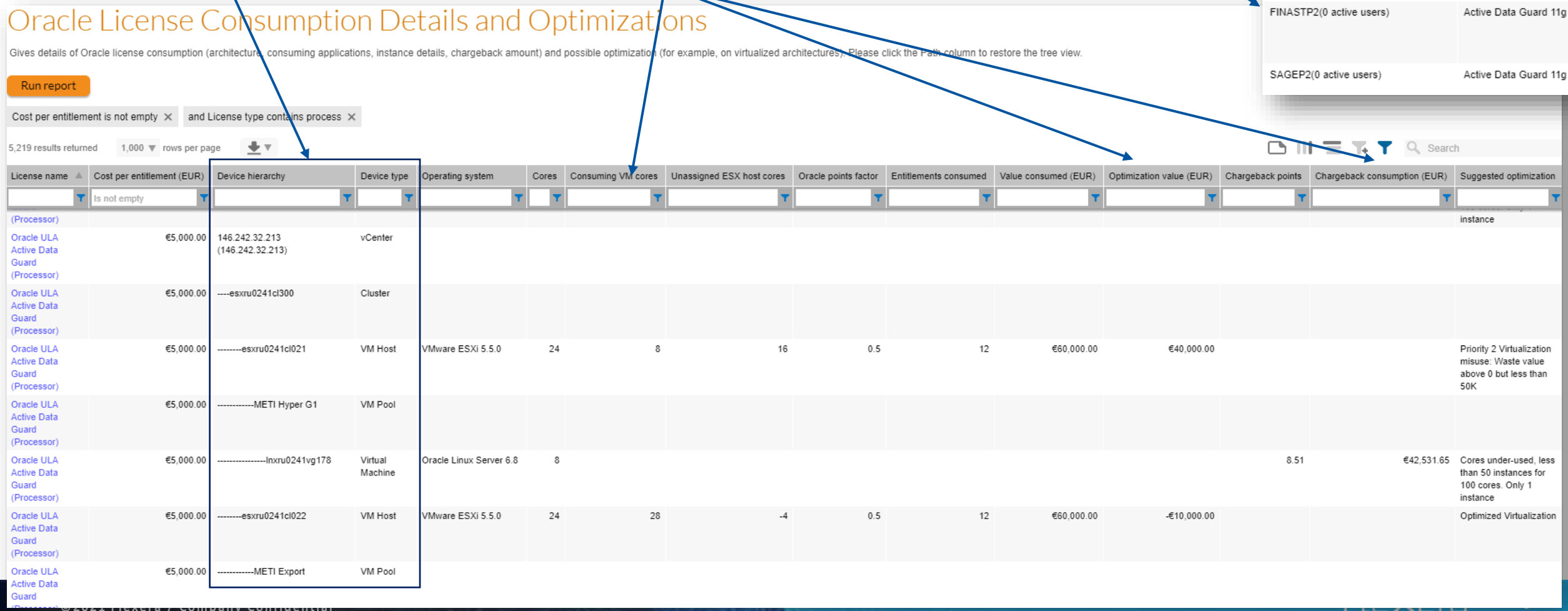
License name	Default cost per point (EUR)	Cluster/Host name	Type	Total host cores	Consuming VM cores	Total consumed for cluster/host	Value consumed for cluster/host (EUR)	Optimization value (EUR)	Consuming instances
advanced compr									
Oracle Advanced Compression (Processor)	€5,000.00	241_DC_Compressor_Oracle/esxru0241cl300	Cluster	336	32	168	€840,000.00	€760,000.00	lnxoru0241db236 22 Cores (RUSM004P), lnxru0242vg103 4 Cores (RUQLGM1P), lnxoru0242db079 6 Cores (OEMREP)
Oracle Advanced Compression (Processor)	€5,000.00	EEOVCA147M664NC	Cluster	180	24	90	€450,000.00	€390,000.00	lnxro0147vg110 24 Cores (AXEWAY, SAG, TALEND)
Oracle Advanced Compression (Processor)	€5,000.00	pcc-178-33-102-111_datacenter2703/DPC_Cluster002	Cluster	160	4	80	€400,000.00	€390,000.00	intlbddmut01 4 Cores (INTRMSDB)
Oracle Advanced Compression (Processor)	€5,000.00	pcc-37-187-228-141_datacenter2851/CLUH03D9901	Cluster	120	6	60	€300,000.00	€285,000.00	lnxfrh098101247 6 Cores (OEM13)

Oracle Licenses Consumption Details and Optimizations

The full hierarchy in consumption is represented, across all Oracle licenses

For each host, installed VM cores are captured and consumption, charge back values and optimization are calculated

Consuming instances, applications are identified



Oracle License Consumption Details and Optimizations

Gives details of Oracle license consumption (architecture, consuming applications, instance details, chargeback amount) and possible optimization (for example, on virtualized architectures). Please click the Path column to restore the tree view.

Run report

Cost per entitlement is not empty ✕ and License type contains process ✕

5,219 results returned 1,000 rows per page

License name	Cost per entitlement (EUR)	Device hierarchy	Device type	Operating system	Cores	Consuming VM cores	Unassigned ESX host cores	Oracle points factor	Entitlements consumed	Value consumed (EUR)	Optimization value (EUR)	Chargeback points	Chargeback consumption (EUR)	Suggested optimization
(Processor)														instance
Oracle ULA Active Data Guard (Processor)	€5,000.00	146.242.32.213 (146.242.32.213)	vCenter											
Oracle ULA Active Data Guard (Processor)	€5,000.00	----esxru0241cl300	Cluster											
Oracle ULA Active Data Guard (Processor)	€5,000.00	--------esxru0241cl021	VM Host	VMware ESXi 5.5.0	24	8	16	0.5	12	€60,000.00	€40,000.00			Priority 2 Virtualization misuse: Waste value above 0 but less than 50K
Oracle ULA Active Data Guard (Processor)	€5,000.00	----------METI Hyper G1	VM Pool											
Oracle ULA Active Data Guard (Processor)	€5,000.00	----------lnxru0241vg178	Virtual Machine	Oracle Linux Server 6.8	8							8.51	€42,531.65	Cores under-used, less than 50 instances for 100 cores. Only 1 instance
Oracle ULA Active Data Guard (Processor)	€5,000.00	--------esxru0241cl022	VM Host	VMware ESXi 5.5.0	24	28	-4	0.5	12	€60,000.00	-€10,000.00			Optimized Virtualization
Oracle ULA Active Data Guard	€5,000.00	----------METI Export	VM Pool											

Consuming instances	Consuming installations
Is not empty	
RFXTMS12(0 active users)	Active Data Guard 12c R1
FINASTP2(0 active users)	Active Data Guard 11g
SAGEP2(0 active users)	Active Data Guard 11g

Oracle License Consumption Summary At All Levels

What FNMS Licenses calculate

Various simulations depending on soft partitioning applied

Compare incremental cost (or saving) for each partitioning option

Oracle License Consumption Summary At All Levels

Gives the summary on Oracle licenses consumptions and compares Cluster level, vCenter, all vCenters level soft partitioning, or all hard partitioning consumptions and costs.

Search | Run report

7 results returned | 20 rows per page

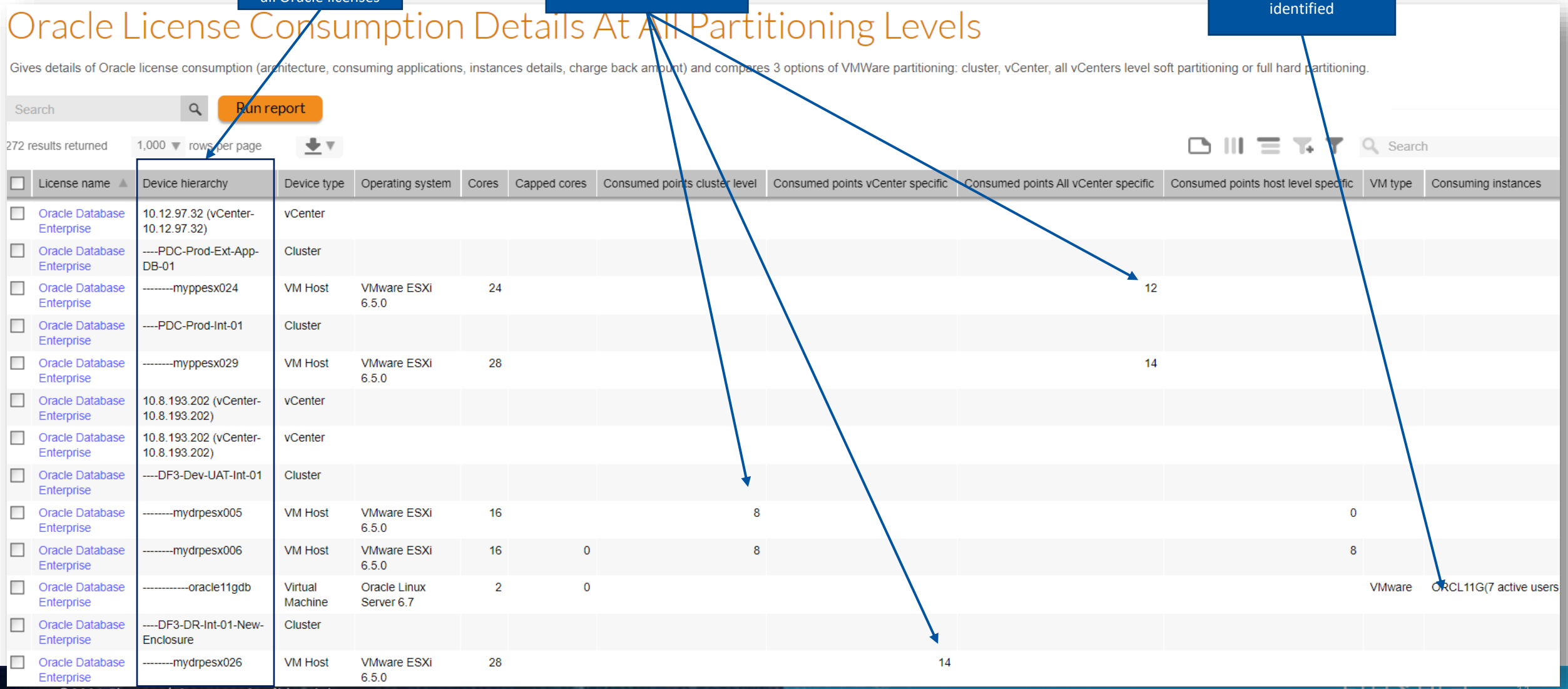
License name	Cost per entitlement (USD)	Purchased	Cso (Cluster Level)	Cso (Host Level)	Cso (vCenter Level)	Cso (All vCenters Level)	Cost of vCenter Rule vs Cluster (USD)	Cost of all vCenters Rule vs vCenter (USD)	Saving ESX Host Hard Partitioning vs cluster (USD)
Oracle Advanced Security	$5,500.00	0	36	36	36	290		$1,397,000.00	$0.00
Oracle Database Enterprise	$7,000.00	0	109	101	291	317	$1,274,000.00	$182,000.00	$56,000.00
Oracle Diagnostics Pack	$4,000.00	0	94	94	262	324	$672,000.00	$248,000.00	$0.00
Oracle Multitenant 19c	$17,500.00	20	7	7	7	267		$4,550,000.00	$0.00
Oracle Partitioning	$3,000.00	0	60	60	240	296	$540,000.00	$168,000.00	$0.00
Oracle Real Application Clusters - Processor	$23,000.00	15	30	30	30	30			$0.00
Oracle Tuning Pack	$6,000.00	0	94	94	262	324	$1,008,000.00	$372,000.00	$0.00

Oracle License Consumption Details At All Partitioning Levels

The full hierarchy in consumption is represented, across all Oracle licenses

Various simulations depending on soft partitioning applied

Consuming instances, applications are identified



Oracle License Consumption Details At All Partitioning Levels

Gives details of Oracle license consumption (architecture, consuming applications, instances details, charge back amount) and compares 3 options of VMWare partitioning: cluster, vCenter, all vCenters level soft partitioning or full hard partitioning.

Search | Run report

272 results returned | 1,000 rows per page | Search

License name	Device hierarchy	Device type	Operating system	Cores	Capped cores	Consumed points cluster level	Consumed points vCenter specific	Consumed points All vCenter specific	Consumed points host level specific	VM type	Consuming instances
Oracle Database Enterprise	10.12.97.32 (vCenter-10.12.97.32)	vCenter									
Oracle Database Enterprise	----PDC-Prod-Ext-App-DB-01	Cluster									
Oracle Database Enterprise	--------myppesx024	VM Host	VMware ESXi 6.5.0	24				12			
Oracle Database Enterprise	----PDC-Prod-Int-01	Cluster									
Oracle Database Enterprise	--------myppesx029	VM Host	VMware ESXi 6.5.0	28				14			
Oracle Database Enterprise	10.8.193.202 (vCenter-10.8.193.202)	vCenter									
Oracle Database Enterprise	10.8.193.202 (vCenter-10.8.193.202)	vCenter									
Oracle Database Enterprise	----DF3-Dev-UAT-Int-01	Cluster									
Oracle Database Enterprise	--------mydrpesx005	VM Host	VMware ESXi 6.5.0	16		8			0		
Oracle Database Enterprise	--------mydrpesx006	VM Host	VMware ESXi 6.5.0	16	0	8			8		
Oracle Database Enterprise	----------oracle11gdb	Virtual Machine	Oracle Linux Server 6.7	2	0					VMware	ORCL11G(7 active users
Oracle Database Enterprise	----DF3-DR-Int-01-New-Enclosure	Cluster									
Oracle Database Enterprise	--------mydrpesx026	VM Host	VMware ESXi 6.5.0	28			14				

Oracle Options Virtualization Target Architecture

VM details

You can peak up the grouping level

The list of options installed and used will determine the cluster specialization

The optimal number of cores of the cluster is the sum of cores of VMs

Even within the VM, the report finds possible instances moves for optimizations

Detailed recommendations are provided

Oracle Options Virtualization Target Architecture

Identifies installed, used and to be licensed options on all VMs and makes cluster gathering suggestions for optimizing the license cost for these options. The soft partitioning rule is applied at cluster level. You can set up the grouping level for locations.

Location grouping level: Level 1 — Run report

10 results returned

VM name	Cores	Host	Cluster	Cluster cores	Total installed cluster cores for options	Recommended cluster	Recommended cluster cores	Oracle options in use	Instances using all options	Instances not using all options
oracle11gdb	2	mydrpesx006	DF3 DR Datacenter/DF3-Dev-UAT-Int-01	32	32	Cluster - Advanced Compression - No location	2	Advanced Compression	ORCL11G (1)	
p720p3	4	067E33P	fnmp/TestCluster	20	20	Cluster - Diagnostics Pack, Tuning Pack - Australia	4	Diagnostics Pack, Tuning Pack	ORCL3 (2)	
qdelah	1	2230589533	fnmp/Test	7	7	Cluster - Diagnostics Pack, Partitioning, Tuning Pack - No location	1	Diagnostics Pack, Partitioning, Tuning Pack	TSINET2 (3)	
srvbidolc	16	srv011i200	11 Paris/APP-Prod	24	24	Cluster - Advanced Compression - United States	16	Advanced Compression	ORC (1)	
vmlig23	12	srv011m230	11 Paris/APP2-DevQA-vSAN	36	36	Cluster - Advanced Compression, Diagnostics Pack, Partitioning, Tuning Pack - United States	12	Advanced Compression, Diagnostics Pack, Partitioning, Tuning Pack	LIG (4)	
vmmfp1	8	srv011i200	11 Paris/APP-Prod	24	24	Cluster - Advanced Compression, Diagnostics Pack, Tuning Pack - United States	8	Advanced Compression, Diagnostics Pack, Tuning Pack	MFP (3)	
vm-oem13-01	6	ko-server-hp3	novaratio/hp-server	12	12	Cluster - Diagnostics Pack, Tuning Pack - India	6	Diagnostics Pack, Tuning Pack	ORCLEM (2)	
vm-oldb12-02	2	ko-server-hp4	fnmp/OracleCluster	12	12	Cluster - Advanced Compression, Advanced Security, Partitioning - India	2	Advanced Compression, Advanced Security, Partitioning	KRATES (3)	
vm-oldb18-03	4	ko-server-hp3	novaratio/hp-server	12	12	Cluster - Advanced Compression, Advanced Security, Diagnostics Pack, Multitenant, Partitioning, Tuning Pack - India	4	Advanced Compression, Advanced Security, Diagnostics Pack, Multitenant, Partitioning, Tuning Pack	hiketas~CDB_ROOT (6)	hiketas~HIKETAS_TEST (5), hiketas~HIKETASPDB (4)
vm-oldb19-01	4	ko-server-hp3	novaratio/hp-server	12	12	Cluster - Diagnostics Pack, Multitenant, Partitioning, Tuning Pack - India	4	Diagnostics Pack, Multitenant, Partitioning, Tuning Pack	kleanthes~CDB_ROOT (4)	kleanthes~KLEANTHESPDB (2), kleanthes~KPDB1 (2), kleanthes~KPDB11 (2), kleanthes~KPDB2 (2), kleanthes~KPDB3 (2), kleanthes~KPDB4 (2), kleanthes~KPDB5 (2)

Possible Architecture optimizations identified by the report

Saving could be obtained by grouping together VMs with consistent installed and used options. Licensing of 30 cores could be avoided.

Some instances have inconsistent options activated for the VM. Saving could be obtained by grouping together VMs with consistent installed and used options. Licensing of 8 cores could be avoided.

Useful resources for anticipating released features

- Often on for on-premise customers, but are on boarded
- Oracle-Specific:
  - Oracle Optimization Reports
  - Oracle Instances Transparency Reports
  - Application Recognition Transparency report
  - Automating the non-inclusion of embedded Java instances
- But also other vendors
  - Microsoft: Windows and SQL Server Optimization Reports
  - Adobe Optimization Report
  - Red Hat Optimization Report
- More generally
  - Creating advanced automations in a FNMS Cloud Instance

THANK YOU

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Inform IT. Transform IT.