SAM Monthly Best Practices Webinars

Session 3: Everything About Oracle In Flexera One / FNMS

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Flexera
Inform IT. Transform IT.

Agenda

- Last session pointers and answers to questions
- Managing Oracle in FNMS
  - Inventory (functioning, prerequisites, troubleshooting)
  - Compliance (License Consumption for Database and Options)
  - Optimization (Reports released in 2021R1 and 2021R1.1)
  - The special case of Java (brief introduction and pointers)

Last Session: Windows and SQL Server Optimization with FNMS

- **Useful pointers**
  - Recording and PowerPoint:
    - September SAM Best Practice Webinar Recording and PowerPoint
  - Answers to questions:
    - There was no question!

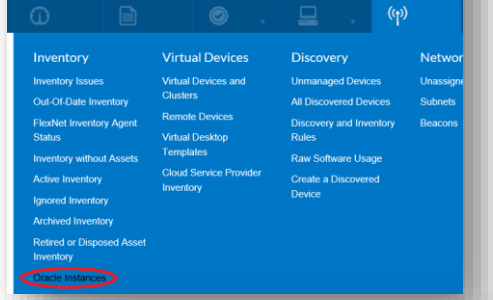
Oracle Applications Inventory

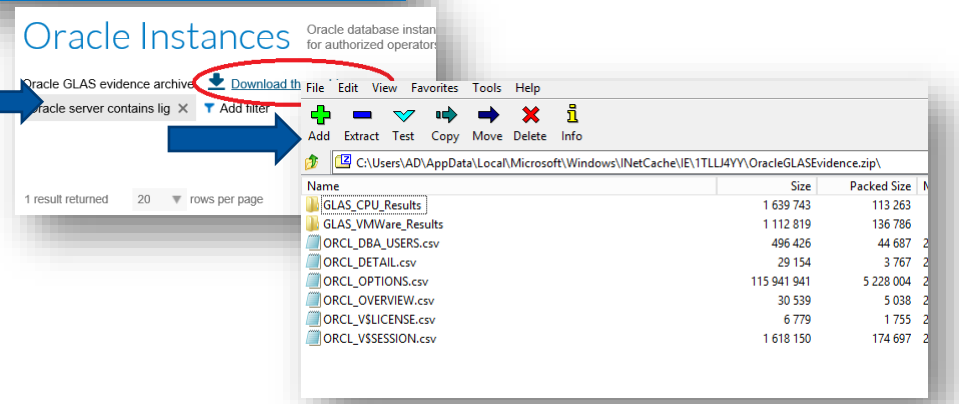
- **Database and Options**
- **Middleware**
- **EBS**
- **Others…**

Oracle Inventory

Oracle Database and Options

- **Oracle LMS (GLAS) Verified:**
  - The raw inventory collection is verified
  - Data in the zip file you can fine in the Oracle Instances screen (let's have a look)
- **Various types of inventories**
  - By Beacon:
    - servers through listeners or **AWS RDS instances**
  - Agent. Agent recommended for on prem and PaaS
- **Prerequisites**
  - Beacon: adapted to old versions (8i, 9i)
  - Windows Server:
    - OS Authentication must be enabled
    - LocalSystem account part of the Ora_dba group
  - More information in the System Reference Guide
- **The query is in InventorySettings.xml**
  - The rules can be updated by content



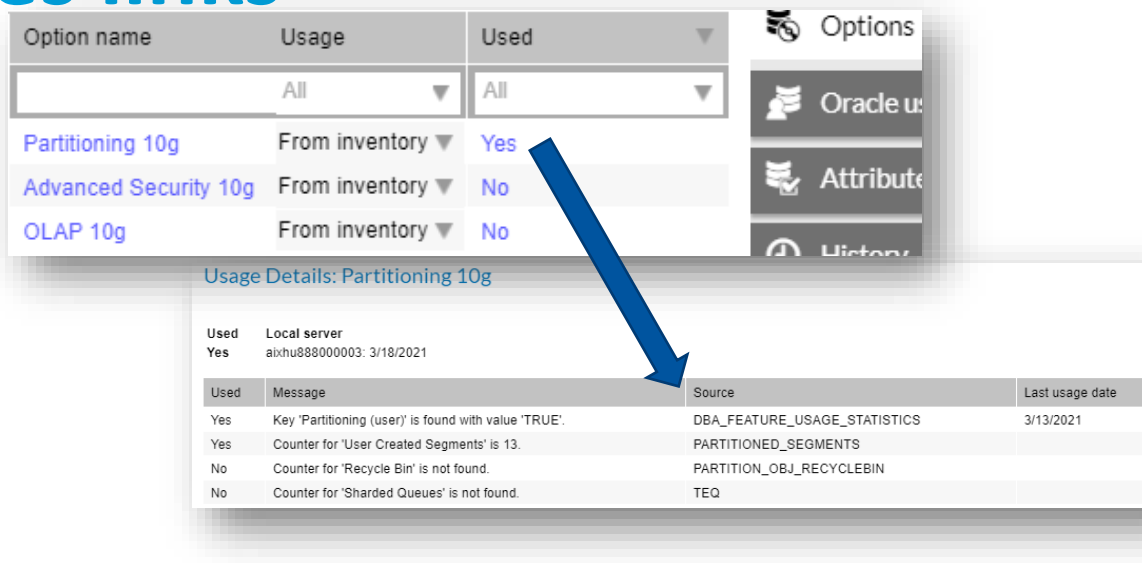


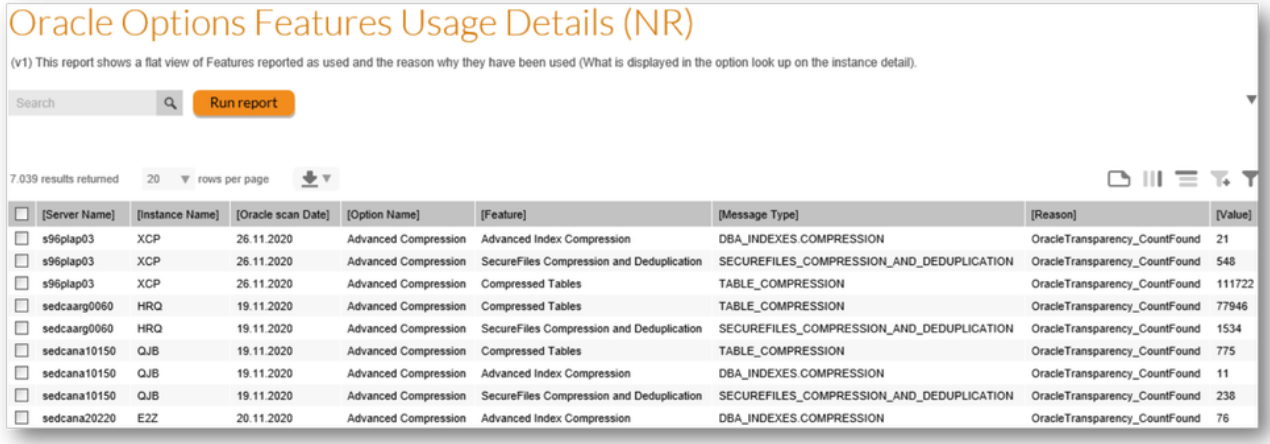
Oracle Database	8i, 9i, 10g, 11g, 11g Release 2, 12c Notes: • 8i — requires a direct inventory beacon connection • 9i — requires a named account on Windows or a direct inventory beacon connection • 12c — the Oracle Multitenant option is not supported using a local agent.

```
<!-- Enterprise Options -->
<Query Name="AuditVault" Type="!A1X9CtYC3F9FB1lxnBry4LgA==">!A1ZIHQ4tg5hEghYAxcEJk0mRXPO8s2h7NKDp3bEstn+owETbL0y2Eys1EhPtNeQKjo2L+GOWRnJx
<Query Name="ActiveDataGuard11g" Group="!A1YR/3mh80sBAxm7vgr/y7BA==" MinVersion="!A1ZDLp6/4rxm6rb/Zi9xaFHw==" Type="!A1X9CtYC3F9FB1lxnBry
<Query Name="ActiveDataGuard_ByFeature" Group="!A1YR/3mh80sBAxm7vgr/y7BA==" MinVersion="!A1+USEB2BGzBP+QjPVYJUKNw==" Type="!A1X9CtYC3F9FB
<Query Name="ActiveDataGuard_ByFeature_RTQ" Group="!A1YR/3mh80sBAxm7vgr/y7BA==" MinVersion="!A1tgUzK8mRMbAKSuZrM7yyhA==" Type="!A1X9CtYC3
<Query Name="ActiveDataGuard_ByFeature_12" Group="!A1YR/3mh80sBAxm7vgr/y7BA==" MinVersion="!A1PYns2AnMj8Tg+fXr2UAVwg==" Type="!A1X9CtYC3F
<Query Name="ActiveDataGuard_ByBlockChangeTracking" Group="!A1YR/3mh80sBAxm7vgr/y7BA==" MinVersion="!A1PvnjkJMU/a29mjBn3ZsUTg==" Type="!A
<Query Name="ActiveDataGuard_ByRollingStatistics" Group="!A1YR/3mh80sBAxm7vgr/y7BA==" MinVersion="!A1PYns2AnMj8Tg+fXr2UAVwg==" Type="!A1X
<Query Name="ActiveDataGuard_ByAutomaticBlockRepair" Group="!A1YR/3mh80sBAxm7vgr/y7BA==" MinVersion="!A1PYns2AnMj8Tg+fXr2UAVwg==" Type="!
```

Understanding Options to features links

- You can read Reviewlite (FNMS has an encrypted equivalent)
- The Options.csv contains all the details
  - In the lms evidence download
    - in Discovery & Inventory / Oracle Instances
  - Format imposed by Oracle,
  - Pretty cryptic
- When Options.csv is to big
  - Unzip Zip file from the Oracle instances screen ORCL_Options.csv
  - Extract the Run the following form cmd for a give, K22 instance
    C:\Users\ROUSSEN\Documents\LMS_Options>find ",K22,"
    C:\Users\XXX\Documents\LMS_Options\LMS_Options.csv > K22Details.csv
  - Then, check what “raw evidence” caused the options to be used...
- From FNMS 2020R1: the option usage contains the explanations
- A flat Report Published shows a flat view of options and reason why they are used (Planned for Q1 2022 on SaaS)



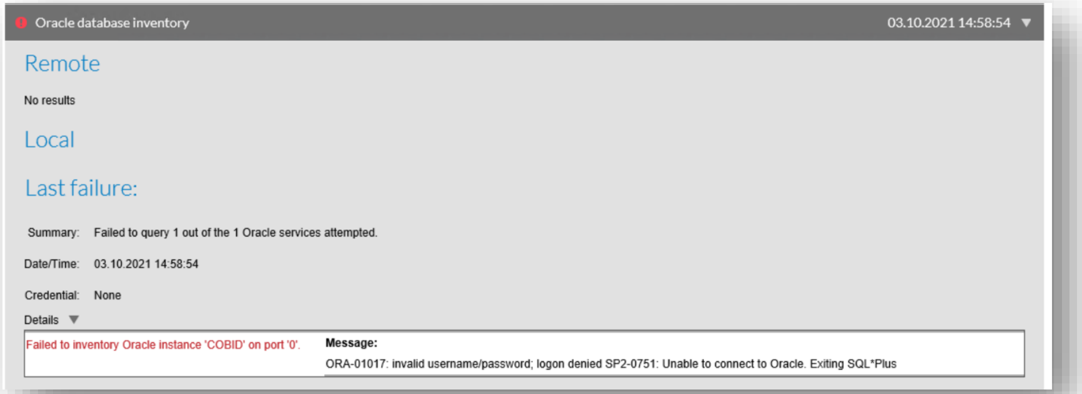


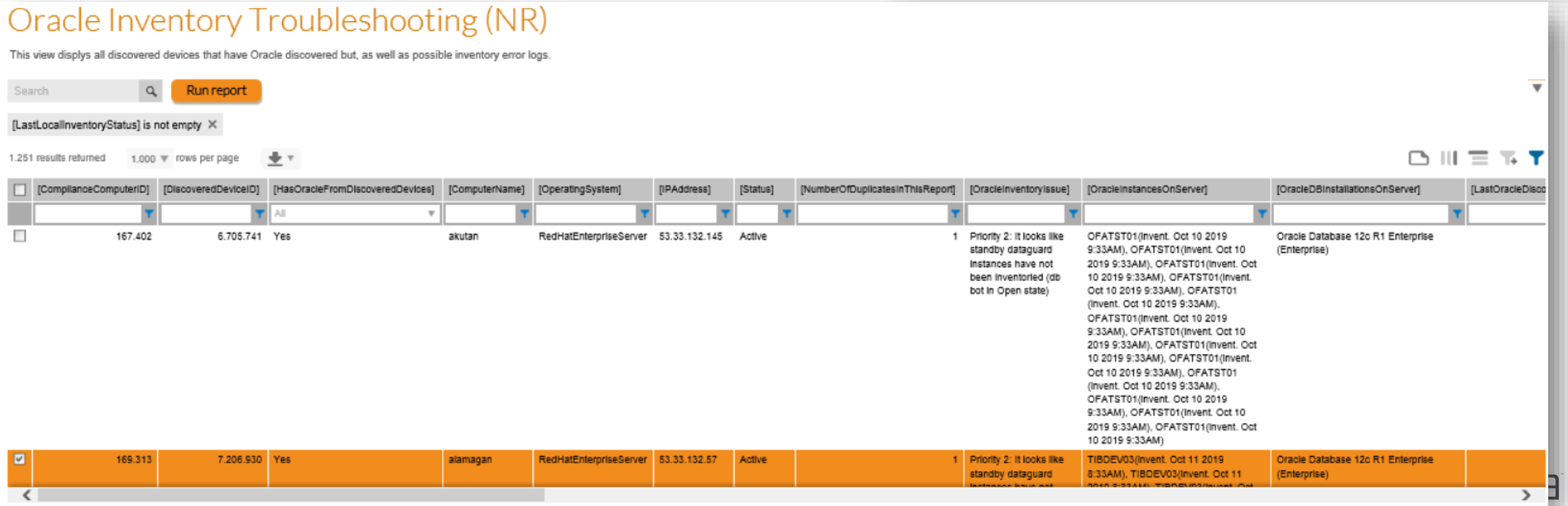
Oracle DB Inventory specificities

- **Specific Oracle NDIs**
- **Options have a special flag in the SoftwareTitle table**
  - Creating a new Option local version may change the behavior of the licenses (Installed AND Used)
- **The Oracle inventory logs details are available in the “Discovered Device” details (Oracle = Yes)**
- **The installed layer is imported, the Host / Cluster is crucial**
- **Ugly combination of Oracle Universal Installer (OUI) and LMS script evidences (“Uninstall”). Don’t trust OUI!**

Troubleshooting Oracle Inventory

- **From each discovered device detail**
- **Through an Oracle Inventory Troubleshooting report [published](#)**





Oracle Middleware, EBS and others

- **Oracle Middleware**
  - Flexera: First partner verified for Oracle Fusion Middleware
  - FNMS Agent 2021R1 (on prem) or 2020R2.2 (Cloud)
  - Like Oracle LMS (GLAS) verified, this is about the raw data
  - Evidences added to the GLAS evidence file in the Oracle Instances screen
  - Enhancement of the recognition level (WebLogic editions ok, WebCenter too…)
- **Oracle Enterprise Business Suite**
  - The Oracle Database Inventory collects EDS users with their allocated module
- **Other applications**
  - Are recognized through classical Installer and file evidence
  - Challenge: license metric may make installations useless (Named User Plus products with no DB introspection (WebLogic, Oracle Developer…)

Oracle Compliance

Oracle is complex

- **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
  - On an instance, you can’t mix NUP and Processor
- **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!*

FNMS Licenses do the Job for Oracle Database and Options and EBS

- Apply cluster level soft partitioning
- But also a report on vCenter, all vCenter and soon DRS rules
- Options: need to be installed AND used

Oracle Optimization

Please check this recording

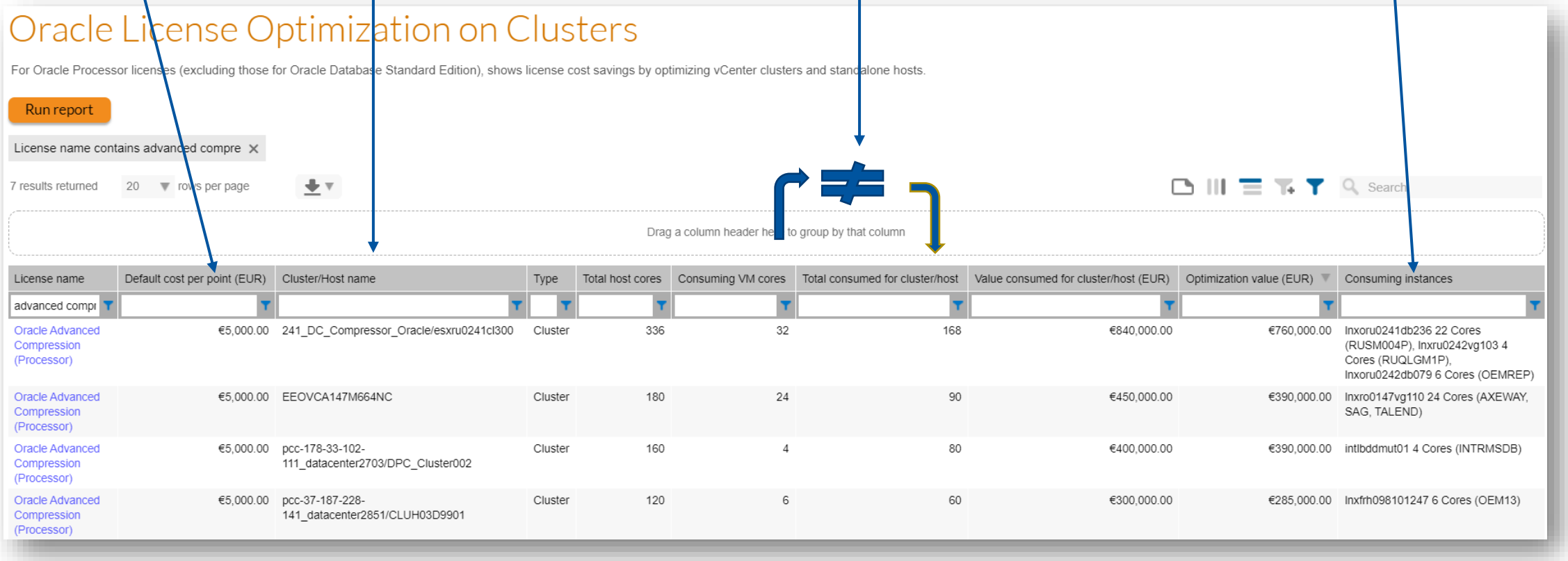
Oracle License Optimization on Clusters is suggested

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

Search

Drag a column header here to group by that column

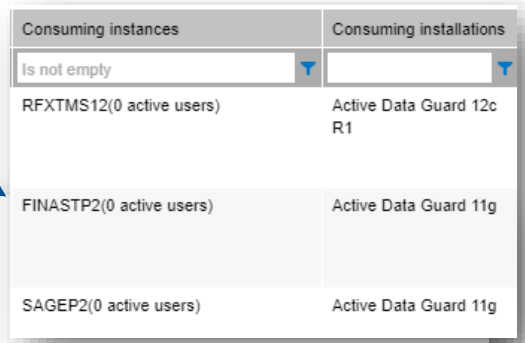
License name	Default cost per point (EUR)	Cluster/Host name	Type	Total host cores	Consuming VM cores	Total consumed for cluster/host	Value consumed for cluster/host (EUR)	Optimization value (EUR)	Consuming instances
advanced compr									
Oracle Advanced Compression (Processor)	€5,000.00	241_DC_Compressor_Oracle/esxru0241cl300	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



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 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

Search

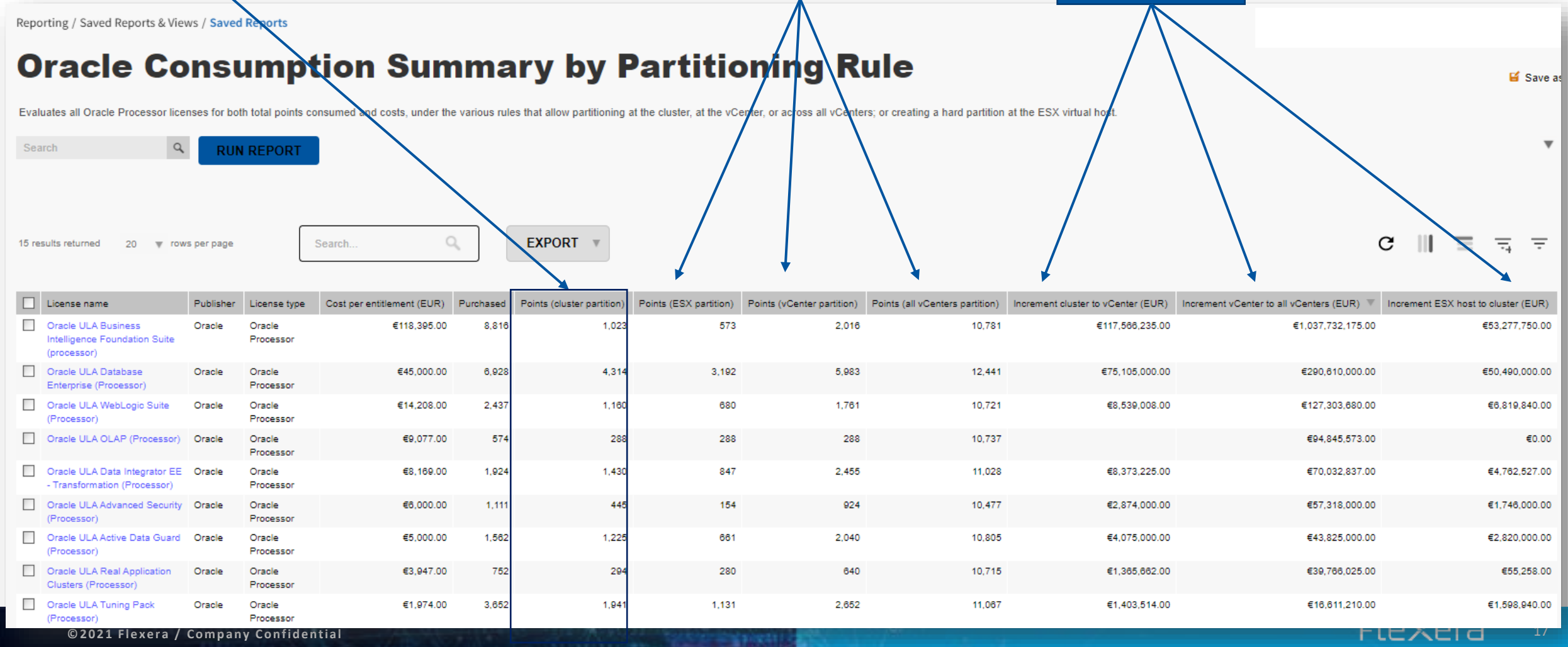
License name	Cost per entitlement (EUR)	Device hierarchy	Device type	Operating system	Cores	Consuming VM cores	Unassigned ESX host cores	Oracle points factor	Entitlements consumed	Value consumed (EUR)	Optimization value (EUR)	Chargeback points	Chargeback consumption (EUR)	Suggested optimization
	Is not empty													
(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											

Financial impact of partitioning rules is computed

What FNMS Licenses calculate

Various simulations depending on soft partitioning applied

Compare incremental cost (or saving) for each partitioning option



Reporting / Saved Reports & Views / Saved Reports

Oracle Consumption Summary by Partitioning Rule

Save as

Evaluates all Oracle Processor licenses for both total points consumed and costs, under the various rules that allow partitioning at the cluster, at the vCenter, or across all vCenters; or creating a hard partition at the ESX virtual host.

Search

RUN REPORT

15 results returned 20 rows per page

Search...

EXPORT

License name	Publisher	License type	Cost per entitlement (EUR)	Purchased	Points (cluster partition)	Points (ESX partition)	Points (vCenter partition)	Points (all vCenters partition)	Increment cluster to vCenter (EUR)	Increment vCenter to all vCenters (EUR)	Increment ESX host to cluster (EUR)
Oracle ULA Business Intelligence Foundation Suite (processor)	Oracle	Oracle Processor	€118,395.00	8,816	1,023	573	2,016	10,781	€117,566,235.00	€1,037,732,175.00	€53,277,750.00
Oracle ULA Database Enterprise (Processor)	Oracle	Oracle Processor	€45,000.00	6,928	4,314	3,192	5,983	12,441	€75,105,000.00	€290,610,000.00	€50,490,000.00
Oracle ULA WebLogic Suite (Processor)	Oracle	Oracle Processor	€14,208.00	2,437	1,160	680	1,761	10,721	€8,539,008.00	€127,303,680.00	€6,819,840.00
Oracle ULA OLAP (Processor)	Oracle	Oracle Processor	€9,077.00	574	288	288	288	10,737		€94,845,573.00	€0.00
Oracle ULA Data Integrator EE - Transformation (Processor)	Oracle	Oracle Processor	€8,169.00	1,924	1,430	847	2,455	11,028	€8,373,225.00	€70,032,837.00	€4,762,527.00
Oracle ULA Advanced Security (Processor)	Oracle	Oracle Processor	€6,000.00	1,111	445	154	924	10,477	€2,874,000.00	€57,318,000.00	€1,746,000.00
Oracle ULA Active Data Guard (Processor)	Oracle	Oracle Processor	€5,000.00	1,562	1,225	661	2,040	10,805	€4,075,000.00	€43,825,000.00	€2,820,000.00
Oracle ULA Real Application Clusters (Processor)	Oracle	Oracle Processor	€3,947.00	752	294	280	640	10,715	€1,365,662.00	€39,766,025.00	€55,258.00
Oracle ULA Tuning Pack (Processor)	Oracle	Oracle Processor	€1,974.00	3,652	1,941	1,131	2,652	11,067	€1,403,514.00	€16,611,210.00	€1,598,940.00

Oracle Partitioning Rules Impact are provided

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

Various simulations depending on soft partitioning applied

Consuming instances, applications are identified

Reporting / License Reports / Oracle Partitioning Rule Impacts

Oracle Partitioning Rule Impacts

For Oracle Processor licenses, compares the consumption impact of different soft (and hard) partitioning rules: soft partitioning at the cluster, at each vCenter, for all vCenters; or hard partitioning for each VMware ESX host.

vCenter name ▲ Cluster name ▲

License name	Cost per entitlement (EUR)	Device hierarchy	Device type	Device status	Allocated	Exemption reason	Operating system	Cores	Capped cores	Points (cluster partition)	Points (vCenter partition)	Points (all vCenters partition)
Oracle ULA Database Enterp					All							
vCenter name: 172.17.199.220 (i08199220) (4)												
Cluster name: Cluster_consolidacion_5 (3)												
Oracle ULA Database Enterprise (Processor)	€45,000.00	--------conso5server1	VM Host	Active	No		VMware ESXi 5.5.0	8	0			4
Oracle ULA Database Enterprise (Processor)	€45,000.00	--------conso5server2	VM Host	Active	No		VMware ESXi 5.5.0	8	0			4
Oracle ULA Database Enterprise (Processor)	€45,000.00	--------conso5server3	VM Host	Active	No		VMware ESXi 5.5.0	8	0			4
vCenter name: 172.20.148.100 (orajy001) (34)												
Cluster name: CL-PROD-CENTRAL-BI (5)												
Oracle ULA Database Enterprise (Processor)	€45,000.00	--------esxjy015	VM Host	Active	No		VMware ESXi 5.5.0	32		16		
Oracle ULA Database Enterprise (Processor)	€45,000.00	----------lnxjy275	Virtual Machine	Active	No		Red Hat Enterprise Linux ES 5.11	4				
Oracle ULA Database Enterprise (Processor)	€45,000.00	----------lnxjy302	Virtual Machine	Active	No		Red Hat Enterprise Linux ES 5.11	32				
Oracle ULA Database Enterprise (Processor)	€45,000.00	----------lnxjy303	Virtual Machine	Active	No		Red Hat Enterprise Linux ES 5.11	16				
Oracle ULA Database Enterprise (Processor)	€45,000.00	--------esxjy016	VM Host	Active	No		VMware ESXi 5.5.0	32		16		
Cluster name: CL-PROD-ESSBASE (2)												
Oracle ULA Database Enterprise (Processor)	€45,000.00	--------esxjy037	VM Host	Active	No		VMware ESXi 5.5.0	16				8

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

Optimum target architecture recommendation

VM details

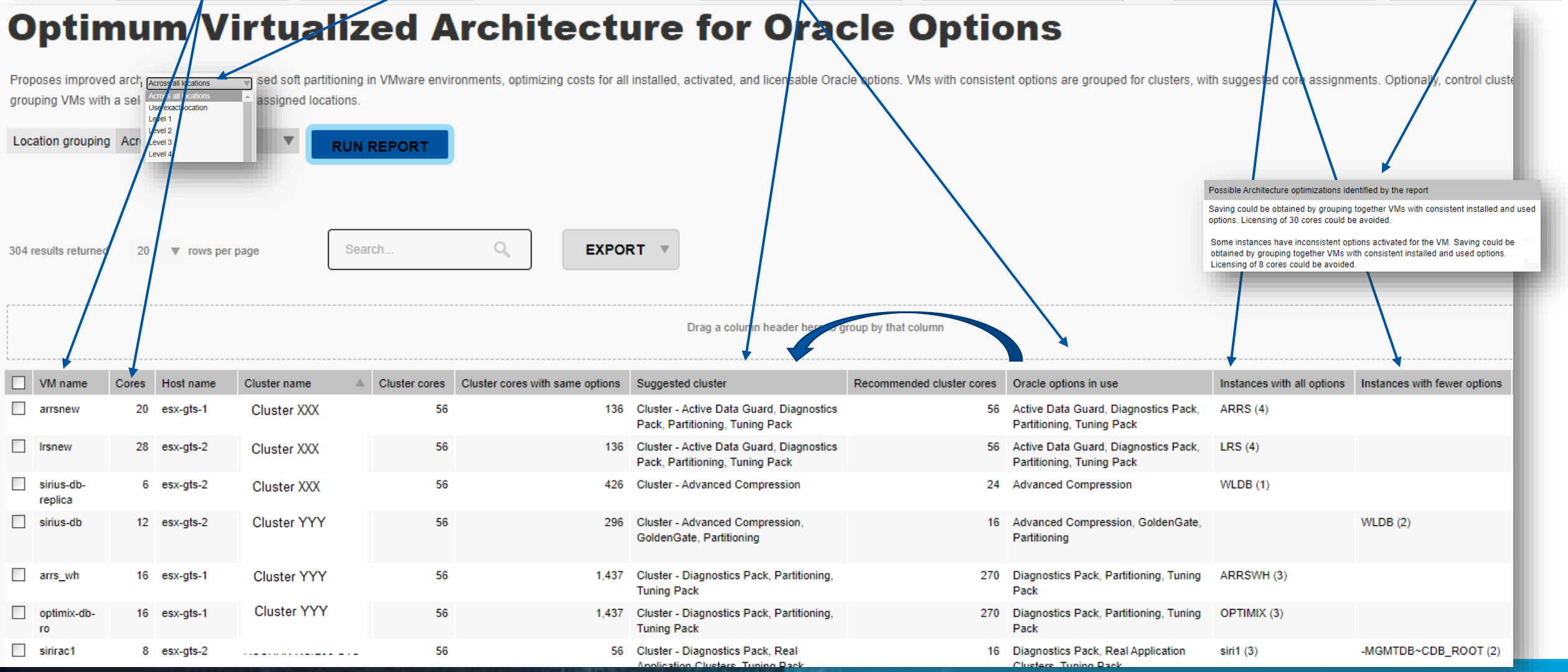
You can peak up the grouping level

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

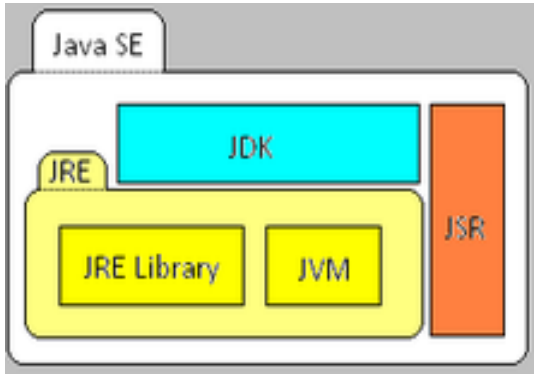
Detailed recommendations are provided



VM name	Cores	Host name	Cluster name	Cluster cores	Cluster cores with same options	Suggested cluster	Recommended cluster cores	Oracle options in use	Instances with all options	Instances with fewer options
arrsnew	20	esx-gts-1	Cluster XXX	56	136	Cluster - Active Data Guard, Diagnostics Pack, Partitioning, Tuning Pack	56	Active Data Guard, Diagnostics Pack, Partitioning, Tuning Pack	ARRS (4)	
lrsnew	28	esx-gts-2	Cluster XXX	56	136	Cluster - Active Data Guard, Diagnostics Pack, Partitioning, Tuning Pack	56	Active Data Guard, Diagnostics Pack, Partitioning, Tuning Pack	LRS (4)	
sirius-db-replica	6	esx-gts-2	Cluster XXX	56	426	Cluster - Advanced Compression	24	Advanced Compression	WLDB (1)	
sirius-db	12	esx-gts-2	Cluster YYY	56	296	Cluster - Advanced Compression, GoldenGate, Partitioning	16	Advanced Compression, GoldenGate, Partitioning		WLDB (2)
arrs_wh	16	esx-gts-1	Cluster YYY	56	1,437	Cluster - Diagnostics Pack, Partitioning, Tuning Pack	270	Diagnostics Pack, Partitioning, Tuning Pack	ARRSWH (3)	
optimix-db-ro	16	esx-gts-1	Cluster YYY	56	1,437	Cluster - Diagnostics Pack, Partitioning, Tuning Pack	270	Diagnostics Pack, Partitioning, Tuning Pack	OPTIMIX (3)	
sirirac1	8	esx-gts-2		56	56	Cluster - Diagnostics Pack, Real	16	Diagnostics Pack, Real Application	siri1 (3)	-MGMTDB~CDB_ROOT (2)


Java

Context



- Oracle has made JDK / JRE licensable for all editions in 2019
- Java JDK 11 (That includes JRE) is licensable…
- JDK / JRE version get licensable for new updates for corporations
- An option is to use OpenJDK, but this is a complex migration project
- Java is however included in some Oracle Licensed applications (see list below): https://www.oracle.com/technetwork/java/javase/terms/oaa.html

Java public and restricted versions

https://www.oracle.com/java/technologies/javase/8u-relnotes.html

1. **Java SE 5:**
    1. Java 5 Until (& incl.) update 22 => “PUBLIC”
    2. Java 5 update 23 & up => “RESTRICTED”
    3. Java 5 (all update) where build >30 => “RESTRICTED”
2. **Java SE 6:**
    1. Java 6 Until (& incl.) update 45 => “PUBLIC”
    2. Java 6 update 51 & up => “RESTRICTED”
    3. Java 6 (all update) where build >30 => “RESTRICTED”
3. **Java SE 7:**
    1. Java 7 Until (& incl.) update 80 => “PUBLIC”
    2. Java 7 update 85 & up => “RESTRICTED”
    3. Java 7 (all update) where build >30 => “RESTRICTED”
4. **Java SE 8:**
    1. Java 8 Until (& incl.) update 202 => “PUBLIC”
    2. Java 8 update 211 & up=> “Restricted” (License change – 16/04/2019)
    3. Java 8 (all update) where build >30 => “RESTRICTED”
5. **Java SE 9 / 10**
    1. Java 9 & 10 => Public
    2. Java 9 & 10 (all update) where build >30 => “RESTRICTED”
6. **Java 11**
    1. Java 11 Until (&incl.) update 2 => Public
    2. Java 11 update 3 => “RESTRICTED”
7. **Java 12 and more => “Restricted” (Licensing modification – 16/04/2019)**

Oracle Products that Include Java

The below section provides an overview of the different Oracle licenses that do have the (Full Use or Restricted Use) rights granted to make use of one or more Java software programs:

- **WebLogic Server Standard Edition includes the right to make use of Java Standard Edition. This means that if you purchased a Weblogic Server Standard Edition, you are entitled to make use of Java SE, including its components: The Java Development Kit (JDK), including the JavaFX Software Development Kit (SDK), Java Runtime Environment (JRE), (Server and regular packages), JavaFX Runtime and JRockit JDK**
- **WebLogic Server Enterprise Edition includes the right to make use ofJava SE Advanced (restricted however for WebLogic Server. Java SE is included for client applications that access WebLogic Server). Java SE Advanced consists of Java SE and JRockit Mission Control, plus restricted use licenses of Weblogic Server Standard Edition and Coherence Standard Edition One.**
- **WebLogic Suite includes the right to make use of Java SE Suite (restricted for WebLogic Server, Oracle Containers for J2EE and Coherence. Java SE is included for client applications that access these server components). Java SE Suite consists of Java SE Advanced and JRockit Real Time. Additional to these components, Java SE Suite comes with the same restricted use licenses as Java SE Advanced and the same limitations (meaning restricted use licenses of Weblogic Server Standard Edition and Coherence Standard Edition One).**
- **Internet Application Server Enterprise Edition includes the right to make use of Java Standard Edition. This means that if you purchased an Internet Application Server Enterprise Edition license, you are entitled to make use of Java SE, including its components: The Java Development Kit (JDK), including the JavaFX Software Development Kit (SDK), Java Runtime Environment (JRE), (Server and regular packages), JavaFX Runtime and JRockit JDK.**
- **GlassFish Server includes the right to make use of Java Standard Edition. This means that if you purchased a GlassFish Server license, you are entitled to make use of Java SE, including its components: the Java Development Kit (JDK), including the JavaFX Software Development Kit (SDK), Java Runtime Environment (JRE), (Server and regular packages), JavaFX Runtime and JRockit JDK**
- **Coherence Standard Edition One, Coherence Enterprise Edition and Coherence Grid Edition licenses all do include the (Full Use) right to make use of Java Standard Edition.**

Summary of current state

- **Flexera has changed the normalization on Windows file evidences in April to the major version level, with a recognition down to the build level. Announcements around changes in Java normalization have been made on: https://community.flexera.com/t5/FlexNet-Manager-Content-Blog/bg-p/FlexNet-Manager-Content-Release-Blog**
- **Flexera normalizes the Java signatures based on version, update and build for Windows. This article gives the details of the normalization approach and a report for normalization transparency https://community.flexera.com/t5/FlexNet-Manager-Knowledge-Base/Unravelling-the-mysteries-of-Java-and-other-products-actual/ta-p/192100/jump-to/first-unread-message**
- **The Unix agent is enhancement with the next on prem release (end of July).**
  - Java – version now catches the build number, when exists
  - The Unix agent creates a file evidence (same naming as the previous installer evidences, versions includes build) with the path of the instance
  - The ARL will be soon extended to recognize these Unix file evidences.
- **"Embedded" versions of Java (even for commercial versions) can be automatically removed from recognition using this implementation, but only for Windows short term: https://community.flexera.com/t5/FlexNet-Manager-Knowledge-Base/Automating-the-Management-of-Embedded-Java-instances/ta-p/195162**

THANK YOU

Flexera

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