

My SYSAUX tablespace is
full - please help!





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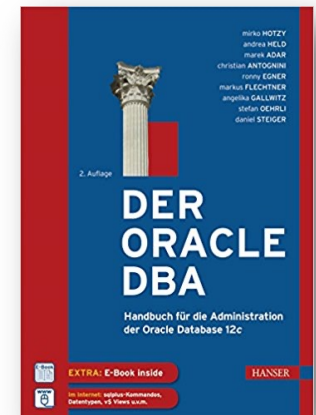
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- Working with Oracle since 1990
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Agenda

- Introduction
- Which components occupy space in SYSAUX?
- How to cleanup the SYSAUX Tablespace?
- How to keep the SYSAUX tablespace small?
- Conclusion & more information

Introduction

- Until Oracle Database 9i there was the SYSTEM tablespace only
 - All database components stored their data there
- With Oracle Database 10g Oracle introduced the SYSAUX tablespace
 - Data of many database components was moved to SYSAUX
- Oracle says "If the SYSAUX tablespace becomes unavailable, core database functionality will remain operational. The database features that use the SYSAUX tablespace could fail, or function with limited capability."
- In container databases, analysis, cleanup and configuration must be done in each container (CDB\$ROOT and PDBs) separately

Space issues with SYSAUX

- Since Oracle 10g more and more components store their data in SYSAUX
- It keeps growing
- There is even a dedicated problem type for service requests:

Database Storage (Compression, Corruption, Partitioning, LOBS, Tablespaces, Files)	▶	Data Corruption (Not for ASM disk head
Information Integration (AQ, CDC, Streams, Advanced Replication, Distributed Transactions, Message Gateway)	▶	Database Storage: Compression
Internal Errors and Core Dump (ORA-600, ORA-700, ORA-7445, ORA-4030, ORA-4031, ORA-3137)	▶	Database Storage: LOBS/Securefiles, Co
Oracle Net Services Connectivity Issues	▶	Archiving
Oracle Sharding	▶	Database Storage: Partitioning
Other Database Admin (Config, Params, Memory, Dictionary, Scheduler, Processes, Startup/Shutdown, Undo/Rollback, Resource Mgr)	▶	Database Storage: Segment and Tables
PDB: Relocate, Cloning, Plug/Unplug	▶	Database Storage: Transportable Tables
Recovery Manager [RMAN], DataGuard, FRA, GDS, OSB, Backup & Recovery, other issues	▶	Information Lifecycle Management
		SYSAUX tablespace growth issues

Size Guidelines/estimations for the SYSAUX tablespace

Parameter/Recommendation	Small	Medium	Large
Number of CPUs	2	8	32
Number of concurrently active sessions	10	20	100
Number of user objects, tables and indexes	500	5.000	50.000
Estimated SYSAUX size at steady state with default configuration	500 MB	2 GB	5 GB

Size prediction for the SYSAUX tablespace - utlsyxsz.sql

- The script **\$ORACLE_HOME/rdbms/admin/utlsyxsz.sql** can help to estimate the required size of the SYSAUX tablespace
- You have to provide some information like snapshot interval, retention etc.
 - Interval Setting (minutes)
 - AWR Retention Setting (days)
 - Number of Instances
 - Average Number of Active Sessions
 - Number of tables in the database
 - Number of partitions
 - Number of Datafiles
 - Statistics Retention
 - DML activity (low/medium/high)

utlsyxsz.sql – Sample Output

```
| *****  
| Summary of SYSAUX Space Estimation  
| *****  
| Est size of SDO                                297.2 MB  
| Est size of XDB                                67.4 MB  
| Est size of AUDSYS                             51.5 MB  
| Est size of SM/OTHER                           49.9 MB  
| Est size of AO                                 45.8 MB  
| Est size of LOGMNR                             10.8 MB  
| Est size of SM/ADVISOR                        10.8 MB  
| Est size of WM                                 6.6 MB  
| Est size of TEXT                              2.9 MB  
| Est size of PL/SCOPE                          2.8 MB  
| Est size of SQL_MANAGEMENT_BASE               2.7 MB  
| Est size of SMON_SCN_TIME                     2.1 MB  
| Est size of JOB_SCHEDULER                     2.0 MB  
| Est size of STREAMS                           1.7 MB  
| Est size of LOGSTDBY                          1.6 MB  
| Est size of AUTO_TASK                         0.6 MB  
| Est size of EM_MONITORING_USER                 0.5 MB  
| Est size of Others                            111.4 MB  
| Est size of SM/AWR                           3,676.4 MB  
| Est size of SM/OPTSTAT                        40.7 MB  
| ~~~~~  
| Total Estimated SYSAUX size:                  4,385.4 MB  
| ~~~~~
```


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The entrypoint – v\$sysaux_occupants

- Oracle provides a V\$ view which provides almost all the information we need:

```
SQL> desc v$sysaux_occupants
```

Name	Null?	Type
-----	-----	-----
OCCUPANT_NAME		VARCHAR2 (64)
OCCUPANT_DESC		VARCHAR2 (64)
SCHEMA_NAME		VARCHAR2 (64)
MOVE_PROCEDURE		VARCHAR2 (64)
MOVE_PROCEDURE_DESC		VARCHAR2 (64)
SPACE_USAGE_KBYTES		NUMBER
CON_ID		NUMBER

Sample Output – v\$sysaux_occupants

```
SQL> select OCCUPANT_NAME, OCCUPANT_DESC, SPACE_USAGE_KBYTES USED_KB
2  from V$SYSAUX_OCCUPANTS where SPACE_USAGE_KBYTES>0
3  order by SPACE_USAGE_KBYTES desc
4  fetch first 10 rows only;
```

OCCUPANT_NAME	OCCUPANT_DESC	USED_KB
SM/AWR	Server Manageability - Automatic Workload Repository	137024
SDO	Oracle Spatial	132096
XDB	XDB	104448
AO	Analytical Workspace Object Table	49536
AUDSYS	AUDSYS schema objects	47680
SM/OPTSTAT	Server Manageability - Optimizer Statistics History	39680
SM/OTHER	Server Manageability - Other Components	33088
SM/ADVISOR	Server Manageability - Advisor Framework	13440
LOGMNR	LogMiner	11264
WM	Workspace Manager	7488

Issues with V\$SYSAUX_OCCUPANTS (1)

- In a Container Database when in CDB\$ROOT, V\$SYSAUX_OCCUPANTS shows the current container only (i.e. CDB\$ROOT)
 - No global view possible

- Other (older) issues (public bugs from MOS):
 - Bug 16767759 AUDSYS schema is not present in V\$SYSAUX_OCCUPANTS
 - Open since 12.1.0.1, fixed in 12.2
 - Bug 10404641 V\$sysaux_occupants.space_usage_kbytes may not be accurate
 - Open since 10.2.0.4, fixed in 18.1

Issues with V\$SYSAUX_OCCUPANTS (2)

```
SQL> select distinct owner from
2   dba_segments where
3   tablespace_name='SYSAUX'
4   order by owner;
```

OWNER

AUDSYS

CTXSYS

DBSNMP

GSMADMIN_INTERNAL

MDSYS

SYS

SYSTEM

WMSYS

XDB

Global
Data
Services

```
SQL> select distinct schema_name
2   from v$sysaux_occupants
3   where SPACE_USAGE_KBYTES>0
4   order by schema_name;
```

SCHEMA_NAME

AUDSYS

CTXSYS

DBSNMP

MDSYS

SYS

SYSTEM

WMSYS

XDB

TOP Occupants – the usual suspects:

- **SM/OPTSTAT**- old optimizer statistics
- **SM/ADVISOR** – the various advisors
- **SM/AWR** – AWR data
- **SM/OTHER** - DB Feature Usage, Alert History etc.
- **SQL_MANAGEMENT_BASE** – SQL baselines
- **AUDSYS** – audit data

Occupants which typically do not occupy (much) space

```
SQL> select occupant_name,occupant_desc from v$sysaux_occupants
2   where space_usage_kbytes=0;
```

OCCUPANT_NAME	OCCUPANT_DESC
AUDIT_TABLES	DB audit tables
XSAMD	OLAP Catalog
XSOQHIST	OLAP API History Tables
STATSPACK	Statspack Repository
ORDIM	Oracle Multimedia ORDSYS Components
ORDIM/ORDDATA	Oracle Multimedia ORDDATA Components
ORDIM/ORDPLUGINS	Oracle Multimedia ORDPLUGINS Components
ORDIM/SI_INFORMTN_SCHEMA	Oracle Multimedia SI_INFORMTN_SCHEMA Components
EM	Enterprise Manager Repository
ULTRASEARCH	Oracle Ultra Search
ULTRASEARCH_DEMO_USER	Oracle Ultra Search Demo User
EXPRESSION_FILTER	Expression Filter System
TSM	Oracle Transparent Session Migration User

Occupants which are desupported (and can be ignored)

- **Oracle Streams**

- Desupported since Oracle Database 19c

- **Enterprise Manager Repository**

- Used by OEM Database Control (until Oracle Database 11g Release 2)
 - Can be removed in Oracle Database 12c and higher:
Script `$ORACLE_HOME/rdbms/admin/emremove.sql`

Detailed analysis of AWR data in SYSAUX

- The script `$ORACLE_HOME/rdbms/admin/awrinfo.sql` provides more information about the AWR components in SYSAUX
 - And about the other occupants, too (e.g. largest segments)

```
*****
(3a) Space usage by AWR components (per database)
*****
```

COMPONENT	MB	% AWR	KB_PER_SNAP	MB_PER_DAY	MB_PER_WEEK	TABLE% : INDEX%
FIXED	89.7	69.4	5,402	21.1	147.7	47% : 53%
EVENTS	10.4	8.1	629	2.5	17.2	39% : 61%
SPACE	9.3	7.2	561	2.2	15.3	50% : 50%
SQLPLAN	7.8	6.0	467	1.8	12.8	66% : 34%
SQL	4.8	3.7	286	1.1	7.8	50% : 50%
ASH	2.4	1.9	147	0.6	4.0	69% : 31%
RAC	1.6	1.3	98	0.4	2.7	50% : 50%
SQLBIND	1.2	0.9	72	0.3	2.0	47% : 53%
SQLTEXT	1.2	0.9	72	0.3	2.0	68% : 32%
[...]						

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How to reduce the size of the SYSAUX tablespace

- **Option 1:**
 - Reorganize tables and indexes in SYSAUX
- **Option 2:**
 - Move the component out of the SYSAUX Tablespace
- **Option 3 (AWR-related data)**
 - Cleanup data used by the occupant
 - Define appropriate retention parameters
- **And**
 - ... don't forget to resize the datafiles afterwards
 - ... with AUTOEXTENSIBLE datafiles you may not detect a fast growing SYSAUX tablespace

Reorganize Tables and Indexes in SYSAUX

- As we know it:

```
ALTER TABLE .. MOVE TABLESPACE SYSAUX ONLINE;  
ALTER INDEX .. REBUILD TABLESPACE SYSAUX ONLINE;
```

- Don't forget to rebuild indexes after moving a table
 - \$ORACLE_HOME/rdbms/admin/awrinfo.sql will show the largest segments
- Do not reorganize XDB objects!
- More information:
 - How to Reduce SYSAUX Tablespace Occupancy Due to Fragmented tables and indexes (Doc ID 1563921.1)
 - Reducing SYSAUX Fragmentation of tables and indexes Caused by Statistics Related Activities (Doc ID 1271178.1)

Move data out of the SYSAUX tablespace

- Oracle provides procedures for moving the data into another tablespace

```
SQL> select occupant_name,move_procedure from v$sysaux_occupants
       2 where move_procedure is not null;
OCCUPANT_NAME                                MOVE_PROCEDURE
-----                                -
LOGMNR                                         SYS.DBMS_LOGMNR_D.SET_TABLESPACE
LOGSTDBY                                       SYS.DBMS_LOGSTDBY.SET_TABLESPACE
AUDSYS                                         DBMS_AUDIT_MGMT.SET_AUDIT_TRAIL_LOCATION
AUDIT_TABLES                                  DBMS_AUDIT_MGMT.SET_AUDIT_TRAIL_LOCATION
XDB                                             XDB.DBMS_XDB_ADMIN.MOVEXDB_TABLESPACE
XSAMD                                          DBMS_AMD.Move_OLAP_Catalog
AO                                              DBMS_AW.MOVE_AWMETA
XSOQHIST                                       DBMS_XSOQ.OlapiMoveProc
SDO                                            MDSYS.MOVE_SDO
WM                                              DBMS_WM.move_proc
ORDIM                                          ordsys.ord_admin.move_ordim_tblspc
ORDIM/ORDDATA                                ordsys.ord_admin.move_ordim_tblspc
ORDIM/ORDPLUGINS                             ordsys.ord_admin.move_ordim_tblspc
ORDIM/SI_INFORMTN_SCHEMA                     ordsys.ord_admin.move_ordim_tblspc
EM                                             emd_maintenance.move_em_tblspc
[...]
```

Move Data out of the SYSAUX tablespace – Example Audit-Data (1)

- Procedure **DBMS_AUDIT_MGMT.SET_AUDIT_TRAIL_LOCATION**

PROCEDURE SET_AUDIT_TRAIL_LOCATION		
Argument Name	Type	In/Out Default?

AUDIT_TRAIL_TYPE	BINARY_INTEGER	IN
AUDIT_TRAIL_LOCATION_VALUE	VARCHAR2	IN

- Values for AUDIT_TRAIL_TYPE
 - AUDIT_TRAIL_AUD_STD (Tables AUD\$ and FGA_LOG\$)
 - AUDIT_TRAIL_FGA_STD (FGA_LOG\$)
 - AUDIT_TRAIL_DB_STD (AUD\$)
 - AUDIT_TRAIL_UNIFIED (unified audit data)

Move Data out of the SYSAUX tablespace – Example Audit-Data (2)

```
SQL> exec DBMS_AUDIT_MGMT.SET_AUDIT_TRAIL_LOCATION  
2    (AUDIT_TRAIL_TYPE=>'AUDIT_TRAIL_DB_STD' ,  
3      AUDIT_TRAIL_LOCATION_VALUE=>'AUDIT_DATA') ;  ← new tablespace
```

- Can be time-consuming
- Preferably during non-peak hours

Looks like a good idea, but ...

Move Data out of the SYSAUX tablespace – Example Audit-Data (3)

- Moving audit data out of the SYSAUX tablespace is supported, but may lead to some issues („side effects“):
 - For type AUDIT_TRAIL_UNIFIED new partitions of the audit table will be created in the new tablespace. Existing data will not be moved.
 - LOB and index partitions are not moved.
- See MOS-Notes
 - RMAN Duplicate PDB Fails With RMAN-05548 If Audit Trails Are Moved Outside Of SYSAUX (Doc ID 2256158.1) – (AUD\$ only)
 - Dbms_Audit_Mgmt.Set_Audit_Trail_Location Does Not Move Lob And Index Partitions (Doc ID 2428624.1)
 - About Changing Partitioning Behavior of Unified Audit Trail (AUD\$UNIFIED) (Doc ID 2438973.1)

Reduce Data in SYSAUX – SM/OPTSTAT

- Remove old statistics
- Example: remove data older than 14 days (Default retention period is 31 days)

```
SQL> exec DBMS_STATS.PURGE_STATS (SYSDATE-15) ;
```

Reduce Data in SYSAUX – SM/ADVISOR (1)

- **"Deleting data from this component can be more complicated."** (Quote from MOS-Note 329984.1)
- Use OEM to delete old results
- You can DISABLE and RE-ENABLE an advisor
- You will loose all the old data (but that's on purpose in this case)

Reduce Data in SYSAUX – SM/ADVISOR (2)

- By default, old data will be purged automatically after 30 days
- Change this setting (EXECUTION_DAYS_TO_EXPIRE):

```
SQL> EXEC DBMS_ADVISOR.SET_TASK_PARAMETER  
      2 (task_name=> 'AUTO_STATS_ADVISOR_TASK',  
      4 parameter=> 'EXECUTION_DAYS_TO_EXPIRE', value => 10);
```

- Manual purging:

```
SQL> exec prvt_advisor.delete_expired_tasks;
```

- Move table WRI\$_ADV_OBJECTS and rebuild indexes
- Note: According to MOS-Note 2660128.1 data in PDBs will not be purged automatically
 - Use manual purging

Reduce Data in SYSAUX – SM/AWR (1)

- Reduce the retention period → Older data will be deleted
- Current retention period (example: 31 days):

```
SQL> SELECT retention FROM dba_hist_wr_control;  
RETENTION  
-----  
+00031 00:00:00.0
```

- Change retention period (example: set to 8 days)

```
SQL> exec DBMS_WORKLOAD_REPOSITORY.MODIFY_SNAPSHOT_SETTINGS  
(retention=>8*1440);
```

Reduce Data in SYSAUX – SM/AWR (2)

- Remove a range of AWR snapshots

```
DBMS_WORKLOAD_REPOSITORY.DROP_SNAPSHOT_RANGE (  
  low_snap_id IN NUMBER,  
  high_snap_id IN NUMBER  
  dbid IN NUMBER DEFAULT NULL);
```

Reduce Data in SYSAUX – SM/SQL_MANAGEMENT_BASE (1)

- Options
 - Reduce retention period
 - Reduce available space in SYSAUX
 - Remove unused SQL Plan baselines
 - Restrict the plans which will be gathered

Reduce Data in SYSAUX – SM/SQL_MANAGEMENT_BASE (2)

- Reduce retention period & reduce available space in SYSAUX
- Current configuration

```
SQL> SELECT PARAMETER_NAME, PARAMETER_VALUE
       2 from DBA_SQL_MANAGEMENT_CONFIG;
PARAMETER_NAME                                PARAMETER_VALUE
-----
[.]
PLAN_RETENTION_WEEKS                          53
SPACE_BUDGET_PERCENT                          10
```

- Change configuration

```
SQL> Exec DBMS_SPM.CONFIGURE('PLAN_RETENTION_WEEKS',26);
SQL> Exec DBMS_SPM.CONFIGURE('SPACE_BUDGET_PERCENT',5);
```

Reduce Data in SYSAUX – SM/SQL_MANAGEMENT_BASE (3)

- Remove unused SQL Plan baselines
- Step 1: Find out the sql_handle

```
SQL> SELECT SQL_HANDLE, SQL_TEXT, PLAN_NAME, ORIGIN, ENABLED, ACCEPTED  
2 FROM DBA_SQL_PLAN_BASELINES  
3 WHERE SQL_TEXT LIKE '<your_sql_text>';
```

- Step 2: Remove SQL Plan baseline for this handle (please see SQL Tuning Guide, Chapter 28.6 for more information)

```
DECLARE  
    v_dropped_plans number;  
BEGIN  
    v_dropped_plans := DBMS_SPM.DROP_SQL_PLAN_BASELINE (  
        sql_handle => '<handle_from_step_1>  
>';  
    DBMS_OUTPUT.PUT_LINE('dropped ' || v_dropped_plans || ' plans');  
END;  
/
```


Reduce Data in SYSAUX – SM/SQL_MANAGEMENT_BASE (4)

- Through 12.1 a SQL plan baseline is created for every SQL statement that is executed repeatedly
- Since 12.2 several include/exclude filter types for automatic capture are available
 - SQL text
 - Parsing schema name
 - Module (DBMS_APPLICATION_INFO)
 - Action (DBMS_APPLICATION_INFO)
- For example: include only SQL statements whose text start with “SELECT”

```
dbms_spm.configure(parameter_name=>'AUTO_CAPTURE_SQL_TEXT',  
                  parameter_value=>'SELECT%',  
                  allow => TRUE);
```

- Obviously, the less data is captured, the less disk space is used

Reduce Data in SYSAUX – SM/OTHER

- Unfortunately, there's no special advice if there are space issues with SM/OTHER
- Create an SR and follow the steps described in the MOS Note
"SRDC - How to Collect Standard Information for an Issue where Excessive SYSAUX Space is Used by the Automatic Workload Repository (AWR) (Doc ID 1934108.1)"

Check the Statistics Level

- Level "ALL" may lead to a huge amount of data in SYSAUX
- Recommendation:
 - Keep the default value "TYPICAL"

```
SQL> show parameter STATISTICS_LEVEL
```

NAME	TYPE	VALUE
-----	-----	-----
statistics_level	string	TYPICAL

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A stitch in time saves nine – soon after creating a database

- Use dedicated tablespaces
 - Move Audit-Data out of the SYSAUX tablespace (but think about the side effects)
 - Use a dedicated tablespace for Statspack data (schema PERFSTAT)
- Don't use AUTOEXTENSIBLE for SYSAUX (or set it to a reasonable value)
 - But don't forget to monitor your tablespaces
- Keep Statistics Level "Typical"
- Define appropriate retention periods for AWR related data
- Disable unnecessary advisors

Define retention periods (1)

```
REM SM/OPTSTAT
REM retention period in days (Default: 31 days)
exec dbms_stats.alter_stats_history_retention(7);

REM SM/ADVISOR
REM retention period Statistics Advisor (default: 30 days)
EXEC DBMS_SQLTUNE.SET_TUNING_TASK_PARAMETER (
    task_name => 'AUTO_STATS_ADVISOR_TASK',
    parameter => 'EXECUTION_DAYS_TO_EXPIRE',
    value => 14);
```

Define retention periods (2)

```
REM SM/AWR
REM retention period defined in minutes (1 day = 1440 minutes)
exec
DBMS_WORKLOAD_REPOSITORY.MODIFY_SNAPSHOT_SETTINGS(retention=>8*1440);

REM SQL_MANAGEMENT_BASE
REM retention period defined in weeks
Exec DBMS_SPM.CONFIGURE('PLAN_RETENTION_WEEKS',26);

REM or percentage of space in SYSAUX
Exec DBMS_SPM.Configure('SPACE_BUDGET_PERCENT',5);
```

Disable un-needed advisors (Examples)

```
REM disable the Statistic Advisor  
exec dbms_stats.set_global_prefs('AUTO_STATS_ADVISOR_TASK','FALSE');
```

```
REM disable the Tuning Advisor  
DBMS_AUTO_TASK_ADMIN.DISABLE(  
client_name => 'sql tuning advisor',  
operation => NULL, window_name => NULL);
```

```
REM disable the Space Advisor  
DBMS_AUTO_TASK_ADMIN.DISABLE(  
client_name => 'auto space advisor',  
operation => NULL, window_name => NULL);
```


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Conclusion

- More and more components are using the SYSAUX tablespace
- SYSAUX needs your attention
 - Monitor tablespace growth
 - Don't use AUTOEXTENSIBLE
- Use dedicated tablespaces where applicable
- Set retention policies soon after database creation

More Information – MOS notes (1)

- Troubleshooting Issues with SYSAUX Space Usage (Doc ID 1399365.1)
- General Guidelines for SYSAUX Space Issues (Doc ID 552880.1)
- How to Reduce SYSAUX Tablespace Occupancy Due to Fragmented TABLEs and INDEXes (Doc ID 1563921.1)
- Tips if Your SYSAUX Tablespace Grows Rapidly or Too Large (Doc ID 1292724.1)
- Usage and Storage Management of SYSAUX tablespace occupants SM/AWR, SM/ADVISOR, SM/OPTSTAT and SM/OTHER (Doc ID 329984.1)
- SYSAUX Grows Because Optimizer Stats History is Not Purged (Doc ID 1055547.1)
- SRDC - How to Collect Standard Information for an Issue where Excessive SYSAUX Space is Used by the Automatic Workload Repository (AWR) (Doc ID 1934108.1)
- SYSAUX Tablespace Filled With WRI\$_EMX_FILES | What is WRI\$_EMX_FILES (Doc ID 2639664.1)
- SYSAUX Tablespace Grows Quite Fast Due to Apply Spilling (Doc ID 556183.1)
- SYSAUX Tablespace Growing Due to SYS.SCHEDULER\$_JOB_OUTPUT LOB Column (Doc ID 2095104.1)
- Bug 8553944 - SYSAUX tablespace grows (Doc ID 8553944.8)
- Bug 14373728 - Old Statistics not Purged from SYSAUX Tablespace (Doc ID 14373728.8)

More Information – MOS notes (2)

- How To Recreate the SYSAUX Tablespace (Doc ID 468116.1)
- SYSAUX Tablespace Space Issue Because Of dbms_comparison (Doc ID 2089484.1)
- Exports Fail Because SYSAUX Tablespace Needs Recovery (Doc ID 1497195.1)
- HEATMAP Segment Size Is Large In SYSAUX Even When Heatmap=Off (Doc ID 2024036.1)
- SYSAUX New Mandatory Tablespace in Oracle 10g and higher (Doc ID 243246.1)
- ZDLRA: SM/ADVISOR using more space in SYSAUX (Doc ID 2730556.1)
- How to Relocate the SYSAUX Tablespace (Doc ID 301186.1)
- SYSAUX Tablespace Is Getting Filled Frequently with COMPARISON_ROW_DIF\$ (Doc ID 2087865.1)
- Abnormal High Space Usage in Sysaux Tablespace - Unable to Purge (Doc ID 1360000.1)
- Large Growth of SYSAUX Tablespace with Table WRH\$_SQL_PLAN Taking Lot of Space (Doc ID 2475149.1)
- The SQL Plan Directive Written to the SYSAUX Tablespace Is Not Accounted For in V\$SYSAUX_OCCUPANTS (Doc ID 2464177.1)
- How To Prevent The Unified Audit Trail From Being Created in SYSAUX, And Change Its Default Partitioning Behavior (Doc ID 2548804.1)
- Is it Possible to Move SQL Plan Management (SPM) Data Outside of SYSAUX (Doc ID 2065088.1)

More information – blog posts (English)

- ToadWorld: SYSAUX and purging big objects (segments) manually:
<https://blog.toadworld.com/2017/11/15/sysaux-and-purging-big-objects-segments-manually>
- Managing the sysaux tablespace - <https://mindmajix.com/oracle-dba/managing-sysaux-tablespace>
- Purging statistics from the SYSAUX tablespace - <https://doyensys.com/blogs/purging-sysaux-tablespace-statistics/>
- Cleaning Oracle SYSAUX Tablespace Usage:
<https://www.techpaste.com/2017/03/cleaning-oracle-sysaux-tablespace-usage/>

More information – blog posts (German)

- Andrea Held: Der Oracle Sysaux-Tablespace: Reorganisation und Verkleinerung
<https://www.informatik-aktuell.de/betrieb/datenbanken/der-oracle-sysaux-tablespace-reorganisation-und-verkleinerung.html>
- Oracle Help: Tablespace SYSAUX ist voll oder wächst ununterbrochen:
<https://oracletipps.wordpress.com/2015/10/21/tablespace-sysaux-full-or-growing/>
- Mein SYSAUX-Tablespace wächst und wächst, was soll (kann) ich tun ...:
<https://www.markusdba.de/2021/04/06/mein-sysaux-tablespace-waechst-und-waechst-was-soll-kann-ich-tun/>
- Hermann & Lenz: Neues vom SYSAUX-Tablespace...:
<https://blog.hl-services.de/2021/03/26/neues-vom-sysaux-tablespace/>

**Thank you
for your attention!**

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