This is a blank slide for equipment testing

Defaults Bloody Defaults

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Pythian

About Me (Short)

Apps DBA now
Developer long time ago

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About Me (Long)

Dev => Perf => DBA => Apps DBA
Apps Database Consultant at Pythian
14+ years with Database and Java
Started with Oracle DB 9.2.0.1
Oracle DB 7.3.4 experience
Systems Performance and Architecture
OakTable member
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ABOUT PYTHIAN

Pythian's 400+ IT professionals help companies adopt and manage disruptive technologies to better compete

Database Default

Parameters
Setup
Behavior

which are questionable

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CONTROL_MANAGEMENT_PACK_ACCESS

DIAGNOSTIC+TUNING

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CONTROL_MANAGEMENT_PACK_ACCESS

DIAGNOSTIC+TUNING

NONE

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FILESYSTEMIO_OPTIONS

NONE

FILESYSTEMIO_OPTIONS

NONE

SETALL

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JOB_QUEUE_PROCESSES

4000

JOB_QUEUE_PROCESSES

4000

CPU_COUNT/2

Out of the Box Jobs

auto space advisor

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Out of the Box Jobs

auto sql tuning advisor

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Out of the Box Jobs

statistics advisor

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OPTIMIZER_ADAPTIVE_STATISTICS

FALSE

OPTIMIZER_ADAPTIVE_STATISTICS

FALSE

FALSE

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PARALLEL_MAX_SERVERS

a very big number

PARALLEL_MAX_SERVERS

a very big number

CPU_COUNT

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PARALLEL_FORCE_LOCAL

FALSE

PARALLEL_FORCE_LOCAL

FALSE

TRUE

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PARALLEL_THREADS_PER_CPU

2

PARALLEL_THREADS_PER_CPU

2 (1 in 19c)

1

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index dop after create/rebuild

```
ALTER INDEX T1_I1 REBUILD PARALLEL 8;

-- really want to avoid doing this
ALTER INDEX T1_I1 NOPARALLEL;
```

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PGA_AGGREGATE_LIMIT

2*PGA_AGGREGATE_TARGET

PGA_AGGREGATE_LIMIT

2*PGA_AGGREGATE_TARGET

2*PGA_AGGREGATE_TARGET

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RESUMABLE_TIMEOUT

0

RESUMABLE_TIMEOUT

```
SQL> update t set x='asdf';
```
ORA-XXXXX: USERS tbs is out of space, waiting for N seconds before failing

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RESUMABLE_TIMEOUT

Too expensive at the moment:

https://jonathanlewis.wordpress.com/2019/10/07/resumable/

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Redo Logs

`3*200` MB

Redo Logs

3*200 MB

3*1024 MB

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Redo Logs

https://tiny.cc/redo-sizing

Redo Writing

multiple log writers

Redo Writing

multiple log writers

single log writer
`_use_single_log_writer=true`

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Undo

autoextensible undo datafiles

`undo_retention=900`

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any undo datafile autoextensible?

Yes

No

try to obey `undo_retention`

ignore `undo_retention`
use all undo space;
auto tuned retention

Undo

For AUTOEXTEND undo tablespaces, the system retains undo for at least the time specified in this parameter, and automatically tunes the undo retention period to satisfy the undo requirements of the queries. For fixed-size undo tablespaces, the system automatically tunes for the maximum possible undo retention period, based on undo tablespace size and usage history, and ignores UNDO_RETENTION unless retention guarantee is enabled.

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Undo

autoextensible undo datafiles

`undo_retention=900`

fixed size undo datafiles

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Undo

Should be 100% utilized

https://tiny.cc/undo-sizing

Statistics – ESTIMATE_PERCENT

auto_sample_size

auto_sample_size

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Statistics – ESTIMATE_PERCENT

But… https://twitter.com/JLOracle/status/979044773154652161

Jonathan Lewis @JLOracle

Common problem.

The sample size on auto_sample_size for indexes tends to be ridiculously small, and it's block sampled (to get the clustering factor) which magnifies the risk of error.

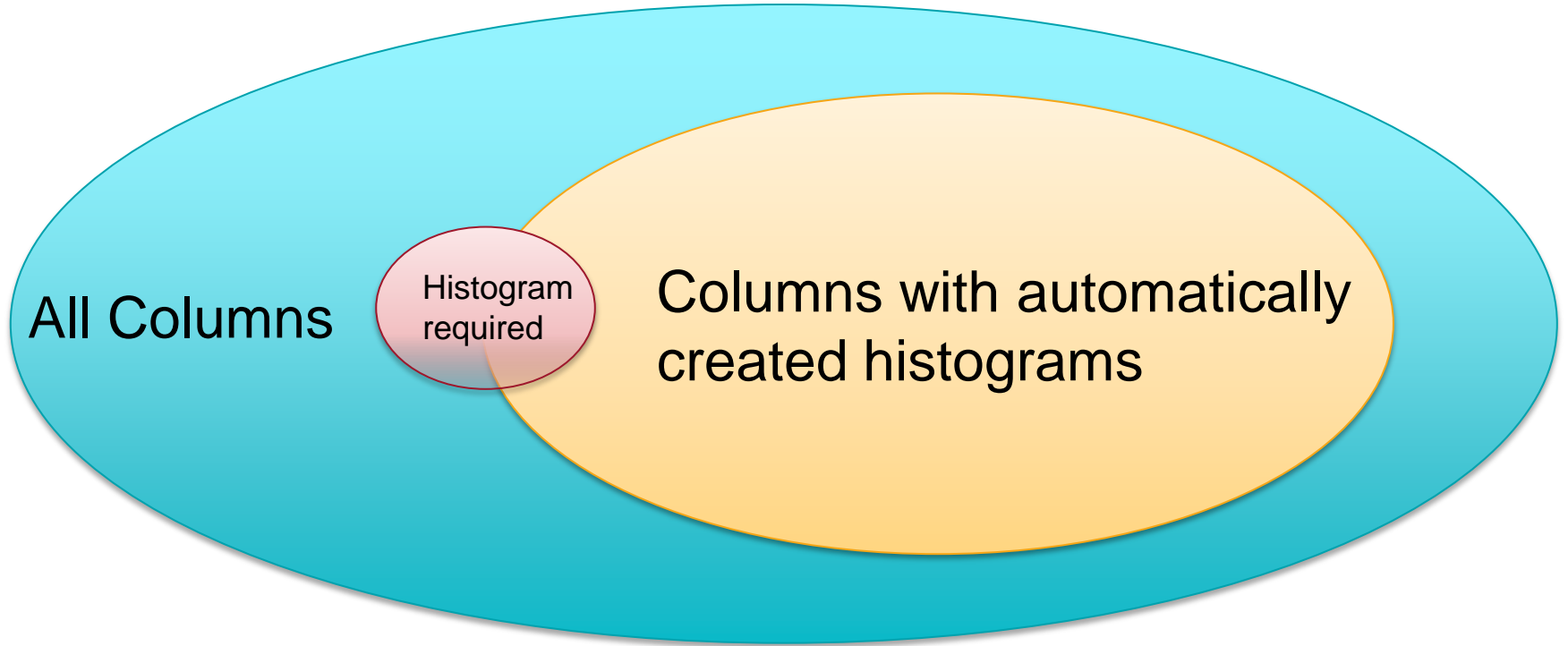8:17 PM - Mar 28, 2018

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Statistics – ESTIMATE_PERCENT

27268249 ENHANCE INDEX NDK STATISTICS GATHERING

+ comments here:

https://blogs.oracle.com/optimizer/how-does-autosamplesize-work-in-oracle-database-11g

Statistics – METHOD_OPT

`for all columns size auto`

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All Columns

Histogram required

Columns with automatically created histograms

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Automatic Indexes vs. Automatic Histograms

	Automatic Indexes	Automatic Histograms
Appeared in?	19.3	10.1
Enabled by default?	✗	✓
Available in all versions?	✗	✓
Just a bunch of PL/SQL?	✓	✓
Could be created by Oracle?	✓	✓
Could be dropped by Oracle?	✓	✓
SQL regressions handled?	✓	✗
Configurable?	✓	✗
Could be turned off?	✓	✓
Freaks me out?	✗	✓

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Statistics – METHOD_OPT

`for all columns size auto`

less histograms

Statistics – METHOD_OPT

`for all columns size auto`

~~less histograms~~

Statistics – METHOD_OPT

`for all columns size auto`

`for all columns size 1`

Statistics – METHOD_OPT

```
dbms_stats.set_table_prefs(
'OWNER', 'TABLE',
'METHOD_OPT',
'FOR ALL COLUMNS SIZE 1 FOR
COLUMNS SIZE 254 C1 C2 C3');
```

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Statistics – Linear Decay

scales down estimates for out of range values

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Statistics – Linear Decay

scales down estimates for out of range values

use in range estimates for most columns

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Statistics – STALE_PERCENT

`10`

Statistics – STALE_PERCENT

10

change in behavior

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Statistics – TABLE_CACHED_BLOCKS

1

Statistics – TABLE_CACHED_BLOCKS

1

16..16*instance_count

Some defaults need a change

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Thank You!

Questions?

Comments?
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