

Informix Performance Tuning Webcast Series Part 3

By Art Kagel

The Webcast will start soon!

Informix Performance Tuning Webcast Series

By Art Kagel



Art Kagel, Principal Consultant of Advanced DataTools Corporation. Art is a member of the IIUG Board of Directors was presented with one of the Inaugural Data Champion awards by IBM.

The Webcast will start soon!

Agenda

Focus on data collection for historical analysis

- What is worth collecting over time?
- How do I do it?
- Collection frequency?
- Now that I have the data, what do I do with it?

What is worth collecting over time?

- Anything that changes over time.
- Any change that is interesting for itself.
- Any resource that is limited or can be consumed.

What is worth collecting over time? Specifically?

- Free space remaining in each dbSPACE
 - All dbSPACES!

```
Select dbname, sum(nfree * sc.pagesize / 1024) kb_free  
from syschunks sc, sysdbspaces sd  
where sc.dbsnum = sd.dbsnum;
```

What is worth collecting over time? Specifically?

- MGM Memory allocated.

If your server makes use of parallel processing – or should not be.

Sysmgminfo

```
max_priority      100
max_query         5
active            0
ready             0
early_act_cnt    0
total_mem         12500
avail_mem         12500
quantum_mem      2500
ds_query_mem     1250
total_seq        1048576
avail_seq        1048576
quantum_seq      1
min_free_mem     12500
avg_free_mem     0.00
std_free_mem     0.00
min_free_seq     1048576
avg_free_seq     0.00
std_free_seq     0.00
max_active       0
cnt_active       0
avg_active       0.00
std_active       0.00
max_ready        0
cnt_ready        0
avg_ready        0.00
std_ready        0.00
```

What is worth collecting over time? Specifically?

- OS Statistics
 - CPU Usage – sar/mpstat output
 - Idle time – sar/mpstat output
 - IO Service and Wait times – iostat output

What is worth collecting over time? Specifically?

- Application Statistics
 - Number of transactions succeeded
 - Number of transactions failed
 - Counts by transaction type
 - Number of users serviced
 - Anything else of interest

What is worth collecting over time? Specifically?

- IDS Statistics
 - Sysprofile contents

Sysprofile

<u>name</u>	<u>value</u>	<u>name</u>	<u>value</u>
dskreads	4347	plgpagewrites	13811
bufreads	2123034	plgwrites	659
dskwrites	30499	llgreccs	153107
bufwrites	140171	llgpagewrites	16064
isamtot	1762796	llgwrites	12547
isopens	57787	pagreads	19923
isstarts	82144	pagwrites	47837
isreads	1149417	flushes	1336
iswrites	28267	compress	5281
isrewrites	9976	fgwrites	2
isdeletes	6968	lruwrites	0
iscommits	22956	chunkwrites	16529
isrollbacks	0	btradata	344
ovlock	0	btraidx	0
ovuser	0	dpra	670
ovtrans	0	rapgs_used	1014
latchwts	740	seqscans	9103
buffwts	292	totalsorts	5055
lockreqs	829504	memsorts	5055
lockwts	69	disksorts	0
ckptwts	78	maxsortspace	0
deadlks	0		
lktouts	0		
numckpts	1248		

What is worth collecting over time? Specifically?

- IDS Statistics
 - Sysbufpool contents *

```
indx 0
address 1144658640
bufsize 2048
nbufs 100000
buff_header 1153227976
nlrus 16
mindirty 50.000000000000
maxdirty 60.000000000000
dskreads 4347
pagreads 19915
bufreads 2123190
dskwrites 30495
pagwrites 47805
bufwrites 140167
bufwrites_sinceck+ 61
bufwaits 292
ovbuff 0
flushes 693
fgwrites 2
lruwrites 0
chunkwrites 16525
lru_time_total 0.00
lru_calls 0
```

* For IDS 10.00 & 11.10 you need to use sysbufprofile to get some of these values.

What is worth collecting over time? Specifically?

- IDS Statistics

- Sysseprof

If you have long running client processes:

- App servers
 - Middleware servers
 - Web services

Sysprof

sid	1160
lockreqs	329
locksheld	1
lockwts	0
deadlks	0
lktouts	0
logrecs	0
isreads	153
iswrites	0
isrewrites	0
isdeletes	0
iscommits	0
isrollbacks	0
longtxs	0
bufreads	397
bufwrites	0
seqscans	0
pagreads	2
pagwrites	0
total_sorts	1
dsksorts	0
max_sortdiskspace	0
logspused	0
maxlogsp	0

What is worth collecting over time? Specifically?

- Sysptprof

dbname	art
tablename	test_varchar
partnum	1048577
lockreqs	1024
lockwts	0
deadlks	0
lktouts	0
isreads	230345
iswrites	1230
isrewrites	234
isdeletes	10
bufreads	107167
bufwrites	0
seqscans	0
pagreads	40587
pagwrites	239

What is worth collecting over time? Specifically?

- Syschkiio

chunknum	3
reads	7
pagesread	68
writes	665
pageswritten	14562
mreads	
mpagesread	
mwrites	
mpageswritten	

What is worth collecting over time? Specifically?

- HDR Health – `syssha_lagtime`

Column name	Type	Nulls
<code>lt_secondary</code>	<code>char(128)</code>	yes
<code>lt_time_last_upd+</code>	<code>integer</code>	yes
<code>lt_lagtime_1</code>	<code>float</code>	yes
<code>lt_lagtime_2</code>	<code>float</code>	yes
<code>lt_lagtime_3</code>	<code>float</code>	yes
<code>lt_lagtime_4</code>	<code>float</code>	yes
<code>lt_lagtime_5</code>	<code>float</code>	yes
...		
<code>lt_lagtime_15</code>	<code>float</code>	yes
<code>lt_lagtime_16</code>	<code>float</code>	yes
<code>lt_lagtime_17</code>	<code>float</code>	yes
<code>lt_lagtime_18</code>	<code>float</code>	yes
<code>lt_lagtime_19</code>	<code>float</code>	yes
<code>lt_lagtime_20</code>	<code>float</code>	yes

How do I do it?

➦ Timestamp every record!

How do I do it?

- Include a host name and server number or servername so you can monitor multiple instances!

How do I do it?

- Use an IDS instance for the repository!

How do I do it?

- Save to a repository that is NOT the production server being monitored!

How do I do it?

- Consider using the Timeseries Datablade
 - Makes it easier to compare data across different periodicities.

Collection Frequency?

- The correct frequency will differ for different data elements or classes of elements
- Ask:
 - How frequently is there a significant change?
 - How frequent are correlated events?

Collection Frequency?

- The correct frequency will differ for different data elements or classes of elements
- Ask:
 - How do I break up my business
 - Year
 - Month
 - Week
 - Day

Now that I have the data, what do I do with it?

- Develop and report metrics:
 - Bufwaits Ratio (BR)
 - Buffer Turnover Ratio (BTR)
 - Readahead Utilization (RAU)

Now that I have the data, what do I do with it?

- Report tables of absolute latest numbers:
 - Sequential scans.
 - Number of extents.
 - Free space in partition extents.
 - etc.

Now that I have the data, what do I do with it?

- Graph/chart values over time to expose trends:
 - Number of extents.
 - Free space in dbspaces.
 - CPU Usage
 - Hourly
 - Daily
 - Weekly

Next Session

Tools for Monitoring and Managing your server.

Questions?

Future Web Casts

**Informix Database Performance Tuning
by Art Kagel, Principal Consultant,
Advanced DataTools Corporation**

Final Session:

Tuesday August 24, 2010 at 2:00pm EST

<http://www.advanceddatatools.com/Informix/Webcasts.html>

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Advanced DataTools

Building a successful data warehouse requires the commitment of significant time and financial resources. To ensure that this commitment is justified, Advanced DataTools has developed a unique approach based on years of designing and implementing successful programs and applications.



Thank You

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For more information:

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