

TUNING GUIDELINES

(HINTS AND TIPS)



Andrew Gadsby
SAS UK Customer Loyalty Team
andrew.gadsby@sas.com

READ THIS

DISCLAIMER

- These guidelines have been developed following visits to a number of UK customers where various performance problems have been reported and in many cases resolved following deeper investigation. During these visits a number of common patterns have emerged that SAS Administrators can, hopefully, exploit to improve and maintain performance in their environments.
- This document is designed to help SAS Administrators tune their systems however, it is not a definitive reference source, for that consult www.sas.com and the various SAS conference proceedings referenced below.
- Finally, as a SAS Administrator you are responsible for your SAS environments and the topics discussed should be carefully reviewed before being tested or used in a production environment as environments vary depending on specific configurations.
- For assistance on tuning please in the first instance contact your normal SAS Support representative. If you have additional hints and tips that you feel SAS users could benefit from then please do let me know me on the email address below.

I WANT YOU TO
GET ME MY.....

P45 **CERTIFICATE NO.** **T**

PLEASE COMPLETE THIS FORM IN CAPITAL LETTERS USING BLACK INK

INCOME TAX - PAY AS YOU EARN - CESSATION CERTIFICATE

Particulars of Employee Leaving

PART 1

Surname of Employee
First Name
Payroll/Works No.
Mark box ☐ if employee is deceased
Name
Address
Mark box ☐ if employee was paid weekly or monthly
Weekly/Monthly Tax Credit
(a) Total Pay & Tax deducted from 1 January to Date of Cessation
Total Pay
(b) If employment started since 1 January enter Pay and Tax deducted (or Tax refunded) for this period of employment only
Pay (this employment)
(c) Amount of Taxable LUMP SUM PAYMENT on termination included in either pay figure above - if applicable
(d) Total amount of taxable Illness Benefit included in pay figure above - if applicable

Employee Address
PPS Number
Date of Cessation
Date of Birth
Date of Commencement (if after 1 January)
Employer Registered Number
and state the name and address of the personal representative of the deceased employee, if known
Mark box ☐ if employee was on Week 1/Month 1 basis at Date of Cessation
Mark box ☐ if employee was on emergency basis at Date of Cessation
Weekly/Monthly Cut-Off Point
Total Tax Deducted
Tax Deducted or Tax Refunded
Mark box ☐ if the tax figure at (b) is a refund

SAMPLE

BUILDS UPON

SAS® Professionals Convention **Marlow** 2014

make connections • share ideas • be inspired

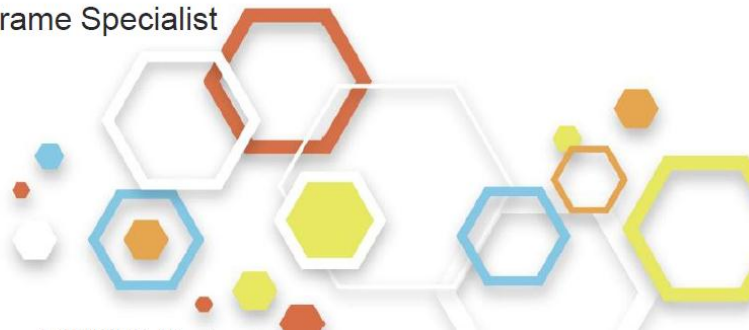
Best Practices for SAS GRID and LSF Deployments

Andrew Gadsby

Customer Loyalty Team and Mainframe Specialist

andrew.gadsby@sas.com

NOTE: The views of the author may not necessarily reflect those of the company.



http://api.ning.com/files/4O6elqcn6-5EauYClb*X2Mn8YF6hIXUdHfdqciAoZOEqZgXZ*EnnLn-0eUanYHuxMJ4HKiUdtuLF5CzXofFUjxqHJ5-2PMw4/BestPracticesforSASGridandLSFDeploymentsAndyGadsby.pdf

GETTING STARTED

- What is normal?



- Things to collect?



- Always turn on FULLSTIMER and keep it on!

```
156      proc options;
157      run;

SAS (x) Proprietary Software Release 9.3  TS1M2

Portable Options:

APPEND=          Append at the end of the option value
APPLETLOC=D:\SASHome\Software\SASGraphJavaApplets\9.3
6                                     The SAS System
| | | | | Location of Java applets
ARMAGENT=log4sas ARM Agent to use to collect ARM records
ARMLOC=ARMLOG.LOG Identify location where ARM records are to be written
ARMSUBSYS=(ARM_PROC)
| | | | | Enable/Disable ARming of SAS subsystems
AUTOCORRECT      Perform auto-correction for misspelled procedure names, keyw
AUTOEXEC=D:\SASHome\Config\Lev3\SASApp\WorkspaceServer\autoexec.sas

NOTE: The data set WORK.SASVER has 1 observations and 1 variables.
NOTE: DATA statement used (Total process time):
| | | | |
| | | | | real time          0.03 seconds
| | | | | user cpu time      0.00 seconds
| | | | | system cpu time    0.00 seconds
| | | | | memory            303.25k
| | | | | OS Memory         6180.00k
| | | | | Timestamp         16/04/2015 10:46:17 o'clock
```


MEMORY

- Memory Settings

- Buffers

- Buffer Cache

- Transparent_hugepages (LINUX only)



File System Buffer Cache

- For performance reasons, the OS will keep some blocks in memory
 - reads will simply use the in memory copy
 - writes update the in memory copy, and the OS will decide when to write back to disk
- On a read, we scan the cache to see if the block is there. If not, bring it in and read from the cache
- Write through means the OS updates the disk block at the same time (slower and safer)
- Write back means the OS updates the disk block at a later time (faster and riskier)

5/1/2000

Moran OS Lecture 11

11



- Query Plans
- `proc sql _method _tree`
- `proc sql buffersize=12345678`
 - Default is 64,000 rows

Name code	Description
SqxCRTA	Create table as select
SqxSLCT	Select
SqxJSL	Step loop join (Cartesian)
SqxJM	Merge Join
SqxINDX	Index Join
SqxHASH	Hash Join
SqxSORT	Sort
SqxSRC	Source rows from table
SqxFIL	Filter rows
SqxSUMG	Summary stats with group by
SqxSUMM	Summary stats with NO group by

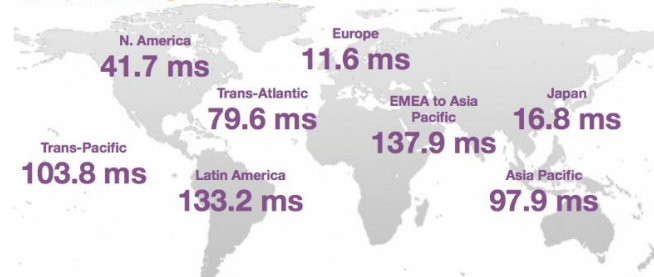
NETWORK

- Network settings
- Latency
- Jumbo Frames



Domestic latency in selected regions:

"higher latency decreases game response time, user performance and perceived game quality."



STORAGE

- FLASH storage
- SASwork



QUESTIONS

THANK YOU