

NMON
(NIGEL'S MONITOR)



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DISCLAIMER

- These guidelines have been developed following visits to a number of UK customers where various performance problems and 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
- 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.

GETTING STARTED

What is normal why do you think you have a problems?

Things to collect?

- PROC OPTIONS;
- SAS Job logs
- Matching operating system stats.

```
156      proc options;
157      run;

      SAS (r) 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

SAS BASIC TUNING

SAS Memory Settings

MEMSIZE 4G depending on #session and physical memory size
SORTSIZE largest of 1G or 75% of MEMSIZE

SAS Buffers

BUFNO > 1
VBUFSIZE (SAS views only)
LIBNAME READBUFF=n

Collecting STATS

FULLSTIMER on (and keep it on)

WHAT IS NMON

See <http://nmon.sourceforge.net/pmwiki.php>

- Interactive performance tool (like top)

- Performance Data collector

```
nmon -f -s 120 -c 720 # day @ 2 minute intervals
```

```
nmon -f -s 60 -c 60 # one hour @ 1 minute intervals
```

Creates file : <hostname>_YYYYMMDD_HHMM.nmon

- Nmon analyser

https://www.ibm.com/developerworks/community/wikis/home?lang=en#!/wiki/Power+Systems/page/nmon_analyser

THINGS TO CONSIDER

- CPU
 - If high system time compared to user time what is causing this?
 - *LINUX: Check transparent_huge_page setting*
 - If running in a VM watch for “steal”
- Memory
 - Low “free memory” is normal, as long as you’re not really paging
 - *LINUX: vm.swappiness is too high by default (60) consider reducing to 10*
- Disk IO
 - SAS can drive >100 Mbytes/second per core, check spread and wait times
- Random hangs
 - *LINUX: Read this <http://support.sas.com/kb/58/166.html>*
 - *if you have an affected version you **MUST** upgrade to a fixed version of the kernel.*

THANK YOU

Coffee Break



AGENDA

- 9am – *Registration & coffee*
- 9.30am – Introductions
- 9.40am – Metadata library audit trails – **Peter Hobart, SAS**
- 10.10am – nmon - **Andy Gadsby, SAS**
- 10.30am – *Break*
- 11.00am – Cloud and security – **Ian Ruffell, SAS**
- 11.30am – Using Enterprise Session Monitor (a Boemska application)
 - - **Nik Markovic, Boemska & Matt Truslove, npower**
- 12 noon – Understanding your ODBC drivers and taming large data sets in Proc SQL
 - - **Andy Gadsby, SAS**
- 12.30 – *Wrap up and Lunch*

WRAP-UP

- Ideas for future sessions, SAS Forum UK, any speaker volunteers
- Re-vamped [Customer Loyalty website](#)
- Any other business

Thank you for joining us today, we appreciate your time and participation



LET'S DO
LUNCH

