art - Bug #2233

Support # 7559 (Closed): Memory check issues for Sirius A

SimpleMemoryChecker needs to be able to cope with different procfs formats on different SLF versions.

11/29/2011 04:11 PM - Christopher Green

Status:	Closed	**Start date:**	11/29/2011
Priority:	Normal	**Due date:**	09/30/2013
Assignee:	Kyle Knoepfel	**% Done:**	100%
Category:	Infrastructure	**Estimated time:**	20.00 hours
Target version:	1.13.00	**Spent time:**	20.00 hours
Occurs In:		**Experiment:**	
Scope:	Internal	**SSI Package:**	art

Description

Chris Jones reported thusly:

> Hi guys,
>
> Are you providing the SimpleMemoryCheck service to your clients? If so, check the definition of linux_proc you are using. I just discovered that the types and even some of the fields do not match the present description of the linux proc file system. I'm guessing there was a change from SL4 to SL5 and we never caught the difference since VSize and RSS remained at their same location in the format.
>
> Thought you should know,
>
> Chris

We need to find out what changed between SLF4 and SLF5 (and potentially between SLF5 and SLF6), how to detect the changes and then act accordingly.

Related issues:

Related to art - Bug #5831: SimpleMemoryCheck affected by overflow errors	**Closed**	**04/04/2014**

History

#1 - 12/09/2011 04:37 PM - Walter E Brown

- Status changed from New to Accepted

SLF4 is not a concern for us. We ought verify the functionality under both SLF5 and SLF6.

#2 - 08/02/2013 02:00 PM - Christopher Green

- Due date set to 09/30/2013

- Target version set to 1.09.00

- Estimated time set to 20.00 h

- Scope set to Internal

- SSI Package art added

#3 - 02/17/2014 12:27 PM - Christopher Green

- Target version changed from 1.09.00 to 521

#4 - 09/02/2014 02:23 PM - Christopher Green

- Target version changed from 521 to 1.13.00

#5 - 12/19/2014 03:15 PM - Kyle Knoepfel

- Assignee set to Kyle Knoepfel

- Parent task set to #7559

#6 - 12/19/2014 03:48 PM - Kyle Knoepfel

- % Done changed from 0 to 70

The procfs types and fields for SLF5 and SLF6 are shown below. Entries prefaced with '*' indicate either a difference in type or field.

```
     Property              SLF5   SLF6
 ========================================
  1. pid                    %d     %d
  2. comm                   %s     %s
  3. state                  %c     %c
  4. ppid                   %d     %d
  5. pgrp                   %d     %d
  6. session                %d     %d
  7. tty_nr                 %d     %d
  8. tpgid                  %d     %d
*  9. flags                 %lu    %u
 10. minflt                 %lu    %lu
 11. cminflt                %lu    %lu
 12. majflt                 %lu    %lu
 13. cmajflt                %lu    %lu
 14. utime                  %lu    %lu
 15. stime                  %lu    %lu
 16. cutime                 %ld    %ld
 17. cstime                 %ld    %ld
 18. priority               %ld    %ld
 19. nice                   %ld    %ld
 20. num_threads            %ld    %ld
 21. itrealvalue            %ld    %ld
*22. starttime              %lu    %llu
----------------------------------------
 23. vsize                  %lu    %lu
 24. rss                    %ld    %ld
----------------------------------------
*25. rlim                   %lu    ---
*25. rsslim                 ---    %lu
 26. startcode              %lu    %lu
 27. endcode                %lu    %lu
 28. startstack             %lu    %lu
 29. kstkesp                %lu    %lu
 30. kstkeip                %lu    %lu
 31. signal                 %lu    %lu
 32. blocked                %lu    %lu
 33. sigignore              %lu    %lu
 34. sigcatch               %lu    %lu
 35. wchan                  %lu    %lu
 36. nswap                  %lu    %lu
 37. cnswap                 %lu    %lu
 38. exit_signal            %d     %d
 39. processor              %d     %d
*40. rt_priority            %lu    %u
*41. policy                 %lu    %u
 42. delayacct_blkio_ticks  %llu   %llu
*43. guest_time             ---    %lu
*44. cguest_time            ---    %ld
```

For the current memory service, only items 23 and 24 are of interest. The code is being restructured so that only the values of fields 23 and 24 are stored. This is done by a new function that looks like:

```
vsize_t vsize;
rss_t rss;
std::istringstream iss ( buffer_from_proc_stat );
iss >> token_ignore(22) >> vsize >> rss;
```

Should a user decide they want the values associated with any other fields, we will need to come up with an SL-release-dependent way of handling this. For now, this is not a concern.

The types of vsize and rss in the current version of SimpleMemoryCheck_service.cc are being corrected to be in accord with those provided by SL5/6 procfs.

#7 - 12/22/2014 09:10 AM - Kyle Knoepfel

- Status changed from Accepted to Assigned

#8 - 01/09/2015 10:22 AM - Kyle Knoepfel

- Status changed from Assigned to Resolved

- % Done changed from 70 to 100

This has been implemented with fbc282dd.

#9 - 02/16/2015 10:32 AM - Christopher Green

- Status changed from Resolved to Closed