IBM Education Assistance for z/OS V2R2

Item: 64-bit USS stacks above the bar
Element/Component: z/OS UNIX System Services

Material current as of May 2015

Agenda

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Trademarks

- See url http://www.ibm.com/legal/copytrade.shtml for a list of trademarks.

Presentation Objectives

- New and changed external items for z/OS UNIX System Services.

Overview

- Problem Statement / Need Addressed
  - Thread capacity approaching maximum limits of kernel below the bar storage.
- Solution
  - Internal dynamic stacks can be moved above the bar.
- Benefit / Value
  - Increased thread capacity.

Interactions & Dependencies

- MODIFY OMVS command enhancement:

  F OMVS,PFS,PFS=<pfsname>,<*command-string*>

  <*command-string*> is a PFS dependent string that allows the PFS, when running in the kernel address space, to receive and execute commands. Refer to the PFS (zFS or TFS) documentation for further details of the supported commands.

- D OMVS,STORAGE output enhancement:

  With KERNELSTACKS(ABOVE) specified, this will show thread info instead of stack cell info.

Migration & Coexistence Considerations

- Some documents describe how to set a SLIP to trap z/OS UNIX reason codes. E.g.,

```
SLIP SET,IF,A=SYNCSVCD,RANGE=(10?+8C?+F0?+1F4?),
  DATA=(13R??+1B0,EQ,reason-code),DSPNAME=('OMVS'.*),
  SDATA=(ALLNUC,PSA,CSA,LPA,TRT,SQA,LSQA,RGN,SUM),
  JL=OMVS,AL=(H,P,S,CU),END
```

- With KERNELSTACKS(ABOVE), Register 13 must indicate a 64 bit address, using “!!”: E.g.,

```
SLIP SET,IF,A=SYNCSVCD,RANGE=(10?+8C?+F0?+1F4?),
  DATA=(13R!!+1B0,EQ,reason-code),DSPNAME=('OMVS'.*),
  SDATA=(ALLNUC,PSA,CSA,LPA,TRT,SQA,LSQA,RGN,SUM),
  JL=OMVS,AL=(H,P,S,CU),END
```

Installation

- BPXPRMxx Parmlib new statement:

KERNELSTACKS(ABOVE|BELOW)

ABOVE indicates stacks for space switched threads will reside above the bar. This increases thread capacity.
BELOW is the default behavior, which uses prior stack storage algorithms.

Presentation Summary

- z/OS UNIX running with 64 bit AMODE and internal stacks above the bar allow increased thread capacity.

Appendix

- *z/OS UNIX System Services Planning (GA22-7800)*
- *z/OS UNIX System Services File System Interface Reference (SA23-2285)*
- *z/OS UNIX System Services Command Reference (SA23-2280)*
- *z/OS MVS System Commands (SA38-0666)*
- *z/OS MVS Initialization and Tuning Reference (SA23-1380)*