Proc file system (procfs)

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Contents

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What is procfs ?

- Procfs is an in memory (RAM) file system, which will keep track of the activity of all the processes from and when system gets boot-up.

- Procfs is not a virtual file system.

- Since files present in the proc file system are virtual files (size - 0Kb), notionally procfs is called as virtual file system.

Applications to access procfs

- Following applications can be used to access the procfs :

  - cat

  - echo

  - vim editor

  - top

  - ps

Attributes of system

asound	execdomains	kmsg	pagetypeinfo	sysvipc
buddyinfo	fb	kpagecount	partitions	thread-self
bus	filesystems	kpageflags	sched_debug	timer_list
cgroups	fs	loadavg	schedstat	timer_stats
cmdline	interrupts	locks	scsi	tty
consoles	iomem	mdstat	self	uptime
cpuinfo	ioports	meminfo	slabinfo	version
crypto	irq	misc	softirqs	version_signature
devices	kallsyms	modules	stat	vmallocinfo
diskstats	kcore	mounts	swaps	vmstat
dma	keys	mtrr	sys	zoneinfo
driver	key-users	net	sysrq-trigger	

Attributes of processes

.	coredump_filter	limits	ns	sched	syscall
..	cpuset	loginuid	numa_maps	schedstat	task
attr	cwd	map_files	oom_adj	sessionid	timers
autogroup	environ	maps	oom_score	setgroups	uid_map
auxv	exe	mem	oom_score_adj	smaps	wchan
cgroup	fd	mountinfo	pagemap	stack	
clear_refs	fdinfo	mounts	personality	stat	
cmdline	gid_map	mountstats	projid_map	statm	
comm	io	net	root	status	

Mount and Unmount of procfs

- During booting along with the kernel image procfs is also loaded into the memory and it will be mounted when system boot-up.

- Since procfs is always keeping track of processes in memory unmount of procfs is not possible by the user.

- Procfs will be unmounted when system shutdown.

Conclusion

What is procfs?

Attributes of system

Attributes of processes

Mount and Unmount of procfs

Applications to Access procfs

References

- Accessing Linux kernel using /proc filesystem

  – https://www.ibm.com/developerworks/library/l-proc/index.html

- Read and Write a /proc file

  – https://linux.die.net/lkmpg/x769.html

- /proc kernel fuction from source code version "Linux-4.16.5"

- Linux man pages

  – http://man7.org/linux/man-pages/man5/proc.5.html

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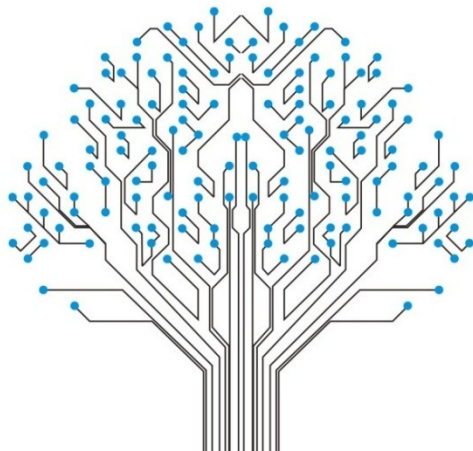Raheja Mindspace
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