

# Tools for Measuring System and Application Performance



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# GlancePlus Character Mode

## `/opt/perf/bin/glance`

# Glance Character Mode

- CPU utilization
  - System time and user time
- System call rates
  - sched\_yield, read, write
- Memory regions
  - Java Heap and C Heap
  - Page sizes used for each region allocated (mmap)
  - Sizes of thread stacks

# Glance Character Mode

- Network activity rates
- Thread activity
  - Thread ID is “lwp\_id” shown in Java stack trace and HPjmeter
  - Sort by CPU usage to see busiest threads
- Files
  - Total number of files open
  - Socket activity on each socket!
- System
  - System table usage

# Glance Character Mode Invocation

- /opt/perf/bin/glance
- Starts a character mode version in window
- Commands typed directly in window
  - Command summary: ?
  - Can use function keys to navigate
- Powerful printing interface
  - Ideal for collecting snapshots of the state of
    - Machine
    - Operating System
    - Process

# Glance Character Mode

## ? – List All Commands

h - Online Help	q - exit (or e)	A - Application List
g - Process List	d - Disk Report	P - PRM Group List
a - CPU By Processor	i - IO By File System	Y - Global System Calls
c - CPU Report	u - IO By Disk	F - Process Open Files
m - Memory Report	v - IO By Logical Volume	M - Process Memory Regions
t - System Tables	N - NFS Global Activity	R - Process Resources
w - Swap Space	n - NFS By System	W - Process Wait States
B - Global Waits	I - Network By Interface	L - Process System Calls
Z - Global Threads	D - DCE Global	
G - Process Threads	K - DCE Process List	
I - Thread Resource	T - Trans Tracker	y - Renice Process
J - Thread Wait	H - Alarm History	s - Select Process
S - Select Disk/NFS/App/Trans/Thread		

### GlancePlus Control Key Menu

? - Commands Menu	b - Page Backward (or -)	< - Display Previous Screen
! - Invoke Shell	f - Page Forward (or +,space)	> - Display Next Logical Scr
h - Online Help	q - exit (or e )	z - Reset Statistics to Zero
p - Print Toggle	r - Refresh Screen (or ^L)	<cr>- Update Current Screen
j - Adjust Interval	o - Threshold Screen Options	

# Glance Character Mode Commands for Java: Machine

- g Process List
- a CPU By Processor
- c CPU Report
- m Memory Report
- t System Tables
- w Swap Space

# Glance Character Mode Commands for Java: Process

- s      Select Process
- F      Open Files
- M      Memory Regions
- R      Resources
- W      Wait States
- L      System Calls
- G      Threads
- S      Select Thread



# Glance Character Mode Commands for Java: Environment

- f Page Forward (or +,space)
- b Page Backward (or -)
- < Display Previous Screen
- j Adjust Interval
- q exit (or e)
  
- p **Print** – single page or continuous – to file or printer



# Glance Character Mode

## g – Process List

coha@gengar /extra/coha/VOLAND/volano2.1 (/dev/tty2)

B3692A GlancePlus C.03.20.00 20:33:13 gengar 9000/800 Current Avg High

Cpu Util	S	SA	AR	100%	46%	100%
Disk Util				0%	3%	
Mem Util	S	SU	UB E	65%	56%	
Network Util	U	UR	R	50%	38%	

PROCESS LIST

Process Name	PID	PPID	Pri	User	CPU Util ( 400% max)	Cum CPU	Disk IO Rate	Users= RSS	Thd Cnt
java	2391	1	154	root	196/83.4	48.9	0.0/ 0.0	333.70b	2016
Java	2546	2532	154	root	160/ 104	48.4	0.0/ 0.0	325.30b	2010
midaemon	2531	1	-16	root	15.0/ 5.3	3.1	0.0/ 0.0	11.00b	3
glance	2527	1637	156	coha	2.8/ 2.5	1.4	0.0/ 0.0	6.6mb	1
statdaemon	3	0	128	root	1.3/ 0.6	0.4	0.0/ 0.0	32kb	1

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Thread Count

# Glance Character Mode

## g – Process List

coha@gengar /extra/coha/VOLAND/volano2.1 (/dev/tty2)

B3692A GlancePlus C.03.20.00 20:30:28 gengar 9000/800 Current Avg High

Cpu Util	S	SA	AR	100%	40%	100%
Disk Util	F			2%	2%	2%
Mem Util	S	SU	UB E	63%	4%	63%
Network Util	U	UR	R	52%	0%	52%

PROCESS LIST

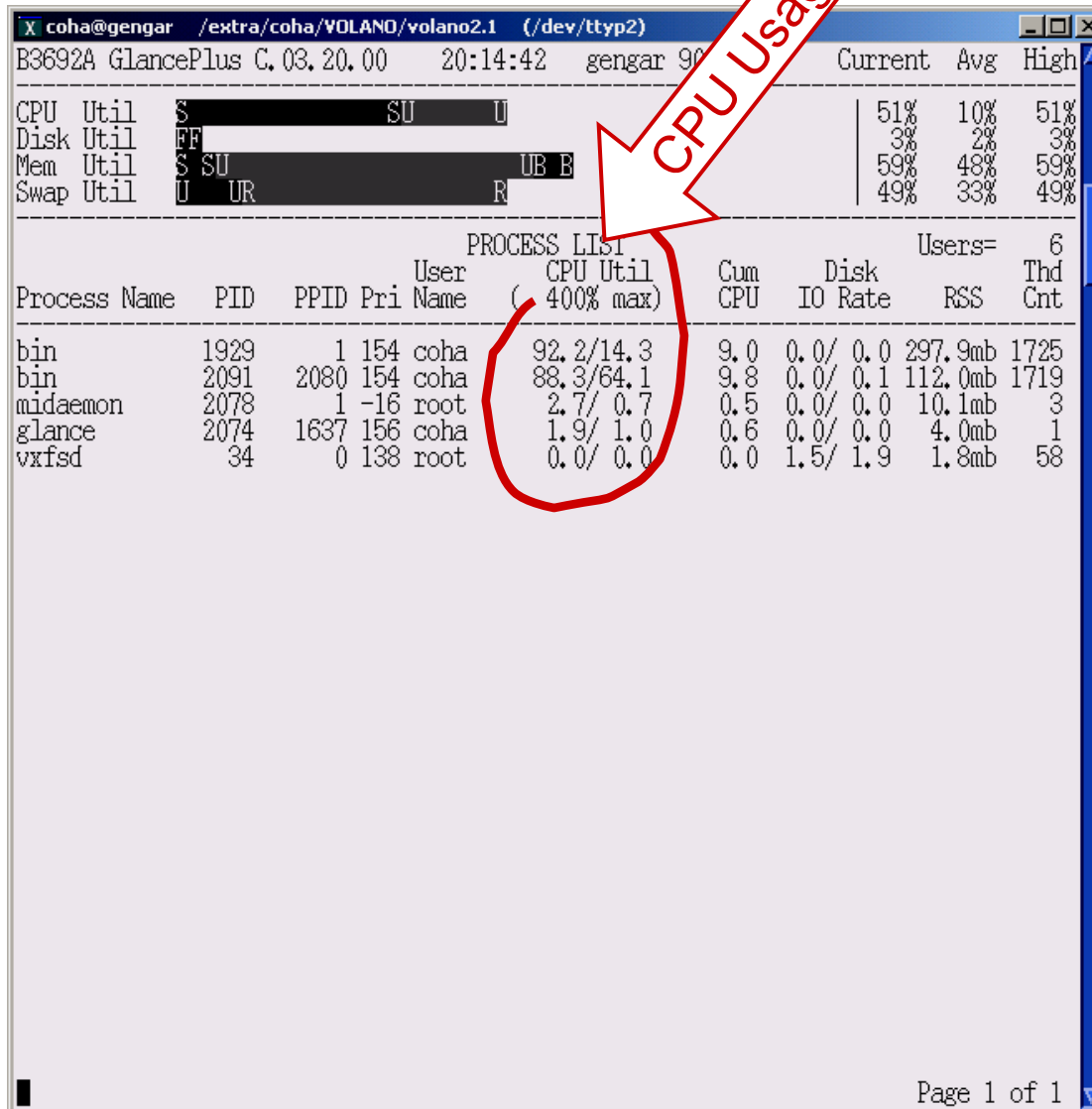
Process Name	PID	PPID	Pri	User	CPU Util ( 400% max)	Cum CPU	Disk IO Rate	Use RSS	Thd Cnt
java	2391	1	137	root	197/91.7	172.7	0.0/ 0.1	329.7mb	1332
Java	2454	2440	154	root	162/ 119	72.4	0.0/ 0.0	325.0mb	1316
midaemon	2078	1	-16	root	13.8/ 5.9	60.0	0.0/ 0.0	11.8mb	3
glance	2074	1637	156	coha	2.8/ 1.2	12.6	0.0/ 0.0	8.8mb	1
vxfsd	34	0	138	root	0.0/ 0.1	0.5	2.2/ 1.4	1.8mb	58

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Resident Set Size

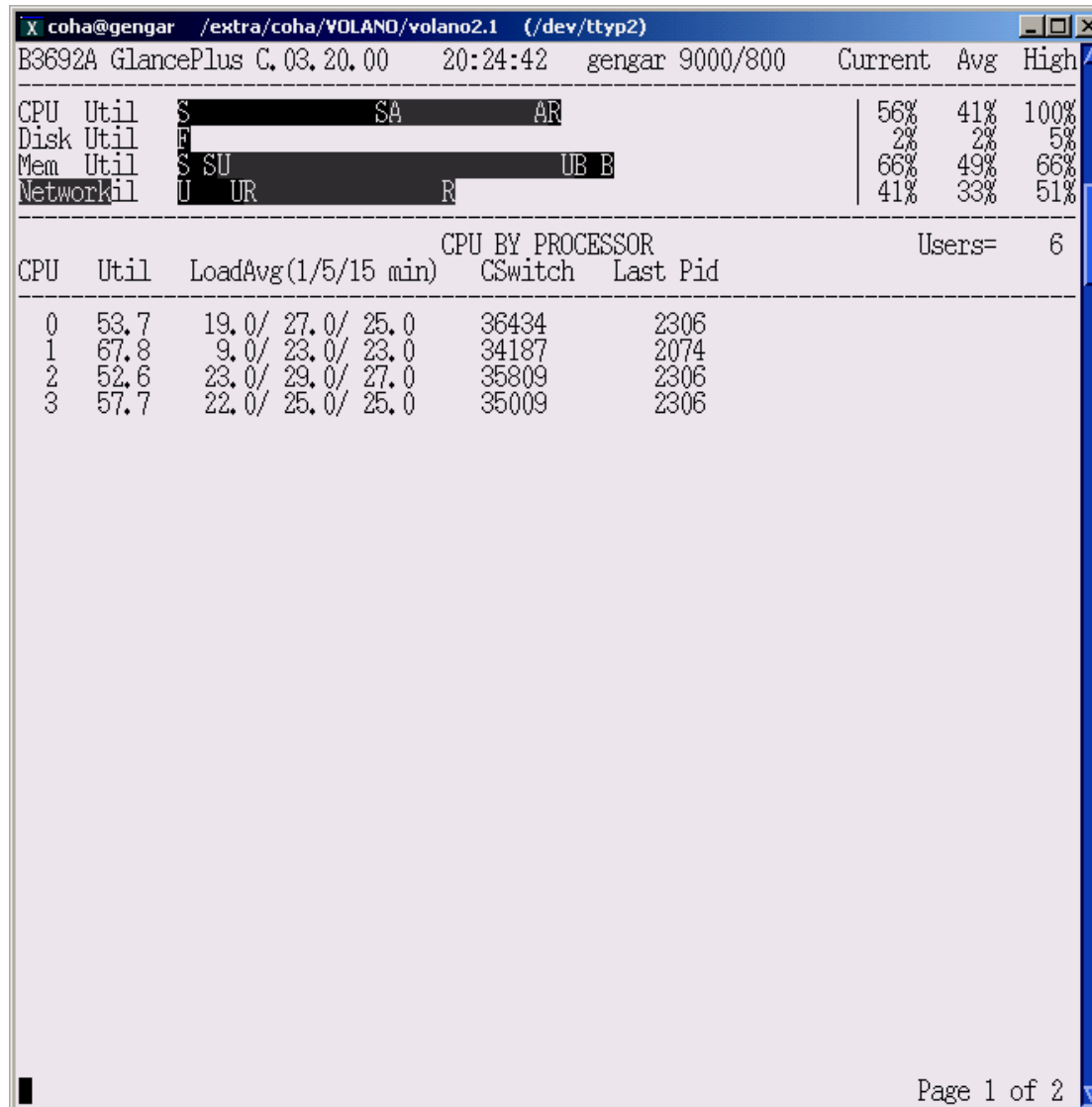
# Glance Character Mode

## g – Process List



# Glance Character Mode

## a – CPU By Processor



# Glance Character Mode

## t – System Tables (1)

X coha@gengar /extra/coha/VOLANO/volano2.1 (/dev/tty2)									
B3692A GlancePlus C.03.20.00		20:46:34		gengar 9000/800		Current	Avg	High	
Cpu Util	S		SA		ARR	95%	39%	100%	
Disk Util						0%	1%	7%	
Mem Util	S SU				UB B	64%	55%	65%	
Networkil	U		UR		R	53%	40%	53%	
-----									
SYSTEM TABLES REPORT								Users=	6
System Table		Available		Requested		Used		High	
-----									
Inode Cache (ninode)		4680		na		473		1779	
Shared Memory		256.0gb		16.2mb					
Message Buffers		16kb		na		0kb		0kb	
Buffer Cache		119.6mb		na		119.6mb		119.6mb	
Buffer Cache Min		102.4mb							
Buffer Cache Max		1024mb							
DNL Cache		5704							
-----									
Model : 9000/800/L2000-44		Phys Memory : 2.00gb		Network Interfaces :		3			
OS Name : HP-UX		Number CPUs : 4		Number Swap Areas :		2			
OS Release: B.11.00		Number Disks: 5		Avail Volume Groups:		0			
OS Kernel Type: 64 bits		Mem Region Max Page Size: 64.0mb							
-----									
Page 2 of 2									

# Glance Character Mode

## t – System Tables (1)

```

X coha@gengar /extra/coha/VOLAND/volano2.1 (/dev/tty2)
B3692A GlancePlus C.03.20.00 20:46:34 gengar 9000/800 Current Avg High
Cpu Util S SA
Disk Util
Mem Util S SU UB E
Network Util U UR R

SYSTEM TABLES REPORT

System Table Available Request
-----
Inode Cache (ninode) 4680
Shared Memory 256.0gb 16.2
Message Buffers 16kb
Buffer Cache 119.6mb
Buffer Cache Min 102.4mb
Buffer Cache Max 1024mb
DNLC Cache 5704

Model : 9000/800/L2000-44 Phys Memory : 2
OS Name : HP-UX Number CPUs :
OS Release: B.11.00 Number Disks:
OS Kernel Type: 64 bits Mem Region Max
  
```

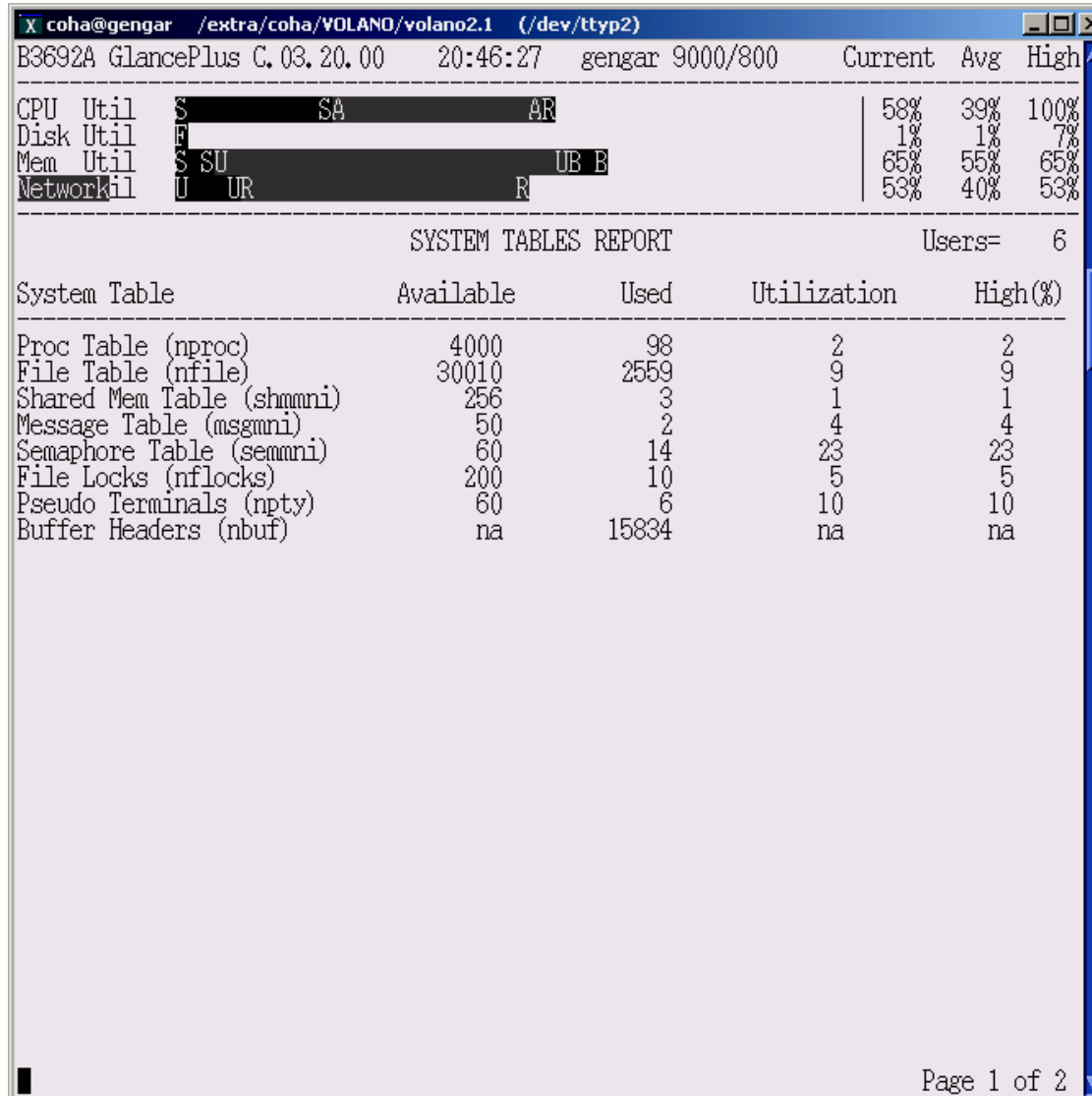
### Interesting values:

- **ninode**
- **Shared Memory**
- **Machine**
  - **Model**
  - **OS Version**
- **Physical Memory**
- **Number of CPUs**
- **Network Interfaces**
- **Number of Swap Areas**



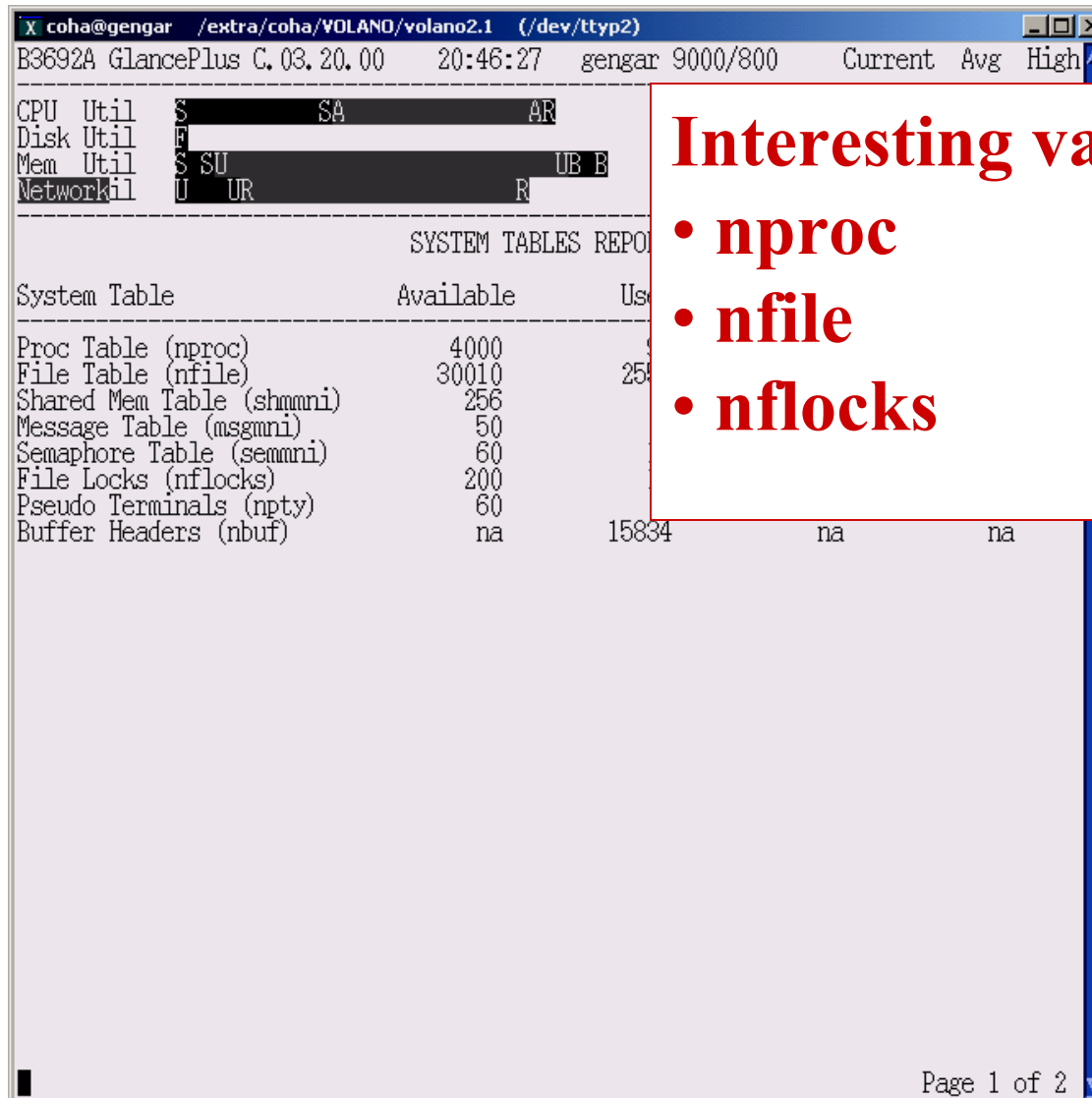
# Glance Character Mode

## t – System Tables (2)



# Glance Character Mode

## t – System Tables (2)

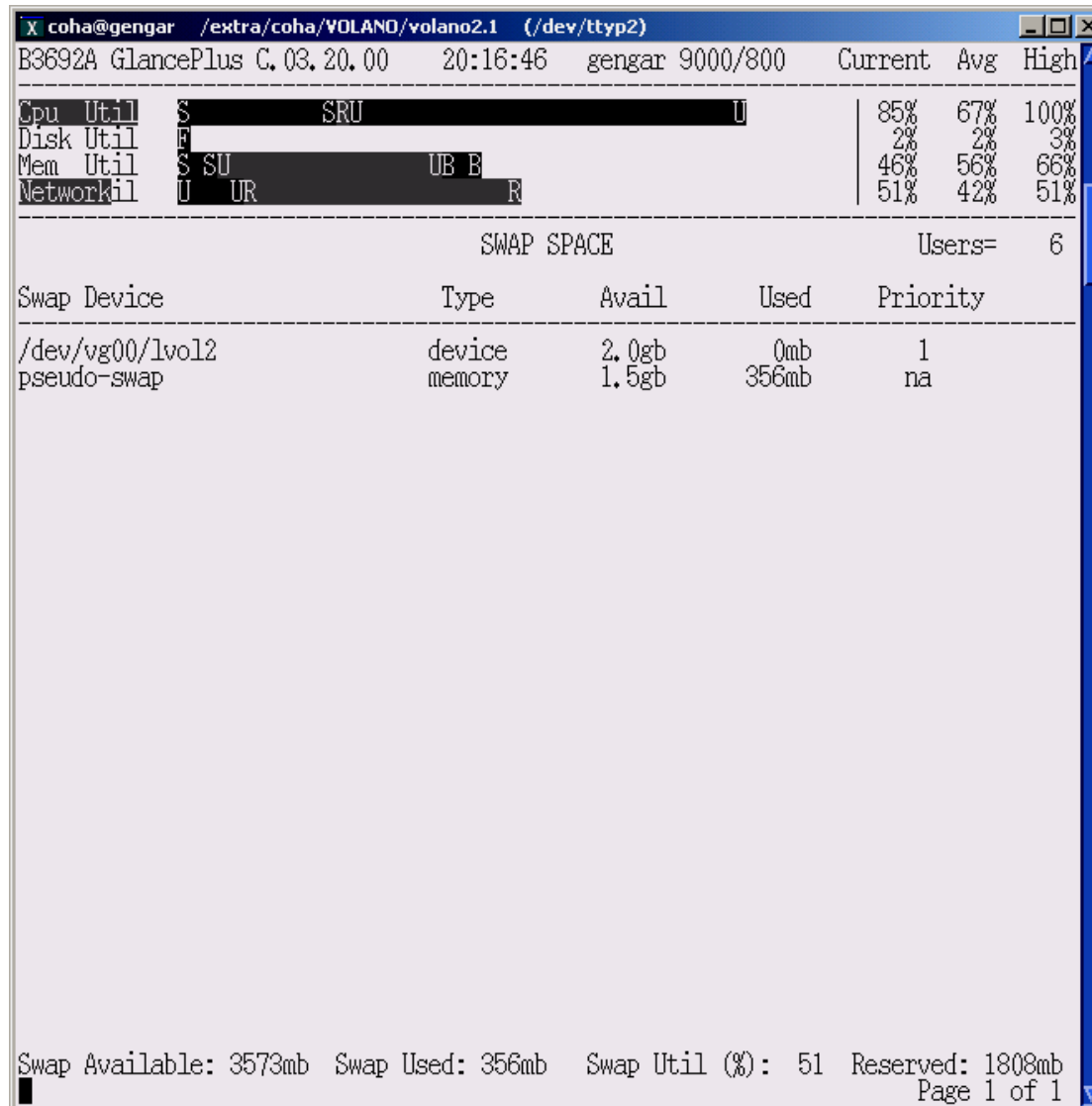


Interesting values:

- nproc
- nfile
- nflocks

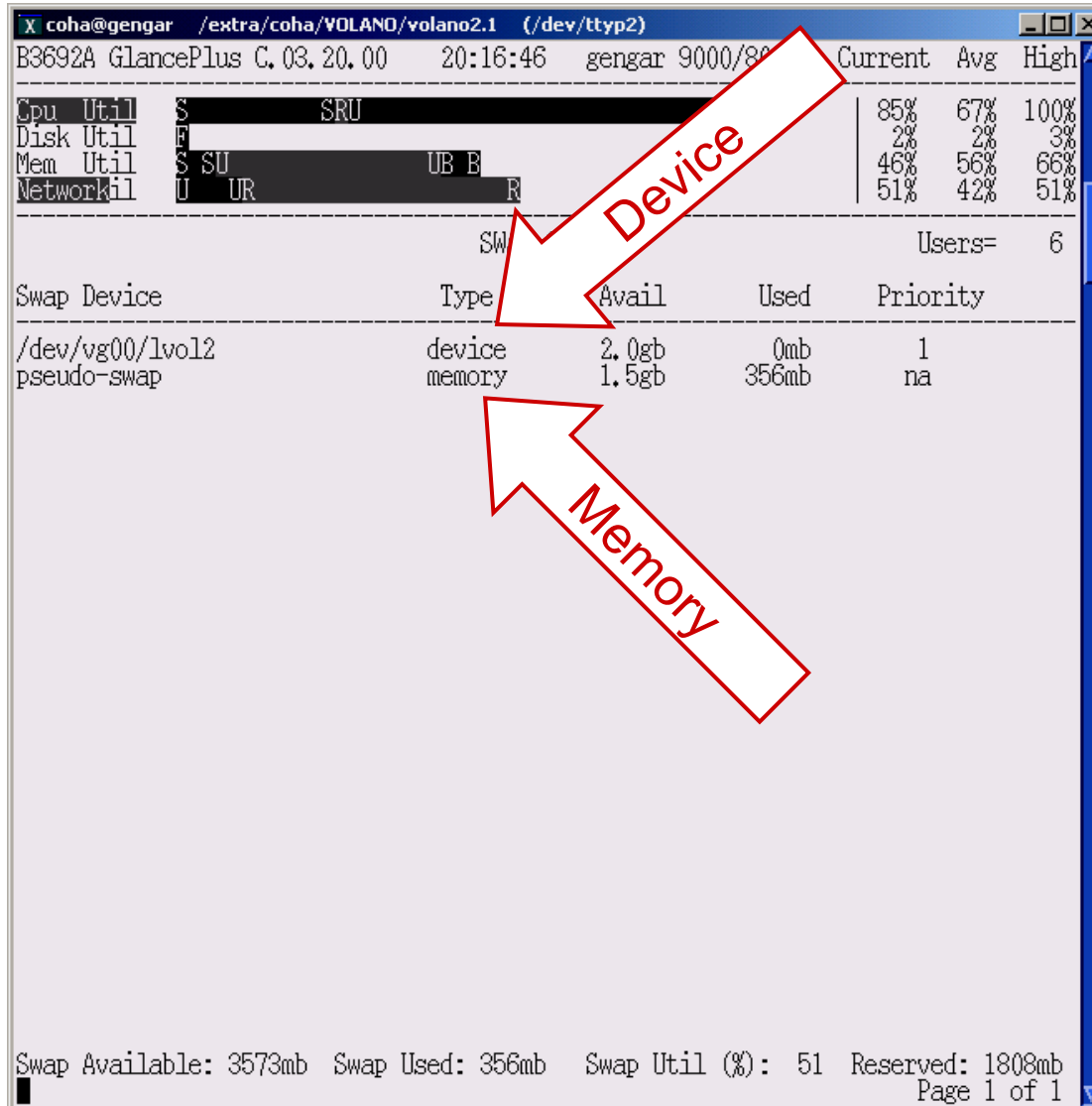
# Glance Character Mode

## W – Swap Space



# Glance Character Mode

## W – Swap Space



B3692A GlancePlus C. 03. 20. 00 20:16:46 gengar 9000/8000 Current Avg High

Cpu Util	S	SRU	85%	67%	100%
Disk Util	F		2%	2%	3%
Mem Util	S	SU UB B	46%	56%	66%
Network Util	U	UR	51%	42%	51%

SW Users= 6

Swap Device	Type	Avail	Used	Priority
/dev/vg00/lvol2	device	2.0gb	0mb	1
pseudo-swap	memory	1.5gb	356mb	na

Swap Available: 3573mb Swap Used: 356mb Swap Util (%): 51 Reserved: 1808mb  
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# Glance Character Mode

## s – Select Process

```

X coha@gengar /extra/coha/VOLAND/volano2.1 (/dev/tty2)
B3692A GlancePlus C.03.20.00 21:11:08 gengar 9000/800 Current Avg High
CPU Util  S          SA  A      | 45% 12% 100%
Disk Util  |          | 0% 1% 7%
Mem Util   S SU          UB E   | 64% 48% 65%
Swap Util  U  UR          R      | 38% 30% 53%

PROCESS LIST
Process Name  PID  PPID Pri User  CPU Util  Cum  Disk  Users= 6
              ( 400% max)  CPU  IO Rate  RSS  Thd Cnt
java          3065 3051 154 root 88.8/62.2 16.3 0.0/ 0.0 209.8mb 1922
java          2391 1 154 root 81.7/21.9 442.5 0.0/ 0.0 330.1mb 1928
glance        2659 1637 156 coha 3.4/ 0.8 16.9 0.0/ 0.0 7.7mb 1
midaemon      2663 1 -16 root 1.7/ 1.7 35.0 0.0/ 0.0 11.8mb 3

Enter PID (2391) : 2391
  
```

# Glance Character Mode

## s – Select Process

```
x coha@gengar /extra/coha/VOLAND/volano2.1 (/dev/tty2)
B3692A GlancePlus C.03.20.00 21:11:08 gengar 9000/800 Current Avg High
CPU Util  S          SA  A          | 45% 12% 100%
Disk Util                                     | 0% 1% 7%
Mem Util   S SU          UB E          | 64% 48% 65%
Swap Util  U  UR          R          | 38% 30% 53%

PROCESS LIST
Process Name  PID  PPID Pri User  CPU Util  Cum  Disk  Users= 6
              ( 400% max)  CPU  IO Rate  RSS  Thd Cnt
-----
java          3065 3051 154 root  88.8/62.2 16.3 0.0/ 0.0 209.8mb 1922
java          2391 1 154 root  81.7/21.9 442.5 0.0/ 0.0 330.1mb 1928
glance        2659 1637 156 coha  3.4/ 0.8 16.9 0.0/ 0.0 7.7mb 1
midaemon      2663 1 -16 root  1.7/ 1.7 35.0 0.0/ 0.0 11.8mb 3

Enter PID (2391): 2391
```

Type PID Number

# Glance Character Mode Displays Process Resources

```

X coha@gengar /extra/coha/VOLAND/volano2.1 (/dev/tty2)
B3692A GlancePlus C.03.20.00 20:40:43 gengar 9000/800 Current Avg High
-----
CPU Util  S      SA      A      | 37% 47% 100%
Disk Util  F      | 1% 2% 7%
Mem Util   S SU      UB B      | 55% 55% 65%
Swap Util  U      UR      R      | 41% 41% 53%
-----
Resources TID: 1762, java PID: 2391 euid: 0 User: root
-----
CPU Usage (sec) : 1.84 Log Reads : 0 Remote Log Reads : 0
User/Nice/RT CPU : 0.20 Log Writes : 0 Remote Log Writes : 0
System CPU : 1.62 Phy Reads : 0 Remote Phy Reads : 0
Interrupt CPU : 0.00 Phy Writes : 0 Remote Phy Writes : 0
Cont Switch CPU : 0.00 FS Reads : 0
Scheduler : HPUX FS Writes : 0 Other Log Reads : 0
Priority : 154 VM Reads : 0 Other Log Writes : 0
Nice Value : 0 VM Writes : 0 Other Phy Reads : 0
Dispatches : 603 Sys Reads : 0 Other Phy Writes : 0
Forced CSwitch : 80 Sys Writes : 0
Voluntary CSwitch: 332 Raw Reads : 0 Wait Reason : STRMS
Running CPU : 1 Raw Writes : 0 Thread Start Time
CPU Switches : 14 Bytes Xfer : 0kb Fri Aug 31 20:27:22 2001
  
```

■ C - cum/interval toggle % - pct/absolute toggle Page 1 of 1

# Glance Character Mode

## M – Process Memory Regions

X coha@gengar /extra/coha/VOLANO/volano2.1 (/dev/tty2)									
B3692A GlancePlus C. 03. 20. 00		20:34:03		gengar 9000/800		Current	Avg	High	
CPU Util	S SA A					41%	49%	100%	
Disk Util						0%	2%	15%	
Mem Util	S SU UB E					62%	56%	65%	
Swap Util	U UR R					45%	43%	53%	
Memory Regions PID: 2391, java PPID: 1 euid: 0 User: root									
Type	RefCt	RSS	VSS	Locked	File Name				
TEXT /Priv	na	24kb	24kb	na	{vxfs, /, /de...node:61953}				
DATA /Priv	na	68.0mb	68.0mb	na	{vxfs, /, /de...node:61953}				
MEMMAP/Priv	na	24kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	72kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	24kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	24kb	104kb	na	{mmap}				
MEMMAP/Priv	na	64kb	104kb	na	{mmap}				
MEMMAP/Priv	na	24kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	72kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	24kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	24kb	104kb	na	{mmap}				
MEMMAP/Priv	na	64kb	104kb	na	{mmap}				
MEMMAP/Priv	na	24kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	72kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	24kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	24kb	104kb	na	{mmap}				
Text RSS/VSS: 24kb/ 24kb Data RSS/VSS: 68mb/ 68mb Stack RSS/VSS: 1.1mb/2.1mb									
Shmem RSS/VSS: 0kb/ 0kb Other RSS/VSS: 272mb/653mb									
Page 1 of 164									



# Glance Character Mode

## M – Process Memory Regions

X coha@gengar /extra/coha/VOLANO/volano2.1 (/dev/tty2)									
B3692A GlancePlus C. 03. 20. 00		20:16:00		gengar 9000/800		Current	Avg	High	
Cpu Util	S	SRU				U	98%	58%	100%
Disk Util	E						2%	2%	3%
Mem Util	S	SU		UR E			66%	55%	66%
Networkil	U	UR		R			51%	40%	51%
Memory Regions PID: 2091, bin PPID: 2080 euid: 1486 User: coha									
Type	RefCt	RSS	VSS	Locked	File Name				
TEXT /Priv	na	16kb	20kb	na	{nfs,fs:N/A,inode:20581}				
DATA /Priv	na	64.0mb	64.0mb	na	{nfs,fs:N/A,inode:20581}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	64kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb	na	{mmap}				
MEMMAP/Priv	na	8kb	104kb	na	{mmap}				
MEMMAP/Priv	na	16kb	104kb						

# Glance Character Mode

## M – Process Memory Regions

The screenshot shows the Windows Task Manager Performance tab for the 'Memory' section. The top bar indicates 'C:\Program Files\Java\jre6\bin\java.exe' is running. Below it, a graph shows memory usage over time, with a peak around 1.5GB. The bottom section displays memory statistics:

Category	Private Bytes	Working Set
Private Bytes	1,536 MB	1,536 MB
Working Set	1,536 MB	1,536 MB
Committed Bytes	1,536 MB	1,536 MB
Free Space	1,536 MB	1,536 MB

# Glance Character Mode

## L – Process System Calls

x coha@gengar /extra/coha/VOLAND/volano2.1 (/dev/tty2)										
B3692A GlancePlus C.03.20.00				20:38:38		gengar 9000/800		Current	Avg	High
CPU Util	S SA ARR						74%	45%	96%	
Disk Util	FF						3%	2%	4%	
Mem Util	S SU UB E						64%	55%	64%	
Networkil	U UR R						53%	43%	53%	
System Calls PID: 2391, java								PPID: 1 euid: 0 User: root		
System Call Name		ID	Count	Rate	Elapsed Time	Cum Ct	CumRate	Elapsed CumTime		
read		3	1937	272.8	0.03994	7744	221.8	0.15270		
write		4	72	10.1	0.00195	240	6.8	0.00490		
brk		17	0	0.0	0.00000	1	0.0	0.00000		
mmap		71	0	0.0	0.00000	184	5.2	1.28608		
mprotect		74	0	0.0	0.00000	554	15.8	0.09021		
gettimeofday		116	7	0.9	0.00010	31	0.8	0.00046		
sysconf		132	0	0.0	0.00000	184	5.2	0.00070		
sigprocmask		185	0	0.0	0.00000	370	10.6	0.00305		
sigsetstatemask		225	40677	5729.1	0.39669	160519	4599.3	1.61047		
poll		269	1937	272.8	7034.70122	7744	221.8	o/f		
accept		275	0	0.0	0.00000	92	2.6	1.56750		
send		285	36803	5183.5	2.93248	144845	4150.2	11.15898		
setsockopt		288	0	0.0	0.00000	92	2.6	0.00273		
sched_yield		341	1588	223.6	3.04969	20733	594.0	12.81557		
clock_gettime		346	7	0.9	0.00005	31	0.8	0.00028		
nanosleep		353	86	12.1	7.11590	524	15.0	29.96216		
sigaltstack		381	0	0.0	0.00000	185	5.3	0.00490		
lwp_create		389	0	0.0	0.00000	184	5.2	0.05083		
lwp_suspend		392	4	0.5	0.00078	599	17.1	0.17181		
lwp_resume		393	4	0.5	0.00004	599	17.1	0.00787		
ksleep		398	34377	4841.8	7199.55446	137581	3942.1	o/f		
kwakeup		399	34373	4841.2	0.69626	103187	3711.7	2.33525		
lwp_mutex_unlock		411	94	14.2	0.00045	977	35.1	0.00417		
lwp_getscheduler		416	2	0.3	0.00004	7	0.2	0.00014		
lwp_setscheduler		417	0	0.0	0.00000	184	6.6	0.22871		
lwp_getstate		418	0	0.0	0.00000	185	6.6	0.00766		
Cumulative Interval:				28 secs						
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# Glance Character Mode

## L – Process System Calls

coha@gengar /extra/coha/VOLAND/volano2.1 (/dev/tty2)

B3692A GlancePlus C.03.20.00 20:38:38 gengar 9000/800 Current Avg High

CPU Util	S	SA	ARR	74%	45%	96%
Disk Util	FF			3%	2%	4%
Mem Util	S	SU	UB E	64%	55%	64%
Network Util	U	UR	R	53%	43%	53%

System Calls PID: 2391, java PPID: 1 euid: 0 User: root

System Call Name	ID	Count	Rate	Elapsed Time	Cum Ct	CumRate	Elapsed CumTime
read	3	1937	272.8	0.03994	7744	221.8	0.15270
write	4	72	10.1	0.00195	240	6.8	0.00490
brk	17	0	0.0	0.00000	1	0.0	0.00000
mmap	71	0	0.0	0.00000	184	5.2	1.28608
mprotect	74	0	0.0	0.00000	554	15.8	0.09021
gettimeofday	116	7	0.9	0.00010	31	0.8	0.00046
sysconf	132	0	0.0	0.00000	184	5.2	0.00070
sigprocmask	185	0	0.0	0.00000	370	1	
sigsetstatemask	225	40677	5729.1	0.39669	160519	459	
poll	269	1937	272.8	7034.70122	7744	22	
accept	275	0	0.0	0.00000	92		
send	285	36803	5180.5	2.93248	144845	415	
setsockopt	288	0	0.0	0.00000	92		
sched_yield	341	588	223.6	3.04969	20733	59	
clock_gettime	346	7	0.9	0.00005	31		
nanosleep	353	86	12.1	7.11500	524	1	
sigaltstack	381	0	0.0	0.00000	185		
lwp_create	389	0	0.0	0.00000	184		
lwp_suspend	392	4	0.5	0.00078	599	1	
lwp_resume	393	4	0.5	0.00004	599	1	
ksleep	398	34375	4841.8	7199.55446	137581	394	
kwakeup	399	34375	4841.2	0.69626	103187	3711.7	2.33525
lwp_mutex_unlock	411	94	14.2	0.00045	977	35.1	0.00417
lwp_getscheduler	416	2	0.3	0.00004	7	0.2	0.00014
lwp_setscheduler	417	0	0.0	0.00000	184	6.6	0.22871
lwp_getstate	418	0	0.0	0.00000	185	6.6	0.00766

Cumulative Interval: 28 secs

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**HIGH**  
**ksleep()**  
**kwakeup()**  
**CALL RATES**

# Glance Character Mode

## L – Process System Calls

coha@gengar /extra/coha/VOLAND/volano2.1 (/dev/tty2)

B3692A GlancePlus C.03.20.00 20:18:40 gengar 9000/800 Current Avg High

Cpu Util	S	SRU	U	100%	66%	100%
Disk Util				0%	1%	3%
Mem Util	S	SU	UB E	66%	56%	66%
Swap Util	U	UR	R	51%		

System Calls PID: 2135, bin PPID: 2124 euid: 1486 User:

System Call Name	ID	Count	Rate	Elapsed Time	Cum Ct.	CumRat
read	3	10974	1097.4	2544.60476	10974	532.7
gettimeofday	116	4	0.4	0.00004	4	0.1
sigsetstatemask	225	11258	1125.8	0.09710	11258	546.5
send	285	610	61.0	0.06919	610	29.6
sched_yield	341	64589	6458.9	840.56121	64589	3135.3
clock_gettime	346	4	0.4	0.00002	4	0.1
nanosleep	353	775	77.5	83.56148	775	37.6
lwp_suspend	392	0	0.0	0.00000	0	0.0
lwp_resume	393	0	0.0	0.00000	0	0.0
ksleep	398	11026	1102.6	6949.96236	11026	535.2
kwakeup	399	5217	521.7	0.98592	5217	253.2
lwp_getscheduler	416	0	0.0	0.00000	0	0.0
lwp_setscheduler	417	0	0.0	0.00000	0	0.0
lwp_getstate	418	0	0.0	0.00000	0	0.0

Cumulative Interval: 21 secs

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**HIGH**  
**sched\_yield()**  
**CALL RATE**

# Glance Character Mode

## L – Process System Calls

X coha@gengar /extra/coha/VOLANO/volano2.1 (/dev/tty2)								
B3692A GlancePlus C.03.20.00			20:19:12		gengar 9000/800		Current	Avg High
Cpu Util	S SRU U					100%	69%	100%
Disk Util						0%	1%	3%
Mem Util	S SU UB E					66%	57%	66%
Swap Util	U UR R					51%	43%	51%
System Calls PID: 2135, bin PPID: 2124 euid: 1486 User: coha								
System Call Name	ID	Count	Rate	Elapsed Time	Cum Ct	CumRate	Elapsed Time	CumTime
read	3	6919	691.9	1984.90979	56547	1089.5	14888.7957	
open	5	0	0.0	0.00000	3	0.0	0.00869	
close	6	30	3.0	0.05753	56	1.0	0.12801	
brk	17	0	0.0	0.00000	3	0.0	0.00007	
stat	38	0	0.0	0.00000	3	0.0	0.02227	
mmap	73	60	6.0	0.00777	106	2.0	0.01448	
mprotect	74	120	12.0	0.00306	212	4.0	0.00561	
fstat	92	0	0.0	0.00000	3	0.0	0.00004	
gettimeofday	116	39	3.9	0.00053	165	3.1	0.00208	
sigcleanup	139	0	0.0	0.00000	2	0.0	0.00004	
sigprocmask	185	0	0.0	0.00000	5	0.0	0.00004	
sigsetstatemask	225	7307	730.7	0.04457	59635	1149.0	2.12546	
send	285	418	41.8	0.04047	3303	63.6	0.38505	
sched_yield	341	48703	4870.3	504.06617	336136	6476.6	7660.36681	
clock_gettime	346	2	0.2	0.00002	22	0.4	0.00018	
nanosleep	353	804	80.4	21.09018	2318	44.6	144.74527	
stat64	369	0	0.0	0.00000	3	0.0	0.00024	
sigaltstack	381	120	12.0	0.00079	212	4.0	0.00158	
lwp_suspend	392	303	30.3	0.00488	565	10.8	0.01014	
lwp_resume	393	303	30.3	0.01111	565	10.8	0.01585	
ksleep	398	7034	703.4	4126.60241	47638	917.8	o/f	
kwakeup	399	5070	507.0	0.87074	31600	608.8	6.18695	
lwp_getscheduler	416	547	54.7	0.00565	1093	21.0	0.03844	
lwp_setscheduler	417	388	38.8	0.02812	861	16.5	0.03102	
lwp_getstate	418	263	26.3	0.00787	517	9.9	0.01353	
siginhibit	491	0	0.0	0.00000	7	0.1	0.00003	
Cumulative Interval:			52 secs					
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# Glance Character Mode

## G – Process Threads

Thread Id

X coha@gengar /extra/coha/VOLANO/volano2.1 (/dev/tty2)										
B3692A GlancePlus C.03.20.00 20:40:11 gengar 9000/800 Current Avg High										
Cpu Util	S SA ARR						95%	50%	100%	
Disk Util							0%	2%	5%	
Mem Util	S SU UB E						64%	56%	65%	
Network Util	U UR R						53%	41%	53%	
Thread List PID: 2391, java PPID: 1 euid: 0 User: root										
TID	CPU Util ( 400% max)		CPU Tm Cum	Phys IO Rate	Logl IO Rate	Scheduler	Pri	Block On		
1727	0.0/	0.0	0.0	0.0/	0.0	HPUX	138	OTHER		
1748	0.0/	0.7	1.1	0.0/	0.0	HPUX	154	SYSTM		
1749	12.8/	5.1	8.5	0.0/	0.0	HPUX	154	SYSTM		
1750	0.0/	0.0	0.0	0.0/	0.0	HPUX	154	SYSTM		
1751	0.0/	0.0	0.0	0.0/	0.0	HPUX	154	SYSTM		
1752	0.0/	0.2	0.0	0.0/	0.0	HPUX	168	SLEEP		
1753	0.0/	0.0	0.0	0.0/	0.0	HPUX	138	OTHER		
1754	0.0/	0.0	0.0	0.0/	0.0	HPUX	138	OTHER		
1755	0.0/	0.0	0.0	0.0/	0.0	HPUX	154	SYSTM		
1756	0.0/	0.1	0.2	0.0/	0.0	HPUX	154	SYSTM		
1757	0.0/	0.0	0.0	0.0/	0.0	HPUX	138	OTHER		
1758	0.0/	0.0	0.0	0.0/	0.0	HPUX	138	OTHER		
1759	0.0/	0.0	0.0	0.0/	0.0	HPUX	138	OTHER		
1760	0.0/	0.0	0.0	0.0/	0.0	HPUX	138	OTHER		
1761	0.0/	0.0	0.0	0.0/	0.0	HPUX	138	OTHER		
1762	0.0/	11.6	19.3	0.0/	0.0	HPUX	154	STRMS		
382	0.1/	0.1	0.0	0.0/	0.0	HPUX	154	SYSTM		
383	0.0/	0.0	0.0	0.0/	0.0	HPUX	154	SLEEP		
386	0.1/	0.1	0.0	0.0/	0.0	HPUX	154	SYSTM		
387	0.0/	0.0	0.0	0.0/	0.0	HPUX	154	SLEEP		
388	0.1/	0.1	0.0	0.0/	0.0	HPUX	154	SYSTM		
389	0.0/	0.0	0.0	0.0/	0.0	HPUX	154	SLEEP		
394	0.1/	0.1	0.0	0.0/	0.0	HPUX	154	SYSTM		
395	0.0/	0.0	0.0	0.0/	0.0	HPUX	154	SLEEP		
398	0.1/	0.1	0.0	0.0/	0.0	HPUX	154	SYSTM		
399	0.0/	0.0	0.0	0.0/	0.0	HPUX	154	SLEEP		
402	0.1/	0.1	0.0	0.0/	0.0	HPUX	154	SYSTM		
403	0.0/	0.0	0.0	0.0/	0.0	HPUX	154	SLEEP		
S - Select a Thread										
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CPU Usage



# Glance Character Mode

## S – Select Thread

coha@gengar /extra/coha/VOLANO/volano2.1 (/dev/tty2)

B3692A GlancePlus C. 03.20.00 21:13:14 gengar 9000/800 Current Avg High

Cpu Util	\$	SA	AR	100%	15%	100%
Disk Util				0%	1%	7%
Mem Util	\$	SU	UB E	64%	48%	65%
Network Util	U	UR	R	53%	30%	53%

Thread List PID: 2391, java PPID: 1 euid: 0 User: root

TID	( CPU Util 400% max)	CPU Tm Cum	Phys IO Rate	Logl IO Rate	Scheduler	Pri	Block On
1727	0.0/0.0	0.0	0.0/0.0	0.0/0.0	HPUX	138	OTHER
1748	0.0/0.2	4.1	0.0/0.0	0.0/0.0	HPUX	154	SYSTM
1749	10.9/1.4	30.9	0.0/0.0	0.0/0.0	HPUX	152	IPC
1750	0.0/0.0	0.1	0.0/0.0	0.0/0.0	HPUX	154	SYSTM
1751	0.0/0.0	0.3	0.0/0.0	0.0/0.0	HPUX	154	SYSTM
1752	0.0/0.1	2.2	0.0/0.0	0.0/0.0	HPUX	168	SLEEP
1753	0.0/0.0	0.0	0.0/0.0	0.0/0.0	HPUX	138	OTHER
1754	0.0/0.0	0.0	0.0/0.0	0.0/0.0	HPUX	138	OTHER
1755	0.0/0.0	0.0	0.0/0.0	0.0/0.0	HPUX	154	SYSTM
1756	0.0/0.0	0.7	0.0/0.0	0.0/0.0	HPUX	154	SYSTM
1757	0.0/0.0	0.0	0.0/0.0	0.0/0.0	HPUX	168	SLEEP
1758	0.0/0.0	0.0	0.0/0.0	0.0/0.0	HPUX	168	SLEEP
1759	0.0/0.0	0.0	0.0/0.0	0.0/0.0	HPUX	168	SLEEP
1760	0.0/0.0	0.0	0.0/0.0	0.0/0.0	HPUX	138	OTHER
1761	0.0/0.0	0.0	0.0/0.0	0.0/0.0	HPUX	138	OTHER
1762	0.0/3.1	67.1	0.0/0.0	0.0/0.0	HPUX	154	STRMS
20962	0.0/0.1	0.0	0.0/0.0	0.0/0.0	HPUX	154	SYSTM
20963	0.0/0.0	0.0	0.0/0.0	0.0/0.0	HPUX	154	SYSTM
20966	0.0/0.1	0.1	0.0/0.0	0.0/0.0	HPUX	154	SYSTM
20967	0.0/0.0	0.0	0.0/0.0	0.0/0.0	HPUX	154	SYSTM
20970	0.0/0.1	0.0	0.0/0.0	0.0/0.0	HPUX	154	SYSTM
20971	0.0/0.0	0.0	0.0/0.0	0.0/0.0	HPUX	154	SLEEP
20974	0.0/0.1	0.0	0.0/0.0	0.0/0.0	HPUX	154	SYSTM
20975	0.0/0.0	0.0	0.0/0.0	0.0/0.0	HPUX	154	SLEEP
20978	0.0/0.1	0.0	0.0/0.0	0.0/0.0	HPUX	154	SYSTM
20979	0.0/0.0	0.0	0.0/0.0	0.0/0.0	HPUX	154	SLEEP
20982	0.0/0.1	0.0	0.0/0.0	0.0/0.0	HPUX	154	SYSTM
20983	0.0/0.0	0.0	0.0/0.0	0.0/0.0	HPUX	154	SLEEP

Enter TID (1727) : 1762

Type TID Number



# Glance Character Mode Thread Resources

```

X coha@gengar /extra/coha/VOLAND/volano2.1 (/dev/tty2)
B3692A GlancePlus C.03.20.00 20:40:43 gengar 9000/800 Current Avg High
-----
CPU Util  S      SA      A      | 37%  47% 100%
Disk Util  F      | 1%   2%  7%
Mem Util   S SU      UB B      | 55%  55% 65%
Swap Util  U      UR      R      | 41%  41% 53%
-----
Resources TID: 1762, java PID: 2391 euid: 0 User: root
-----
CPU Usage (sec) : 1.84 Log Reads : 0 Remote Log Reads : 0
User/Nice/RT CPU : 0.20 Log Writes : 0 Remote Log Writes : 0
System CPU : 1.62 Phy Reads : 0 Remote Phy Reads : 0
Interrupt CPU : 0.00 Phy Writes : 0 Remote Phy Writes : 0
Cont Switch CPU : 0.00 FS Reads : 0
Scheduler : HPUX FS Writes : 0 Other Log Reads : 0
Priority : 154 VM Reads : 0 Other Log Writes : 0
Nice Value : 0 VM Writes : 0 Other Phy Reads : 0
Dispatches : 603 Sys Reads : 0 Other Phy Writes : 0
Forced CSwitch : 80 Sys Writes : 0
Voluntary CSwitch: 332 Raw Reads : 0 Wait Reason : STRMS
Running CPU : 1 Raw Writes : 0 Thread Start Time
CPU Switches : 14 Bytes Xfer : 0kb Fri Aug 31 20:27:22 2001

```

■ C - cum/interval toggle % - pct/absolute toggle

# Glance Character Mode Thread Resources

```

X coha@gengar /extra/coha/VOLAND/volano2.1 (/dev/tty2)
B3692A GlancePlus C.03.20.00 20:44:01 gengar 9000/800 Current Avg High
CPU Util  S SA AR 62% 37% 100%
Disk Util  0% 1% 7%
Mem Util  S SU UB E 65% 54% 65%
Network Util U UR R 42% 38% 53%

Resources TID: 1762, java PID: 2391 euid: 0 User: root

CPU Usage (sec) : 1.87 Log Reads : 0 Remote Log Reads : 0
User/Nice/RT CPU : 0.08 Log Writes : 0 Remote Log Writes : 0
System CPU : 1.76 Phy Reads : 0 Remote Phy Reads : 0
Interrupt CPU : 0.01 Phy Writes : 0 Remote Phy Writes : 0
Cont Switch CPU : 0.01 FS Reads : 0
Scheduler : HPUX FS Writes : 0 Other Log Reads : 0
Priority : 154 VM Reads : 0 Other Log Writes : 0
Nice Value : 0 VM Writes : 0 Other Phy Reads : 0
Dispatches : 486 Sys Reads : 0 Other Phy Writes : 0
Forced CSwitch : 119 Sys Writes : 0
Voluntary CSwitch : 140 Raw Reads : 0 Wait Reason : STRMS
Running CPU : 1 Raw Writes : 0 Thread Start Time
CPU Switches : 6 Bytes Xfer : 0kb Fri Aug 31 20:27:22 2001

C - cum/interval toggle % - pct/absolute toggle
  
```

# Glance Character Mode Summary

- Ideal tool for:
  - Low bandwidth connections
  - Printing information for remote problem diagnosis
    - Important machine configuration information
    - Important OS configuration information
    - OS resource usage
    - Process list and resource consumption summary
  - Analysis of individual thread behavior