

Tools for Measuring System and Application Performance



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- **GlancePlus**
 - Introduction
 - Glance Motif
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 - Glance Command-line
- **Xverbosegc**
- **HPjmeter and –Xeprof**
- **Other Tools**
- **gdb**



GlancePlus Introduction

GlancePlus

- 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

GlancePlus

- Network activity rates
- Thread activity
 - Thread ID same as:
 - “lwp_id” shown in Java stack trace
 - Thread ID shown in HPjmeter
 - Sort by CPU usage to see busiest threads
- Files
 - Total number of files open
 - Socket activity on each socket!
- System
 - System table usage

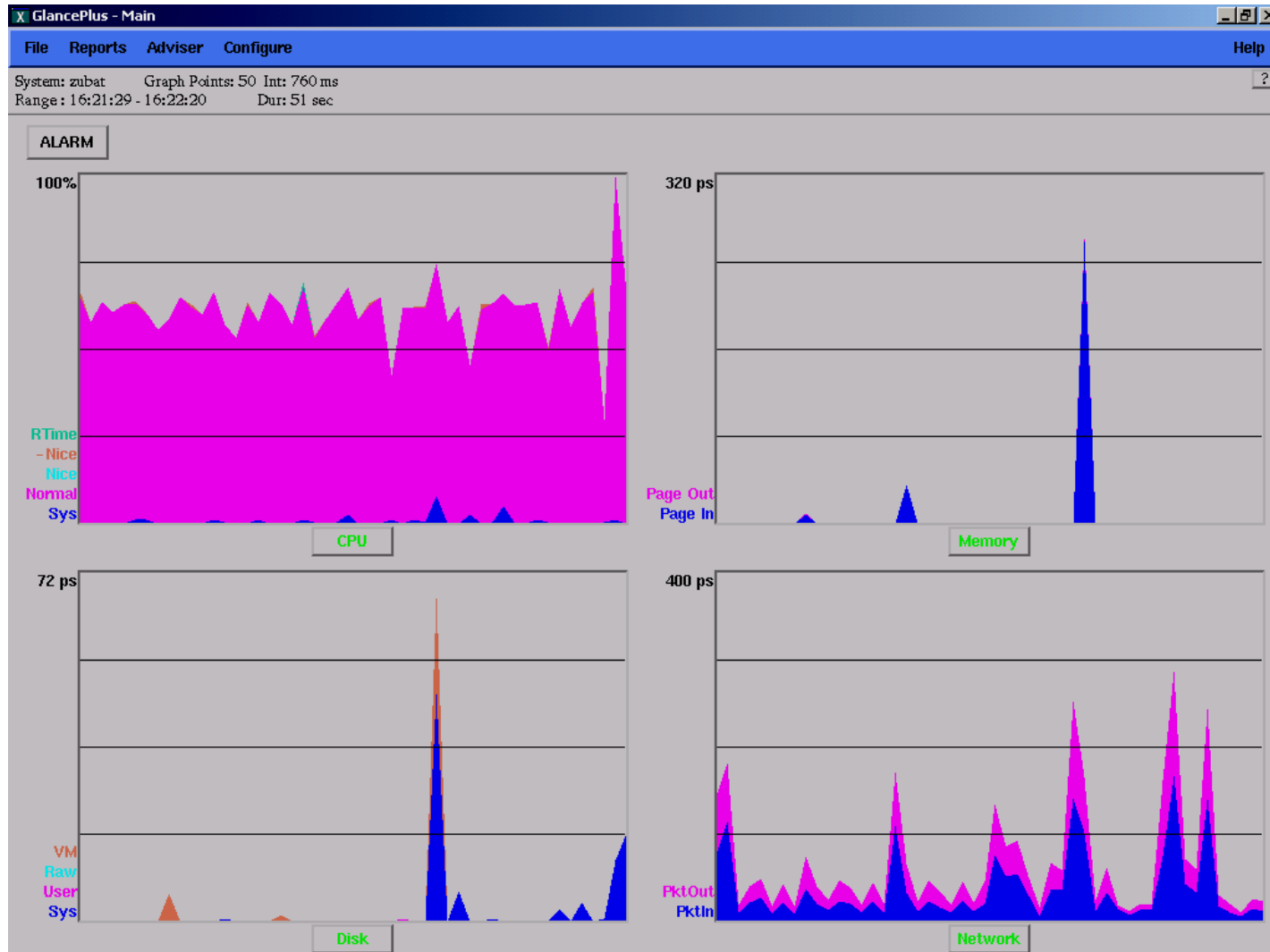
GlancePlus

- Three modes:
 - GlancePlus **Motif** Interface – Multiple Windows
 - /opt/perf/bin/gpm
 - Simultaneous visual displays of all aspects of performance
 - GlancePlus **Character Mode** Interface – 1 Window
 - /opt/perf/bin/glance
 - One screen at a time
 - GlancePlus **Adviser Mode** Interface
 - /opt/perf/bin/glance –adviser_mode
 - Command line interface

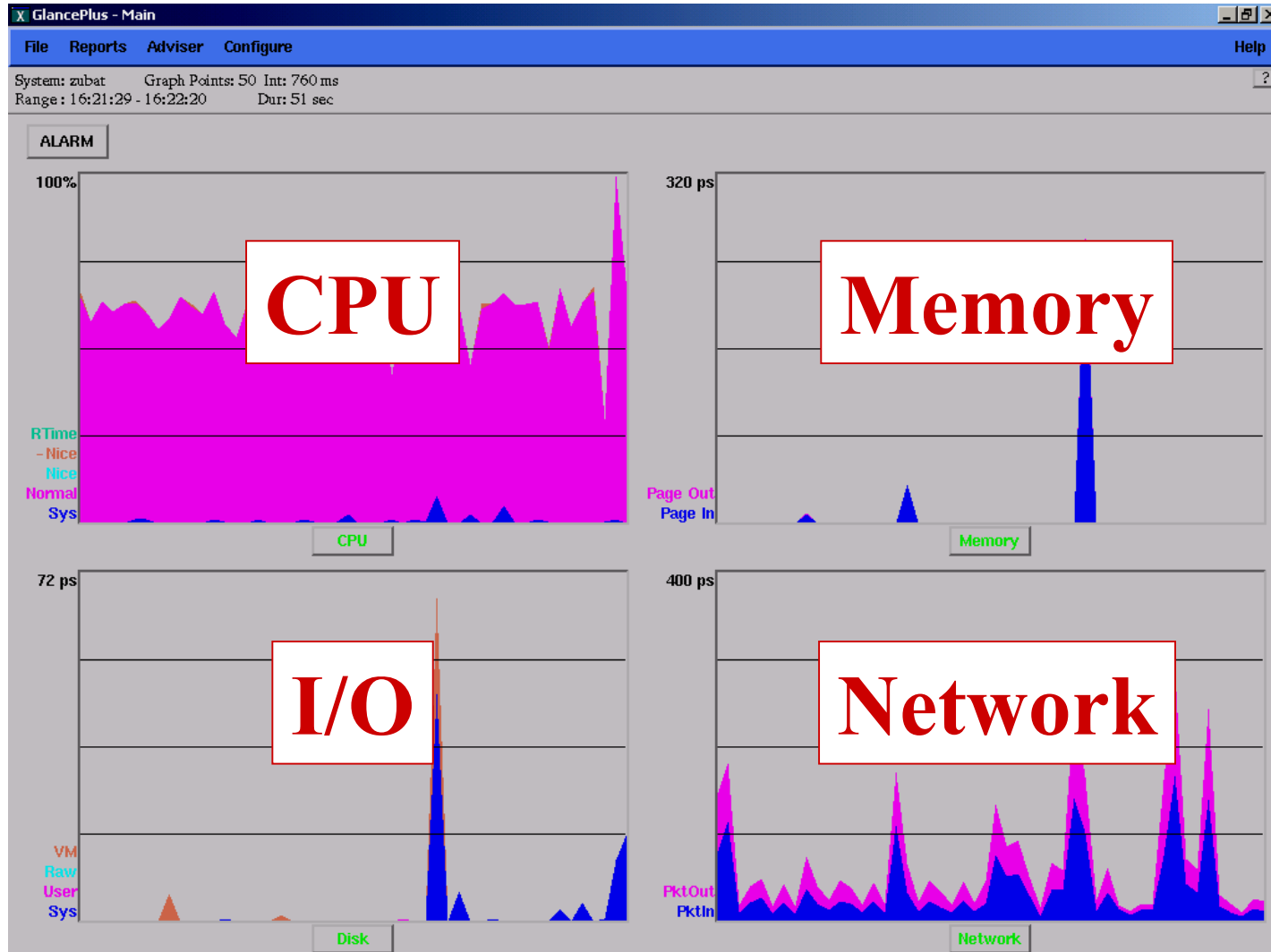
GlancePlus

- When to use each mode:
 - GlancePlus **Motif** Interface – Multiple Windows
 - Whole system graphical view
 - Great simultaneous visualization of events
 - GlancePlus **Character Mode** Interface – 1 Window
 - Works in any environment (even without X or Motif)
 - GlancePlus **Adviser Mode** Interface
 - Command line tool
 - Great of monitoring applications long term
 - Easy method to record data as the process runs

GlancePlus Motif Main Window



GlancePlus Motif Main Window



GlancePlus Character Mode

g – Process List

```

X 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%  15%
Mem Util  S SU          UB E  65%  56%  65%
Network I/O  U  UR          R  50%  38%  50%
-----
PROCESS LIST
Process Name  PID  PPID  Pri  User  CPU Util  Cum  Disk  Users=  Thd
              ( 400% max)  CPU  IO Rate  RSS      Cnt
-----
java          2391  1  154  root  196/83.4  48.9  0.0/ 0.0  333.7mb  2016
Java          2546  2532 154  root  160/ 104  48.4  0.0/ 0.0  325.3mb  2010
midaemon     2531  1  -16  root  15.0/ 5.3  3.1  0.0/ 0.0  11.0mb   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
-----

```

GlancePlus Character Mode

? - 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	

GlancePlus Character Mode

a – CPU By Processor

```

X coha@gengar /extra/coha/VOLAND/volano2.1 (/dev/tty2)
B3692A GlancePlus C. 03. 20. 00 20:24:42 gengar 9000/800 Current Avg High
-----
CPU Util  S  SA  AR  | 56% 41% 100%
Disk Util  F  | 2% 2% 5%
Mem Util  S  SU  UB  E  | 66% 49% 66%
Network Util  U  UR  R  | 41% 33% 51%
-----
CPU BY PROCESSOR
CPU Util LoadAvg(1/5/15 min) CSwitch Last Pid Users= 6
-----
0 53.7 19.0/ 27.0/ 25.0 36434 2306
1 67.8 9.0/ 23.0/ 23.0 34187 2074
2 52.6 23.0/ 29.0/ 27.0 35809 2306
3 57.7 22.0/ 25.0/ 25.0 35009 2306
  
```

GlancePlus in Adviser Mode Command-Line Tool

```
/opt/perf/bin/glance -adviser_only -syntax  
adviser_commands -j 5
```

- Samples every 5 seconds (you can specify)
- Uses the commands in *adviser_commands* file

GlancePlus in Adviser Mode

Sample Output

----- 20:15:37 (proc name, pid, cpu, negnice cpu, VSS, RSS, thread #, I/O)

Swap space utilization: 42% nfile utilization: 6%

bin	6390	93.33	0.00	787.9mb	389.7mb	2438	0.0
-----	------	-------	------	---------	---------	------	-----

bin	6370	88.66	0.00	788.9mb	308.3mb	2444	0.0
-----	------	-------	------	---------	---------	------	-----

----- 20:15:38 (proc name, pid, cpu, negnice cpu, VSS, RSS, thread #, I/O)

Swap space utilization: 42% nfile utilization: 6%

bin	6390	80.00	0.00	793.8mb	389.7mb	2482	0.0
-----	------	-------	------	---------	---------	------	-----

bin	6370	74.66	0.00	794.7mb	308.3mb	2488	0.0
-----	------	-------	------	---------	---------	------	-----

[...]

GlancePlus

More Information

- <http://www.openview.hp.com/products/glanceplus>
- http://ovweb.external.hp.com/lpe/doc_serv
 - Concepts
 - Adviser Reference Guide
- Using the **A**pplication **R**esponse **M**easurement (**ARM**) API with Java
 - See examples in: `/opt/perf/examples/arm`