eCAP Version V9.0A
Release Notes

June 2009

Revision/Update:
Version 9.0 is a eCAP Monitor feature and fix release.

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eCAP Performance and Capacity Suite Release Notes – V9.0A

Release Overview

These release notes address version 8.2b of the eCAP Monitor, Analyzer, Reducer, and Planner. All fixes and known problems are outlined at the end of this document.

Summary of Features and Changes

V9.0 introduces several new features.

- FileSystem Space by Percentage, GB and TB
- IO/Wait cpu mode for Linux (2.6 kernels)
- AIX data spiking fixes.
- AIX kitting chagnes
- Linux Kitting Changes (RPM)
- Solaris Kitting changes (srv)

End of Life for VMS Alpha , 7.2-1 and 7.1-2

eCAP v9.0 will be the last version for Alpha VMS 7.2-1 and 7.1-2.

End of Life for VAX-VMS, HP-UX 10.20, Solaris 2.6 and TRU64 V4.n

eCAP V8.1 will be the last version for HP-UX 10.20, Solaris 2.6, TRU64 V4.n and VAX VMS (all versions) is no longer supported.

Installation

Note that for all UNIX versions of the software, installation uses the script, *install.sh* provided in the kit.

For all software, an ASCII license file, *ecap-monitor.txt*, must be provided in *PERFCAP$LIBRARY* on OpenVMS platforms, On UNIX platforms, Windows NT, Windows 2000, Windows 2003 ecap-monitor.txt should be placed in installation directory. (see table below).

_____ NOTE _____

eCAP V9.0 requires a separate license file for each product to be enabled.   The license files must be named

- ecap-monitor.txt
- ecap-analyzer.txt
- ecap-reducer.txt
- ecap-planner.txt

To obtain a new license file, contact PerfCap Corporation. If you currently are running V7.0 through V8.4 your current license file will enable V9.0

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eCAP Kit on OpenVMS

The following is a summary of new features and changes specific to V8.4 Packaging

- The VMSINSTAL script for OpenVMS will now install all components (except the eCAP Planner) by default. (Due to cross dependencies)
- VMSINSTAL on VAX VMS will no longer install eCAP Analyzer or eCAP Planner.

eCAP Kit on UNIX

The following is a summary of new features and changes specific to V8.4 Packaging

- Silent install was greatly enhanced in V7.1. See the "Silent Install" section of this document.
- Added –ecap_verbose silent install option for UNIX

eCAP Kit on WINDOWS

The following is a summary of new features and changes specific to V8.4 Packaging

- Installation now uses Microsoft installer   (.msi)
- Installation combines eCAP Monitor and PAWZAgent (7.3)

eCAP Monitor

The following is a summary of new features and changes specific to V8.4

- There have been a number of bug fixes to eCAP Monitor.
- HBA data collected on HP-UX 11.23 IA64
- HBA data collected on Solaris 10
- HBA data collected on AIX V5.3
- LPAR data collected on AIX V5.3

eCAP Analyzer

The following is a summary of new features and changes specific to V8.4:

- No additional features added

eCAP Reducer

The following is a summary of new features and changes specific to V8.4

- No additional features added

eCAP Plan

The following is a summary of new features and changes specific to this release, V8.4

- No additional features added

Release Contents

This release of the eCAP Performance Solution product set consists of four separately licensed components:

- eCAP Monitor (AIX, HP-UX, Linux, OpenVMS, Solaris, Tru64, Windows NT/2000/2003)
- eCAP Analyze (AIX, HP-UX, OpenVMS, Solaris, Tru64, Linux)
- eCAP Reduce (AIX, HP-UX, OpenVMS, Solaris, Tru64, Linux)
- eCAP Plan (AIX, HP-UX, OpenVMS, Solaris, Tru64, Linux)

Version 9.0 is comprised of the following items:
- eCAP Version 9.0 software
- eCAP User and Installation Guide

For more information on all the components, see *eCAP User Guide, eCAP Reference Guide,* and the *eCAP Installation* guides and Software Product Descriptions.

eCAP Installation

V9.0 Installation: VMS

Re-Installation of eCAP Performance Monitor on OpenVMS Systems does NOT require a system reboot.

Licensing has changed in V7.0. Each licensed component requires a license file to be placed in the PERFCAP$LIBRARY: folder. These must be named:

- o ECAP-MONITOR.TXT
- o ECAP-ANALZYER.TXT
- o ECAP-REDUCER.TXT
- o ECAP-PLANNER.TXT

The perfcap.txt from prior versions will NOT enable V7.0 PerfCap Software.Please contact PerfCap to upgrade your license. eCAP V9.0 is enabled with the V7.0 or V7.1 licenses.

V9.0 Installation: UNIX

Previous version of UNIX eCAP Performance software must be UNINSTALLED prior to installation. This does not pertain to OpenVMS versions.

Licensing has changed in V7.0. Each licensed component requires a license file to be placed in the installation folder. These must be named:

- o ecap-monitor.txt
- o ecap-analyzer.txt
- o ecap-reducer.txt
- o ecap-planner.txt

The perfcap.txt from prior versions will NOT enable V7.2 PerfCap Software.Please contact PerfCap to upgrade your license. eCAP V8.2 is enabled with the V7.0 or V7.1 licenses.

On UNIX based systems, the installation now creates a settings file to retain user preferences. The *ecap_configure* program, located in bin under the installation folder (e.g /opt/perfcap/bin on Solaris), is used to create/maintain these settings.

V9.0 Silent Installation: Unix

Silent installs are done with the install.sh using command line qualifiers.

-silent

-help

-data_dir <path>

-install_dir <path>

-license_dir <path>

-save_db   (retain dba files)

-dump <dump value in seconds>

-poll < process scan rate in milliseconds>

-peak <peak value in milliseconds>

-retain <ndays>

-mapdisk <map disknames on Solaris>

-ecap_verbose

-pawz_port <port>

-pawz_verbose

-pawz_server <ipaddress of pawzserver>

-pawz_appdata_dir <path>

-pawz_compression <compression command>

-rta_port <rtaport>

-rta_scan <scan rate in seconds>

-rta_verbose

-rta_process

Samples

sh install.sh –silent

(this will install with default options or reinstall with currently set options)

*sh install.sh –silent –license_dir /tmp –data_dir /data/ECP –poll 2000 –dump 120 *
–rta_process

(this will install looking for the license files in /tmp and setting the directory for data files in /data/ECP. The collector will scan at 2000 ms and write to disk every 120 seconds. The real time agent will collect process information)

The -silent install will install the init.d files for the target platform with the default scan and dump rate.

V9.0 Installation: Windows

On Windows based systems, Re-Installation of eCAP Performance Monitor requires the un-installation of the currently installed PerfCap Monitor. This should NOT require a system reboot.

Licensing has changed in V7.0. Each licensed component requires a license file to be placed in the installation folder. These must be named:

- o   ecap-monitor.txt

The ecap-monitor.txt file can also be placed in the C:\ directory for re-installation.

The perfcap.txt from prior versions will NOT enable V7.0 PerfCap Software.Please contact PerfCap to upgrade your license. eCAP V8.2 is enabled with the V7.0 - V7.2 licenses.

V9.0 Installation: Windows Silent Install

On Windows based systems, the eCAP Monitor and PAWZ agent have been bundled into one MSI media kit. This kit will be named "PAWZAgent and eCAP monitor 8.3.msi" or "PAWZAgent eCAP monitor 8.3 (x64).msi"

To Install interactively:

- • Run the PAWZ agent And Ecap Monitor 8.3.msi

- ecap-monitor.txt license will be copied from C:\
  (if the license file is not found, the installation will proceed but the services will not be started)

To Install non-interactively:

- msiexec /qn /I "pawzagent and ecap monitor 8.3.msi"

    - ecap-monitor.txt license will be copied from C:\

To Uninstall non-interactively:

- msiexec /qn /x {6311BE89-1A15-40CE-9353-65F6A2754FA1}
    - This will not delete .CPC data files & retains settings in registry.

- msiexec /qn /x RETAIN_SETTINGS="0" {6311BE89-1A15-40CE-9353-65F6A2754FA1}
    - Remove settings

Installed Components: The following components will be installed:

- eCAP Monitor
- eCAP Monitor Release notes:
- PAWZ Agent
- PAWZ Real time Agent
- PAWZ Agent Release Notes

_____**NOTE**_____

Java JRE is no longer required for the PAWZ Agent on Windows

Installation Locations: The default installation locations are:

eCAP monitor:

C:\Program Files\PerfCap\ECAP\Monitor

PAWZ Agent and Real-Time Agent:

C:\Program Files\PerfCap\PAWZ\Agent

Changing the Defaults

The MSI packaging uses property values to enable customization of the software on installation.

Available Properties

Property Name	Default Value
USER	UserName
COMPANY	CompanyName
INSTALLDIR	C:\program files\PerfCap
ECAP_CONTINUOUS	1
ECAP_LICENSE	C:\ecap-monitor.txt
ECAP_DUMP_RATE	120
ECAP_SCAN_RATE	5000
ECAP_PEAK_RATE	0
ECAP_CUSTOM_METRIC_FILTER	""
ECAP_METRIC_LIST	2,4,86,230,234,236,238,260,510,638,546,658
ECAP_RETENTION	30
ECAP_MANAGE_RETENTION	0
ECAP_START_SERVICE	1

ECAP_LOG_DETAILS	0
ECAP_RETENTION	15
ECAP_MANAGE_RETENTION	0
ECAP_LOW_PRIORITY	0
PAWZAGENT_PAWZSERVER_IP	0.0.0.0
PAWZAGENT_PORT	1661
PAWZAGENT_LOG_DETAILS	0
PAWZAGENT_LOW_PRIORITY	0
PAWZRTA_PORT	2101
PAWZRTA_LOG_DETAILS	0

Installation using Properties

msiexec /qn ECAP_LICENSE=C:\ecap-monitor.txt ECAP_DUMP_RATE=300 ECAP_PEAK_RATE=5000
ECAP_SCAN_RATE=10000 ECAP_CUSTOM_METRIC_FILTER ="RAS*, Termina**"
INSTALLDIR=D:\PAWZ   /I "pawzagent and ecap monitor 8.2.msi"

Installing without real-time

msiexec /qn ADDLOCAL=ECAPMONITOR,PAWZAGENT /i "pawz agent and ecap monitor
8.2.msi"

V9.0: Default Installation Path

The following are the default installation folder(s).

OS	Default

HP TRU64	/usr/opt/perfcap
HP-UX	/opt/perfcap
IBM AIX	/usr/perfcap
Linux	/usr/local/perfcap
Sun Solaris	/opt/perfcap
OpenVMS	sys$sysdevice:[perfcap]
Windows	C:\program files\perfcap\ecap\monitor

_____ **NOTE** _____

At this time, on UNIX platforms, if the default installation path is changed a soft link must exist from the default location pointing to the new installation directory.

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eCAP Monitor for OpenVMS

The eCAP OpenVMS Monitor (Alpha and VAX) was rewritten in V4.0.

Following is a summary of its features added in V4.0:

- No device driver required
- No reboot for re-install
- Automatic rollover to new datafile at midnight
- Datafile retention period may be specified
- Many new performance metrics
- New command line interface

The new collector runs as a detached process and uses a user-written system service. The syntax of the command line interface is described in the user's manual. Only one data file is created each day in the directory specified by the logical PERFCAP$DATA. File extension is .PMD.

The DCL syntax for the eCAP Monitor for OpenVMS may be examined using the $HELP PERFCAP MONITOR command. Two qualifiers are not documented there and may require explanation for some system managers:

OpenVMS Installation

Unless specified during the installation, the monitor is **NOT** started. It is up to the system manager to manually edit the startup command file, *SYS$STARTUP:PERFCAP$STARTUP.COM*, run it, and insert it into the system startup procedure.

The installation procedure for the OpenVMS eCAP Monitor will query the installer as to the data file retention period, the data dump interval, and the hotfiles disk utilization threshold. This has been added to remove the need to additional editing of the PERFCAP$STARTUP.COM file after installation.

OpenVMS Settings File

Currently there is NO settings file for eCAP Monitor for OpenVMS.

Special qualifiers

/CLASS=(item[,…])

This qualifier may be used to specify which performance metrics should be collected. Any of the following items may be specified:

Metric	Description	Default
ALL	All Metrics	No
SCH	Per-Process scheduling state metrics	No
MBX	Per-Process mailbox I/O metrics	No
SYS	System metrics	Yes
DSK	Disk Metrics	Yes
XQP	XQP metrics	Yes
FIO	File I/O metrics	Yes
SCS	SCS metrics	Yes
LCK	Lock management metrics	Yes
LAN	LAN Adapter metrics	Yes
NET	IP, UDP,TCP, ICMP and DECnet metrics	Yes
PROC	Per-Process metrics	Yes
IMG	Per-Process image metrics	Yes
PDSK	Per-Process disk I/O metrics	Yes
PORT	Adapter Metrics	Yes

With the exception of the ALL item, items may be specified in their negated form to indicate that a specific class of data is not to be included, such as:

    /CLASS=(ALL,NONE)

The default statistics are always enabled unless specifically negated.

_____ **NOTE** _____
The inclusion of scheduling statistics may significantly increase the size of the .PMD data file. However, collection of scheduling statistics is necessary if process scheduling state, resource wait state, or scheduling priority statistics are to be reported.
_____

/BUFFERS=number

This qualifier specifies the number of 4096-byte buffers to be allocated for use by the PerfCap Monitor. For OpenVMS Alpha systems, the default is 100 buffers. For OpenVMS VAX systems, the default is 20. In rare occasions where a system is extremely active, exhibiting a large number of concurrent processes, the number of buffers may have to be increased. The maximum allowable is 4096. A rule of thumb is that the number of buffers should be at least half the average number of concurrent processes. Note that buffer space is returned to non-paged pool when the PerfCap Monitor is stopped.

/PEAK_INTERVAL=number

This qualifier specifies the interval in milliseconds that peak values for metrics are to be scanned. The default is 0. The maximum is 60000.

Special Logicals

PERFCAP$BUFFERS

The system logical, PERFCAP$BUFFERS, may be defined to override the default non-paged pool buffer count. This is designed primarily for systems where the eCAP Monitor is controlled by the PAWZ agent, which does not have the ability to specify buffer counts.

eCAP Monitor for UNIX platforms

The default installation directory for UNIX platforms is platform dependent. (see the table below) This directory hierarchy contains all files for the eCAP Monitor, Analyze, Reduce and Planner release. The *log* subdirectory will contain all log files from the eCAP Monitor. The *data* sub-directory contains the data files (cpc) from the performance monitor. This directory can be changed by creating a softlink to a directory where the files are to be installed.

Each Unix platform is installed with the *install.sh* script. This script will uninstall currently installed PerfCap software and then invoke the systems native installation facility with the user's selections.

_____ **NOTE** _____

The command to startup eCAP Monitor has changed from *cpcunix* to *ecap_monitor* The cpcunix
command will still function.

_____

eCAP Monitor for UNIX platforms - Post Installation

It is recommended that you use the system's initd mechanism for starting and stopping the
eCAP monitor on system reboots.

The installation script will now copy the following

AIX

```
# cp /usr/opt/perfcap/settings/perfcap.initd /etc/rc.d/perfcap
# chown root:system /etc/rc.d/perfcap

# chmod +x /etc/rc.d/perfcap

# ln –s /etc/rc.d/perfcap   /etc/rc.d/rc2.d/S90perfcap
# ln –s /etc/rc.d/perfcap   /etc/rc.d/rc3.d/K90perfcap
# ln –s /etc/rc.d/perfcap   /etc/rc.d/rc4.d/K90perfcap
# ln –s /etc/rc.d/perfcap   /etc/rc.d/rc5.d/K90perfcap
# ln –s /etc/rc.d/perfcap   /etc/rc.d/rc6.d/K90perfcap
# ln –s /etc/rc.d/perfcap   /etc/rc.d/rc7.d/K90perfcap
# ln –s /etc/rc.d/perfcap   /etc/rc.d/rc8.d/K90perfcap
# ln –s /etc/rc.d/perfcap   /etc/rc.d/rc8.d/K90perfcap
```


HP-UX

```
#  cp /opt/perfcap/settings/perfcap.initd   /sbin/init.d/perfcap
#  chown bin:bin /sbin/init.d/perfcap
#  chmod 555 /sbin/init.d/perfcap
#  ln -s /sbin/init.d/perfcap  /sbin/rc3.d/S90perfcap
#  ln -s /sbin/init.d/perfcap /sbin/rc0.d/K90perfcap
```


Linux (RedHat)

```
# cp /usr/local/perfcap/settings/perfcap.initd /etc/rc.d/init.d/perfcap
# chkconfig –add perfcap
# chkconfig –list perfcap
```

Linux (SLES Suse)

```
# cp /usr/local/perfcap/settings/perfcap.initd /etc/rc.d/perfcap
# chkconfig –add perfcap
```

```
# chkconfig –list perfcap
```

Solaris

```
# cp /opt/perfcap/settings/perfcap.initd /etc/init.d/perfcap
# chown root:sys /etc/init.d/perfcap
# chmod +x /etc/init.d /etc/init.d/perfcap
# ln -s /etc/init.d/perfcap  /etc/rc3.d/S90perfcap
# ln -s /etc/init.d/perfcap  /etc/rc0.d/K90perfcap
```

Tru64

```
# cp /usr/opt/perfcap/settings/perfcap.initd /sbin/init.d/perfcap
# ln –s /sbin/init.d/perfcap   /sbin/rc3.d/S90perfcap
# ln –s /sbin/init.d/perfcap   /sbin/rc0.d/K90perfcap
```

If you have modified the /etc/inittab file, please remove entries which start the cpcunix process.

Please review the *install_path/*settings/perfcap.initd file to ensure that startup command line is correct for your site.

eCAP Monitor for UNIX platforms: Settings file

The settings file, ecap_*hostname.*config is located in the settings directory of the perfcap install folder /usr/local/perfcap/settings.   It contains user preferences for starting the ecap_monitor. After this file is created and contains the user preferences, issuing the ecap_monitor command will first read the preferences file and then parse out any command line options, which will override the settings file.

There are settings for each command line option, they are customizable by running the ecap_configure program. This file is run during installation and is also available post installation by running *install_path*/bin/ecap_configure.

eCAP Monitor for UNIX platforms: Command line options

These are the command line options for the ecap_monitor. All settings should also be included in the settings file.

Qualifier	Description	default
-start DD-MMM-YYYY:HH:MM	Specifies the date and time when data collection is to begin.	Current time

-end DD-MMM-YYYY:HH:MM	Specifies the date and time when data collection is to end.	
-status	Display status.	
-stop	Stop data collection	
-help	Display command line usage	
-dump \<interval\>	Specifies interval for writing data to disk in seconds.	120
-poll \<interval\>	Specifies interval for polling process data in milliseconds	2000
-peak \<interval\>	Specifies interval for polling peak data in milliseconds	0
-dir \<path\>	Specifies directory for writing raw data	*install_dir*/data
-logdir \<path\>	Specifies directory for writing log files	*install_dir*/logs
-collect \<all [no]cpu [no]disk [no]fs [no]process [no]net [no]vm [no]hba [no]processor \>	Comma separated list of metric classes to collect.	all
-priority \<nn\>	Set process priority [-20 (highest)] to 20 lowest]	0
-maxcpu \<limit\>	Specifies the upper limit for CPU Utilization. –max cpu will dynamically adjust polling rate at run time (TRU64 only)	No Limit
-retain \<days\>	Number of days to retain data an log files	
-augment_network	Use network statistics from netstat (AIX)	
-augment_process	Augment process statistics from ps. (to capture full command line) (AIX, LINUX)	
-[no]mapdisk	Map disk names from Solaris format to BSD format Solaris format is dad0, sd0 (-nomapdisk) BSD format is /dev/dsk/c0t0d0s0 (-mapdisk)	-mapdisk

-[no]verbose	Verbose logging	-noverbose
-write_config	Write configuration options file.	*Install_dir*/settings

eCAP Monitor for WINDOWS

eCAP Monitor for Windows platforms: Settings file

eCAP Monitor for Windows does not use a settings file. All settings are registry entries.

eCAP Monitor for WINDOWS: Registry Entries

The following table contains each eCAP Monitor registry entry, default value and a description.

The root for eCAP Monitor is:

HKEY_LOCAL_MACHINE \ SOFTWARE \ PERFCAP \ PM

Name	Default

InstallDirectory   C:\program files\PerfCap\ECAP\Monitor

InstallDirectory contains the eCAP Monitor root directory path.

BinDirectory   C:\program files\PerfCap\ECAP\Monitor\Bin

BinDirectory contains the path where eCAP Monitor executable and binary files will be installed.

DataDirectory   C:\program files\PerfCap\eCAP\Monitor\Data

DataDirectory contains the path where eCAP performance data files will be written.

LogDirectory   C:\program files\PerfCap\eCAP\Monitor\Logs

LogDirectory contains the path where eCAP Monitor log files will be written.

DefaultMetricList   2,4,86,230,234,236,238,260,546,638,658

DefaultMetricList contains the Default Metric IDs the collector will monitor.

MetricList   "2,4,86,230,234,236,238,260,546,638,658"

MetricList contains the currently monitor Metric IDs.

DefaultPeakList   2,4,238

  DefaultPeakList contains the Default Peka Metric IDs the collector will monitor if PeakInterval is enabled.

CustomMetricFilter   """

  CustomMetricFilter uses to create a filter of additional metrics to be collected when the ecap_monitor is started. For example a value of "sql*, outlook" would cause all metrics with the name starting with sql and all metrics with the name outlook to be enabled. Their metric IDs are added to *CustomMetricIds.*

CustomMetricIds   """

  CustomMetricIds contains metric ids obtained from matching names in the *CustomMetricFilter* value.

CurrentMetricList   """

  CurrentMetricList contains the values from both *DefaultMetricList* and *CustomMetricIds*

PollInterval   "120"

  PollInterval contains the interval in seconds to write collected performance data to disk. This should be a multiple of 60, (60, 120, 300…)

ScanInterval   "5000"

  ScanInterval contains the interval in millseconds that process data is sampled.

PeakInterval   "0"

  PeakInterval contains the interval in millseconds that peak data is sampled.

LowPriority   "0"

  LowPriority contains "0" to run at normal priority or "1" to run at below normal priority.

ManageRetention   "0"

  ManageRetention contains a value ("0" or "1") enabling/disabling having eCAP Monitor manage retention of the data files. Typically managing retention of data files is not necessary as PAWZ Server will manage it.

Retention   "30"

Retention contains the number of days the eCAP Monitor should retain data files. This is only enabled if the *ManageRetention* entry is "1"

Continuous   **"1"**

Continuous contains a value ("0" or "1") enabling/disabling having eCAP Monitor run continuously. If it is set to "0" eCAP Monitor will stop itself at midnight. This is an historical entry, a system that had memory leaks in some performance counters caused eCAP Monitor to leak memory. The eCAP Monitor would disable itself and PAWZ Server would restart it, minimizing the amount of memory consumed by eCAP Monitor.

ManageTimeDrift   **"1"**

ManageTimeDrift contains a value ("0" or "1") enabling/disabling time drift management. If enabled, the collector adjusts the time the collector will sleep between intervals to maintain the desired sampling rate.

Version   **"version string"**

Version is an output registry entry. The eCAP Monitor will set the value to the version and build date string.

DataBufferSize   **""**

DataBufferSize contains the optimal buffer size, in bytes, used for allocating data buffer space. This reduces collector overhead by minimizing data reallocations. This is an internal value and should not be modified.

eCAP Analyze and Graph

eCAP V5.0 and later versions include graphing of SAN I/O and data rates for HBAs and controller ports (by WWID) for OpenVMS data. HBA graphs are node-specific. Controller port graphs are both node-specific and cluster-wide.

eCAP Graphing for OpenVMS Alpha: Command Line

Included with eCAP Analyze for OpenVMS for Alpha is the DCL graph generation facility which permits the creation of CSV, Postscript, JPEG, or GIF graph files. The command line syntax is a follows:

```
$ PERFCAP GRAPH  /PMD_NODES=(nodelist) –
        /BEGIN=vmstime –
        /END=vmstime -
```

```
/GRAPH_FILE=graphFilespec  -
/TYPE={CSV|JPG|GIF|PS}  -
 /ITEM="graphname" –
 [/BEGIN=beginTime ]  -
 [/END=endTime ]  -
[ /WIDTH=number{IN|CM|PIX}]  -
[ /HEIGHT=number{IN|CM|PIX}]  -
[/OVERLAY="overlayname"]
```

PMD_NODES contains a comma-separated list for the clustered nodes from which the performance data is to be obtained. The graphing facility assumes that data files are found in the directory specified by the logical PERFCAP$DATA. graphFilespec is the file specification of the output graphics file. If other than the entire time span of the data file is to be graphed, beginning and ending times may be specified. The /TYPE qualifier is used to specify the type of graphics output. Width and height qualifiers may be specified in units of inches, centimeters, or pixels. The /ITEM qualifier is used to specify the data graph to be generated. Graphname is the graph title as it appears in the motif-based analyze graph. Overlayname is the graph title of the graph from which the overlay trace is extracted followed by the at sign (@) and the legend name of the particular data trace from that graph. Neither graphname nor overlayname are sensitive to spaces or case.

Following is an example of a command to generate of cluster-wide CPU graph:

```
$ PERFCAP GRAPH   /PMD_NODES=(MARKOV,GODEL,ABEL) –
        /BEGIN=10-APR-2004:00:00:00:00 –
        /END=10-APR-2004:23:59:59:00 –
        /TYPE=JPG –
        /GRAPH_FILE=CLUSTER_CPU.JPG –
        /WIDTH=15IN    /HEIGHT=9IN –
        /ITEM="Cluster-wide : CPU Utilization"
```

Below is a list of all the current items that may be **specified** for VMS data. Because the string matching is neither case nor space sensitive, all are listed in lowercase with spaces removed. There is some variability to configuration differences.   Items are typically wrapped by " " when entered on the command line.

/ITEM values by category	
hostname: and *imagename* must be supplied by the end user.	
CPU	**DISK IO**
hostname: overallcpuutilization *hostname* : overallcpuutilizationbymode *hostname:* overallcpuutilizationbyprocessor	*hostname*: overalldiski/ooperationrate *hostname*: overalldiski/oratebytype *hostname*: top10disksbyoveralldiski/o

hostname: overallcpuutilizationbyprocesstype *hostname:* top10imagesbyoverallcpuutilization *hostname:* top10usersbyoverallcpuutilization *hostname:* numberofactivecpus *hostname:* cpucomqueue *hostname:* cpucurprocesses	*hostname*: top10disksbyqueuelength *hostname*: top10disksbyspaceutilization
FILE IO	**MEMORY**
hostname: top10hotfilesbyi/orate *hostname*: spliti/orate *hostname*: windowturnrate hostname: virtuali/orate hostname: virtuali/ocachememory hostname: virtuali/ocacheactivty hostname: averagenumberofopenfiles hostname: fileopenrate hostname: directorylrucacheactivity hostname: fileidcacheactivity hostname: fileheadercacheactivty hostname: extentcacheactivity hostname: storagebitmapcacheactivty	*hostname*: memoryutilization *hostname*: memorycomoqueue *hostname*: memoryallocation hostname: pagefaultrate *hostname*: faults/cpu *hostname*: pagefaultsbytype *hostname*: pagefaulti/o
PROCESS	**TRANSACTION**
hostname: processcount *hostname*: processcountbyprocesstype *hostname*: processcountbyworkloadclass *hostname*: processcountbyresourcewait	*hostname*: responsetimebyclass *hostname*: *imagename* responsetime *hostname*: *imagename* transactionrate
NETWORK	**LAN**
hostname: tcppacketrate *hostname*: tcpdatarate *hostname*: tcpsendpacketsbreakdown *hostname*: tcpreceivedpacketsbreakdown *hostname*: tcpconnectionsestablished *hostname*: tcpconnectionsclose *hostname*: udppacketrate *hostname*: ippacketrate *hostname*: ipsentpacketsbreakdown *hostname*: ippacketsreceivedbreakdown *hostname*: icmppacketrate *hostname*: icmpsendpacketbreakdown *hostname*: icmpreceivepacketbreakdown *hostname*: decnetpackets *hostname*: decneterrors	*hostname*: overalllanpacketratesbyadapter *hostname*: *adaptername* packetrates *hostname*: *adaptername* datarates *hostname*: *adaptername* erroreventrate *hostname*: *adaptername* inboundpacketratesbyprotocol *hostname*: *adaptername* outboundpacketratesbyprotocol *hostname*: *adaptername* inbounddataratesbyprotocol *hostname*: *adaptername* outbounddataratesbyprotocol

LOCK	SCS
hostname: totallockactivity	*hostname*: overallscsactivity
hostname: locallockactivity	hostname: datagramssent
hostname: outboundlockactivity	hostname: datagramsreceieved
hostname: inboundlockactivity	hostname: datagramsdiscarded
hostname: enqlockactivity	hostname: sequencedmessagessent
hostname: declockactivity	hostname: sequencedmessagesrevieved
hostname: blockingastlockactivity	hostname: sendcreditwaits
hostname: directoryfunctionlockactivity	hostname: blocktransferssent
hostname: deadlockmessagelockactivity	hostname: blockdatasent
hostname: totallocks	hostname: blocktransfersrequested
hostname: totalresources	hostname: blockdatarequested
hostname: enqwaits	hostname: bufferspacemapped
hostname: enqueusnotqueued	hostname: bufferdescriptorsqueued
hostname: deadlocksearches	
hostname: remastermessagerate	

CLUSTER	
cluster-wide:cpuutilization	
cluster-wide:cpucurrentprocesses	
cluster-wide:cpucomqueue	
cluster-wide:topdisksbyoveralldiski/o	
cluster-wide:topdisksbyoveralldiskdatarate	
cluster-wide:topdisksbyqueuelength	
cluster-wide:topdisksbyoveralldiskdatarate	
cluster-wide:topdisksbyspaceutilization	
cluster-wide:memoryutilization	
cluster-wide:pagefaultrate	
cluster-wide:pagefaulti/o	
cluster-wide:memorycomoqueue	

eCAP Graphing for UNIX Platforms: Command Line

Included with eCAP Analyze for UNIX platforms for Alpha is a graph generation facility which permits the creation of CSV, Postscript, JPEG, or GIF graph files. The facility is activated using the command, **ecap_graph**. Options accepted by the eCAP Graph facility are:

Option	Meaning
-mw <filename>	Measureware data file
-cpcunix <filename>	eCAP Monitor Unix Data
-begin <DD- MMM-YYYY:HH:MM:SS>	Monitor start time

-end <DD- MMM-YYYY:HH:MM:SS>	Monitor end time
-graph <filename>	Output graph file
-type <CSV | JPG | GIF | PS >	Graph Type
-item <graphname>	Graph name string
-overlay <overlayname>	Graph Overlay Name

Filenames should include the full path. Begin and end time must be specified. The graph filename is the file specification of the output graphics file. The type option is used to specify the type of graphics output. Graphname is the graph title as it appears in the motif-based analyze graph. Overlayname is the graph title of the graph from which the overlay trace is extracted followed by the at sign (@) and the legend name of the particular data trace from that graph. Neither graphname nor overlayname are sensitive to spaces or case.

Following is an example of a command to generate of cluster-wide CPU graph:

> # ecap_graph -cpcunix /usr/local/perfcap/data/ecps_perfsun_2003Mar03.cpc-1 \
>
> > -begin 30-Sep-2003:00:00:00 \
> >
> > -end 30-Sep-2003:23:59:59 \
> >
> > -type JPG \
> >
> > -graph cpu.jpg \
> >
> > -item overallcpuutilization

There is a sample script named *ecap_export.sh* in /usr/local/perfcap/bin, which will create each type of graph for the current days data. This script can be used for reference.

Below is a list of all the current items which may be specified for UNIX data. Because the string matching is neither case nor space sensitive, all are listed in lowercase with spaces removed:

-item values by category	
CPU	**DISK IO**
overallcpuutilization overallcpuutilizationbymode overallcpuutilizationperprocessor top10imagesbycpuutilization top10usersbycpuutilization cpuutilizationofworkloadclasses	overalldiski/ooperationrate overalldiski/oratebytype top10disksbyi/ooperations toptenfilesystemsbydiskspace
Memory	**Network**

memoryutilization memoryallocation pagefaultrate pagefaultsbytype pagefaulti/o	tcppacketrate tcpdatarate tcpsentpacketsbreakdown tcpreceivedpacketsbreakdown tcpconnectonsestablished tcpconnectionsclosed udppacketrate ippacketrate
Process	
processscount processscountbyworkloadclasses	

eCAP Analyze & eCAP and Windows NT/2000/2003 Data

While not officially supported by PerfCap at this time, eCAP Analyze and Reduce for both OpenVMS and UNIX platforms are able to process .cpc data from the Windows NT/2000/2003 collector. However, in order to do so, care must be taken as follows:

1. NT/2000/2003 .cpc data files are ASCII format and should be copied using ASCII transfer mode in FTP.

2. Care should be taken on UNIX systems to ensure that the case of the .cpc filename remains the same as on the originating system.

3. The NT/2000/2003 data should be treated as UNIX data when using either the Motif based analyzer or the reducer.

eCAP Problem Resolution

Problems that have been fixed are listed in the next sections. The first information on each line within the brakets is the eCAP version the fix refers to.

eCAP Monitor problems fixed: OpenVMS

[V9.0a, reference] eCAP Analyze and eCAP Planner MOTIF

eCAP Analyzer and eCAP Planner MOTIF user interfaces now work on VMS 8.3

[V9.0a, reference 3135] Install Failure on Link error

A problem where eCAP Monitor was not installing due to a link error has been fixed.

[V8.0, reference 2041] Process Working Set metric incorrect on OpenVMS Itanium

A problem where eCAP Monitor was not correctly capturing process memory values on Itanium OpenVMS systems has been fixed.

[V7.2, reference xxx] OpenVMS Alpha V8.4 support

The eCAP Monitor for OpenVMS Alpha support for V8.4 added.

[V7.2, reference xxx] eCAP Monitor crash on V7.2-3

The eCAP Monitor …

[V7.0, reference 394] OpenVMS Alpha V8.2 support

The eCAP Monitor for OpenVMS Alpha support for V8.2 added.

[V7.0, reference 333, 428, 530, 567] eCAP Monitor Hang

 A problem where eCAP Monitor would stop writing to the .PMD file has been fixed.

[V6.0A] OpenVMS Alpha V7.3-2 support with SP2

The eCAP Monitor for OpenVMS support for V7.3-2 with Service Pack 2 added.

eCAP Monitor problems fixed: UNIX

[V9.0A,Solaris , reference 3143] Solaris postinstall not starting service

A problem where the Solaris Sparc postinstallation scripto was not registering the perfcap service as been fixed.

[V9.0A, reference 3133] COLLECT_HBA in ecap_monitor startup .config file fixed

A problem where the COLLECT_HB A flag in the ecap_monitor.config file was not disabling HBA data collection has been fixed. Running ***ecap_monitor –collect all, nohba –write_config*** will now properly disable HBA data collection.

[V9.0A, reference 2991] ESX vm name truncation

A problem VM names on ESX systems were truncated at 7 characters has been fixed.

[V9.0, reference 2972] Solaris collection of IP/TCP metrics

A problem where some solaris systems where not collectiong TCP and IP packet and Data rates has been fixed.

[V8.4, Solaris, reference 2808] ecap_monitor in starting on Solaris 'Global' Zone

A problem where the ecap_monitor would not start in the global zone when an ecap_monitor was running in a container zone has been fixed.

[V8.4, Solaris, reference 2806] ecap_monitor TCP/IP/UDP on Solaris Zone

A problem where the ecap_montor was not collecting TCP, IP or UDP metrics on a Solaris container system has been fixed.

[V8.4, HP-UX, reference 2799] ecap_monitor overhead on pst_getproc () call

A problem where the ecap_montor had high overhead of **pst_getproc** () system calls has been fixed. The ecap_monitor was calling **pst_getproc**() for each process. This has been optimized to call **pst_getproc** () for 1024 processes at a time. This greatly reduces ovehead on systems with a large number of processes.

[V8.4, AIX, reference 2707] ecap_monitor was incorrectly reporting system memory size

A problem where the ecap_montor was incorreclty monitoring the system memory size has been fixed. This bug resulted in the memory allocation reporting twice as much memory has the system actually had.

[V8.4, HP-UX , reference 2670] ecap_monitor TCP , IP, UDP

A problem where the ecap_montor was not always collecting TCP, IP and UDP network statistics has been fixed. If the information is not available from the kernel, netstat is used to obtain it.

[V8.4, HP-UX , reference 2654] ecap_monitor crash on HP-UX with peak

A problem where the ecap_montor was core dumping on HP-UX systems where peak data was enabled has been fixed.

[V8.4, HP-UX , reference 2646] NIC data collection

A problem where the ecap_montor was only collecting at most 2 NICs has been fixed.

[V8.4, Linux , reference 2606] IO wait

The ecap_monitor was not saving cpu mode IO wait time. This has been added.

[V8.4, AIX , reference 2560] ecap_monitor crash on systems with > 32 processors

An ecap_monitor crash on systems with > 32 processors has been fixed.

[V8.4, Solaris , reference 2554] eCAP /PAWZ Agent changes for Zones

Multiple changes have been made to the eCAP monitor / PAWZ Agent packaging to support Solaris Zones. See the Zones section of this document.

[V8.1, Linux , reference 2184] disk name mapping on 2.4 kernels

Disk name mapping from the device name to the disk name has been added. (i.e, dev2 to sda)

[V8.0, HP-UX, reference 2008] Superdome support

A problem where systems with greater then 32 processors was causing the ecap_monitor to core dump has been fixed.

[V8.0, Linux , reference 1890] per-processor cpu utilization corrected

A problem where CPU-0 was being reported for each processor has been fixed.

[V8.0, AIX 5.3 , reference 1794] svmon no longer required

A dependency on svmon has been removed for AIX 5.3 systems.

[V7.2, Solaris, reference 1675] Empty disk names

A problem where the ecap_monitor for solaris would return empty disk names has been fixed.

[V7.2, Unix, reference 1657] Status returns 64 or 32 bit information

The ecap_monitor –status report will now indicate whether the 64 bit or 32 bit version of the collector is running.

[V7.2, Unix, reference 1583] NIC Statistics
.

The ecap monitor now collects NIC statistics. These metrics are as follows

> **NIC Name**
> **Packets sent**
> **Packets Received**
> **Packet data sent (Kb/Sec)**
> **Packet data recevied (Kb/Sec)**
> **Errors**

[V7.2, Solaris, reference 1563] Process VSS now collected

A problem where the ecap_monitor for solaris was not collecting process VSS data has been fixed.

[V7.1, Solaris, reference 1264] Cannot open /dev/kmem

A problem where the collector would not run when it was unable to access /dev/kmem has been resolved. This happens on Solaris Zones system. Now the collector will run but will be unable to collect network statistics.

[V7.1, Linux, reference 744] X64 bit support

The collector now runs in 64 bit mode. This resolves some overflow issues with CPU Utilization showing 100% for processor-1.

[V7.1, UNIX, reference 581] Install init.d startup file

The silent install option will now install the perfcap.initd to the system init.d and rc.d folders. It will also set permissions and ownership so that the ecap_monitor will restart on system reboots.

[V7.0, Solaris, reference 622] Memory Leak

A memory leak in the eCAP Monitor for Solaris has been fixed.

[V7.0, Solaris, reference 330] Solaris 10 Sparc Support

Solaris 10 supported added.

[V7.0, Linux, reference 331] Linux 2.6 kernel Support

Linux 2.6 Kernel supported added (x86).

[V7.0, Linux, reference 716] Memory Leak

A memory leak in the eCAP Monitor for Linux has been fixed.

[V7.0, Solaris, reference 760] FibreChannel Disks

The eCAP Monitor can now identify ssd devices.

[V7.0, Linux, reference 862] Verbose logging

A problem where verbose logging would be enabled when not requested to has been fixed.

[V7.0, AIX, reference 282] Process RSS/VSS

Process RSS/VSS values were incorrectly interpreted from the process rusage structures which resulted in incorrect RSS/VSS being reported. This has been fixed.

[V7.0, UNIX, reference 359] –stop qualifier

The stop command has been enhanced to ensure that the ecap_monitor stops.

[V7.0, HP-UX, reference 286] I/O spike

The eCAP Monitor was occasionally getting a negative I/O rate number. This was causing huge spikes in the I/O graphs in eCAP Analyze & PAWZ. Due to the negative I/O number being assigned to an unsigned integer value. This has been fixed.

[V7.0, Linux] bin_i386 directory added

The install directory under linux has changed to include an bin_i386 folder. This folder contains perfcap images and the bin folder now softlinks to the images in the bin_i386 folder.

[V6.0A, Linux] per-processor metrics

A problem collecting Per Processor metrics has been fixed. (Ref: 83)

[V6.0A, Linux] Memory > 4.0 GB

ecap_monitor now properly collects memory statistics for systems with greater then 4.0 GB of memory. (Ref; 73)

[V6.0, UNIX] -version qualifier

ecap_monitor –version   is fixed.

eCAP Monitor problems fixed: Windows

[V8.4, reference 2807] PAWZ Agent and eCAP Monitor (X64) kit copy of ecap-monitor.txt

A problem where the installation packaging of the 64bit PAWZ Agent and eCAP Monitor was not copying the ecap-monitor license file on silent installations has been fixed

[V8.0, reference] Log File name format change

The format of the log file name has changed to ecap_log_HOSTNAME_yyyyMMMdd_hhmm.txt

[V7.2, reference 1649] Disk statistics not being collected (Qlen, Busy Time, Idle Time)

A problem where eCap Monitor was not collecting certain disk metrics (Qlen, Busy Time and Disk Idle) has been fixed.

[V7.2, reference 1617] Log file Creation now daily

A new eCAP Monitor log file is now created every day.

[V7.1, reference 991] Network Interface Counters enabled by default

The eCap Monitor enables the "Network Interface" counters by default.

[V7.1, reference 1267] Crash on XP

A problem where on Windows XP the eCAP Monitor would crash on a system where no performance counter names where available has been fixed. The eCAP Monitor will now exit.

[V7.1, reference 990] System Memory Size

The user is no longer required to enter the memory size during installation for systems with > 4GB memory. The eCAP Monitor will now obtain the information automatically.

eCAP Analyzer problems fixed: UNIX

[V70, Solaris, reference 444] ecap_export crash
A crash with ecap_export has been fixed.

[V60A, Linux, reference 173] ecap_export process data
The CSV exporter ecap_export now exports process data (Linux).

[V60A, Linux, reference 84] ecap_export debug messages
The CSV exporter ecap_export was printing a lot of debug information to the user terminal. This has been removed.

[V60A, All , reference 170] Product name display
The product name was incorrectly displayed in the eCAP Analyze GUI, in the Help -> On Version popup.

[V60A, Linux, reference 74] <NoProc> Calculation
Fixed <NoProc> Calculation

eCAP Reducer problems fixed

[V5.0, OpenVMS] Host-based Volume Shadowing
eCAP Reduce host-based volume shadowing processing from PMD data is now handle correctly.

eCAP Planner problems fixed

[V6.0A] Device database updated
> eCAP Plan device database has been updated.

eCAP Installation problems fixed

[V7.0, OpenVMS, reference 493]   PERFCAP$STARTUP.COM now defining PERFCAP$BUFFERS
> The perfcap$startup file now defines PERFCAP$BUFFERS as a logical.   Use of Logicals in the PERFCAP$STARTUP.COM file is required when using PAWZ$AGENT to restart the eCAP Monitor.

[V70, AIX, reference 816] ecap_configure link missing
> The ecap_configure link in the install folder's bin directory was missing. This has been fixed.

[V7.0, UNIX, reference 409] silent-install.sh
> A silent install option added to packaging.

[V7.0, UNIX, reference 339] init.d startup
> The perfcap.initd, in the settings folder, has been updated.

[V6.0A, OpenVMS, reference 126] deinstall
> The deinstall script should now delete all installed images except the license file(s) and the performance data files (.PMD)

[V6.0A, Windows, reference 97] invalid menu link
> The "START" -> "All Programs" -> Startup invalid menu link was causing a popup message window to appear on login; this has been fixed.

[V6.0A, HP-UX, reference 80] ecap_monitor link missing
> A problem where the soft link /opt/perfcap/bin/ecap_monitor was missing has been fixed.

[V6.0A, OpenVMS] help
> The help subsystem has been updated.

Restrictions and Known Problems — OpenVMS

The following is a summary of currently known restrictions and potential problems.

PERFCAP MONITOR /START not starting collector

Rarely the PERFCAP MONITOR/START will give the message "Data Collector Starting…" and then the PERFCAP$MONITOR image does not start.   If this occurs issue the following command and then re-issue the PERFCAP MONITOR/START command.

$ DEASSIGN /SYSTEM /USER   PERFCAP$VERSION

System Crash on host based RAID (DPDRIVER) OpenVMS Alpha

The combination of DPDRIVER and eCAP Monitor activity may exhaust the allocated kernel-node stack pages. This may be avoided by setting the *SYSGEN* parameter. KSTACKPAGES to 2, rather then the default value of 1.

Data Directory sharing - PERFCAP$DATA

The data collection output files directory MAY be shared on a cluster- common non-system disk. This is recommended configuration.

Mixed Architecture / OS Versions - PERFCAP$LIBRARY

Need to be specific to the Architecture and OS Version; i.e. not shared between Alpha and VAX or among different OS versions. Perform separate installations for each system disk.

Loss of Data

Large systems with over 1000 concurrent processes may experience failure to collect all performance data. PerfCap recommends that sufficient half the number of buffers as concurrent processes be specified at monitor startup to avert this problem. See the discussion above.

VAXC2DECC.EXE shareable library is required

The PerfCap suite requires that the DEC C Libraries be installed. These libraries may not be present on some older VMS systems. If the following message is received during installation: "PERFCAP-E-NEEDS Sharable Library VAXC2DECC.EXE required", install the C/C++ Runtime Components kit.

Repeated %PPM-W-COSTRTNG message

If %PPM-W-COSTRTNG message is seen repeatedly, The eCAP Monitor will need to be reset. This is done with the following commands.

$ DEASSIGN/SYSTEM/USER PERFCAP$VERSION
$ DEASSIGN/SYSTEM/USER PERFCAP$CURRENT_DATAFILE

eCAP Plan Font size.

Font size my need to be adjusted depending on the desplay settings. This is done in the DECW$USER_DEFAULTS:perfcap.dat file. Modify line 3   *fontList:

TCP/IP metrics collection

The eCAP monitor will not collect TCP/IP metrics when the V5.4 TCPIP Services Performance Kernel is used.

Restrictions and Known Problems — UNIX

The following is a summary of currently known restrictions and potential problems.

eCAP Monitor delay on HBA data for AIX

The eCAP Monitor can take several minutes to collect HBA data on AIX. In this case, Hba collection can be disabled by adding "–collect all,nohba" to the ecap_monitor startup file.

eCAP Monitor no peak information on TRU64

The eCAP Monitor is not collecting peak statistics on TRU64.

eCAP Monitor -maxcpu qualifier

The -maxcpu qualifier will increase the polling interval if it is detected that the collector exceeds the maxcpu percent CPU utilization. When the collector goes below the maxcpu value, the polling rate is not adjusted back to the original polling rate.

eCAP Monitor -verbose qualifier

Currently the format is haphazard and not consistent between platforms.
Verbose logging my help to track down problems.

eCAP Monitor – full disk

If the filesystem containing the perfcap/data folder has suffcent space to write an intervals data. The CPC file may become corrupt. (Ref: 48, 2123)

Modifying /etc/inittab files

Previous documentation said when adding an entry to the   /etc/inittab file to start the collector on system boot, This is no longer recommended.

eCAP Analyzer not supported on Solaris 2.6 or HP-UX 10.20

The eCAP Analyzer is not supported on Solaris 2.6 or HP-UX 10.20

ecap_graph command on UNIX requires full -begin and -end times.

The -begin and -end qualifiers are required when using the ecap_graph command.
The format must be complete DD-MMM-YYYY:HH:MM:SS

Note: seconds cannot include a fractional decimal component as is allowed
in OpenVMS.

ecap_graph support

ecap_graph is only supported on platforms that support eCAP Analyze. (i.e., there is no HP-UX
10.20 or Solaris 2.6 version)

ecap_analyze picks up wrong path

Some times when specify a path for finding the .cpc-1 file, the Analyzer changes the path to /

<NoProc> on HP TRU64 UNIX

The <NoProc> process is created to contain all CPU time which is measured and has no
associated process. This typically is the case with Kernel threads.   NFS file server systems is
one example of this.
Executing the following command will show the amount of kernel thread activity.

ps 0 –u
ps 0 –lm

Network statistics (TCP,IP,UDP) on Superdome

Currently TCP, IP and UDP metrics are not being collected on HP-UX 11i (superdome) systems.

Restrictions and Known Problems — Windows

The following is a summary of currently known restrictions and potential problems.

eCAP Monitor Handle Leak on Windows Server 2003 with Service Pack 2, reference 2303

The ecap_monitor.exe process leaks 5-7 handles per day on Windows 2003 server 2003 SP2 systems. Microsoft has a HotFix for this issue.

eCAP Monitor continues when disk is full. Reference 2123

The ecap_monitor.exe process continues to run when the data disk becomes full. This can lead to a corrupt data file.

Nodename Length Greater then 16 , reference 1161

If the nodename is greater then 16 characters the eCAP Monitor will truncate the nodename portion of the CPC filename This leads to problems with the PAWZ Agent being unable to locate the CPC file. This truncation is due to a NETBIOS limitation. Nodenames must be less the 16 characters to work with PAWZ Agent.

TCP / IP and UDP metrics under Windows NT 4.0

The TCP, IP and UDP metrics are not part of the default Windows NT 4.0 installation. They are part of the Options Pack.

Memory leak on WINDOWS 2000 with SP2

A memory leak occurs on some Windows 2000 systems running Service pack 2. At this time the cause of the problem has not been determined.

TCP Metrics stop collecting on Windows 2000/2003

TCP, IP and UDP counters may stop functioning on some Windows 2000 systems. Use the winmgmt/clearadp command to reset them.

The *exctrlst* utility from Microsoft can also enable/disable performance counters.