VSI PERFDAT
Service Tool Description

SERVICE TOOL NAME: VSI PERFDAT performance solution for OpenVMS

VSI Technical Services

Description

VSI PERFDAT is an integrated performance monitoring, management and capacity planning solution for OpenVMS Alpha and OpenVMS Itanium. It has been designed and developed for the management of big environments as an in-depth trouble-shooting tool.

The VSI PERFDAT OpenVMS data collector collects up to 660 performance statistics organized in 23 metrics, and is today's most comprehensive OpenVMS performance data collector commercially available. For example, in addition to collecting I/O statistics for any device configured on the system and hot file statistics, PERFDAT also collects the I/O statistics per process and per process and file, which makes it easy to identify the sources of heavy I/O load. Any of the metrics can be enabled independently or disabled altogether. Several thresholds can be applied. VSI PERFDAT has the ability to restrict the collection to a subset of the monitored subsystem (For example, if the device metric is enabled, you can define the devices to monitor separately.)

Up to three performance data collections can be triggered and run in parallel.

VSI PERFDAT also provides the ability to monitor the performance of non-OpenVMS systems. The VSI PERFDAT SNMP extension collects performance raw data from non-OpenVMS systems that provide performance data via SNMP, converts this raw data into human-readable form and stores the data in the performance database. VSI PERFDAT supports HP Tru64 systems and Brocade switches out of the box.

VSI PERFDAT provides a new online performance-alerting feature. Online performance alerting can be enabled for any active performance data collection, regardless whether the data collection is performed by the OpenVMS data collector or the SNMP extension.

Once online alerting has been enabled for an active performance data collection, the alerting subsystem tracks the actual values of specific statistics collected by the OpenVMS data collector and the SNMP extension, and triggers alerts if any alert condition becomes true.

The statistics to monitor, the alert conditions and the alert method (OPCOM messages, user definable command scripts) are defined by alert blocks within an alert definition file. An alert definition file is a text file that can be easily customized.

The data collected is stored in an RMS-based, distributed and self-defining high speed database. Data can be accessed via a query interface similar to SQL. Due to the design of the database, all performance data available in your environment can be transparently accessed from a single node and data upward- and downward compatibility is guaranteed. Moving data from one node to another, renaming data files, as well as multiple file versions have no effect on the visibility of the data.

To guarantee high-speed data access to all data files, regardless of which node services the file within the PERFDAT environment, VSI PERFDAT provides a distributed performance database file cache valid throughout the whole environment.

CSV (comma separated values) files can be dynamically mapped and accessed via the query interface. Thus, data collected by other tools (such as application data), can be easily analyzed and compared to the performance data collected by VSI PERFDAT without additional tools.

A statistic package is fully integrated for best practice workflow support in analyzing performance data. It includes standard statistics like Min, Max, Average, standard deviation, as well as correlation and deviation analysis.

The query interface of VSI PERFDAT provides the features to create cluster views and to define site-specific measures.

A cluster view maps performance data of different nodes for cluster wide performance analysis. All methods and features to analyse performance data of single nodes are available for cluster views also. Consequently the workflow for cluster analysis does not differ from the workflow to analyze single node performance data

The user can create site-specific measures computed from any statistics collected by defining stored procedures. User-defined statistics (site-specific measures) are calculated values that can, once defined, be accessed as if they are part of the distributed performance database without any additional action. Thus, any statistical method provided by the statistic package of the query interface can also be applied to site-specific measures.

For automated trend analysis and capacity planning, an auto-reporting engine is available. The engine periodically compresses data and makes full statistical analysis of the data.

The package includes a state of the art graphical user interface (GUI) with several options for viewing and analyzing collected data.

Main Features
- Multithreaded OpenVMS data collector
- EVA extension to monitor non EVA storage arrays
- SNMP extension to monitor non-OpenVMS systems
- Online performance alerting
- Data is stored in a distributed, self-defining high-speed database (based on RMS)
- Query interface similar to SQL
- Auto-reporting engine for capacity planning and trend analysis
- Auto-archiving functionality
- Statistic package
- Graphics package on Windows XP/7/8.1/10
- Single point management (VSI PERFDAT Manager)

OpenVMS Data Collector
- Up to 3 collections in parallel
- Currently 660 statistics organized in 20 metrics
- Profile controlled
- Each metric can be enabled/disabled independently
- For each metric (except the system metric) thresholds can be defined to minimize the
    amount of data

- Metrics can be restricted to single or multiple devices, processes, users, images and volumes
- Device metric allows I/O resolution to single process, files and files per process (not only hot file statistic but also the originator of hot files can be identified)
- Files in the device- and XFC statistics are resolved to file ID's and also to their actual file names
- Complete XFC integration
- Full LAN and network protocol support
- Dynamic resource trimming. In order to avoid performance problems due to running the service tool, VSI PERFDAT watches its own resource consumption, and if CPU load and/or I/O load exceeds a definable threshold, VSI PERFDAT automatically increases collections sample intervals and/or dismisses metrics rule-based.
- Permits online monitoring

SNMP extension

- Up to 64 remote systems can be monitored in parallel
- Metrics and statistics are predefined for Linux, HP Tru64 systems and Brocade switches.
- Profile-controlled
- Sample interval is freely definable (minimum = 1 minute)
- Each metric can be enabled and disabled independently
- Supported systems out of the box include:
    - Linux
    - HP Tru64
    - Brocade switches
- Permits online monitoring

Online Performance Alerting

- Can be enabled for any active performance data collection of the OpenVMS data collector and the SNMP extension
- Tracks the actual values of specific statistics and triggers alerts if any alert condition becomes true
- The statistics to monitor, the alert conditions and the alert methods are defined by alert blocks within alert definition files
- Available alert methods
- OPCOM messages (default)
- Call to user-definable command procedures
- Alert definition files are test files for easy customization

Database

- RMS based
- Self-defining
- Distributed
- Query interface (DQL) similar to SQL
- Transparent single point access due to implemented network abstraction layer via DQL interface
- Upward and downward data compatibility due to integrated data abstraction layer
- Dynamic CSV file mapping capability for accessing and analyzing data from different data sources
- Multifile version support
- No root file involved. Single files can be moved to other nodes and accessed without restoring the whole database
- CSV import capability. Data is not inserted but normalized.
- CSV export capability
- Statistics package fully integrated in data query interface

Auto-Report Engine

- Automatic selection and compression of performance statistics for trend- and capacity analysis

Archive and Housekeeping

- Daily log- and temporary file cleanup
- Archiving of completed data collections with freely definable time periods
- Archiving can be done locally or on dedicated archiving nodes

VSI PERFDAT Management Utility

- Single point management utility
- Controls the complete environment (collector, auto report engine and archiving)

Statistic Package

- Min/max calculations
- Mean value calculations
- Standard deviation
- Correlation
- Integral and mean value based deviation calculation
- Integral and mean value sorting of each element of a metrics (free definable time period, statistics and elements)
- The package is part of the query interface. Thus, it is available from the GUI as well from the command line interface (DCL) on OpenVMS.

VSI PERFDAT Windows GUI

- Nothing else to be installed besides the delivered kit
- Representation of line graphs
- Representation of variation functions
- Capabilities of data overlays (graphs of different time periods can be overlapped to allow visual comparison)
- Stack/unstack function
- Zoom in/out
- Shift left /right
- Data scanning
- Auto/native scaling
- Up to 16 curves in one graph (in overlay mode up to 32)
- Each graph is scaled separately
- Auto, native and manual scaling capability
- Correlation- and deviation analysis capability
- Multi window support for multi screen systems
- Online deviation calculation of free definable statistics
- Export capability to Excel
- Fully supported on Win2000/2003/XP/7/8.

Hardware Requirements
Processors Supported

Any Alpha system capable of running the OpenVMS Alpha Operating System Version 7.3-2 and above or any Itanium Integrity server capable of running OpenVMS Itanium V8.2 and above.

PC hardware

Pentium IV, 1.5 GHz, 256 MB RAM

Disk Space Requirements

Disk space required for installation on OpenVMS:	Approximately 450,000 blocks
Disk space required for data files:	This depends on the sample interval of the data collector and on the amount of collected items (statistics). A 30-second interval on a standalone node with 10 disks and the default statistics enabled will result in a data file with about 400,000 blocks (per node and day)

Software Requirements

- For Alpha Systems: OpenVMS AXP V 7.3-2 and above
- For Itanium Systems: OpenVMS IA64 V 8.2 and above
- For both architectures: Installed/configured and running TCP/IP Services for OpenVMS.
- VSI PERFDAT GUI: Win XP/7/8.1/10

No further software is required to run VSI PERFDAT on any OpenVMS node.

Software Licensing

Software licenses can be requested by sending email to sales@vmssoftware.com. When installing VSI PERFDAT for the first time, a 30-day test license is automatically applied.

After that, a license must be purchased. For more information about VSI's licensing terms and policies, contact your local VSI office or sales@vmssoftware.com.

Cluster Environment

VSI PERFDAT is fully supported when installed on any valid and licensed OpenVMS Cluster configuration without restrictions.

Growth Considerations

The minimum hardware and software requirements for any future version of this tool may be different from the requirements for the current version.

More information
For more information about PERFDAT, please contact VMS Software, Inc. at sales@vmssoftware.com.