

openSM2 **(VMware ESX Server)** **Version 7.0**

Issue May 2006

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System Performance Monitor

Round-the-clock performance monitoring forms the basis for effective and economic operation of IT systems.

With the *openSM2* product line, Fujitsu Siemens computers offers a consistent solution for the enterprise-wide performance management of heterogeneous system environments, by which the following system platforms are supported: VMware™ ESX Server™, Microsoft® Windows, Solaris™(SPARC®), Linux® and BS2000/OSD®.

openSM2 (VMware ESX Server) provides a comprehensive online monitoring with configurable alarm management, detailed bottleneck analyses as well as forecasts of future performance requirements and so gives the customer the capability to optimize the performance of his VMware ESX Server systems.



openSM2 (VMware ESX Server) consists of the components INSPECTOR for online monitoring, and ANALYZER for offline analysis of monitoring files.

Each component consists of a manager with a comfortable graphical user interface on a Windows PC and agents which collect performance data of the servers to be monitored resp. analyze monitoring files.

The managers can work together with the agents of all members of the *openSM2* product line.

Online monitoring

With INSPECTOR a number of servers can be monitored simultaneously. Besides to the graphical presentation of the monitored data INSPECTOR offers a flexibly configurable alarm management which supports the automated monitoring with a rule-based check of the measurement data and automatically executable actions.

The performance data can be saved to a monitoring file for later analysis.

Offline analysis

The monitoring files generated by INSPECTOR are analyzed using ANALYZER.

The output from ANALYZER permits accurate bottleneck and trend analyses and provides support in planning capacity and generating reports.

Time-controlled analysis runs enable regular analyses to be fully automated, for reporting procedures for example.

Description of the measurement variables

openSM2 (VMware ESX Server) collects all relevant performance data of the entire server and the individual virtual machines:

- Number of virtual machines
- Number of real and virtual processors
- Utilization of processors total and by virtual machines
- Memory usage by VMkernel and virtual machines
- Size and usage of swap area
- Import and export activities (swapping),
- Accesses to and data transfer rates of disks
- Data transfer rates of network

INSPECTOR

In selectable time intervals, the monitoring cycles, agents collect performance data relating to the current system status of the monitored servers and send it via a TCP/IP connection to the manager, which presents and monitors the data. The agents collect the data remotely from the PC, so that no installation on the ESX servers is necessary ("agentless" monitoring).

The monitored servers are displayed in the server list of the manager. The server list has a tree structure showing the association of the servers to system platforms and server groups. The color of a server entry indicates the status of the server. There are the possibilities "no data", "values in normal range" and "alarm". The status display is constantly updated and enables exceptional situations to be detected instantly and an appropriate response to be made.

A number of different types of reports with a graphical or tabular layout are available for presenting the performance data.

Snapshot reports show the current system status in graphic or numeric form. Time-series reports enable the user to read off the chronological development of the measured values over the last hours. There are global reports, which provide an overview of multiple servers in a chart or a table, and reports which show selected performance data of an individual server.

The user can specify the measurement variables and monitored objects whose measured values are to be presented in a report, and can also define new measurement variables by linking variables by means of formulas.

The user can customize the charts in the reports by selecting different chart types (bar, line, line logarithmized, etc.) and colors. The charts can be printed by mouse click, saved as a graphics file or copied to the Clipboard for transfer to mainstream programs (Word, PowerPoint, etc.). A header and footer can be inserted for printout and the labeling of the charts modified.

The monitored data provided by the servers can be supervised by means of user-defined rules. In a rule conditions and actions are defined. If all conditions of a rule are fulfilled an alarm for the rule is set off. The server entry in the server list takes the color of the alarm level assigned to the rule and the actions defined for the rule are executed.

The following actions can be triggered:

- A report with the measurement variable in question is opened automatically for each condition of the rule
- An audible alarm is triggered
- A procedure is started on any monitored server, on which an agent is running
- A batch file is executed on the PC
- An e-mail or SMS is sent

A rule can be used to link not only conditions for the measurement variables of one server, but also conditions for different servers.

In the rules the user can define different limit values and actions for different times of day in order to take account of different system usage types – for instance, online mode during the day and batch mode during the night.

ANALYZER

With ANALYZER, multiple monitoring files – from the same or different servers – can be analyzed simultaneously in a single analysis run. The user specifies the type and scope of the analysis via the user-friendly graphical interface of the manager. The analysis job thus defined is processed by agents and the result is then presented by the manager. The monitoring files to be analyzed can be stored on any server or PC where an agent is running.

The analysis result is supplied as chart and table and can be saved as a file and also copied into mainstream programs like Excel and Word or to the Clipboard for further processing.

Functions:

- Selection of the analysis period; time windows can also be defined and certain periods (e.g. weekends) can be excluded
- Selection of the measurement variables via report group, report and measurement variable
- Linking of a number of measurement variables by means of formulas
- Selection of monitored objects (e.g. CPU, devices, workload classes, etc.)
- Selection of different analytical functions (mean value, frequencies, minimum, maximum, quantiles)
- Creation of time series and correlation charts
- Identification of overloaded resources by automatic production of hit lists of the monitored objects with the highest utilization values
- Identification of the processes involved in load peaks by automatic production of a list of the processes with highest CPU consumption for each monitoring cycle
- Monitoring of specified service levels through analysis of frequencies (e.g. percentage share of the monitoring cycles with CPU utilization above 80%)
- Discovery of functional interrelationships between measurement variables through presentation as correlation chart
- Customizing of the charts by selection of different chart types (bar, line, line logarithmized, etc.) and colors.

ANALYZER supports macro technology, enabling regular analysis runs to be automated.

The long-term files of ANALYZER provide the ability to save measured values of randomly selected measurement variables over longer periods in compressed form on the PC in order to produce trend analyses and support long-term capacity planning.

Technical requirements

Hardware

Server:

x86-compatible server, e.g. PRIMERGY Server (as far as certified for VMware ESX)

PC:

PC with INTEL Pentium processor or compatible running at min. 800 MHz with
min. 256 MB RAM
min. 100 MB free hard disk space
min. 1024 x 768 screen resolution

Software

Server:

VMware ESX 2.x

PC:

MS Windows XP or
MS Windows 2000 or
MS Windows NT 4.0 (Service Pack 6 recommended)
TCP/IP LAN connection with Winsockets
VmPerl Scripting API Version 2.1.5

Implementation language

C, Visual Basic

User interface

English and German; others on request

Installation

See release notice

Documentation

Online help

Training

See course offer at:

<http://www.fujitsu-siemens.com/training>

Demands on the user

The user should possess in-depth system knowledge so as to be able to analyze and interpret the performance data.

Conditions

This software product is supplied to the customer against a single payment/payment by installments subject to our conditions for the use of software products.

Warranty

Class: A

Delivery format: Machine language

Ordering and delivery

This software product can be obtained from your local Fujitsu Siemens Computers regional office.