

Data sheet

Fujitsu

openSM2 (Open Systems)

Version 9.2 Software

System Performance Monitor

Product line openSM2

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

Fujitsu Technology Solutions offers the openSM2 product line, a consistent solution for corporate performance.

openSM2 with its powerful components INSPECTOR and ANALYZER offers comprehensive, easy-to-use monitoring and analysis functions.

INSPECTOR enables comprehensive online monitoring with configurable alert management; ANALYZER is used to create detailed bottleneck analyses as well as forecasts about future performance requirements.

openSM2 thus helps a customer to optimize the performance of his systems.

openSM2 (Open Systems)

openSM2 (Open Systems) supports the server systems Microsoft Windows, Linux, Solaris, VMware ESX Server and Xen, the storage systems ETERNUS DX, Symmetrix, CLARiiON and FibreCAT as well as all SNMP-capable systems.

openSM2 (Open Systems) in conjunction with openSM2 (BS2000) offers a powerful solution for monitoring heterogeneous IT environments.



Features and Benefits

Main features	Benefits
<p>openSM2</p> <ul style="list-style-type: none"> ■ Simple installation and configuration ■ Comfortable graphical user interfaces ■ Central performance monitoring of heterogeneous IT infrastructures ■ Uniform tool for various system types 	<ul style="list-style-type: none"> ■ Ready to run ■ Intuitive to use ■ Efficient and transparent performance management ■ Unified and graphically supported processing of all measurement data
<p>Online monitoring with INSPECTOR</p> <ul style="list-style-type: none"> ■ Simultaneous monitoring of several systems with a different system type ■ Graphical and tabular presentation of the measurement data ■ Rule-based verification of the measurement data ■ Configurable alarms ■ Automatically triggered actions ■ Save the measurement data in a corresponding file 	<ul style="list-style-type: none"> ■ Swift estimation of the overall situation ■ Precise assessment of system behavior ■ Automated monitoring ■ Early problem recognition ■ Rapid reaction to problems ■ Database to implement detailed analyses and to create reports
<p>Offline evaluation with ANALYZER</p> <ul style="list-style-type: none"> ■ Central analysis of systems with a different system type ■ Accurate analysis with a flexible selection of the analysis period and measurement variables ■ Automatic generation of a list of processes with the highest CPU consumption ■ Automatic generation of hit lists of the monitored objects with the highest utilization values ■ Analysis of frequencies ■ Time-controlled analysis using macro technology 	<ul style="list-style-type: none"> ■ Unified layout of charts and reports ■ Implementation of trend and bottleneck analyses ■ Fast identification of the main causes of peak loads ■ Simple identification of overloaded resources ■ Simple monitoring of defined service levels ■ Automation of analyses to be performed on a regular basis

Topics

Measurement data

openSM2 enters a large number of server and operating system measurement data for server systems.

- Utilization of processors in user and privileged mode
- Utilization of physical and virtual storage
- Paging and swapping activities
- Utilization of the paging file and the swap area
- Use of cache areas
- Number of inputs/outputs
- Utilization of the physical disks and logical partitions
- Transfer rates and access times for devices
- File accesses
- Utilization of filesystems
- Transfer rates for TCP/IP network connections
- Number of system calls
- Length and utilization of wait queues
- Number of processes, threads, etc.
- Use of operating resources for processes and workload classes

openSM2 collects measurement data from the entire server and the individual virtual machines for the virtualized server systems VMware ESX Server and Xen.

- Number of virtual machines
- Number of the real and virtual processors
- Utilization of the processors as a whole and via the virtual machines
- Memory assignment via virtual machines
- Data transfer rates of the virtual block devices
- Data transfer rates of the network

Measurement data for storage systems are recorded on a system-global basis as well as for each volume based on read/write accesses.

- Access rates
- Data transfer rates
- Response times
- Cache hit rates

For SNMP-capable systems openSM2 collects measurement data from the groups of the SNMP-MIB-2.

- IP
- TCP
- UDP

Online monitoring with INSPECTOR

Using measurement intervals at times that can be set, agents collect measurement data about the current state of the monitored systems and send the data via a TCP/IP connection to the manager which presents and monitors such data. The agents can run on any Windows PC or server and record the data of the monitored systems on a remote basis so that installation on these systems is necessary ("non-agent" monitoring). The exceptions are systems with Solaris or Windows NT. An agent must be installed locally on the monitored system.

The monitored systems are displayed in the system list of the manager. The system list has a tree structure showing the association of the systems to system types and system groups. The symbol or color of a system indicates the current status of the system. The status display is constantly updated and enables exceptional situations to be detected instantly and an appropriate response to be made.

Several different types of reports are available for presenting the performance data in graphical or tabular form. Snapshot reports indicate the current system status in a chart or a table. Time reports reveal how the performance values have changed over the last hours. Global reports provide an overview of several systems while system reports provide measurement data for one system.

The user can specify the measurement variables and the monitored objects whose performance data is to be included in a report, as well as define new measurement variables by linking measurement variables by means of formulas.

The charts in the reports can be customized by selecting various diagram types (line, bar, logarithmic line, etc.), colors and other options. The charts can be printed with a single mouse click, saved to a graphics file or copied to the Clipboard for pasting into standard programs (Word, PowerPoint, etc.). A header and footer line can be inserted for printout and the labels can be modified.

The performance data can be monitored by means of user-defined rules. Conditions and actions are defined in a rule. If all conditions of a rule are fulfilled, an alarm for the rule is set off. The system entry in the system list takes the color defined for the rule and the actions defined for the rule are executed.

The action initiated can be:

- open a report with the affected measurement size,
- initiate an acoustic alert,
- start a procedure on any monitored server system on which an agent runs,
- execute a batch file on the PC,
- send an e-mail or SMS,
- send a SNMP trap.

Conditions for various systems can usually be linked as well. Different limits and actions can be defined for various times of the day in order to consider the various types of system usage, e.g. dialog mode during the day and batch mode during the night.

Offline evaluation with ANALYZER

The measurement files created by INSPECTOR are evaluated using ANALYZER. The user specifies the type and scope of the analysis via the user-friendly graphical interface of the manager component. The analysis job defined in this way is processed by agents and the result is then presented by the manager. Several monitoring files – also from different systems – can be analyzed simultaneously in a single analysis operation. The monitoring files to be analyzed can be located on any servers or PCs on which agents run.

The analysis period can be defined in the analysis job; time slots can be defined and certain periods (e.g. weekends) can be excluded. Furthermore, the values are selected which are to return measurement values whereby several values can be linked via a formula and individual measurement objects (e.g. CPU, device, network interface) can be selected.

Various analytical functions (mean values, frequencies, minimum, maximum, quantile, variance) are available for detailed analyses. Frequencies are evaluated (e.g. percentage of times with CPU load over 80%) so that defined service levels can be monitored.

The main causes of load peaks are quickly identified by the automatic generation of a list of processes with the highest CPU consumption. Likewise, overloaded resources are easily found by automatic production of hit lists of the monitored objects with the highest utilization values.

The analysis results are presented as a table or in various types of charts (time series, statistics, correlation, intensity), thus making them easy to interpret. In this way, for example, relationships between measurement variables can be identified through presentation as a correlation diagram. The charts can be customized by selecting various diagram types (line, bar, logarithmic line, etc.), colors and other options. The varied options of chart design and the simple transferability of data to other Windows applications also make ANALYZER an indispensable tool when it comes to creating monitoring reports.

The analysis result can be printed, saved as a file and also transferred to standard programs such as Excel and Word for further processing or to the Clipboard.

The macro technology of ANALYZER can be used to regularly perform analyses on a fully automatic basis.

The long-term files of ANALYZER provide the option of saving on a PC the performance data of selected measurement variables over extended periods of time and in compressed form for trend analyses and long-term capacity planning.

Technical details

Technical prerequisites: Hardware		
Monitored systems	Storage	ETERNUS DX, CLARiiON, FibreCAT, Symmetrix
	SNMP	Systems supporting SNMP MIB-2, e.g. printers, routers, switches
	Other system types	Servers which are supported by the operating systems named in "Technical prerequisites software"
Agent	for Solaris	SPARC servers, x86-64 compatible servers
	For other system types	x86-compatible PC or server
Manager		x86-compatible PC or server with at least 800 MHz
		Minimum 512 MB main memory
		Minimum 100 MB free disk space
		Minimum 1024 x 768 screen resolution
Technical prerequisites: Software		
Monitored systems	Solaris	Solaris 8 / Sparc and higher, Solaris 10 / x86-64 and higher SMAWemanate (Solaris) as of V1.5 (only when using the SNMP subagent)
	LINUX	SuSE Linux as of 8.0, Red Hat Enterprise Linux as of 3 SMAWemanate (Linux) as of V1.5 (only when using the SNMP subagent)
	Windows	Microsoft Windows Server as of 2000 Microsoft Windows NT 4.0 Server (Service Pack 6 required)
	VMware ESX Server	VMware ESX as of V3
	Xen	Xen (SuSE or Red Hat Linux) as of V3, Citrix XenServer as of V5 X2000 (on SQ series business servers) as of V5
	SNMP	SNMP V2
	Agent	for Solaris
For other system types		Microsoft Windows from 2000, Microsoft Windows Server from 2000 Microsoft Windows NT 4.0 Server (Service Pack 6 required) Microsoft .NET Framework 2.0 (only for VMware ESX Server) StorManMonitor V4.0 (only for storage, will be supplied) SSH (only for Linux, Xen)
Manager		Microsoft Windows from 2000, Microsoft Windows Server from 2000
		Microsoft .NET Framework 2.0
User interface		German and English, others upon request
Installation		By the customer (see Release Notice)
Documentation		Help function
Demands on the user		In order to analyze and interpret the performance data, users should have in-depth knowledge of the system.
Training		See http://ts.fujitsu.com/training
Conditions		This software product is supplied to the customer under the conditions for the use of software products against a single payment or instalments.
Ordering and delivery		The software product may be obtained from your local Fujitsu Technology Solutions GmbH regional office.

More information

Fujitsu OPTIMIZATION Services

In addition to Fujitsu, BS2000 offers Fujitsu a large number of platform solutions. These combine the high-performance products from Fujitsu with optimum service concepts, many years of experience and worldwide partnerships

Dynamic Infrastructures

With its Dynamic Infrastructures strategy, Fujitsu offers a comprehensive portfolio of IT products, solutions and services, for example, solutions for the data center and managed infrastructures up to infrastructure-as-a-service. How much you benefit from Fujitsu technologies and services depends on the level of cooperation you choose. Your IT can thus reach new levels of flexibility and efficiency.

Computing products

de.fujitsu.com/products

- PRIMERGY: Industry standard servers
- SPARC Enterprise: UNIX servers
- PRIMEQUEST: Mission-critical IA servers
- ETERNUS: Storage system
- BS2000/OSD Mainframe

Software

de.fujitsu.com/products/software/

- Operating systems
- Database products
- Resource orchestration
- Storage software
- System management

services

de.fujitsu.com/services

- Managed Services
- Infrastructure as a Service
- Consulting & Integration Services
- Maintenance & Support Services

More information

For more information about Fujitsu openSM2 (open system), please contact your representative or visit our web site: <http://de.fujitsu.com/bs2000>

Fujitsu Green Policy Innovation

Fujitsu Green Policy Innovation is our worldwide project for reducing burdens on the environment. Using our global know-how, we aim to resolve issues of environmental energy efficiency through IT. For more information see:

www.fujitsu.com/global/about/environment/



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