Development Of "IT Monitor Manager"

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1. Introduction

Recently, as computers continue to shrink in size and to save power, it has become customary to install multiple computers in a single rack. While the system equipped with the rack brings an advantage by space saving, the malfunction measures and security countermeasures against heat of the device become more important.

Although SANYO has offered it's "IT Monitor" (4 analog input, 8 digital input, and 8 digital output) as a rack-monitoring device for some time, in order to monitor multiple "IT Monitors" it was necessary to use a SNMP (Simple Network Management Protocol) manager.

In order to improve operability and usability, integrated monitoring software "IT Monitor Manager" was developed.

In the latest version of "IT Monitor Manager," not only "IT Monitor" but also all SNMP compatible products developed by the power system division can be monitored.

This document introduces the integrated monitoring software "IT Monitor Manager."

2. System Configuration

Once the target device to be monitored and PC (WindowsNT/2000/XP) with "IT Monitor Manager" installed are connected to network, a basic system configuration is completed.

Fig.1 shows the example of the system configuration.

In the system in Fig.1, an "IT Monitor" installed on a rack monitors the temperature inside the rack and the opening and closing of the door. When the temperature deviates from normal or the door is opened, "IT Monitor" notifies the "IT Monitor Manager" via SNMP. Once "IT Monitor Manager" receives the notification, it sends an e-mail to the administrator, turns on the output outlet of "Network Power Manager", which can light a trouble light or power some other device to indicate trouble.

"IT Monitor Manager" uses a client/server configuration and can operate either on the same PC or each on different PCs.

The server provides the following functions:
· Acquires the state of the devices regularly and stores the information in a database
· Receives notifications from each device, stores them in a database and initiates actions such as sending of E-mail if necessary
· Regular backup of the database.

On the other hand, the client takes charge of the GUI (Graphical User Interface) to the user. The client acquires information of various types from the database and displays it to the user.
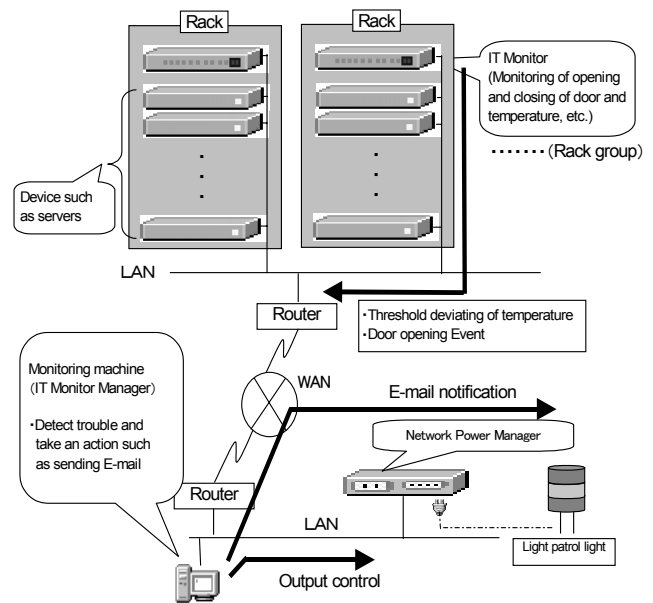

Fig.1   System Configuration

3. Features

3.1 Can Monitor Up To 500 By Using SNMP

This product is a de facto standard of the network device management protocol, and can monitor up to 500 devices by using SNMP. It is also applicable to a large-scale system.

3.2 Ease Of Use Compared With Other SNMP Managers

This product is a SNMP manager that uses SNMP for the management protocol.

Most SNMP managers on the market are difficult to master if a user does not have detailed knowledge of SNMP. These products are only suitable for professionals. Moreover, since the user interface is standardized, most offer the same user interface regardless of the type of device.

Our product offers a user interface customized for each monitored device based on the specific features of that target device. The user interface is easy to use and understand even for non-technical users.
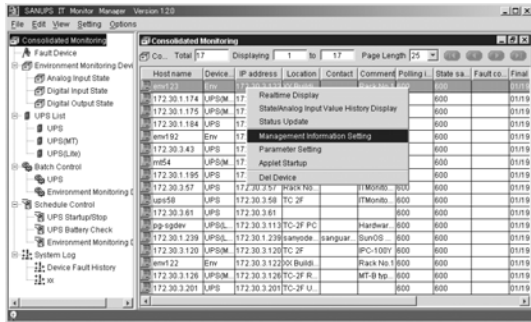
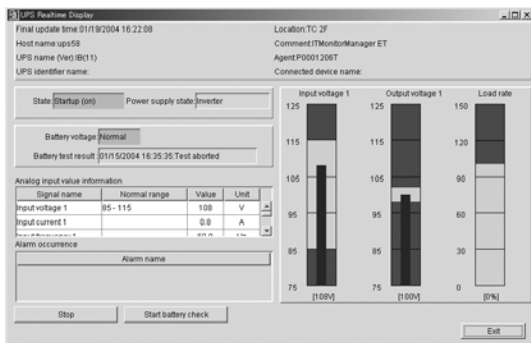**Fig.2 State List Display and Pop-up Menu**

(Similar to general application)

Fig.3 Real-time State Display of UPS

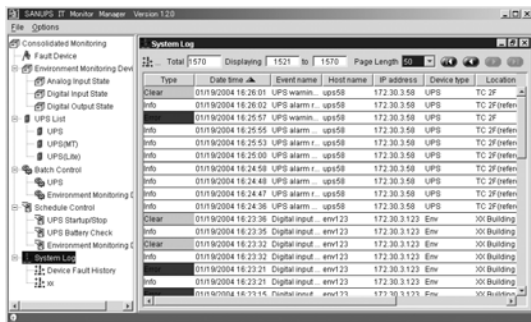**(Different user interface for different device)**

Fig.4 System Log

(Easy to understand for general users)

3.3 Monitoring That Considers Degree of Importance and Network Load

The cycle of the status polling to the monitor can be specified from 10 seconds to several hours for each device. Therefore, it is possible to monitor in accordance with the degree of importance and the available bandwidth or network load for each device.

3.4 Various Trouble Notifications

The following actions can be specified at the time of trouble and recovery:
・Pop-up notification to the client
・E-mail notification
・Batch file execution
・Message notification to other computers.

The execution of the batch file can give the monitoring system flexibility and extendibility because it can execute the action that cooperates with other applications.

3.5 Scheduled Control

In this product, it is possible to control the device on demand as well as on schedule. The scheduled control is a feature of this product, which cannot be seen in other SNMP managers on the market. It can expand the usage of the monitoring target device. For example, by using the scheduled control function for the digital output of "IT Monitor," the usage of "IT Monitor" can be extended.

3.6 Deviation Monitor Of Various Measurement Values Of UPS

Various measurement values can be acquired from UPS. When the measurement value deviates from a normal range, it can notify the administrator by E-mail, etc. This function can be used when wanting to monitor the load factor of UPS and notify the administrator when the normal range is exceeded.

When "IT Monitor" is used for the deviation monitoring, the deviation monitoring function provided in "IT Monitor" can be used to receive an E-mail notification. If a notification by means other than E-mail is preferred, the other trouble notification capabilities of "IT Monitor Manager" can be used.

3.7 Display And File Output State And Measurement Value History

The output state and the measured data acquired from the device can be saved, the graphical representation can be displayed (Fig.5), and file output of history information can be exported. The file output form is CSV (Comma Separated Values) and can be freely processed by commercially available applications, and used to analyze trends of the measured values.
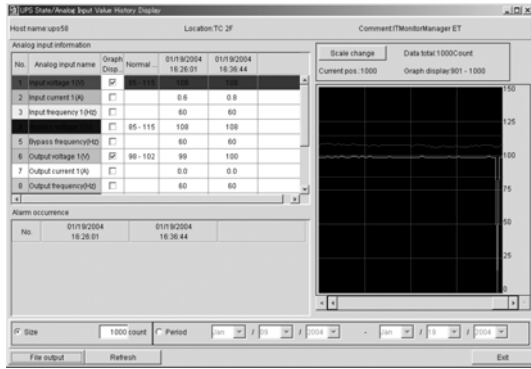
Fig.5 Display of the State and Historical Value

4. Conclusion

This document introduced the features of the integrated monitoring software "IT Monitor Manager."

Although this product has made integrated monitoring possible, there are still improvements that can be made.

To monitor a device that is not compatible for SNMP such as a large-scale UPS, it can be monitored on "IT Monitor Manager" through "IT Monitor." However, the device itself will be hidden from the user. Offering a user interface that can overcome this issue needs to be considered.

Other possible enhancements are:
・Support of web client
・Event coordination control
・Various forms of report generation
・Support of SNMPv3, etc.

We need to ascertain which new functions are most critical by understanding how "IT Monitor" is used and then provide simple but efficient solutions.

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Joined company in 1987
Power Systems Division, 2nd Design Dept.
Worked on the development and design of power instrument and power controlling system