Development of LAN Interface Card "SANUPS" PRASD04

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1. Introduction

In recent years there have been cases in which the conventional LAN interface card has been unable to meet requirements, because of the high-speed nature of the network and the restriction on the number of computers that can be shut down.

Meanwhile, there is growing demand for the use of cellular phones and personal data assistants to control UPS, corresponding to the growing adoption of these devices.

We have developed a LAN interface card called SANUPS PRASD04 to address these issues.

The features of SANUPS PRASD04 are introduced in this paper.

2. System Configuration

Fig. 1 shows an example of the system configuration of this product.

A LAN interface card is mounted on a UPS, and the computer in which UPS management software SAN GUARD IV Lite is installed is directed to shut down via LAN when the power failure occurs.

It is also possible to direct to shut down by logging into UNIX/Linux with Telnet.

3. Feature

3.1 Support for 100BASE-TX

Conventional LAN interface cards have supported only the 10BASE-T network.

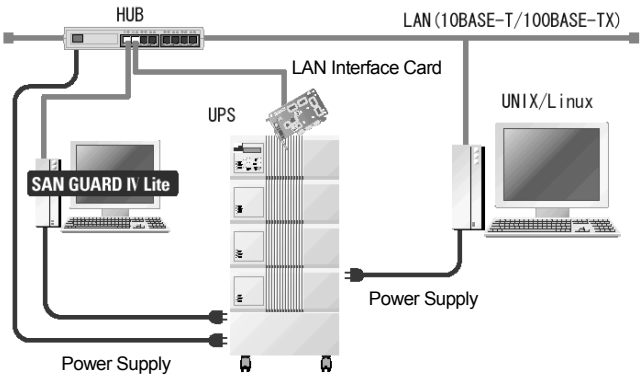

Fig. 1 System Configuration

This meant that it was necessary to prepare a hub for 10BASE-T separately for the LAN interface card when the LAN card was used in the network environment of the increasingly popular 100BASE-TX. We have now succeeded in removing this restriction by supporting 100BASE-TX, and support all network environments.

3.2 Increasing the Number of Computers that Can Be Shut Down

With conventional LAN interface cards, the number of computers that can be shut down has been limited to ten because of hardware restrictions, although the number of computers when the system of server/client configuration was united with the UPS management software SAN GUARD IV Lite was 50. Now, the numbers of computers that can be shut down have been increased to 50, by changing hardware. It therefore became possible to support cases requiring the shutdown of more computers, as in medium-scale and large capacity UPS.

Fig. 2 shows an example of the screen of the connecting device operation information on the Web browser.

Fig. 2 The Screen of Connecting Device Operation Information (Screen of Internet Explorer[(1)])

*(1) Internet Explorer is a registered trademark or a trademark of Microsoft Corporation in the United States and other countries

3.3 Down-loading/Up-loading of Setting Value

The downloading of a setting value is a function to back up information set on a LAN interface card in another medium via the network (Ftp) or the serial, and the up-loading of a setting value is a function to place information backed up in another medium on the LAN interface card via the network (Ftp) or the serial.

Although in the past it was necessary to make the same setting one by one when two or more LAN interface cards with the same setting are introduced, the setting time at introduction is shortened because by using this function,

the setting of the LAN interface card that was made first can be uploaded and downloaded to other cards.

Moreover, if the information set on the LAN interface card is backed up by downloading, when the hardware exchange is needed because of a hardware breakdown or similar reason, the setting made before the exchange no longer needs to be set again as the backed up information can be uploaded to the new hardware.

3.4 Monitoring UPS Status Using E-Mail

The function to notify a manager when events occur in the LAN interface card or when the UPS status changes by e-mail had been available for some time. Now, however, we have added an e-mail receiving function, making it possible to ascertain the UPS status and measurement information by reply e-mail whenever you send an e-mail requesting a UPS status update from a cellular phone or similar device to an address previously given to the LAN interface card.

It is now possible to use this function to monitor the status using a cellular phone or similar device from anywhere, even a remote location.

Fig. 3 shows an example of the system configuration to achieve sending and receiving of e-mail.

An example of a message that has been sent from the LAN interface card is shown in Fig. 4.

Fig. 4 Received Message (Lotus iNotes(2) screen)

*(2) Lotus iNotes is a registered trademark of IBM Corporation.

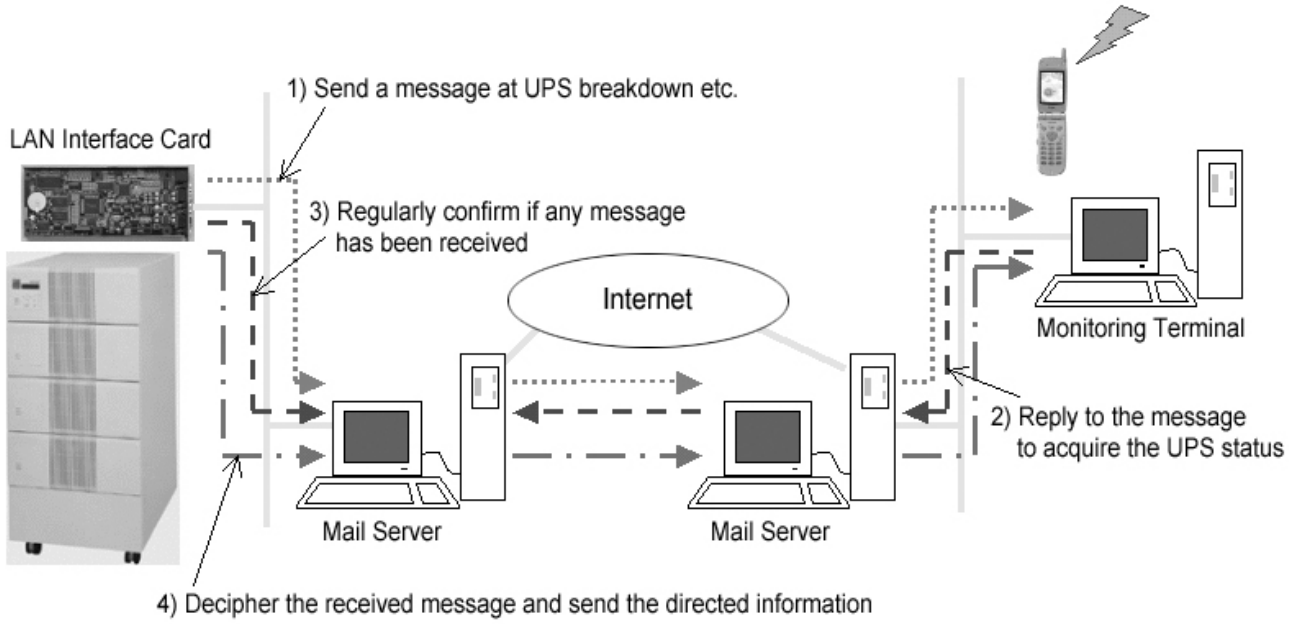

Fig. 3 System Configuration

3.5 Test Transmission Function

We have added a function in which the WS script, e-mail, and the SNMP trap can be sent as a test.

The operational check is easily and safely tested now that we added the test transmission function. In the past, it had been necessary to terminate the input power supply of UPS and generate a power failure event when the WS script transmission, e-mail transmission, and the SNMP trap transmission were tested at the introduction of a LAN interface card.

3.6 Time Adjustment by NTP

Time adjustment using Network Time Protocol (NTP) is now available. We no longer have problems with time adjustment because it synchronizes with the designated NTP server in a constant cycle.

3.7 Contact Cooperation with UPS

It is possible to cooperate not only with the UPS and serial communications but also with a UPS that has no serial interface with a contact signal (as LAN-ADAPTER※(3)). Using contact cooperation with UPS, 50×N computers can be shut down by dividing contact signals from a UPS and connecting two or more LAN interface cards (LAN-ADAPTER).

It can also be used with all other UPS, including those manufactured by other companies.

Fig. 5 shows an example configuration when contact cooperated with UPS and two or more LAN interface cards (LAN-ADAPTER) are connected to a single UPS.

*(3) LAN-ADAPTER SANUPS PRASD04-ADP has the LAN interface card and a power supply for AC100/200V input built in, and is able to contact cooperate with UPS that has no serial interface or built-in optional card slot.

4. Conclusion

With this new development, the potential to use LAN interface cards not only with SANYO DENKI's UPS but with all systems has increased, thanks to the support for 100BASE-TX, the increase in the number of registered devices, and contact cooperation with UPS.

The new card also has solved the traditional problems of setup and operational checking and the time spent on these tasks when it is introduced, by downloading/uploading setting values or test transmission functions.

In addition, we are able to acquire information on UPS introduced to our customers by e-mail, by adding an e-mail receiving function. This will enable us to provide better user support.

We were able to create a product that can meet the demands of diverse users. Nonetheless, challenges remain, such as the issue of setting complexity.

We will identify user needs and expectations to develop even more attractive products in the future.

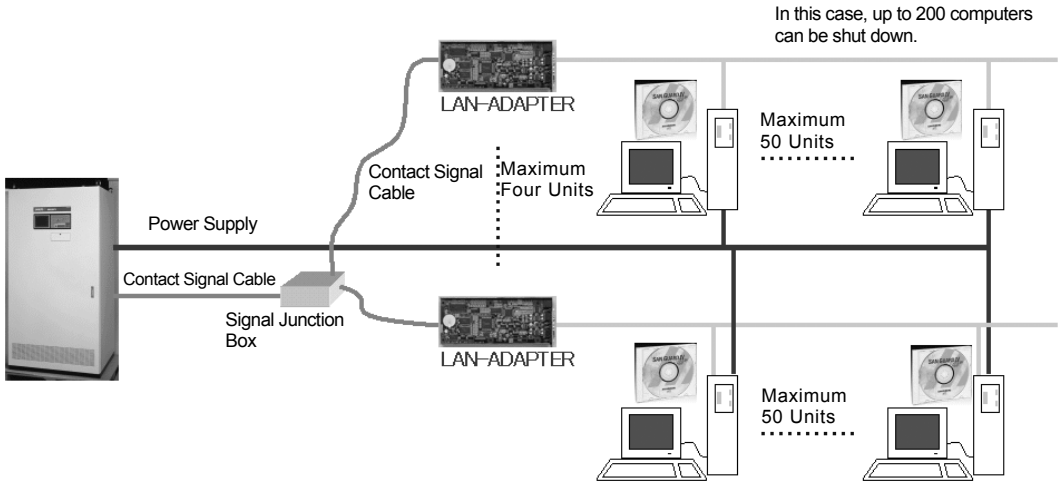

Fig. 5 Configuration of Contact Cooperation with UPS

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Power Systems Div., 2nd Design Dept.
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