Research on Real Time Monitoring of Operation Status of Large Data Platform for Energy Conservation Supervision Based on Computer

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Abstract. At present, the problem of large amount of energy consumption in our country has seriously affected the comprehensive economic development of our country and the uneven mobilization of social resources. The limitations of these problems have gradually aroused the attention of people from all walks of life. In order to meet the supervision of energy consumption in the environment of our society, people put forward the establishment of energy-saving supervision platform system[1]. In order to meet the healthy operation of the platform supported by the large data of energy-saving supervision in China, this paper also proposes a real-time monitoring technique for the operation status of the platform. We believe that through the development and support of this technology, we can ensure the smooth operation of the energy-saving supervision system. There is no doubt that this will lay a solid foundation for the further data mining and corresponding value promotion of the platform.

Keywords: Energy Saving Supervision, Large Data Platform, Operation Status

1. Introduction

In some industrial developed areas of our country, many industrial parks have a wide area of construction facilities. Their consumption of resources and energy is also relatively large. Coupled with the serious lack of basic data and resource management. These problems will limit the progress of energy conservation in industry. However, through the discussion of these problems, we can also see that the energy-saving potential of these industrial parks is infinite[2]. Using the above experts' suggestions, it is absolutely necessary to run the energy-saving supervision platform supported by large data and conduct real-time monitoring.

In addition, with the gradual prosperity and prosperity of computer related skills in our country, the problem of energy mobilization and resource integration is also imminent. Therefore, for our society, energy-saving supervision platform is an important work of social construction. Through the combination of platform mechanism and its system, we can establish our own energy management system. Through this system, we can realize the classification of social resources and household
measurement. This can meet the real-time monitoring of social energy use by relevant superior departments. At the same time, it can also help the energy sector to grasp the energy data in a timely manner.

2. Introduction of SNMP and ICMP protocol of computer

2.1. Introduction of SNMP protocol
Simple network management protocol is an application layer protocol in the protocol architecture. It can monitor the operating system, hardware device and service application of the target device. On this basis, it can also use simple command operation to complete the collection and configuration of equipment information. The network management station about SNMP is the main body of network management. Through this kind of site, the technical personnel can send the corresponding resource monitoring equipment information to the general server in time.

2.2. Introduction of ICMP protocol
The control message protocol of Internet refers to the protocol cluster of IP. It can be used in the process of transmitting control information of host computer and router. Control information refers to the smoothness of the network, the corresponding sensitivity of the host and the communication degree of the router network. Compared with the function of SNMP, the only function of ICMP is to report various problems of the device. Its use can help technical personnel to timely understand the management and control of resources in the operation of the equipment.

2.3. The comprehensive application of the two
SNMP protocol can be regarded as the quality department of resource management. ICMP Protocol can be regarded as the device error reporting department. The cooperation of the two can help technicians to better run the energy-saving supervision equipment under the large data skills. However, we need to note that ICMP Protocol is unable to solve the system error by itself. It's just a web program responsible for the notification of information (see Figure 1).

![Figure 1. Information sharing of energy conservation supervision.](image)

3. The architecture and corresponding function design of large data platform for energy conservation supervision based on computer

3.1. Energy saving regulatory framework in large data environment
Generally speaking, the large data platform of energy-saving supervision is mainly composed of data acquisition function, data transmission system, data processing system, data analysis and display system. The functionality of these architectures is perfect. They can measure resource consumption in different degrees. Truly achieve the design of energy-saving supervision function.

3.2. Brief introduction to the functions of energy conservation supervision in large data environment
Compared with the common energy monitoring system, the functions of energy-saving supervision
system include remote energy consumption statistics, energy-saving and low-level air and energy statistics. In addition, the system can also measure the energy consumption of new and renewable energy sources other than water, electricity and gas. These functions complement each other, and which will eventually fully show the use effect of energy-saving technology.

3.3 Resource and data sharing of multiple devices
In theory, energy regulation should have the characteristics of collection and integration in the form of large data. It needs to collect some data from many different devices and energy monitoring systems. Of course, for resource management and control, we can use the total line of enterprise services to build the platform function. In the process of using multiple devices that make up the whole system, we should ensure that these devices can share resources and data. We want to make the whole system realize the logical sharing and integration of data.

4. Architecture and process of real-time detection technology for running state of large data platform of energy conservation supervision based on computer

4.1 On the design of energy conservation regulatory technology architecture
For this detection module, in addition to the detection of resource data, we also need to conduct a comprehensive test on the performance of CPU, memory, hard disk, network server and other equipment related to the computer. Therefore, technical personnel can design the construction of running state detection module as data acquisition layer, system management layer and display layer. The ingenious design can effectively solve the problems related to the performance detection and release of the hardware and software of the large data platform for energy-saving supervision (see Table 1).

| Health degree standard | Judgment basis          | Color labeling |
|------------------------|-------------------------|----------------|
| Excellent              | 85% memory usage        | Green          |
| Commonly               | 95% memory usage        | White          |
| General fault          | SNMP not turned on      | Yellow         |
| Major failure          | Failure of data acquisition | Red          |

4.2 Realization of the function of energy saving supervision technology
According to the definition of SNMP and ICMP Protocol, aiming at the data collection mode of server and micro database platform of energy-saving supervision platform, we should set the function of energy detection equipment to be able to accept and transmit the operation information and operation status of the equipment. As for the realization of technical functions, we can set the realization of the functions as that the equipment can monitor the energy consumption and the sensitivity of the equipment itself. The device can also detect data and software running in the process. On this basis, the equipment should also carry out intelligent data processing. This kind of treatment includes fault detection and self solution.

4.3 On the operation process of energy saving supervision technology function
Generally speaking, the first step of function operation is to establish the basic information of network management, associate information database and set up monitoring equipment table. We also need to set the monitoring process of the equipment and arrange the corresponding detection module. Secondly, the equipment should analyze and explore the data intelligently. If the equipment detects the corresponding problems, the equipment will automatically generate solutions and running solutions. The device can also carry out module demonstration and SMS release through the system to transmit
important information.

5. Setting of bottleneck period and health degree of operation of energy saving supervision large data platform

5.1. Analysis of bottleneck period of platform operation
In theory, the detection of the platform state and the analysis of the bottleneck period of the equipment mainly include the detection of the CPU performance bottleneck period, the memory performance bottleneck period, the network performance bottleneck period, the network performance bottleneck period and some database performance bottlenecks. The detection of CPU performance bottleneck period and memory performance bottleneck period is more complex. There is no need to say much here. In the resource monitoring system, it is important to detect the bottleneck period of database and network performance. If the network state is unstable, the operation of the supervision platform will also have corresponding problems[5].

5.2. Health setting of system operation
When the health level is set as an excellent standard, its main judgment basis is that the network of hardware, network, software and database platform is normal. The color label is generally green. When the health level is set as a general standard, its main judgment basis is that the memory utilization rate is less than 95%. The color label is generally white. According to the color setting of this health degree, it is convenient for technicians to simply understand the operation of the system.

6. Conclusion
Generally speaking, the establishment of energy regulatory system is a relatively difficult process. Because the detection range of the system is extensive, it is difficult for technicians to control the accuracy of the detection. However, the research on the real-time monitoring of the operation status of the large data platform of energy conservation supervision based on computer is an important step in the implementation of energy supervision[6]. There is no doubt that it will have a very significant impact on China's future energy management and control.

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