

# Optimal Design of Computer Information Processing System Based on Big Data Vision

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**Abstract:** With the continuous expansion of the scale of big data, the computer information processing system has also been expanded to a certain extent. In order to improve the information interaction and data processing capability of the interface, an optimization design method of computer information processing system based on big data view is proposed. Through the optimization design analysis of computer information processing system, and the big data as the background, the corresponding optimization design scheme is proposed for the computer information processing system. By analyzing the development of information processing system in the era of big data, this paper puts forward the core elements of information processing system and the optimization method of computer information system in the view of big data, aiming at strengthening the effective combination of big data technology and computer information system, and providing theoretical reference for related research.

## 1. Introduction

Various types of computer technologies are driving the exponential growth of data. Big data information processing technology has gradually become an important strategic resource, and is also gradually innovating the modern production and life style [1]. The interface interaction design of big data uses GUI and human-computer interaction interface to construct the big data information base, uses related database access and scheduling technologies to realize the information interaction of big data, and realizes information management and data interaction through heterogeneous and hierarchical distributed interfaces [2]. Its application has been widely deployed in all corners of society, playing an irreplaceable role in the increasingly fierce market competition. Therefore, we should pay more attention and attention to computer application technology. Aiming at the use of big data in computer information processing technology, the corresponding analysis of computer information management software is carried out to determine the specific information processing flow [3]. Faced with the information challenge brought by the big data background, computer information processing technology needs to continuously improve itself, and then develop and utilize massive resource data. Based on this, building a more transparent and larger-scale information processing method needs to be solved urgently.

## 2. Understanding Category of Big Data and Information Processing Technology

### 2.1. Big data environment

Big data is a visual description of the massive data collection in the information age. Big data is based on massive data, based on the network, and uses computer science and technology as a means to achieve intelligent analysis and decision-making. In the process of construction and application of information systems, if it is only relying on the processing results of computers, the users do not judge its rationality, which violates the principle of information system man-machine integration [4]. Some useful information is simplified from a huge database and saved, so that appropriate processing techniques are adopted for the information according to different requirements of different objects, and then the results obtained from big data analysis are fed back to the corresponding objects. With the further development of computer technology, the source and scale

of big data are also continuously improving. Traditional information processing technology can no longer meet the needs of faster and more efficient data processing [5]. It can bring reliable and convenient services for human life and work. Because of its own characteristics, computers can grasp the performance of each software and provide high-quality and fast services for people. Large data shunting system based on cloud computing platform is to collect, process and distribute large data through feature extraction and data partition of multi-source information resources.

## **2.2. Computer information processing technology**

Computer information processing technology combines microelectronics networks and application technologies of key technologies such as remote sensing, which realizes the collection, analysis, application and transmission of information data through technology accumulation. The use of big data information fusion and data scheduling methods for information integration processing and scheduling in the interface interaction process not only ensures the fast and stable output of the video signal, but also ensures that the data transmission rate is effectively improved and the transmission frequency is stable [6]. A variety of database technologies have shown high application value in the wide range of practical applications, which can effectively improve office efficiency and information processing capability. Therefore, at present, people have a strong dependence on computer application technology, and it virtually shows the important application significance it represents [7]. Human-computer integration should take people as the center, and on this basis, computers should be combined to ensure the double security and integrity of various management links of information data. It should be noted that in the process of optimal design, it should be clear what kind of data is needed, and only when the purpose is clear can the data and information be systematically integrated and analyzed.

## **3. The Core of Information Processing System from the Perspective of Big Data**

### **3.1. Information security**

In-depth understanding of the core of information processing systems from the perspective of big data is of great significance to the improvement and optimization of information systems. Relevant documents and other aspects prove that information security technology is the core component of information processing system in the era of big data. The interface interaction design model is built in a multi-threaded embedded parallel processing system, and is combined with a functional modular design scheme to carry out large data information processing and interface interaction design and development [8]. Therefore, it is necessary to improve and integrate computer technology, information system management and integration with application systems, and establish a scientific and reasonable database according to the actual needs of the company, to achieve computer application technology and information management to keep pace with the times and achieve work. Efficient and smooth. For the optimization of computer hardware, we must focus on the optimization and maintenance of the CPU and motherboard. As the core of the computer, CPU shoulders the responsibility of processing huge data. Once the CPU fails, the whole computer will also have problems. Therefore, it should be maintained to ensure the normal operation of the information system. Computer information management software needs to save, organize and filter the computer's own resources and data, so that it will not be mixed with other data sources. In order to better protect the security of information and data, it is of great significance to improve the security mechanism in the computer information security system.

### **3.2. Big data storage**

Big data storage differs from chain storage and linear storage in traditional data storage technologies in that big data data components are characterized by strong correlation, complexity, and dispersion. The interface interaction system is designed for multi-threaded distributed architecture, and performs big data information processing in the bottom layer. In the establishment of the information management system, it must be fully considered that it should conform to the

development characteristics of the enterprise itself, improve the application performance of the system, establish its own business information database, and update it in time [9]. In this aspect of optimization, we should continue to strengthen the development of man-machine integration, further optimize business logic and strengthen the rationality and effectiveness of its combination with resource management. In addition, we can enrich multimedia presentation methods and research new algorithms to adapt to big data storage. Therefore, advanced computer technology can be used to input, store, process, output and analyze information and data during the optimization of software and network, thus improving the basic functions of information system.

### 3.3. Data analysis and transmission

In the era of big data, in order to collect and process large amounts of information, computer information management software must retain the advantages of traditional design and make up for the shortcomings of traditional programs. The processing and processing of data is a very important step in computer information processing. However, in the face of massive data information, how to extract key useful information from it and process it into decision-making information support is of great significance [10]. The realization of strategic objectives is also affected by system management. Only by scientific and perfect system management and the help of system operation, management process, management software and management personnel can the realization of strategic planning be fundamentally guaranteed. Thereby improving the overall quality of information. In addition, the computer computing platform under big data also needs to be further optimized, including parallel computing platform and parallel computing mode. The analysis and processing of big data and the transmission of big data both need to classify and sort out big data as a whole.

## 4. Optimization Method of Computer Information System from the Perspective of Big Data

### 4.1. Converged cloud computing technology

The big data offloading system is the infrastructure for realizing the integration of multi-source information resources under the cloud computing platform. As an open source framework, the cloud computing information system can realize wireless data transmission and reception and data aggregation through big data offloading under the cloud computing platform. class. Figure 1 below shows the overall model of the big data distribution system under the cloud computing platform.

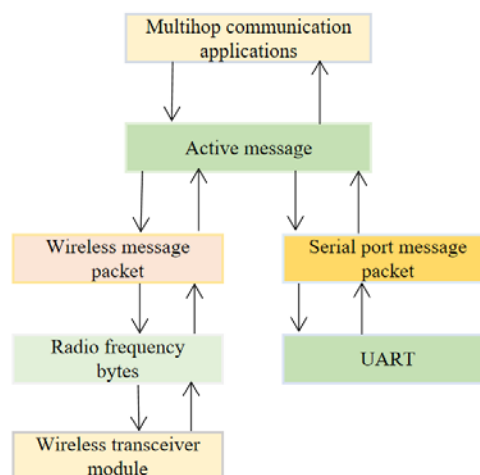


Fig.1. The overall model of big data distribution system under cloud computing platform

Both cloud computing technology and big data technology are computer network technologies in the new era. The two have gradually emerged in a complementary relationship. The computer network continues to innovate and reform itself under the development of the times. A data-centric network is constructed and applied to the sensor model of target tracking to realize data classification and pattern recognition, and the system functions are modularized to improve the

shunt performance. Applying cloud computing technology to computer information processing system can effectively improve the overall computing efficiency and storage capacity of computer information processing system. Through the in-depth application of distributed algorithms, the actual performance of cloud computing technology can be effectively improved. At the output end of the interface interaction, a cross bus control method is adopted to realize the scheduling of large data bus transmission, and information reading and compiling of the interface interaction are carried out in an embedded database. The integration of cloud computing technology can also effectively improve various problems of data transmission under traditional big data and promote the further development of big data technology. For the collection of information, we should also keep pace with the times, conform to the trend of the times and explore the effective combination of computer application technology and information management system.

#### 4.2. Information security technology optimization

According to the overall design of the data distribution system and the data distribution system design, the TinyOS priority scheduling method is used to collect and schedule the feature data of the big data stream, and to read the characteristic sample values of the big data. The digital FIR filter is carried out in the DSP, and the sampling data or processing results are sent to the PC through the PCI bus to realize data shunting. The process of large data shunting is shown in Figure 2.

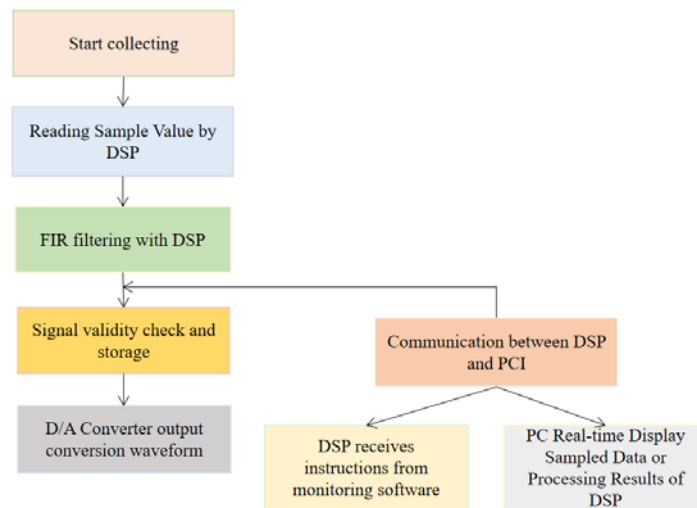


Fig.2. Big data offload processing

The computer information processing system under the big data view is to connect and connect various data systems through the network to realize data sharing and computing, but this open design makes more and more information security appear in the network. Hidden dangers. Considering the large amount of consumption generated during hardware operation, the second consideration is whether the transport rate of Gigabit Ethernet can carry the use of the hardware. A huge information world, for information management personnel, should strive to start with a rich collection of information, and strive to obtain higher quality, more reliable information resources. In the era of big data, data information security requires that illegal acts of network data analysis and processing be prevented so as to effectively improve the security of big data information. In this process, users of foreign networks cannot access the resources of internal networks. This asymmetry of access can not only realize data interaction in different regions, but also realize safe isolation and transmission of information. In today's era of big data emergence, the amount of information input has increased significantly compared with before. However, the external structure of the software cannot be expanded due to the increase in the amount of information stored. On the contrary, the external structure of the management software should be reduced. Only in this way can it meet the needs of modernization.

### 4.3. Data indexing technology optimization

Non-relational databases are based on new databases under big data, and advocate the parallel storage of non-relational data information. This way has greatly stimulated the carrying capacity of data information. Through the big data offload sending and receiving to notify the upper layer of the radio frequency bytes, the data serial port communication and wireless transceiver are realized; the reliability refers to the distributed processing method adopted in the cloud computing big data information shunting system. Through the organization and optimization of the computer database system, all the information collected by the computer system can be filtered and processed in a large scale, and finally can be saved in the information management software. Optimizing business logic requires scientific and reasonable planning of information input sequence and storage mode to ensure convenient and intuitive presentation of data when relevant information is retrieved. For example, when collecting internal information, attention should be paid to the integrity and effectiveness of the information. For external information, it is necessary to determine its source to ensure safety and timeliness. When the software will check that the host computer has that data transmission signal, it will send an interrupt signal to the DSP chip, and the DSP chip will receive the signal to visit the core controller of the system. And it has more outstanding adaptability, expansibility, and high performance of data information processing. It has high application value for the continuous optimization of data storage function. This method effectively realizes the optimization of data storage method in computer information system.

### 5. Conclusion

The interface interaction design of large data uses the related database access and scheduling technology to realize the information exchange of large data and improve the integrated scheduling ability of large data. In this paper, the processing program and application scope of large data are introduced, and the essential requirements of computer information management software are analyzed in detail. Aiming at these requirements, a scheme of optimizing computer information processing is put forward. In cloud computing environment, the sources of computing resources, storage resources and software resources have multiple attributes, forming cloud computing and cloud storage of multi-source information resources. During the overall design of the computer, the Ethernet should be designed as a whole, and the data transmission efficiency should be ensured when the data imaging efficiency is ensured. Through an overall understanding of the current development of computer information processing systems and based on the challenges they face, the optimization methods of future computer information processing systems can be further analyzed and explored. The experimental demonstration shows that the optimization design method proposed in this paper has extremely high effectiveness. I hope this research can provide reliable theoretical basis for the optimization of computer information processing system under the background of big data.

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