# Research on computer information processing technology in the era of big data

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**Abstract:** With the rapid growth of the amount of data, human beings have entered the era of big data. A large amount of data contains a lot of wealth that needs to be explored urgently. Computer electronic information processing technology has emerged. Using this technology, data can be collected, stored and analyzed. And get useful information from it, which will promote the development of computer technology. In order to achieve better use effects, computer electronic information processing technology must ensure the security and stability of data, especially in the era of big data, data security is particularly important. Through the analysis of computer electronic information processing technology in the era of big data, this paper briefly analyzes it, and focuses on its characteristics. In short, in the era of big data, computer electronic information processing technology must adapt to people's practical application requirements, and carry out continuous research and innovation on it.

**Key words:** big data; computer; information processing

## 1 Introduction

With the popularity of the Internet, the number of computer users has exploded, and the total amount of data generated every day has reached a very alarming level. Under the new situation, the requirements of computer processing technology are constantly changing and developing, and computer technology is also constantly following up, and the two complement each other. Now, we must use new ideas and new technologies to cope with the increasing data processing requirements. In the era of big data, people's dependence on network technology and computer technology is increasing day by day. It can be said that people's production and life are inseparable from them. With the application of technology, there will be more and more data, more and more, more and more. Using computer electronic information technology, useful information can be mined from massive data, and with the development of computer technology and the continuous improvement of performance, the obtained data will serve human beings better. With the development of society, the amount of data will increase. In order to adapt to this era, we need to constantly innovate and develop. This is of great help to our country's computer industry and economy. In the era of big data, it is necessary to conduct in-depth research on the electronic information processing technology of computers.

ITEI 2022, December 23-25, Harbin, People's Republic of China

DOI 10.4108/eai.23-12-2022.2329076

## 2 Relevant theoretical analysis

### 2.1 Introduction to Big Data

Generally speaking, big data refers to massive data, which is the biggest feature and most important of big data. Under normal circumstances, data exceeding 10 TB will become big data. With the rapid development of my country's economy, new technologies emerge in an endless stream, especially the application of computer technology, which has led to a rapid increase in the amount of data worldwide. Figure 1 shows the changes in the total global data from 2005 to 2015. It can be seen from the chart that in the past In ten years, the global data has increased by more than 70 times, and in 2015, this number reached 7,910 exabytes. Another important feature of big data is that its structure is very complex, including pictures, text, tables, video, audio and so on. Because of the massive amount of data, big data is more complex and richer [1]. The commonly used big data calculation formula is the Bayesian formula:

The impact of the era of big data on human beings is unprecedented, because there is a lot of useful information contained in big data, which can help people make more scientific decisions. Can provide you with a lot of information. However, the processing and processing of data also requires computer technology, and now, the functions of computers are getting stronger and stronger, and the speed of processing data is getting faster and faster. In this era of big data, if people want to obtain more useful information, they must continuously enhance the electronic information processing capabilities of computers to meet people's needs.

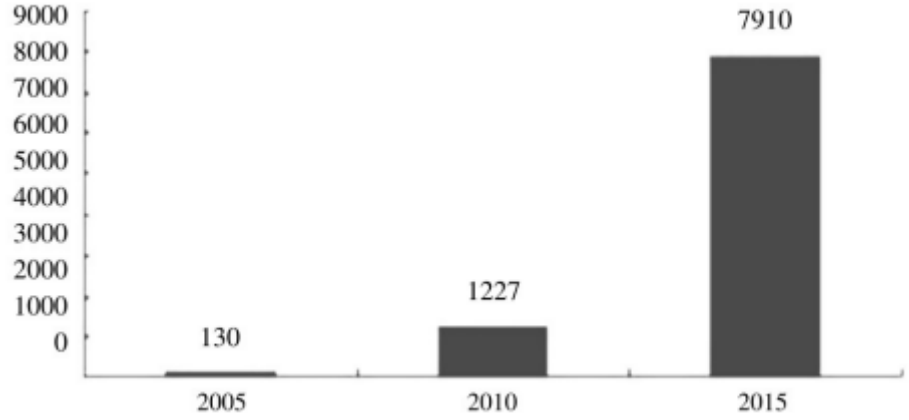


**Figure 1** Ten-year global data volume growth

### 2.2 The meaning of computer electronic information processing technology

The primary goal of computer electronic information processing technology is to process and manage data quickly. In this process, various technologies must be combined, such as data transmission and analysis. Computer information processing technology is the most important part of the computer, and it is the basis of computer technology. Computer technology includes cutting-edge technologies such as microelectronics and sensing. With the advent of

the era of big data, many enterprises are using computer electronic information processing technology. More and more people realize that this technology can effectively improve the office environment and promote the development of enterprises. As shown in Table 1, the commonly used computer parameters.

**Table 1** Computer Parameters

| equipment | model | name | model |
|---|---|---|---|
| computer | Common machine | operating system | Win7 |
| CPU | I7-1700 | motherboard | P5G41 |
| RAM | 16GB | SSD | 1TB |
| graphics card | RTX960 | display | LET-15 |
| sound card | Realtek Audio | network card | Realtek GBE |

# 3 About DES encryption algorithm

## 3.1 Introduction to DES encryption algorithm

The DES algorithm is a symmetric encryption system in the encryption system, and it has become the data encryption standard in the United States. It is a symmetric encryption system encryption algorithm developed by IBM in 1972. The plaintext is grouped by 64 bits, the key length is 64 bits, and the key is actually 56 bits involved in the DES operation (the 8th, 16th, 24th, 32nd, 40th, 48th, 56th, and 64th bits are check digits, so that each key There are an odd number of keys 1) The grouped plaintext group and the 56-bit key are replaced or exchanged bit by bit to form the encryption method of the ciphertext group. The structure of the DES algorithm is shown in Figure 2.

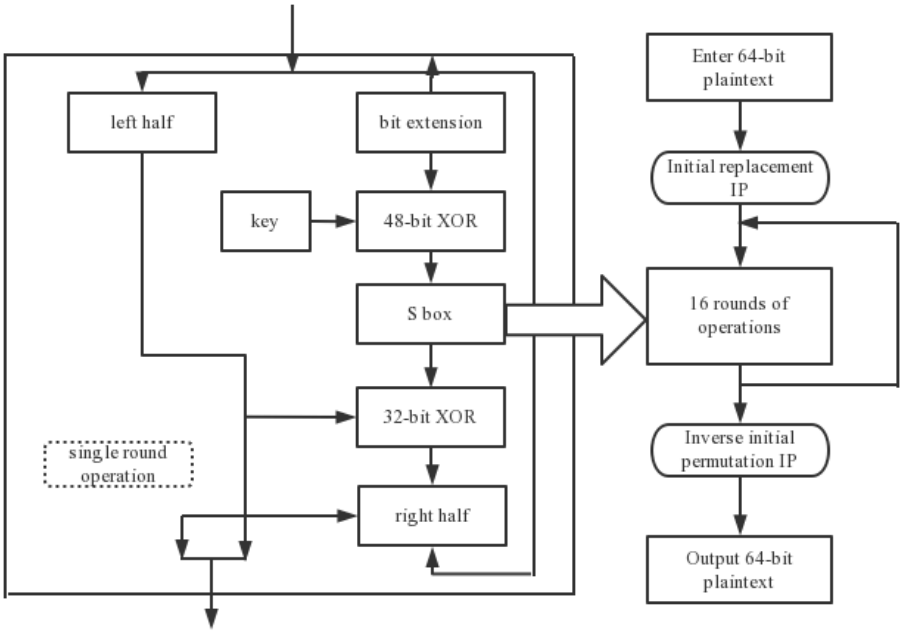


**Figure 2.** DES algorithm structure

### 3.2 Features of DES encryption algorithm

DES encryption algorithm has the characteristics of short grouping, short key, short password life cycle and slow operation speed. The DES algorithm converts a 64-bit plaintext input block into a 64-bit ciphertext output block, and the key it uses is also 64-bit. The main flowchart of the entire algorithm is as follows:

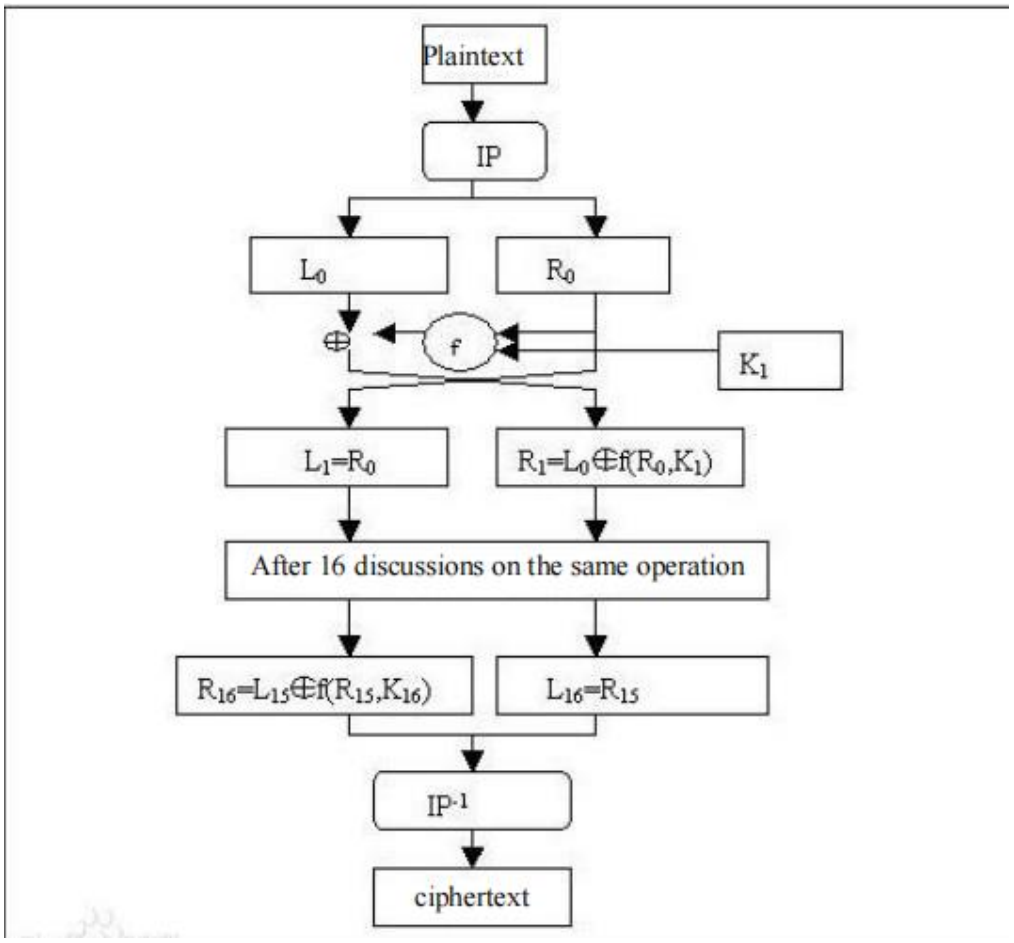


**Figure 3.** DES algorithm flow chart

# 4 Analysis of computer electronic information processing technology in the era of big data

## 4.1 Information collection

Before the application of computer electronic information technology, data collection is required, and the quality of data collection directly affects the time and results of data processing. In order to obtain more accurate and effective results in practical application of this technology, it is necessary to collect more useful data effectively, and at the same time reduce the cost of collection. The traditional computer information processing technology has many shortcomings, and the performance has not yet met the requirements, resulting in low efficiency of data collection, and it cannot guarantee that the collected data is valid. Therefore, with the development of technology, people can obtain more useful information through keywords. This can not only improve the efficiency of data collection, but also save time, but

also save the time required for data collation. In addition, different databases can be created in the background, and various types of data can be classified and saved in the corresponding database, as shown in Figure 2. With such a classification, it will be of great help when using these materials in the future. Introducing this classification collection, packaging and storage technology into computer electronic information processing technology can better realize the technology, save time and hardware costs, so it can be better applied in different fields [2].

### 4.2 Information storage

Because of the huge amount of data, it is difficult to store it. In today's world, with the rapid development of society, data and information are changing and updating every moment, and the types of data are becoming more and more abundant. Especially important. Due to its poor performance, the traditional computer electronic information processing technology can only store a small amount of data. In today's big data era, the traditional computer electronic information processing technology can no longer be applied. The development of new storage technology is a top priority. memory capacity, and at the same time adapt to changes in the external environment. At the same time, it is necessary to effectively filter and eliminate unnecessary information, save storage space, and improve the efficiency of use. At present, computer electronic information processing technology has been greatly developed, cloud computing is a new type of data processing technology, and its main applications are shown in Figure 3. This technology mainly uses the virtual space method, and then completes the transmission task. In addition, the storage space of this technology is much larger than that of the conventional technology, and the processing speed of data will be naturally accelerated during operation. At present, the use of cloud computing technology can well meet people's needs and integrate it into the electronic information processing of computers, which is an inevitable trend in the development of the current era [3].

### 4.3 Information transfer

Since there is a certain connection between data, when processing data, users can interact with users according to different tasks, thus realizing the transmission of information. Since the current Internet is open, in the era of big data, the security of the network is relatively high. Especially when transmitting data, since it is in an open channel and has not undergone encryption processing, it will be maliciously intercepted by gangsters during the transmission process. In this way, his data will be exposed. Only by encrypting the data can it be avoided from being leaked. Although the encryption of the channel also has a certain encryption effect, it is only for a part. At present, in order to avoid the interception of information, a large number of technical researches have been carried out. Among them, digital signature technology is a very reliable and safe technology. It must be realized by using computer electronic information processing technology, and its computer electronic information processing technology The more advanced the technology, the more it can improve the confidentiality of data information. We describe the information transmission of digital signature technology. First, the user sets a key that can represent his own identity, and then the sender signs the information to be transmitted. It is encrypted with a certain key to ensure the security of the information [4].

## 5 Conclusion

In the era of big data, people can use computers to obtain more useful information and make more scientific decisions, thereby promoting human development. In the era of big data, people's research on computer electronics and information processing technology is more and more in-depth. It can be seen from the above analysis that big data has brought us new opportunities and challenges, and the use of computer electronic information technology can make full use of the advantages and functions brought by big data. The organic combination of computer electronic information technology and big data technology will help to promote the development of my country's information technology. At present, data and information security is one of the important topics. In order to ensure information security, relevant researchers must analyze and study the computer's electronic information processing technology according to the actual situation, so as to make it better for people to use.

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