Research on Trusted Interconnection of Power Internet of Things Perception Terminal

Hao Zhang¹,², Lei Ma¹, Yingxian Chang³, Xin Liu¹, Jianfei Chen², Donglan Liu¹, Rui Wang¹, Xiaoli Huang¹, Yong Zhang¹, HaoYu¹

¹State Grid Shandong Electric Power Electric Power Research Institute, China, 250000
²State Grid Shandong Electric Power Company, China, 250000
³Jinan Changqing District Power Supply Company of State Grid, China, 250300
⁴Dechnic(ShanDong) Technology Co., Ltd., China, 250000

*Corresponding author e-mail: zanghao@sgcc.com.cn

Abstract. Based on the perception technology of power Internet of Things, this paper selects software such as Load Runner 10.0 as the research tool, simulates the application of network software of 60 clients through four computers simultaneously, and detects its relevant running status. Studies have found that the majority of users can normal login, using the system operation, the complete set of business processes, but at the same time, this study also continue to explore complex business operation in the process of software development problems, on the basis of monophyletic Overlay the development road of processing nodes to join, the goal is to fusion power iota perception technology, promote the further development and application of iota perception software.

Keywords: Computer, Electric Internet, Internet Perception, Software Development

1. Introduction

With the development of The Times, the total amount of network information data is growing exponentially, and there are more demands to retrieve specific data [1]. Therefore, more corresponding communication systems need to be established continuously for traditional streaming media. Streaming media based on IP technology has been continuously developed and has gradually become a relatively formed perceptual software development technology for the Internet of Things. By analyzing the development of application layer of power Internet of Things perception, this paper discusses the development of Internet of Things perception software based on power Internet of Things perception technology for readers' reference.

2. Overview of application layer development based on power Internet of things perception

2.1. System test of IoT perception software

The development of the application layer is built on the background of numerous users and full load operation of the system. The system test of the sensing software of the Internet of Things should take the stability of the system operation, the uploading and saving state of the data, and the feedback of the
user's operation as the primary test objectives [2]. These tests can provide a comprehensive and comprehensive assessment of the system's performance and also provide feedback on the core performance of the IoT awareness software [3]. In this paper, software such as Load Runner 10.0 was selected as the research tool, and the network software applications of 60 clients were simulated simultaneously on four computers to achieve accurate judgment of system performance.

![Internet of Things](image)

**Figure 1.** System perception and interconnection for the Electric IoT

The discovery mechanism based on DHT provides a sustainable development platform for application layer [4]. The development of Overlay also transfers the corresponding development function from the router to the mobile terminal, records the functional network superimposed on the IP network, generates the corresponding node record topology structure in the Overlay network and generates the corresponding information distribution tree according to the corresponding information.

### 2.2. Improvement of IoT perceptual Pastry routing algorithm

The algorithm of Pastry is an extensible distributed routing algorithm proposed by Microsoft. The characteristic of this algorithm is that it can effectively build a large-scale self-organizing P2P system, and any host connected to the Internet can integrate into the corresponding P2P network by running this algorithm. IP development in the network cannot lack the update and application of the Free Pastry system [5]. In the Linux system application, the new IPv6 development address is marked with the prefix FF::/8, which is widely used in the development of address structure, link management system, development of routing protocol, etc. Pastry algorithm, namely double stack technique through fusion, MTAP6 is made up by multiple network and access network road, overlapping part adopts TCP/IP application layer management, development and management of access part adopts IPv6 and build based on overlapping IPv6 IP technology development system, making it more efficient, and in accordance with the J2EE technology based on a standard system system structure with the characteristics of good stability and strong processing capacity, construct has more excellent ability in developing new Node ID standard operation, to realize the stable operation of the operating system.

The routing improvement of Pastry algorithm needs to be based on IPv6, and integrate the distributed hash table technology [6]. It starts from the practical application environment of IPv6, and constantly improves the application environment harshness. It is a long process from IPv4 to IPv6, in which double stack technology and tunneling technology should be used. The functions of IPv4 and IPv6 are relatively similar, and the network layer protocols can be shared. The construction of Gossip protocol based on computer data analysis can solve the more difficult problems in WAN development and application [6]. At the same time, the mesh structure can also be used in the overlaid network structure to save the corresponding data bitmap, so that the process of selecting the corresponding data in the streaming media can be faster. Different data codes in the nodes affect whether they have an influence with the similar
nodes. Mesh structure from the comprehensive data network screening information where the network system, and the construction of multiple simultaneous information selection mode of close nodes, the formation of the corresponding data transmission channel, support IPv6 node communication. The new Pastry algorithm uses the Java language, and the test program uses the FreePastry2.0 standard to identify the Epoch Inet Socket Address through the analysis of the standard routing.

3. Design of MTAP6 based on power IoT sensing technology

3.1. Streaming media development of IoT perception software

The WAN development software designed in this paper is based on Overlay development, combined with streaming media, IP technology and other applications. And the design of MTAP6 is the key part of it, which should be able to adapt to the heterogeneous Internet network and adjust the dynamic changing mesh node environment [7]. The design of MTAP6 is developed with Java as the platform. Generally, the process of dealing with relevant data and transactions in the actual business of the platform system is divided into four parts, that is, the demand for information, the monitoring of information retrieval and the correction of its results, the uploading and updating of measurement data, and the calling of the database to make it export the overall work pattern.

![Figure 2. Perception and system development of IoT terminals](image)

In the traditional business process, the information in the database is mainly derived from a single external measurement and Overlay development format data generated based on this, the development process and input methods lack of standardization, greatly increase the difficulty of storage and reduce the efficiency of business processing, even in the process of transformation format MTAP6 produces a large number of operational problems, for example, the cohesion of the symbols, line surface processing, significant impact on the effectiveness and accuracy of information in the database [8].

3.2. P2P transmission mode of perception software for the Internet of things

From the perspective of the transmission of control information, it can be found that the system control of MTAP6 still adopts the P2P transmission mode, and lacks the corresponding upper layer monitoring of the client. Communicate the Message content provided by Pastry algorithm of encapsulation, through P2P routing assignment and send up corresponding processing data submitted to the server, will be the necessary information by screening of Pastry algorithm at the same time, in the process of system design and build, design personnel should establish good fault tolerance error correction mechanism, guarantee system in the normal use of a variety of environmental background. In addition, on the basis of the power of things perception technology of iot perception of software development and daily management

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should use effective database management technology, ensure that under the condition of high load using the data of reliability, and can implement emergency IoT perception data backup software, in the case of provide functional module illustration overall reflection, from the viewpoint of system security in the form of a Message is sent to the corresponding to different nodes of P2P network [9].

3.3. Combine IPv6 technology and perception development of the Internet of things
From the perspective of QoS support, through specific target IP address to identify the corresponding data, ERIC technology for IPv6 in the Internet of Things perception research has an important impact on the algorithm, and improve the speed of computing, reduce the empty consumption of storage.

The IPv6 development program allows the underlying operating system to provide more standard application programming and access to further available network services through programming interfaces. Among them, BSD technology, which can be flexibly used in different operating systems, and through the Socket API test can be found that it is suitable for a variety of network protocols, including IPv6 system protocol. However, for the protocol programming of this kind of developer, additional extensions are needed to support it [10]. The IETF further standardizes two types of extensions that can evolve from the basic Socket API to advanced counterpart programming development for a wide range of IPv6 development programs that can implement a wide variety of basic information based on the API. In addition, the IPv6 development program defines the original socket function corresponding to IPv6, and uses different development techniques to achieve IPv6 technology development.

4. Application software demonstration based on power Internet of things sensing technology
From the perspective of video system, the video system mainly consists of four aspects, including Capture's acquisition of program data stream, the use of Supeer of video server, the configuration update of system components and the application of Capture server. By the capture program data stream to get in the first place, and on the basis of CP - SP agreement for programme registration, use the tracker to extract the program summary, landing the client in a timely manner and validation, and through the video server registration and information submitted to lock the target, further after the client login from video server to download the video data, and provide remote play.

As an important component of the server side, the video server is the data source of the WAN development. Combined with IP technology, it can receive the capture video data in a timely and effective manner, and send the corresponding data to the client while receiving the connection request of the client node. In this respect, SUPEER has a very obvious role. The use of system components cannot be separated from the configuration of the video server, register the server after obtaining the tracker, carry out protocol interaction with UDP protocol, inherit the data from TCP class, and receive the uploaded data from the capture server. The whole transmission of data using TCP protocol, more efficient and safe. In the Linux system application of video server, the double stack technology is integrated. MTAP6 is composed of multiple networking and access network. The overlapping part adopts IP application layer management, and the access part adopts IPv6 development management.

5. Conclusion
Starting from the development of IPv6 and multiple IP development technologies, this paper analyzes the Free Pastry routing algorithm in the perception of the power Internet of Things, and probes deeply into the application category of Pastry system algorithm to build an IPv6-based overlapping system of IP technology development, so that it can be applied more efficiently. At the same time, the operation function of Epoch Inet Socket Address was modified to adjust the data acquired in IPv6. Meanwhile, the TCP protocol corresponding to Free Pastry was established to maintain the original communication. From the practical application environment of IPv6, the universality of the application environment was continuously improved to promote the construction of the next generation IPv6 network system.

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