ENHANCED LOAD CONTROL AND POWER MONITORING SYSTEM USING DHCP ALGORITHM IN WIRELESS ENVIRONMENT

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Abstract: Wireless protocol is the load control method to be used on the DHCP method. The replacement of cable by the personal area network on the flow of the various loads, the communication are transfer on the interconnection on the flow of the data. DHCP –Dynamic host Control protocol. Power load monitoring System. The usage and service options of a public network generally differ from a private (enterprise or home) network and consequently, the two networks are often configured differently, the existing system cannot monitor external devices power. The proposed method for DHCP algorithms used to monitor internal and external devices are used in the network . in this paper have been implemented and deployed currently being used in a real-world public network The various loads and external device Efficient Power utilization through real time power consumption with help of monitoring Computer Based GUI.

Keywords: DHCP, MAC, address, pool, automatic allocation.

I. INTRODUCTION

Packet network are the process of finding paths in a network. In packet switching networks, [1] routing directs packet forwarding. In this method transmission is of logically addressed network packets from the source toward the ultimate destination. Through intermediate nodes [2] wireless sensor networks are composed of static nodes equipped with one or more sensor that use each other to obtain network connectivity (through multi-hopping) [3]. It follows the Hierarchical network structure as nodes in the network are fixed as to take advantage of the base station. [4]The multi-hop network will divide the message data streams into segments and transmits the segments in distributed manner.[5] The category of falls in tree based topology as one end of path is base station which simultaneously increase throughput and reduces the overhead of the network, and it can extend the coverage through multi hop forwarding mechanism.

First, network layer is considered the most complex layer. One important thing about the routing protocols used in WSNs is that to have several features that can be make this possible. He ability to deploy large number of sensors, limitation on power sources and more frequent changing the node location.[7] TCP protocols developed for the traditional wireless networks are not suitable for WSNs where the notion of end-to-end reliability has to be reinterpreted due to the “sensor” nature.

II. RELATED WORK

The WSN already developed and deployed many appliances because of wsn extension smart grids with a tremendous upsurge interest in current years,The new knowledge including cutting-edge information sensors and metering and distribution transmission and electricity storage providing new sequence in both consumers and providers of electricity, The ZigBee technology used in wireless communication is examine Japans new smart home wireless system implication. The Zigbee protocol specification and the IEEE 802.15.4g standard to help create smart home energy and efficiency[6-7].

A wide range of smart meter research is being carried during the last decade. Various architectural design and development methods of smart grid utility system for effectively managing and controlling the household appliances for optimal energy harvesting have been presented[8].In order to connect appliances and with WSN with monitor and control based on power tariffs but they are verified using test bed. Smart meter systems are designed specific usages to geographical usages and are limited specific places[9].

The small range of wireless communication is handled by four technologies Bluetooth, UWB, Zigbee and wifi. Out of the seven layers of the OSI reference model, IEEE standard only PHY and MAC layers used in wireless communications. The network power monitoring system separate alliances of companies to realize the commercial standard. Intelligent terminal software design is based on W5100 Ethernet communication program. Its design and implementation for DHCP protocol and TCP protocol, DHCP –Dynamic host configuration protocol used to allocate dynamic port for external devices and power utilization [11].
III. METHODOLOGY

A. Dynamic Host Configuration Protocol (DHCP)

The dynamic host method is identified on the host computers to be evaluated on the server to be manually configured on the DHCP server. The server is configured on the load of the data. Default IP addresses are set on the DHCP server. It is necessary to make changes on DNS server based on DHCP server. The things to be noted in the time server are the name of the host and server responsible for making communication. The CLIENTS DHCP is organized by the DHCP. The servers are configured to conflict the IP address allocation.

B. Manual Allocation of Address

Allocation of address by the manual is a risk to the hardware address of each node of DHCP server. The programmed server is utilized to address the MAC.

C. Dynamic Allocation of Address

Along these lines, the client node will get the arrangement properties powerfully based on "first come, first served" premise. At the point when a DHCP node is no longer on the system for a predefined period, the design is terminated and discharged back to the address pool for use by other DHCP nodes. Then, the client node needs to renegotiate the join with the server to keep up utilization of the address.

D. Automated Allocation of Address.

The automated allocation of a host-based system for DHCP port address doled out on the lasting device and choosing the best accessible address and port. The automated allocation technique used to lessen energy utilization in the wireless environment.

E. Power Usage

The DHCP used for monitoring external device inserted and new port allocated. Load control and power usage will be calculated using server System resources in network.

IV. SIMULATION ENVIRONMENT

This project is developed using Java EE language and developed in Java net beans.

1. Net beans IDE
2. Java development Toolkit 1.7

V. PERFORMANCE EVALUATION

It conducted two experiments. In experiment Power monitoring and dynamic host configuration protocol for monitoring power and compared the performances of memory. The DHCP is taken for less memory.

Table 2: Memory used

| Algorithm Name    | Memory |
|------------------|--------|
| Power Monitoring | 325000 |
| DHCP             | 50000  |

CONCLUSION

The wireless technology has been superseding the wired system design, by providing features such as mobility, low maintenance along with more security and compact systems. Experiment results demonstrate that our proposed technique of constructing Dynamic host power monitoring system was good and better accuracy. In future it produces less power consuming and more security based wireless protocol. Security enhancement using user defined encryption.
| Software requirements | Hardware requirements |
|-----------------------|-----------------------|
| IDE                   | Net beans             |
| Processor             | Processor             |
|                       | 800MHz Intel Pentium III or equivalent |
| Developer tool        | Java SE Development Kit (JDK) |
| Memory                | Memory                |
|                       | 350 GB                |
| Operating system      | Windows               |
| RAM                   | RAM                   |
|                       | 1 GB                  |
| Java Library          | Java FX Support       |
| Database              | Java DB               |
| Language              | Java EE               |

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