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AN APPROACH TO COMPREHEND THE QUALITY OF SERVICES (QOS) FOR WIRELESS SENSOR NETWORK

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Abstract: The growing demand for the use of wireless sensor applications in several aspects makes QoS as one of the most important problems in wireless sensor applications. Ensuring the quality of service in wireless sensor networks (WSN) is very difficult since the resources available for the sensors and the different applications that operate on these networks have different limitations in terms of nature and requirements. Traditionally, service quality has focused on the network level, paying attention to measures such as delay, productivity and jitter. In this document, we provide appropriate WSN standards, including services, responsibilities and availability, and ultimately facilitate archive of eligible services. We discuss three important quality factors that should be considered in developing WSN quality of service services: availability, reliability, and retention. There are some basic requirements for decentralized and dynamic topology of wireless sensor networks, including reducing energy consumption and extended network life. Simulated results provide network overall performance primarily based of a number of factors, together withthe variety of dead nodes, total energy consumption, cluster head configurations, and throughput.

Keywords- QoS, Wireless Sensor Networks, Used Residual Energy, Cluster Head, Collision Detection

1. Introduction

The wireless sensor system consists of different nodes that can communicate with nature by detecting or controlling physical parameters. This nodes work needs to work together. Nodes are connected and use a wireless connection, arranging a remote sensor of each center (WSN) is to collect sensors with mineral assets that can work together to meet the combined goal. Sensor nodes work in threatening situations, for example, fighters and maintenance zones. Due to its operational nature, unusually WSN attacks and many new types of attacks are introduced. Wireless sensor networks are widely used in military then civilian applications and have recently a lot of attention.

1.1 Sensor Nodes

Sensor nodes contain sensor subsystem , processing system and communication system. Sensor subsystem have no of performing sensors, processing system have powerful processing power and communication system have sensor to send data to observer or locator.

Wireless sensor nodes have the following components.

a) Microcontoller
b) Transreceiver
c) External Memory
d) Power Sources

Microcontroller have microprocessor, ram memory and associated peripherals.

1.2 Gateways

Gateway allows scientists/system administrators to connect motors with personal computers (PCs), personal digital support (PDA), internet, and existing networks and protocols. In other words, Gateway serves as a proxy for the sensor network on the

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Internet. According to Gateway, it can be enabled, inactive, and distributed in hybrid. Allows the active door sensor node to activate their data to a gateway server actively.

2. Characteristics about WSN

To compare the traditional WSN configuration system such as MANET (mobile Adhoc networks) and Simple cellular systems have the following features and limits.

- **Battery Enabled (Dependent) Sensor Nodes**

The sensor nodes are basically battery-powered and kept in the environment, where the battery change and charge are difficult.

- **Self-Organized**

The placement of nodes has been configured randomly and are automatically configured as a communication network.

- **Storage Constraints, Delivered Energy and Computation**

Sensor Nodes are capable of limited library, accountability, and ability.The sensor nodes are energy, calculation and storage capabilities are very limited.

- **Redundancy in data**

In order to manage applications in maximum sensor, sensor hub is firmly located in the area and cooperates to achieve general sensing work.

- Small radio range so that it does not affect on health.
- It has concurrent processing

3. Background

Chessa, S., Escolar, S., & Carretero, J. (2017) Energy aggregation wireless sensor networks. The sensor uses reclaimed resources to permanently expand its capacity to conserve electricity. Well-used energy systems rely mainly on solar imagery cells (for starters, the electricity may be pre-calculated). Nevertheless, as the output of solar cells by day and in vain in the nights is not continuous, such systems require algorithms capable of calculating energy usage and the development of sensors. Depending on the importance of the package, the data package will be returned to the appropriate queue. Through an automated process that is conveniently implemented in low-power sensors, the algorithm addresses the optimization problem. Simulated effects indication that the way we work sanctions all network sensors to recover the quality of the whole programming system and that it actually sustains neutral power.

Patel (2017) Wireless Sensor Network (WSN) is a smallwireless sensor node wireless network. Sensors are used to monitor physical or environmental conditions. Wireless sensor networks are mainly back of military or civilian applications. Because wireless sensor networks are often posted among insecure areas, they are vulnerabletypes of attacks.One of the harmful attacks is cyber-attack, in which a node has claimed illegally identification. In this case, the Legal Node will share the data in awesome nodes and the data will be lost. Therefore, such attacks are needed to protect the network. This paper has to study, discuss and analyze various techniques to detect cyber-attacks in the wireless attacks network. Various protocols that were affected by cyber-attacks were also studied and analyzed.

Agarkhed, J. & Kalnoor, G. (March 2016). Basically, a wireless sensor network (WSN) comprises spatially distributed sensors that monitor physical or ambient conditions, such as pressure, temperature, movement and acoustics with their self-determining capacities. Sensors frequently transfer all relevant information over the network. As your network grows in number and size, internet traffic is exponentially increasing. Security in the WSN is a major problem and requires a stability program. A system of intrusion detection is a system that plays an essential role in system safety. WSN's main tasks are in conjunction with the following, implementing a safe routing protocol to provide reliable service quality (QoS), such as stability, management of congestion, power savings and end-to - end latency. This is the attack detector to avoid WSN QoS. Throughout our research work, they addressed numerous QoS-based routing protocols to boost overall network efficiency.

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Cabeza, R. T., *et al.* (2016)neural most artificial neural network model now uses vital information for training. The information may be inconvenient for application errors in industry systems such as information, data retrieval, no less or confirmed due to various factors.In this regard, the Hopfield neural network diagnostic system has been proposed to address this problem. With successful performance, the analysis was tested using the development and application of actor diagnostic practices in Industrial Control System Indicators (DAMADICS) and achieved a successful performance.

Duan, S., *et al.* (2016) In this article systematically designed the present association of neural networks, including the role of the biological world and recent monuments in the traditional hop field neural network.In particular, the originally fully-connected hop filed network is slow to consider the small global impact, based on the priority of removing priority connection, i.e., weight slip. Built-in network association has a low connection on balanced performance. In addition, a hardware plan for small-world hop-field networks is analyzed by commercially adaptive makers (team) using synaptic-based circuits. Eventually, the performance of the multiplexed neural network is verified by the example of the number of identities.

Singh *et al.* (2016) several protocols for wireless sensor networks have been developed.Most of them have similar capabilities like network, each node has the same giving out power, storage, energy and capabilities. In a real situation, nodes are changed processing time, storage and energy values. In this way, the display is to be recognized as the Wireless Sensor Network (H-WSN) routing protocol.There are two methods of the WSN node Advanced Node (high energy) and common nodes. The node connector is not used until the recommended network work in the existence.In addition, when the battery is nodded for some harsh environment, it is difficult to fill the battery node. In this article, it is that the flex, fair and SEP three widely accepted WSN routing protocols have been presented in different scenes against their energy patterns. Initially the initial features of randomly based energy-based weapons are introduced in the center noodle. All virtual responsibilities are done. Various parameters are used to use H-WSN routing protocol utility. The simulation results show that here is no clear winner for all matters, but most of the cases compare SEP and better results, such as round reduction dead nodes and twenty-twenty packets transmission rates and cluster head increases.

Hu, S. G., et al. (2015)show associate memory based on a memorable hop field network. Rejecting the goals of different pattern monuments can be stored in the hop field network, and pre-stored designs could be effectively accessed directly by some or some Associated States Intermediate states, which have a companion's behavioral behavior. According to Single Association Memory and Multi Association Memories can be found with memorable hop field networks.

Zhang, S., *et al.* (2015).Practically hop field neural networks are used as a sampling to communicate how to process every stage processed information. To demonstrate the reliability of implementation information, it is necessary to perform the analysis of the stability of these systems. Here, they perform an analysis of mathematical lithers for them. For this, they extend the second way of technique in partial order cases and establish useful non-qualities that can be used effectively by this analysis. The important point is, these common results can help build the construction of Laptops works, which are used by the analysis of multiple-lager stability of the low-hop hop neural network. Consequently, a combination of considerable conditions is obtained to ensure that stability. In addition, the common conditions of continuous or timely external inputs depend on the case that these networks meet in case the stability conditions can be easily used to achieve complete and minor synchronization. Finally, two judicial examples have been presented to show the effectiveness of our ideological results.

Zaman, N., and Abdallah, A. (2011) Wireless Sensor Networks WSN is becoming more popular nowadays, the community of researchers is trying to make the best use of its various applications by using its maximum energy efficiency. Orientation is a major energy process when nodes are ready for data transfer and extensive research is done to overcome problems with power transmission. However, QoS for sensor applications plays a major role where critical applications include crucial questions such as protection, chemicals and health care about the quality and validity of protected data. Therefore, in addition to energy efficiency, QoS-based routing is also required in order to ensure optimum node use. In our work they try, by using different strategies simultaneously, to focus upon the practical and design challenges of managing QoS traffic flow on the sensor networks. Results show a significant improvement towards efficiency and QoS of networks.

4-Parameter of QoS in WSN

QoS challenges from standard remote systems, their particular highlights present one of a kind difficulties.

a) Major resource constraints
b) Limited traffic

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c) Data classification
d) Network Power
e) Power Balance
f) Scale
g) Multiple sinks
h) Multiple traffic types
i) Delay
j) Packet Delivery Ratio
k) Energy Efficiency.

5. Proposed Algorithm

Create a node network set in circular fashion.
Select the source and destination and node sensor node.
(While the data is not received by the destination) while
reprise
If(sensor node detect collision)
Then
Identify the neural network to identify the pattern of node in which the collision can be detected. And start transmission from source node again.
Else
Transmit the data from one node to another.
End if
End while
Exit

6. Result and Discussion

This compares the performance of each classifier with the transfer rate, the end of the end, and the throughput. We introduced these standards to better understand than the results.

Packet delivery ratio- Representation the absolute number of messages distributed by each spectator hub, the full number of messages created by allocation centers of the opportunity is included. It can be set by very well compatible equations.

PDR= ((total packets-loss)/total packets)*100

End2End Delay- The system has a specified time of packet when the parcel takes the source and achieves the goal.

Throughput – A fixed number of invoice time is the number of packages passing through a channel. This performance metric shows that the number of money successfully moves through source node to destination node, and can be improved by increasing node density.In response to a given question, the sample size generated by the network is equal to the current sensor and is currently active when the question is received. Below table 1 come out after the execution of the WSN simulation. This table contains Packet Drop, PDR, E2EDelay and Throughput.

7. Conclusion and Future Work

First of all, because the sensor network consists of large sensor nodes. Sensor nodes have generally powerful in battery and in many cases it is not possible to charge the battery. The maximum energy consumption is an important consideration in the largest sensor network protocols.. We can calculate the throughput in different routing protocol like LEACH,TEEN etc. By the use these algorithm we can estimate the loss of energy by different parameter value. Use of Genetic algorithm may provide better comparison in throughput as well as loss of energy. It is assumed that the attacker can control the sensor node outside the control and remove all secret data in the node. Finally, sensor systems use incredible remote compatibility channels and require

frameworks.Therefore, existing security procedures are inadequate and new procedures are needed. QoS is very vast term. Use of Wireless Sensor network in future application, the estimation and enhancement is a challenging task..

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