P2P Based Decentralized Service Discovery

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Abstract: The ever increasing want for interconnected applications and distributed systems sharing their design which is able to have identification method that mechanically appearance for open ports generated by the server and fetched by the consumer systems supported the service provided by the server. within the following paper, efforts are taken to make a suburbanised system for mass file transfer and between multiple peers.

***Index Terms*—P2P Network, Modulus, System Architectures.**

I. INTRODUCTION

In the common client-server design, multiple purchasers can communicate with a central server. A peer-to-peer (P2P) design consists of a suburbanized network of peers nodes that area unit each purchasers and servers. P2P networks distribute the employment between peers, and everyone peers contribute and consume resources among the network while not the requirement for a centralized server.

However, not all peers area unit essentially equal. Super peers might have a lot of resources and will contribute over they consume. Edge peers don't contribute any resources, they solely consume from the network.In its purest kind, P2P design is totally suburbanized. However, in application, typically there's a central following server superimposed on prime of the P2P network to assist peers notice one another and manage the network.

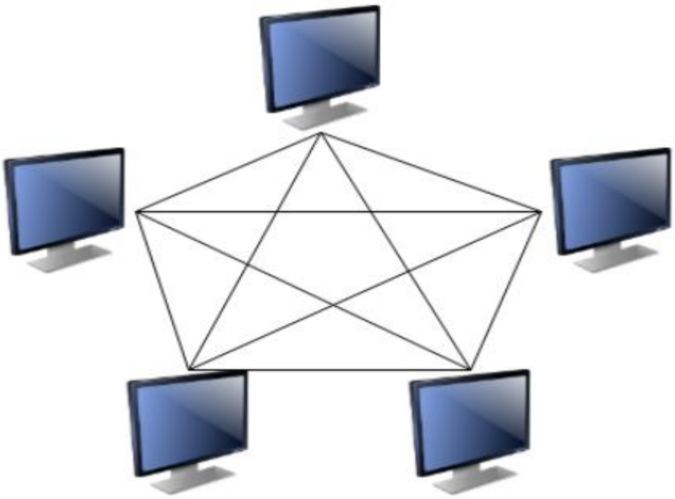

Figure 1: Peer to Peer Network

Applications:

P2P design works best once there are a unit various active peers in a vigorous network, thus new peers connection the network will simply notice different peers to attach to. If an outsized range of peers drop out of the network, there are a unit still enough remaining peers to choose up the slack.

If there are a unit solely a number of peers, there are a unit less resources obtainable overall. for instance, in a very P2P file-sharing application, the additional fashionable a file is, which suggests that various peer’s area unit sharing the file, the quicker it will be downloaded.

P2P works best if the work is split into tiny chunks that may be reassembled later. This method, an outsized range of peers will work at the same time on one task and every peer has less work to try and do. within the case of P2P file-sharing, a file will be softened so a peer will transfer several chunks of the file from completely different peers at a similar time.

II. MODULUS

1. Query Forwarding
2. Search Process
3. Service Retrieval
4. Open File Location
5. Security

1. Query Forwarding:

P2P supports two types of query: Service specific query and wildcard match(s) query. When a user searches a file then they can forward a query to the network & query will forward to the identifier circle.

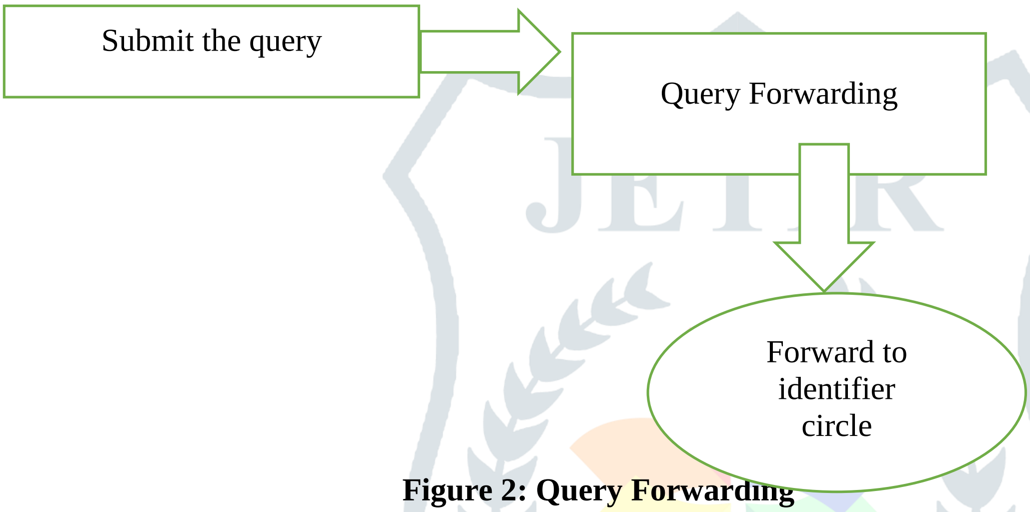

Figure 2: Query Forwarding

Service Specific Query:

In Chord4S, for a service consumer to find multiple functionally equivalent services with one query, the query must be routed across the corresponding virtual segment of the identifier circle until enough services needed by the service consumer are found. In a system that allows four layered function bits descriptions.

Wildcard Match(s):

The process of sending queries with wildcard(s) is same to that of sending service- specific queries. Instead of all the function bits, only the bits generated from explicit service information will be taken into consideration. The service consumer needs to find the component services from categories of services.

2. Search Process:

After Submitting Query, it will forward to identifier Circle & search what all matched service are available in identifier circle.

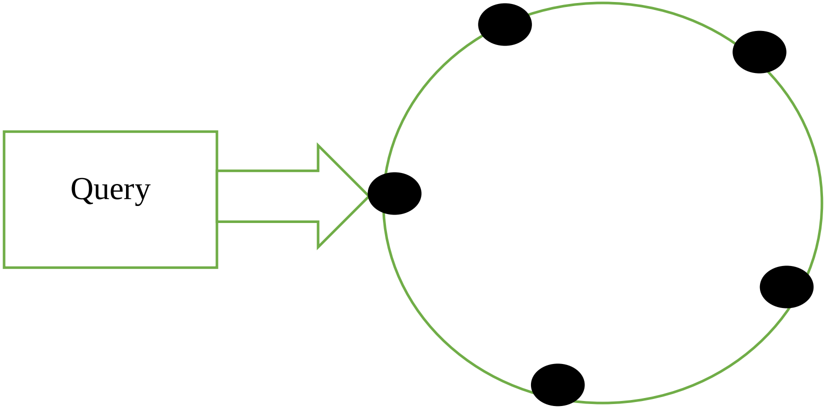

Figure 3: Search Process

In the idenfier circle the service identifier of each description is available for each service with its description. The search process searches the functionally equivalent services in the identifier circle. After searching a service in a node and the query will forward to next successor node and so on. This process continues until all the nodes are reached.

After getting a matching service description, query will still be passed along the circle until enough service providers are found. The Query is forwarded by using flooding technique. After searching in all nodes, the set of matched service description is retrieved to the service consumer.

3. Service Retrieval:

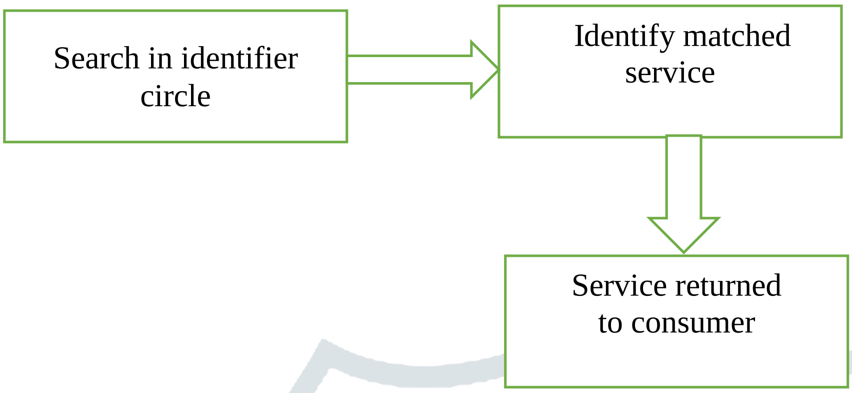

Figure 4: Service Retrieval

In this module after finding the matched service descriptions the requested service will be retrieved and send back to the user who is requesting the service. In the service description the functionally equivalent services with filename, file type, service identifier. After retrieving a user can copy the file and place it in specific location by using user login, Also a user can directly open the file by using user login and make use of this file.

4. Open File Location

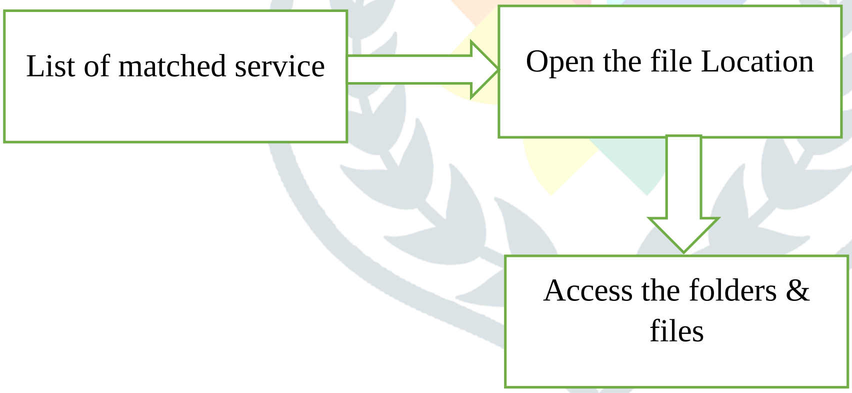

Figure 5: Open File Location

After retrieving the files the service consumer can open the file and its location. Along with retrieved matched description the path of the file is also retrieved. By using this path we can access the location of the file service. Also the retrieval of data is much faster and we can open the location of original file.

5. Security

For opening the specific location authentication system is used. Only authorized persons can open the particular file location. By using this we can avoid the unauthorized user's access the files and folders.

III. Collaboration Diagram For Admin & client:

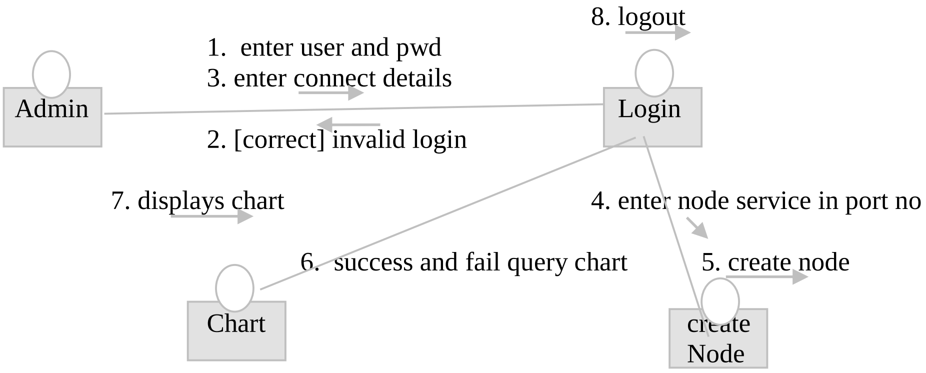

Figure 6: Collaboration diagram for Admin

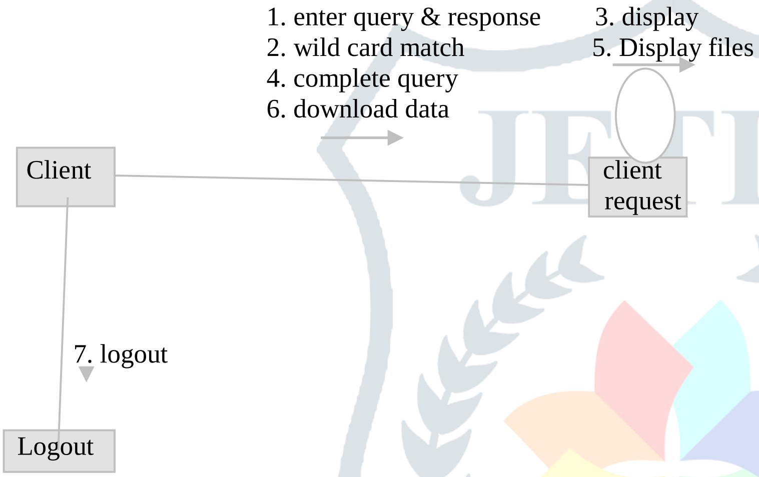

Figure 7: Collaboration diagram for Client

A collaboration diagram describes interactions among client and server in terms of sequenced messages. Collaboration diagrams depicts a communication between two sender and receiver. In this client request to the server for the data.

IV. System Architecture:

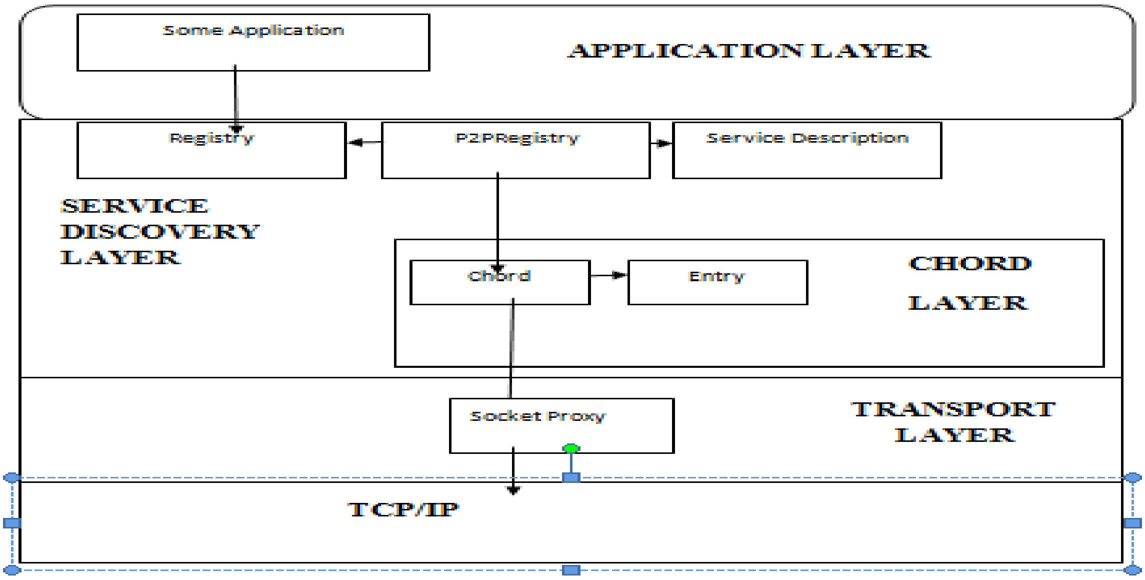

Figure 8: System Architecture

An application layer is associate degree abstraction layer that specifies the shared communications protocols and interface strategies employed by hosts in a very communications network. the applying layer abstraction is employed in each of the quality models of pc networking: the web Protocol Suite (TCP/IP) and therefore the OSI model.

Service discovery is that the automatic detection of devices and services offered by these devices on a electronic network. A service discovery protocol (SDP) may be a network protocol that helps accomplish service discovery. Service discovery aims to scale back the configuration efforts from users.

The transport layer is that the layer within the open system interconnection (OSI) model accountable for end-to-end communication over a network. It provides logical communication between application processes running on completely different hosts among a stratified design of protocols and different network elements.

V. CONCLUSION

As the internet and file sharing has increased and peer-to-peer network has become popular it has become necessary to implement service-based discovery service which will provide a robust and efficient data availability service. In this paper, we have tried to build an efficient system which will provide a file sharing capability with node service providing individual data service. This system tries to find the available service in its network and searches the node service generated by servers. It is a light weight and robust data sharing peer-to-peer system which handles queries based on user's input. Also, this system provides functionality to get all related data based on query. Experiments has shown that server successfully responds to the request created by the client and provides data accordingly. Also system provides a graph which displays the how many requests has been completed and failed. In the future, this system can be used to provide accurate data information based on file served by the server system and can be more reliable and scalable to achieve maximum throughput from the service discovery network.

REFERENCES:

[1] Emekci, O.D. Sahin, D. Agrawal, and A.E. Abbadi, A Peer-to-Peer Framework for Web Service Discovery with Ranking," Proc.IEEE Int'l Conf. Web Services (ICWS '04), pp. 192-199, 2004.
[2] D. Novak and P. Zezula, "M-Chord: A Scalable Distributed Similarity Search Structure," Proc. First Int'l Conf. Scalable Information Systems, 2006.
[3] B. Sapkota, D. Roman, S.R. Kruk, and D. Fensel, "Distributed Webservice Discovery Architecture," Proc. Advanced Int'l Conf.Telecomm. and Int'l Conf. Internet and Web Applications and Services.136, 2006.
[4] C. Schmidt and M. Parashar, "A Peer-to-Peer Approach to Web Service Discovery," World Wide Web, vol. 7, no. 2,pp. 211-229, 2004.
[5] I. Stoica, R. Morris, D. Karger, M.F. Kaashoek, and H. Balakrishnan, "Chord: A Scalable Peer-to-Peer Lookup Service for Internet Applications," Proc. ACM Conf. Applications, Technologies, Architectures, and Protocols for Computer Comm. (SIGCOMM '01), pp. 149-160, 2001.
[6] P. Rompothong and T. Senivongse, "A Query Federation of UDDI Registries," Proc. First Int'l Symp. Information and Comm. Technologies, pp. 561-566, 2003.
[7] S. Baset and H. Schulzrinne, "An Analysis of the Skype Peer-to- Peer Internet Telephony Protocol," Proc. IEEE INFOCOM, pp. 1-11, 2006.
[8] H.V. Jagadish, B.C. Ooi, K.-L.Y. Tan, and R. Cui Zhang, "iDistance: An Adaptive B+-Tree Based Indexing Method for Nearest Neighbor Search.
[9] S. Sanghan and M.M. Hasan, "Intelligent P2P VoIP through Extension of Existing Protocols," Proc.Ninth Int'l Conf. Advanced Comm. Technology (ICACT '07), pp. 1597-1601, and 2007.
[10] B.Y. Zhao, L. Huang, J. Stribling, A.D. Joseph, and J. Kubiatowicz, "Exploiting Routing Redundancy via Structured Peer-to-Peer Overlays," Proc. IEEE 11th Int'l Conf. Network Protocols (ICNP '03), pp. 246-257,2003.Structured Peer-to-Peer Overlays," Proc. IEEE 11th Int'l Conf. Network Protocols (ICNP '03), pp. 246-257,2003