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Optimization Using Majority Selection Process in Identifying Missing Links in Green Cloud and Internet Exchange

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Abstract

As increasing the usage of internet and green cloud grows very rapidly present days. It creates challenge for a researcher how the connectivity links works such a heterogeneity network. Particularly on individual domain how the procedure works to transfer data or communication among the network. Identifying the structure at the individual level still one of the most demanded research activity. In Most of internet exchange it is not known that where the missing link or how the missing link changes our network structure. Identifying the missing link is necessary to find the network architecture completely. Recognizing the missing link connecting the Autonomous system is the objective of this paper.

Keywords: Network Architecture, Missing Connection, Independent System, Routing Procedure, Performance Evaluation.

1 Introduction

It is highly necessary for finding the network structure whenever user find difficult in mission connection. This work highly complicated in an

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individual network structure. For that it is necessary user need to build correct and absolute structure for network operations. There are various methods are currently existing for finding missing connection. One important observation identified most of this missing connection take place in peer-to-peer type of network structure only [1-4]. This take place especially at network exchange point or network exchange node. But constructing the accurate and obsolete network design is one of challenging factor for many researchers. In most of the existing systems collects the network steering information's that are all recorded in a table. These table entries are updates at regular interval or whenever any transaction takes place on the network structure. Additionally network steering registries helps the user find the missing connection [5-8]. Using this resources user identify the missing connection. There is no guarantee that each of this resources are provide complete details to the user, some time providing information may be incorrect or inaccurate also. So, user first needs to find the gene unity of the available datasets. In most of research works network swapping points are not yet consider or this points are not included in network architecture. These points normally consider least significant points [9-12]. For that most of the research work devoted first find the missing connection, find the importance of the missing connection. Based on this information, user needs to find the missing connections.

2 Existing System

Most of the missing connection details are identified through network swapping points. Information's that are recorded and collected though network steering table [13, 14]. Missing connection are identified based on the network architecture. For that it is necessary precise and outmoded structure. From Border Gateway Protocol table, Survey estimates that 25 to 50 percentage of association in Autonomous system are lost. Generally data set of Border Gateway Protocol table is used to analyze the association Autonomous system [15, 16]. Net-Dimes is an attempt to detect the network route from the collection of huge number of host based data. All the efforts are focused on restriction of topological data, however without the fundamental endeavoring to recognize an increasingly complete topology. The systematic distinguishing proof of Internet exchange point members has established only constrained consideration [17, 18].

3 Experimental Setup and Proposed System

Inspite of remarkable research in internet and cloud technology takes place, issues related to missing link in internet exchange at different levels of Autonomous system is not fully revealed. A conventional method and execution process in identifying the missing links is as follows. As an initial process traceroutes are identified from use's and service providers autonomous system using patterns of peer-peer and service provider edges respectively.

3.1 Patterns of the Peer-Peer Edges

Normally network systems transfer information from one device to other with user's knowledge and command. Especially in End-to-End transmission any communication or any information's are transferred from one device to other in terms of message or communication through the addressing concepts. This can be done either direct or indirect transmission mechanism. This transmission is done with help of end-to-end communication network or end –to-end server. This communication are controlled and monitored with help of steering board. This board identifies all the devices connected in the network it will select any one of the device as the first receiver then start transmit the message or communication. This first receiver after receiving the information or communications it starts transmit the same to the rest of network devices. The Pattern of the Peer-Peer Edges is shown in figure 1.

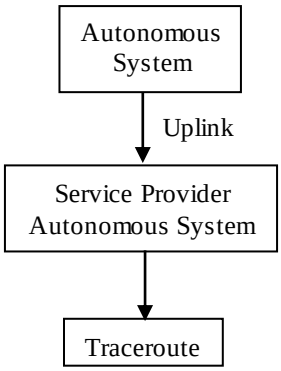

Fig 1. Patterns of the End-to-End Edges

3.2 Patterns of the Service-Provider Edges

In End-to-End communication network single device selected as a first receiver through this rest of the devices in the network receives information or communications. Along with this an examination supplier helps to provide rest of the services in the network. Figures 2 shows the pattern of collecting traceroute Normally these setups act as a resource provider for many business and commercial applications. They provide various resources such as storage resource, communication resource or processing certain operational resource or the combination of these three services.

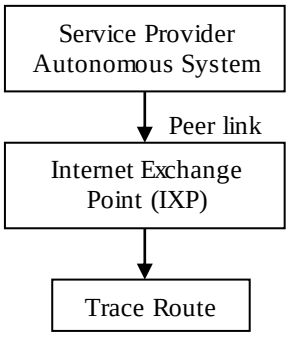

Fig 2. Patterns of the Service-Provider Edges

3.3 Working of Proposed Methodology

The working of the proposed methodology is presented in this section and as represented in figure 3.

- Entire work is divided into two step process. First finding the missing link then identifying the network.
- Edges are recognized through topological information from IXP's which are utilized to identify the links.
- More edges are located and added by further estimation; these edges are ensured by distinguishing potential edges and approving them through focused follow courses.
- Acknowledgement of new edges is done only if traceroute recognize those new edges or they are recognized by a system controlling table.
- Things being what they are, IXP's hide numerous connections which did not show up in many past topology examine.

- Explored edges are verified for IP commands once it shows up it will be processed for AS conversion. In this stage participants AS number will be verified and link will be continued.
- In verification by IP command when it shows up more than IPs it is processed for majority selection process. Those IXP IP address are compared with trace route.
- The comparison of those addresses with traceroute and service providers' autonomous system verifies whether the link is missing one or not.
- Initially work starts with missing links; it also identifies change in link at any network structure. Detecting network swapping points helps in finding more exchange point in network.
- Accuracy less data of Internet Routing Registry are filtered, Internet Routing Registry data which fails the accuracy are filtered using methodical tool.
- In AS path, we study the impact of new edges using the parameter length. Comparison is done on the length of each pairs of edges.
- In AS path, edges of similar shorter length are grouped and each instant change in their length is compared. This change in length may be the reason of implementing minimum hop measure in routing policy.
- Preference of AS depends on longer path rather than the shorter. End-to-End edge can impact the changes in path by reducing their length, altering the edges to maintain same length and sometimes increasing the length.

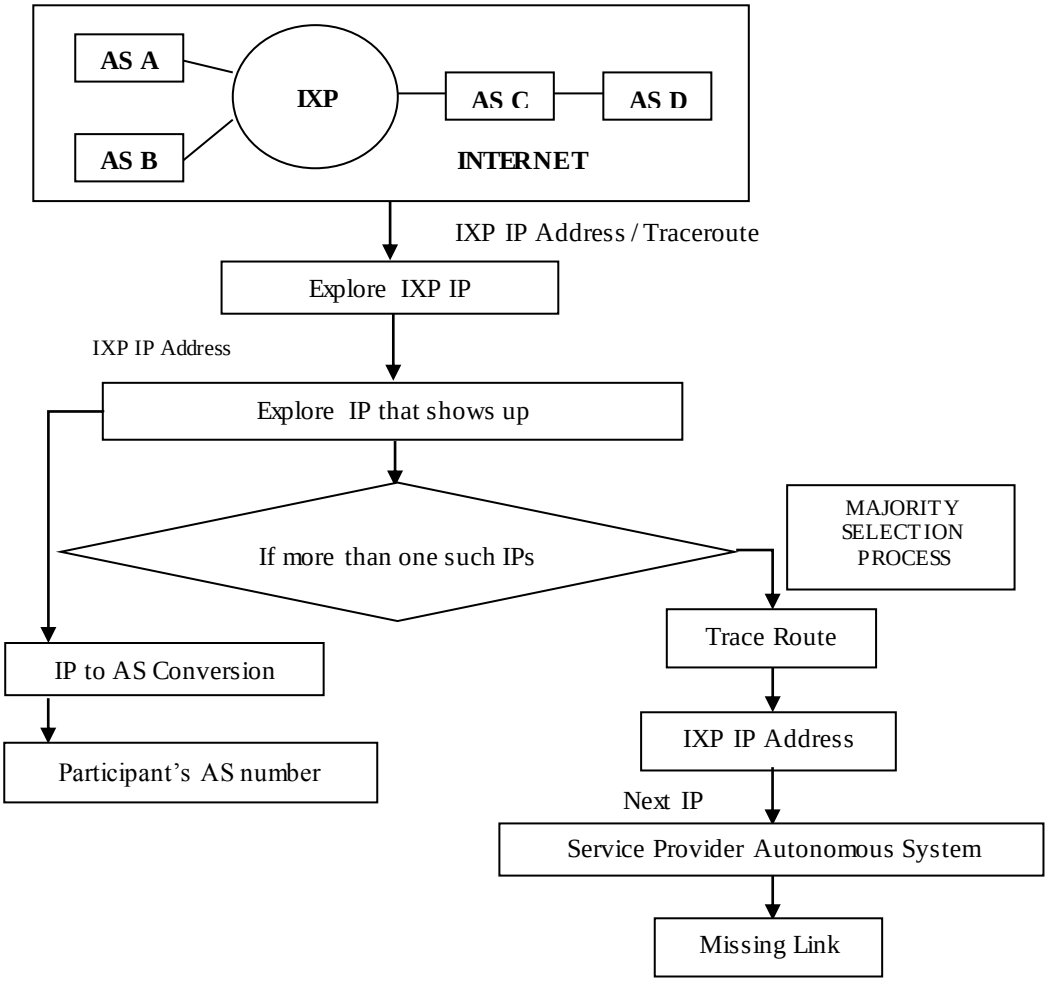

Fig 3. Working of the Proposed System

4 Experimental Outcomes

For experimental analysis the basic requirement of all the system is that it should have java installed and are connected in LAN network. Source to execute the commands depends on the database files IXP.bat, Traceroute.bat, SPAS.bat, AS.bat and Host.bat.

Initialization process of 4 machines are as follows, from machine 1 by executing IXP.bat, TraceRoute.bat and SPAS.bat files it will request for IP

address to run the IXP for example 165.1.1.0. Once the IP address is obtained SPAS.bat file from machine 2 will be executed. Creating more than two hosts in machine 3 by executing AS.bat and Host.bat files. As an output it will trigger the host ip address to run the host. By giving some random ip address for example 100.1.1.01. machine 3 gathers all ip addresses. Similarly execution process is carried in machine 4 also, in same process as like machine 3 it gathers ip addresses like 200.2.2.01. Operating procedure is Autonomous System in machine 3 and 4 gets the uplink from the SPAS it explores AS Number, AS IP Address from machine 1 and 2 SPAS respectively. By providing the number and ip address in the AS and clicking the Uplink, Uplink AS Which will show in the AS. Now Service Provider Autonomous System from machine 1 gathers Peer link of the AS, it also collects IXP numbers and IP address. Since all the machines are connected machine 1 shows Using Peer link in SPAS it will display all the AS link route data and IXP link route data in traceroute. The data sending process from the target host system type some data or browse something and send the data. The data will be sending to the destination. Go to the destination host it will show the source host name and it will show the data which is received. Check out all the 4 machine that SPAS, AS, IXP it will show all the data forwarding information. This traceroute will compare all the links and from this missing link can be identified.

In identifying the missing link the testing outcomes are represented in the following figures. For analysis 4 different machines were used, machine 3 and 4 were considered as host. Once the communications starts traceroute, IXP and Service Provider Autonomous System in machines 1 and 2 are observed. The traceroute in machine 1 and Autonomous system in machine 3 are as shown in figure 4 and 5.

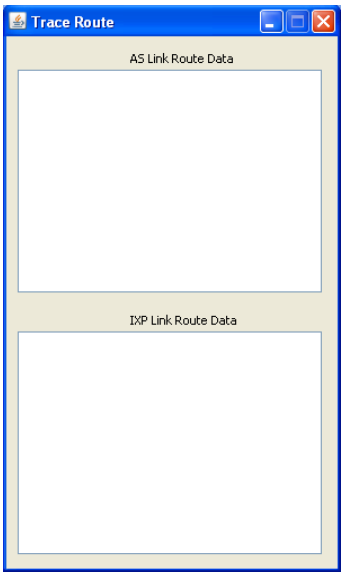

Fig 4. Traceroute in Machine 1

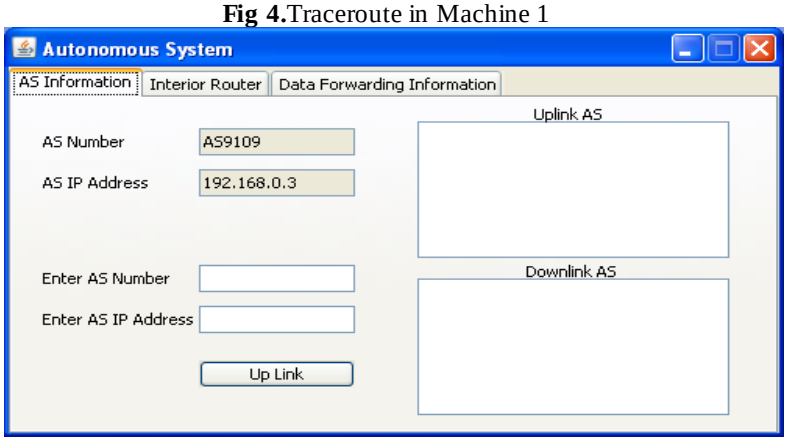

Fig 5. AS in Machine 3

When the exchange of communications starts Autonomous system in machine 3 and 4 shows all the Host and Router IP Address as represented in figure 6 and 7.

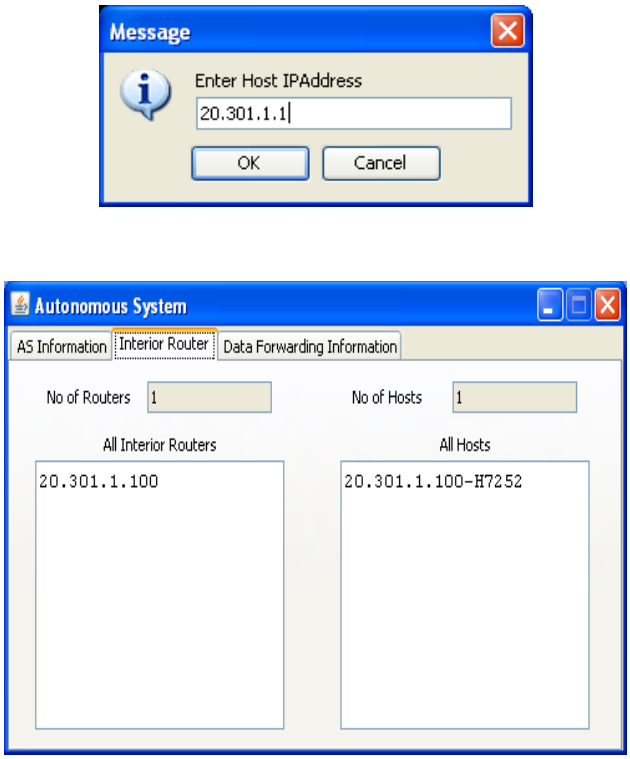

Fig 6. Host in Machine 3 and Machine 3 AS Shows All the Host and Router IP Address

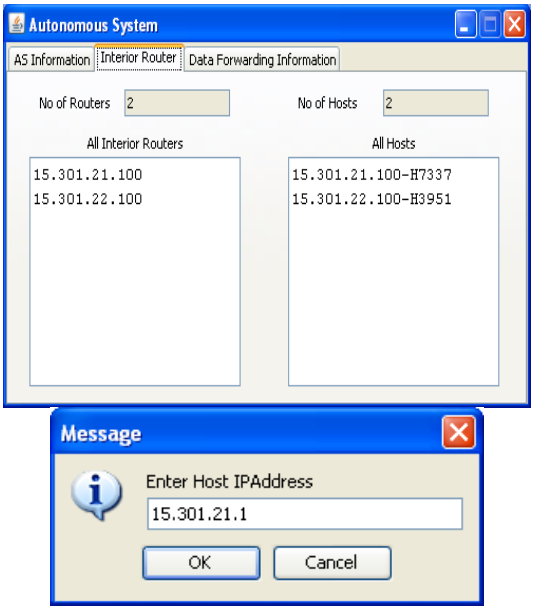

Fig 7. Host in Machine 4 and Machine 4 AS shows all the Host and Router IP address

The outcome of machine 3 AS uplinked with machine 1, machine 3 AS is uplinked with machine 2 AS and machine 2 SPAS shows the downlink AS are as shown in figure 8 and 9.

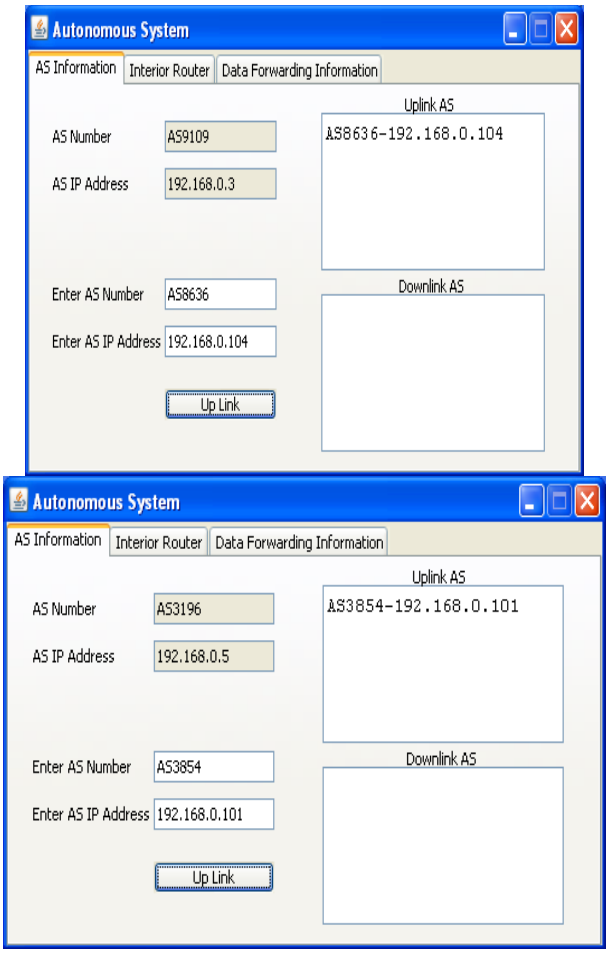

Fig 8 Machine 3 AS is uplinked with Machine 1 and Machine 2

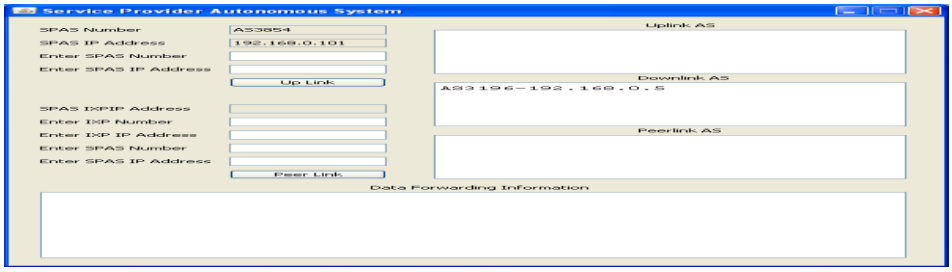

Fig 9. Machine 2 SPAS shows the downlink AS

As a result traceroute in Machine 1 shows all the IP address, AS link route data and IXP link route data as shown in figure 11 and 12. With the continuous process all these datas are tabulated and by comparison on links as proposed by majority selection process missing links are identified.

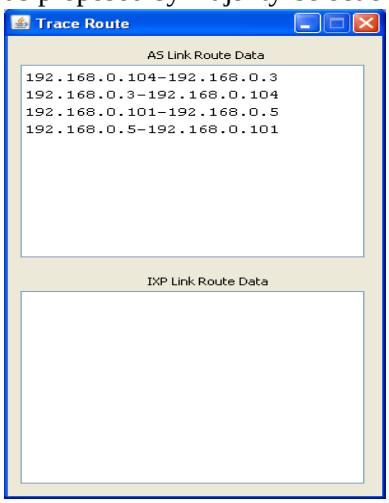

Fig 10. Traceroute in Machine 1 shows all the IP address

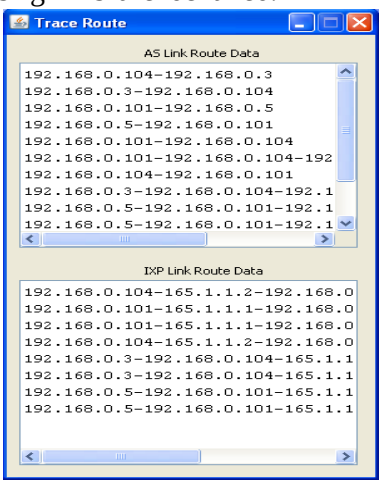

Fig 11. Machine 1 Traceroute shows all the AS link route data and IXP link route data

5 Conclusions

Experimental setup identifies easily how many missing connecting in the network architecture through help of steering counter. Experimental outcomes also identifies that IXPs are identified with help of end-to-end AS link. From the outcomes we observed that very few IXPs circulate this information on steering counter. Information's available on the steering counter are not accurate and most reliable one. We show that by adding these new AS links, some research results based on previous incomplete topology, such as routing decision and ISP profit/cost, change dramatically.

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