International Journal of Advanced Research in

Computer Science Engineering and Information Technology

Volume: 3 Issue: 1 26-Jun-2014,ISSN_NO: 2321-3337

TOPOLOGIES NETWORK SECURITY SERVICES

[1] R.DEEPA

[1]Assitant Professor, Dept.of.Computer science, Raja's college of Tamil Studies & Sanskrit,Thiruvaiyaru

ABSTRACT--*In the paper propose about topology security services in network process. the paper presents the association of a topology techniques and the modeling of topological network states. In terms of a linear integer programming optimization process for the network static state security. The proposed model is for the help of real-time network operators to ensure the security of the power system more efficiently and group authentication. Information and apply local neighbor selection policies to evolve the topology.*

Keywords: ***Topology link.optimized.***

I. INTRODUCTION

Network topology is a representation of the interconnection between directly connected peers in a network. In a physical network topology, peers are ports on devices connected by a physical transmission link. A physical topology corresponds to many logical topologies, each at a different level of abstraction. For example, at the IP level, peers are hosts or routers one IP hop from each other, and at the workgroup level, the peers are workgroups connected by a logical link. In this paper, by network topology we refer exclusively to the logical IP topology, ignoring hubs and bridges, and link-level details such as FDDI token rotation times, ATM or Frame-relay links, and Ethernet segment lengths. At this level, a peer corresponds to one or more IP addresses, and a link corresponds to a channel with specific delay, capacity, and loss characteristics. Network topology constantly changes as nodes and links join a network, personnel move offices, and network capacity is increased to deal with added traffic. Keeping track of network topology manually is a frustrating and often impossible job. Yet, accurate topology information is necessary for network.

TOPOLOGY ACCESS:

- ***Simulation*:**

  In order to simulate real networks, the topology of the network must be first obtained.

- ***Network Management*:**

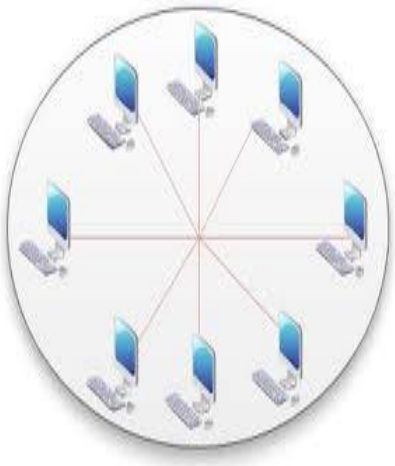
  Network topology information is useful in deciding whether to add new routers and to figure out whether current hardware is configured correctly. It also allows network managers to find bottlenecks and failures in the network.

- ***Siting***

  A network map helps users determine where they are in the network so they can decide where to site servers, and which ISP to join to minimize latency and maximize available bandwidth.

***Topology-aware algorithms*:**

Topology information enables a new class of protocols and algorithms that exploit knowledge of topology to improve performance. Examples include topology-sensitive policy and QoS routing, and group communication algorithms with topology-aware process group selection.

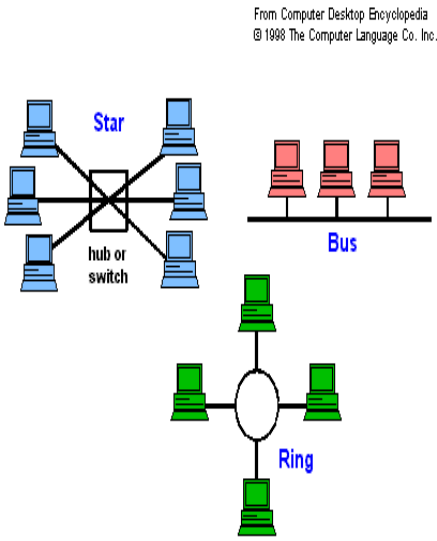


1.1. Goals

The goals of our work are to automatically discover network topology both within a single administrative domain, and in the Internet backbone, while making as few assumptions as possible about the network. In particular, we do not assume that SNMP is globally available, or that the discovery tool is allowed to participate in routing protocols

1. *Efficient*: impose the least possible overhead on the network,
2. *Fast*: take the least possible time to complete the job,
3. *Complete:* discover the entire topology, and
4. *Accurate*: not make mistakes

Because every discovery algorithm represents a tradeoff between these competing goals,



2.1. PROBLEM DESCRIPTION:

The network topology is the most fundamental network structure on which a distributed application is deployed. The lack of control over the topology has a direct impact on performance, resilience, and security of these applications. Network Engineers have to deal with networks that are physically hard or impossible to change, particularly at remote locations under different autonomous system control; what can change however, is the virtual presentation of that network; two nodes physically connected by a path of length m greater than 1, can be represented in the virtual network as connected by a path of length 1. The virtualized topologies can further be used to recommend alternate physical

connectivity. To illustrate the significance of network topology, consider the two canonical topologies

2.2. TOPOLOGY-AWARENESS

While recent research in virtualization has been arguing in favor of data access protocols on the Internet that virtualized content distribution, abstracting the data from its physical location into its virtual network location doesn't necessarily serve location-dependent applications such as Ad-Hoc Routing: mobile networks that can communicate only within a specific geographical space. Security: confidential data that should be transmitted only within trusted networks. Data Management: data mining and information retrieval systems that collect and catalog information based on locality

3.1 FRUTURE WORK:

The increasing scale and complexity of networks has necessitated autonomiccommunication approaches that provide engineers and application developers with more control of the network on which their applications are deployed. Since network topology has a direct impact on performance, resilience, and security, autonomic control of the network topology is an important and immediate requirement. This paper proposed an autonomic topology control approach that builds on concepts of emergence, self-organization and graph theory. evolves and adapts the network topology in an autonomic manner to satisfy dynamically changing application requirements. Adaptation is performed in a decentralized manner where local nodes maintain neighborhood information and apply local neighbor selection policies to evolve the topology. Using prototype simulations of this paper demonstrates that by modifying the network at the microscopic level the macroscopic level is improved in terms of applications centric performance metrics. Ongoing and future work focuses on several outstanding aspects of formulation including: establishing requirements for deploying and enforcing topology rewiring policies; addressing conflict detection and resolution challenges that arise when rewiring involves nodes that are a part of

different neighborhoods; the analysis and characterization of various evolutionary strategies, and the evaluation of their applicability and benefits for different categories of application requirements.

4. CONCLUSIONS

Topology information is critical for simulation and network management. It can also be used effectively for sitting decisions and as an element in a new class of topology-aware distributed systems. We have presented several algorithms that discover intra-domain and backbone topology without relying on SNMP. We find that our algorithms, though slower than those using SNMP, are often able to discover far more nodes and subnets. This reflects the fact that SNMP is not universally deployed, particularly at end-systems, and indeed is the motivation for our work. We also evaluated a backbone discovery tool that was able to discover more than 70,000 nodes in the Internet backbone. This data, when visualized using hop contour maps, allows us to compare ISP backbone topology.

V. REFERENCES

[1] L.Pengwei and X.Zhenqiang, *Security Enhancement of AODV against Internal Attacks*, International Conference on Information Science and Engineering (ICISE), Vol. 2, pp 584-586, 2010.

[2] A.Das, S.S.Basu and A.Chaudhuri, *A Novel security scheme for wireless Ad-hoc network*, International Conference on Wireless Communication Vehicular Technology, Information theory and Aerospace and Electronic System technology, Vol. 2, pp 1-4, 2011.

[3] DENG Hongmei, L I Wei and D P Agrawala, *Routing Security in Wireless Ad Hoc Networks*, International Journal of IEEE, Communication Magazine, Vol. 40(10), pp 70-75, 2002.

[4] Parulpreet Singh, Ekta Barkhodia, Gurleen Kaur Walia, *Performance Study of Different Routing Protocols(OLSR, DSR, AODV) Under Different Traffic Loads and with Same Number of Nodes,* of Electronics & Communication, LPU, Phagwara, Vol. 3, Issue 1, Jan.- March 2012

[5] Park, V., Corson, S., *Temporally-Ordered Routing Algorithm (TORA) Version 1 Functional Specification,* IETF MANET Working Group Internet Draft. Draft-item-manet-TORA-spec-03.txt. November 2000.

[6] Deep Kaur and Kirandeep Kaur "*QoS in WLAN using IEEE 802.11e (Survey of QoS in MAC layer Protocols)"* of SBS College of Engineering and Technology, Ferozepur, India, 2012 IEEE DOI 10.1109/ACCT.2012.93