{tag}

{/tag}

International Journal of Computer Applications

Volume 40 - Number 13

Year of Publication: 2012

Authors:

Debdutta Barman Roy

Rituparna Chaki

10.5120/5037-7355

{bibtex}pxc3877355.bib{/bibtex}

Abstract

The inbuilt flexibility along with easy set-up and low maintenance cost causes MANETs to be increasingly useful in catastrophe management, battlefield surveillance; etc. The infrastructure-less performance of MANET has made it more vulnerable to intrusion than ever before making the security of network all the more acute. As the previously used security systems fail to protect the MANET from insider attacks, the need for an Intrusion Detection System (IDS) becomes evident. IDS based on Mobile Agents is long been used for securing the MANET. The prior works seem to suffer from computational overhead leading to performance. This paper proposes a mobile agent based IDS in order to reduce the overheads. The use of distributed ID consists of multiple mobile agents which assist over a large network and to make communication with each other, or with a central server that provide advanced network monitoring, incident analysis, and instant attack data. This as a whole reduces the network bandwidth usage by moving data analysis computation to the place of the intrusion data & sustains on the heterogeneous platforms.

References

- Debdutta Barman Roy, Rituparna Chaki “MADSN: Mobile Agent Based Detection of Selfish Node in MANET”, International Journal of Wireless & Mobile Networks (IJWMN) Vol. 3, No. 4, August 2011
- Debdutta Barman Roy, Rituparna Chaki,Nabendu Chaki”a new cluster-based wormhole intrusion detection algorithm for mobile ad-hoc networks “,International Journal of Network Security & Its Applications (IJNSA), Vol 1, No 1, April 2009
- Chaki, Rituparna; Chaki, Nabendu; "IDSX: A Cluster Based Collaborative Intrusion Detection Algorithm for Mobile Ad-Hoc Network"; Proc. of the 6th Int’l Conf. on Computer Information Systems and Industrial Manage-ment Applications (CISIM '07); pp. 179 - 184, ISBN: 0-7695-2894-5, June 2007
- Yang, H. and Luo, H. and Ye, F. and Lu, S. and Zhang, U.; “Security in Mobile Ad Hoc Networks: Challenges and Solutions”; Wireless Communications, IEEE, vol. 11, num. 1, pp. 38-47, 2004
- Y.-C. Hu, A. Perrig; “A Survey of Secure Wireless Ad Hoc Routing”; Security and Privacy Magazine, IEEE, vol. 2, issue 3, pp. 28-39, May 2004.
- Y.-C. Hu, A. Perrig, D. B. Johnson; “Wormhole At tacks in Wireless Networks”; IEEE Journal on Select ed Areas of Communications, vol. 24, numb. 2, pp. 370-380,2006
- Y.-C. Hu, A. Perrig, D. B. Johnson; “Packet leashes: defense against wormhole attacks in wireless networks”; INFOCOM 2003, Twenty-Second Annual Joint Confe-rence of the IEEE Computer and Communication Socie-ties, Vol. 3, pp.1976-1986, 2003
- Saidat Adebukola Onashoga, Adebayo D. Akinde, and Adesina Simon Sodiya” A Strategic Review of Existing Mobile Agent- Based Intrusion Detection Systems”, Is-sues in Informing Science and Information Technology Volume 6, 2009
- Abraham, A., Jain, R., Thomas, J., & Han, S. Y. “. D-SCIDS: Distributed soft computing intrusion de-tection system”. Journal of Network and Compute Application, 30,pp 81- 98,2007
- Adesina Simon Sodiya” Multi-level and Secured Agent-based Intrusion Detection System”, Journal of Computing and Information Technology - CIT 14, 3, 217–223 doi:10.2498/cit.2006.03.05
- H.Q. Wang, Q.Wang, Q. Zhao, G.F.Wang, R.J.Zheng and D.X.Liu “Mobile Gent for Network Intrusion Reistance” , Advance Web and Network Technology and Applications Lecture notes in Computer Sci ence,vol. 3842/2006. 965- 970 ,2006
- Eid, M., Artail, H., Kayssi, A., & Chehab, A. “ An adaptive intrusion detection and defense system based on mobile agents Innovations in Information Technologies (IIT’2004)
- Li, C., Song, Q., & Zhang, C.” MA-IDS: Architecture For distributed intrusion detection using mobile agents”. 2nd International Conference on Information Technology for Application (ICITA, 2004).
- Aikaterini Mitrokotsa, Rosa Mavropodi, Christos Douligeris “Intrusion Detection of Packet Dropping Attacks in Mobile Ad Hoc Networks”, Ayia Napa, Cyprus, July 6-7, 2006

Index Terms

Computer Science Security

Keywords
MANET BLACK HOLE MOBILE AGENT