

SADI A Novel Model to Study the Propagation of Social Worms in Hierarchical Networks

ABSTRACT

Protecting a computer system from malicious attacks is a key challenge to research and management communities of network security. In recent years, social worms such as "Koobface", "Samy", and "Here you are", constitute one of the major network security problems. According to Symantec Corporation's report on official Internet security threats, the frequency and virulence of their propagation outbreaks have increased dramatically in the last few years. Social network is still a good propagation platform for worm spreading. Moreover, we have observed the addition of real world social engineering, where virtual and real world attacks are being combined to increase the odds of success. Thus, social worms pose a significant threat to our work and life environment.

EXISTING SYSTEM

The topologies of social worms consist of a social logical layer and an actual physical layer. The former has following characteristics:

- They are defined as a "semi-directed network", in which some edges are directed and others are undirected.
- The indegree of nodes tends to match the out degree, and they both follow the power law distribution.
- they are assortative, which implies that nodes with a high degree tend to connect with each other.
- The weight of each edge denotes the propagation probability from user i to user j .
- Each node in the social logical layer contains a group of nodes corresponding to nodes in the actual physical layer.

Disadvantages

- they are defined as a "semi-directed network", in which some edges are directed and others are undirected.
- one critical problem in this models is message notification.

PROPOSED SYSTEM

We propose a novel SADI model for the propagation of social worms. This model is able to address two core processes and one critical problem in previous models: message notification, the temporal characteristic of human mobility and structural imperfection of network topology. We then conducted a number of experiments to analyze how these factors impact on the spread of worms. Moreover, the experiments show that our SADI model fits the simulation very well, which implies the accuracy for modeling the propagation dynamics is very good. Finally, we also believe our work presented in this paper is of great significance to network defense.

Advantages

- SADI model is more accurate than the state-of-threat models.
- Its advantage is reminding the user to check new messages in time.

SOFTWARE REQUIREMENTS

Front-end	:	JSP
Back-End	:	MySQL
Server	:	Tomcat Server
OS	:	WINDOWS 7/above

HARDWARE REQUIREMENTS

PROCESSOR	:	CORE i3
RAM	:	512MB-2GB
HARD DISK	:	40GB

