APPLICATION FOR

UNITED STATES PATENT

IN THE NAME OF

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OF

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SYSTEM AND METHOD FOR PROTECTING A COMPUTER AND A

NETWORK FROM HOSTILE DOWNLOADABLES

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SYSTEM AND METHOD FOR PROTECTING A COMPUTER AND A NETWORK FROM HOSTILE DOWNLOADABLES

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PRIORITY REFERENCE TO PROVISIONAL APPLICATION

This application claims benefit of and hereby incorporates by reference provisional application serial number 60/030,639, entitled "System and Method for Protecting a Computer from Hostile Downloadables," filed on November 8, 1996, by inventor Shlomo Touboul.

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INCORPORATION BY REFERENCE TO RELATED APPLICATION

This application hereby incorporates by reference related U.S. patent application serial number 08/790,097, entitled "System and Method for Protecting a Client from Hostile Downloadables," filed on January 29, 1997, by inventor Shlomo Touboul.

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BACKGROUND OF THE INVENTION

1. Field of the Invention

This invention relates generally to computer networks, and more particularly provides a system and method for protecting a computer and a network from hostile

20 Downloadables.

2. Description of the Background Art

The Internet is currently a collection of over 100,000 individual computer networks owned by governments, universities, nonprofit groups and companies, and is expanding at an accelerating rate. Because the Internet is public, the Internet has become a major source of many system damaging and system fatal application programs, commonly referred to as "viruses."

Accordingly, programmers continue to design computer and computer network security systems for blocking these viruses from attacking both individual and network computers. On the most part, these security systems have been relatively successful. However, these security systems are not configured to recognize computer viruses which have been attached to or configured as Downloadable application programs, commonly referred to as "Downloadables." A Downloadable is an executable application program, which is downloaded from a source computer and run on the destination computer. Downloadable is typically requested by an ongoing process such as by an Internet browser or web engine. Examples of Downloadables include Java™ applets designed for use in the Java™ distributing environment developed by Sun Microsystems, Inc., JavaScript scripts also developed by Sun Microsystems, Inc., ActiveX™ controls designed for use in the ActiveX™ distributing environment developed by the Microsoft Corporation, and Visual Basic also developed by the Microsoft Corporation. Therefore, a system and method are needed to protect a network from hostile Downloadables.

SUMMARY OF THE INVENTION

The present invention provides a system for protecting a network from suspicious Downloadables. The system comprises a security policy, an interface for receiving a Downloadable, and a comparator, coupled to the interface, for applying the security

5   policy to the Downloadable to determine if the security policy has been violated. The Downloadable may include a Java™ applet, an ActiveX™ control, a JavaScript™ script, or a Visual Basic script. The security policy may include a default security policy to be applied regardless of the client to whom the Downloadable is addressed, a specific security policy to be applied based on the client or the group to which the client belongs,

10   or a specific policy to be applied based on the client/group and on the particular Downloadable received. The system uses an ID generator to compute a Downloadable ID identifying the Downloadable, preferably, by fetching all components of the Downloadable and performing a hashing function on the Downloadable including the fetched components.

15   Further, the security policy may indicate several tests to perform, including (1) a comparison with known hostile and non-hostile Downloadables; (2) a comparison with Downloadables to be blocked or allowed per administrative override; (3) a comparison of the Downloadable security profile data against access control lists; (4) a comparison of a certificate embodied in the Downloadable against trusted certificates; and (5) a

20   comparison of the URL from which the Downloadable originated against trusted and untrusted URLs. Based on these tests, a logical engine can determine whether to allow or block the Downloadable.

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The present invention further provides a method for protecting a computer from suspicious Downloadables. The method comprises the steps of receiving a Downloadable, comparing the Downloadable against a security policy to determine if the security policy has been violated, and discarding the Downloadable if the security policy

5 has been violated.

It will be appreciated that the system and method of the present invention may provide computer protection from known hostile Downloadables. The system and method of the present invention may identify Downloadables that perform operations deemed suspicious. The system and method of the present invention may examine the

10 Downloadable code to determine whether the code contains any suspicious operations, and thus may allow or block the Downloadable accordingly.

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