Revisiting the Firewall Abolition Act

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March 2002

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Abstract

Mobility and the New Global Economy are accompanied by requirements for dynamism and flexibility, with respect to e-commerce, inter-organizational activity, and security. The classical approach to computer security, typified by firewalls, is no longer suitable to encourage and facilitate the growth and nomadic collaboration foreseen for current and future corporate environs. This paper presents concepts and work-in-progress, manifested during our exploration of the Firewall Abolition initiative. At the core of our research is architecturally based Application Layer Security.

While firewalls remain suitable for static protection of perimeters, they cannot aptly address mobile scenarios where legitimate IP ranges and device capabilities are disparate and indiscrete. Even the application of dynamic rule-sets in firewalls is easily susceptible to denial of service attacks. Application Level Security has proven to be a more formidable approach to satisfying both technical and strategic requirements for security. One very essential contribution of Application Layer Security to addressing our problem domain is the possibility for more efficient resource management. Security amplifies the necessity for efficiency in mobile device networks, where the power, memory and processing capabilities of end devices are generally and relatively limited in comparison to a typical network of PCs and Workstations. We contend that the capability of end-devices should not compromise acceptable end-to-end security.

Our research includes an analysis of historical trends in computer security, which has lead to an identification of fundamental sectors of concern, namely, Applications, Communications, and Resources. Furthermore, Services, Resource Transferal, Resource Manipulation, and Coordination represent emergent sectors of concern, based on the overlapping of the fundamental sectors. These may also be classified as the "support beams" around which enterprise security is built, and are considered critically before any acts of demolition or reform are conducted.