

Denial of Service attack

<https://us-cert.cisa.gov/ncas/tips/ST04-015>

What is a denial-of-service attack?

A denial-of-service (DoS) attack occurs when legitimate users are unable to access information systems, devices, or other network resources due to the actions of a malicious cyber threat actor. Services affected may include email, websites, online accounts (e.g., banking), or other services that rely on the affected computer or network. A denial-of-service condition is accomplished by flooding the targeted host or network with traffic until the target cannot respond or simply crashes, preventing access for legitimate users. DoS attacks can cost an organization both time and money while their resources and services are inaccessible.

What is a distributed denial-of-service attack?

A distributed denial-of-service (DDoS) attack occurs when multiple machines are operating together to attack one target. DDoS attackers often leverage the use of a botnet—a group of hijacked internet-connected devices to carry out large scale attacks. Attackers take advantage of security vulnerabilities or device weaknesses to control numerous devices using command and control software. Once in control, an attacker can command their botnet to conduct DDoS on a target. In this case, the infected devices are also victims of the attack.

Botnets—made up of compromised devices—may also be rented out to other potential attackers. Often the botnet is made available to “attack-for-hire” services, which allow unskilled users to launch DDoS attacks.

DDoS allows for exponentially more requests to be sent to the target, therefore increasing the attack power. It also increases the difficulty of attribution, as the true source of the attack is harder to identify.

DDoS attacks have increased in magnitude as more and more devices come online through the Internet of Things (IoT) (see Securing the Internet of Things). IoT devices often use default passwords and do not have sound security postures, making them vulnerable to compromise and exploitation. Infection of IoT devices often goes unnoticed by users, and an attacker could easily compromise hundreds of thousands of these devices to conduct a high-scale attack without the device owners’ knowledge.

Source: us-cert.cisa.gov

