APNIC FACTSHEET

Source Address Validation Everywhere (SAVE)

APNIC

Why SAVE?

It is commonplace to send a packet with a forged or spoofed IP address to try and disrupt services on the Internet. Recent large-scale Denial of Service (DoS) attacks, for instance the recent DNS Reflection and Amplification Attacks, are examples of how IP address spoofing can have a devastating impact on services such as Internet banking.

Attackers simply make requests using the source IP address (or addresses) of the intended target and as a result, the target will be flooded with responses that their systems cannot handle.

What's the solution?

Source Address Validation Everywhere (SAVE), Best Current Practice (BCP) 38, or RFC2727: Network Ingress Filtering, Defeating Denial of Service Attacks, which employ IP Source Address Spoofing.

SAVE is a filtering method that prescribes the use of valid and legitimately reachable source addresses. In other words, SAVE blocks IP addresses that are forged or not assigned to the device that is sending them. This means devices in the receiving network will know the packet they are receiving will contain a legitimate IP address.

How?

Network operators simply implement ingress filtering rules, which check the source IP field of the IP packets it receives. If the source IP address is not within a range of legitimately advertised prefixes, a router will drop the packet.

How is APNIC involved?

APNIC' vision is to help make the Internet stable for everyone to facilitate learning, interaction, and innovation. We are working with the security community to promote awareness of the importance of SAVE and are providing training for network operators to help them implement it on their networks.

What can you do?

If you are a network provider, please consider implement SAVE. You can filter packets entering your networks from downstream customers to clear any packets that have a source address that is not allocated to a particular customer.

If you are an Internet user, please consider asking your ISP to perform SAVE.