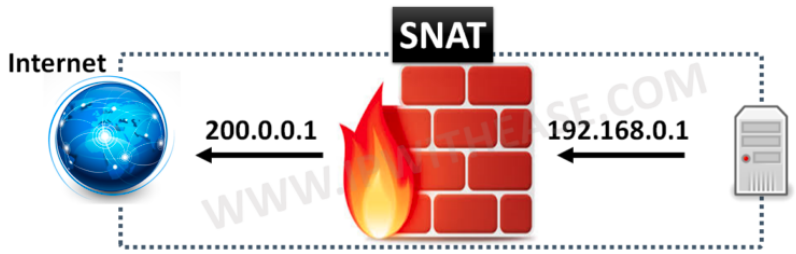
SNAT VS DNAT

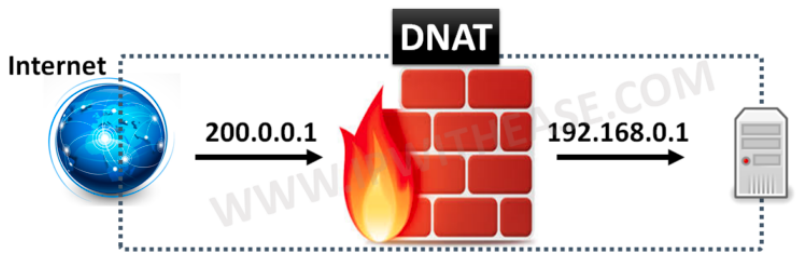
IPWITHEASE | September 8, 2017 | Default | No Comments

Hi viewers, in this post we will walk through how **SNAT** differs from **DNAT** and when/where are they required in the network. But before we continue, let's understand **NAT, SNAT** and **DNAT** terminologies –

NAT is abbreviation for **Network Address Translation**. NAT occurs when one of the IP addresses in an IP packet header is changed i.e. either Source IP address or Destination IP address.



SNAT is abbreviation for **Source Network Address Translation**. It is typically used when an internal/private host needs to initiate a connection to an external/public host. The device performing NAT changes the private IP address of the source host to public IP address. It may also change the source port in the TCP/UDP headers.



DNAT stand for **Destination Network Address Translation**. Destination NAT changes the destination address in IP header of a packet. It may also change the destination port in the **TCP/UDP** headers. The typical usage of this is to redirect incoming packets with a destination of a public address/port to a private IP

address/port inside your network. Destination NAT is performed on incoming packets, where the **firewall** translates a public destination address to a private address. DNAT is a 1-to-1, static translation with the option to perform port forwarding or port translation. Users over Internet Accessing a Web Server hosted in a Data Center is a typical example where DNAT is used to hide the private Address of Web Server and NAT device translates the Public Destination IP reachable to Internet Users to Private IP address of Web Server.

Parameters	SNAT	DNAT
Abbreviation for	Source NAT	Destination NAT
Terminology	SNAT changes the private IP address of the source host to public IP address. It may also change the source port in the TCP/UDP headers. SNAT is typically used by internal users to access the Internet.	Destination NAT changes the destination address in IP header of a packet. It may also change the destination port in the TCP/UDP headers. DNAT is used when we need to redirect incoming packets with a destination of a public address/port to a private IP address/port inside your network.
Use Case	A client Inside LAN and behind Firewall wanted to browse Internet	A Website Hosted inside Data Center behind the Firewall and needs to be accessible to users over Internet
Address Change	SNAT changes the source address of packets passing through NAT device	DNAT changes the destination address of packets passing through the Router
Order of Operation	SNAT is performed after the routing decision is made.	DNAT is performed before the routing decision is made.
Communication Flow	When inside secured Network initiates communicates with outside world , SNAT happens	When outside insecured Network initiates communication with inside secured Network , DNAT happens
Single/Multiple hosts	SNAT allows multiple hosts on the "inside" network to get to any host on the "outside" network	DNAT allows any host on the "outside" network to get to a single host on the "inside" network

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