CISCO ROUTERLAR İLE

NAT, DHCP SERVER VE DHCP RELAY

UYGULAMASI

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TOPOLOJİ:
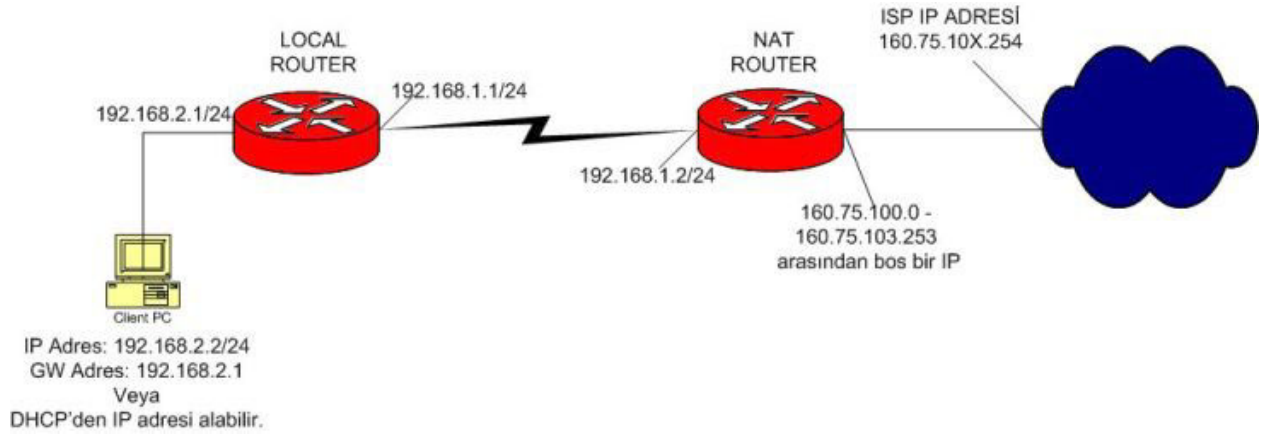
İSTENENLER:

1. Routarlarda gereken temel Interface ve IP Routing konfigurasyonunu yapın. PC'ye baslangıcta statik IP adresi verin ve PC'nin NAT Router'ının ic interface'ine ping atabildigine emin olun.

2. Nat Router'da gereken NAT konfigürasyonunu yapın. PC'nin Internete cikip cikmadığını test edin.

3. NAT Router'da DHCP Server, LOCAL Router'dada DHCP Relay configurasyonunu yapın.

NOT: Çözüm kısmında aynı renk ile ilgili sorunun çözümünü bulabilirsiniz.

ÇÖZÜMLERİ:

LOCAL ROUTER

hostname LOCAL

service dhcp

interface FastEthernet0/0
ip address 192.168.2.1 255.255.255.0
no shutdown
ip helper-address 192.168.1.2
!
interface Serial0/0
ip address 192.168.1.1 255.255.255.0
clockrate 64000
no shutdown

ip route 0.0.0.0 0.0.0.0 192.168.1.2

NAT ROUTER

hostname NAT

service dhcp
ip dhcp excluded-address 192.168.2.1

ip dhcp pool LOCAL
network 192.168.2.0 255.255.255.0
dns-server 160.75.2.20
default-router 192.168.2.1

interface FastEthernet0/0
ip address 160.75.10X.XX 255.255.255.0
no shutdown
ip nat outside

interface Serial0/0
ip address 192.168.1.2 255.255.255.0
ip nat inside

ip route 0.0.0.0 0.0.0.0 160.75.10X.254
ip route 192.168.2.0 255.255.255.0 192.168.1.1

access-list 1 permit 192.168.2.0 0.0.0.255
ip nat pool HAVUZ 160.75.10X.XX 160.75.10X.XX netmask 255.255.255.0
ip nat inside source list 1 pool HAVUZ overload

KONTROL KOMUTLARI:

NAT#sh ip nat translations

Pro	Inside global	Inside local	Outside local	Outside global	
tcp	160.75.100.24X:2500	192.168.1.1:80	---	---	<---- statik
(nat+pat)					
---	160.75.100.24X	192.168.1.1	---	---	<---- statik (nat)
tcp	160.75.100.24X:2316	192.168.2.2:2316	212.98.228.146:80	212.98.228.146:80	<----- (kalan dinamik)
tcp	160.75.100.24X:2246	192.168.2.2:2246	160.75.2.22:139	160.75.2.22:139	
tcp	160.75.100.24X:2302	192.168.2.2:2302	213.74.57.25:110	213.74.57.25:110	

NAT#sh ip nat statistics
Total active translations: 15 (2 static, 13 dynamic; 14 extended)
Outside interfaces:
FastEthernet0/0
Inside interfaces:
Serial0/0
Hits: 67480 Misses: 1742
Expired translations: 1570
Dynamic mappings:
-- Inside Source
[Id: 1] access-list 1 pool HAVUZ refcount 13
pool HAVUZ: netmask 255.255.255.0
start 160.75.100.24X end 160.75.100.24X
type generic, total addresses 1, allocated 1 (100%), misses 41

NAT#sh ip dhcp binding
IP address Client-ID/ Lease expiration Type
Hardware address
192.168.2.2 0001.0475.cXX0.4b Mar 02 1993 12:15 AM Automatic
NAT#sh ip dhcp conflict
IP address Detection method Detection time
NAT#

LOCAL#debug ip dhcp server events

01:21:38: DHCPD: Forwarding reply on numbered intf
01:21:38: DHCPD: Forwarding reply on numbered intf

NAT#debug ip dhcp server packet
01:24:24: DHCPD: DHCPRELEASE message received from client 0100.c017.b46b.0b (0.0
.0.0).
01:24:26: DHCPD: DHCPDISCOVER received from client 0100.c017.b46b.0b through rel
ay 192.168.2.1.
01:24:26: DHCPD: Sending DHCPOFFER to client 0100.c017.b46b.0b (192.168.2.3).
*01:24:26: DHCPD: unicasting BOOTREPLY for client 00c0.17b4.6b0b to relay 192.168
.2.1. (RELAY)*

01:24:26: DHCPD: DHCPREQUEST received from client 0100.c017.b46b.0b.
01:24:26: DHCPD: Sending DHCPACK to client 0100.c017.b46b.0b (192.168.2.3).
01:24:26: DHCPD: unicasting BOOTREPLY for client 00c0.17b4.6b0b to relay 192.168
.2.1.
NAT#

NAT EKSTRA KOMUTLAR:

Havuzlu Sistem: (bir veya birden fazla statik IP olması durumunda)
ip nat inside source list 1 pool HAVUZ overload
ip nat pool HAVUZ 160.75.100.24X 160.75.5.24X netmask 255.255.255.0

Dinamik IP Alınması durumunda:
ip nat inside source list 1 interface FastEthernet0/0 overload

Statik NAT uygulaması 1 : Bir PC'nin butun hizmetleri Real IPsi varmış gibi configure edilmesi
ip nat inside source static 192.168.1.1 160.75.100.2XX

Not: Bu durumda 160.75.100.2XX ipsi routerın dıs interface IP adresi olmamasına ragmen router artık 2XXe gelen butun trafigi yanıtlar. Sanki Networkte 160.75.100.2XX IP'li bir PC olur

Statik NAT uygulaması 2 : Bir PC'nin Sadece bir hizmeti vermesi icin configure edilmesi
ip nat inside source static tcp 192.168.1.1 80 160.75.5.248 2500 *extendable (bu parametre otomatik eklenir)*