使用NAT超载和Cisco Secure VPN Client配置IPSec路由器到路由器

目录

简介

此实例配置加密从Light后的网络到House后网络(192.168.100.x 到 192.168.200.x 网络)的流量。 网络地址转换 (NAT) 过载也已完成。加密的VPN客户端连接被允许进入Light，与通配符、预先共享密钥和模式设置。发送到 Internet 的流量已转换，但未加密。

先决条件

要求

本文档没有任何特定的要求。

使用的组件

本文档中的信息基于以下软件和硬件版本：

- 思科IOS®软件版本12.2.7和12.2.8T
- Cisco Secure VPN Client 1.1(在IRE客户端帮助>关于菜单中显**示为2.1**.12)
- Cisco 3600 路由器**注意：**如果将Cisco 2600系列路由器用于此类VPN场景，则必须将路由器与加密IPsec VPN IOS映像一起安装。

本文档中的信息都是基于特定实验室环境中的设备编写的。本文档中使用的所有设备最初均采用原始（默认）配置。如果您使用的是真实网络，请确保您已经了解所有命令的潜在影响。

规则

有关文档规则的详细信息，请参阅 Cisco 技术提示规则。

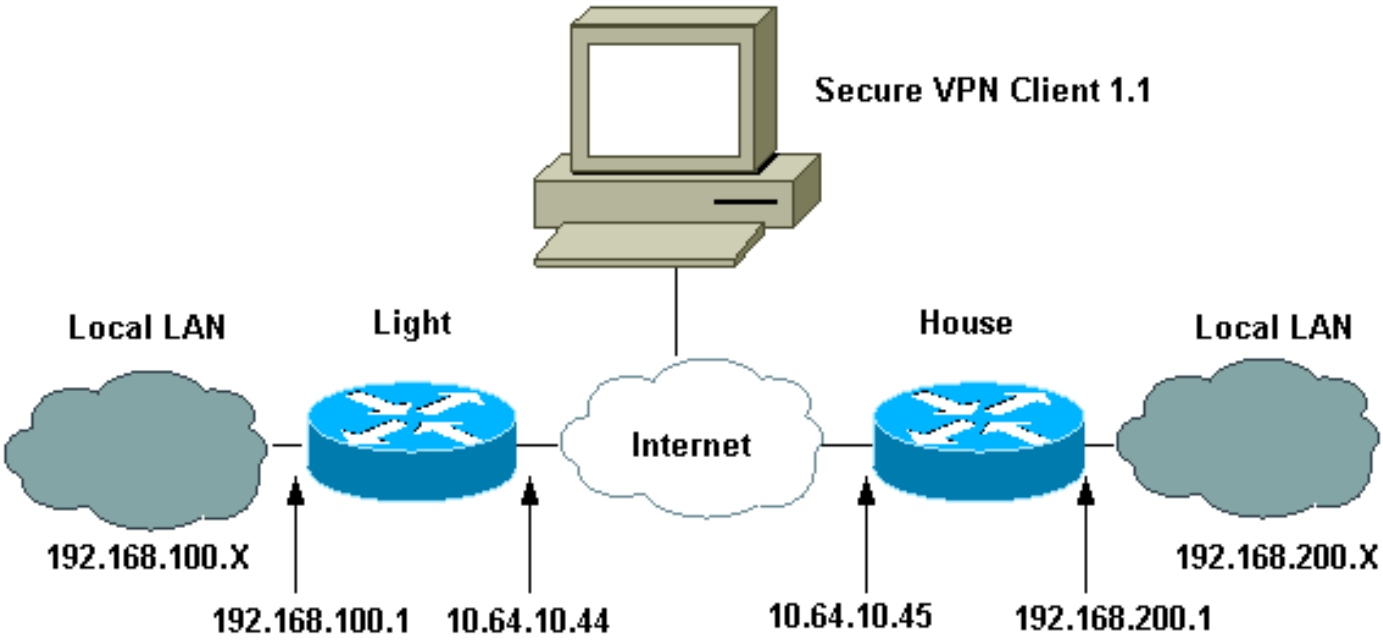
配置

本部分提供有关如何配置本文档所述功能的信息。

注意：使用命令查找工具(仅限注册客户)可查找有关本文档中使用的命令的详细信息。

网络图

本文档使用以下网络设置：



配置

本文档使用以下配置。

- Light 配置
- House 配置
- VPN 客户端配置

Light 配置

```
Current configuration : 2047 bytes
!
version 12.2
service timestamps debug uptime
service timestamps log uptime
no service password-encryption
!
hostname Light
!
boot system flash:c3660-ik9o3s-mz.122-8T
```

```
 !
 ip subnet-zero
 !
 ip audit notify log
 ip audit po max-events 100
 ip ssh time-out 120
 ip ssh authentication-retries 3
 !
!--- IPsec Internet Security Association and !--- Key
Management Protocol (ISAKMP) policy. crypto isakmp
policy 5
  hash md5
  authentication pre-share
!--- ISAKMP key for static LAN-to-LAN tunnel !---
without extended authenticaton (xauth). crypto isakmp
key cisco123 address 10.64.10.45 no-xauth
!--- ISAKMP key for the dynamic VPN Client. crypto
isakmp key 123cisco address 0.0.0.0 0.0.0.0
!--- Assign the IP address to the VPN Client. crypto
isakmp client configuration address-pool local test-pool
 !
 !
 !
 crypto ipsec transform-set testset esp-des esp-md5-hmac
 !
 crypto dynamic-map test-dynamic 10
  set transform-set testset
 !
 !
!--- VPN Client mode configuration negotiation, !---
such as IP address assignment and xauth. crypto map test
client configuration address initiate
 crypto map test client configuration address respond
!--- Static crypto map for the LAN-to-LAN tunnel. crypto
map test 5 ipsec-isakmp
  set peer 10.64.10.45
  set transform-set testset
!--- Include the private network-to-private network
traffic !--- in the encryption process. match address
115
!--- Dynamic crypto map for the VPN Client. crypto map
test 10 ipsec-isakmp dynamic test-dynamic
 !


 call rsvp-sync
 !
 !
 !
 !
 !
 fax interface-type modem
 mta receive maximum-recipients 0
 !
 controller E1 2/0
 !
 !
 !
 interface FastEthernet0/0
  ip address 10.64.10.44 255.255.255.224
  ip nat outside
  duplex auto
  speed auto
  crypto map test
```

```
 !
 interface FastEthernet0/1
  ip address 192.168.100.1 255.255.255.0
  ip nat inside
  duplex auto
  speed auto
 !
 interface BRI4/0
  no ip address
  shutdown
 !
 interface BRI4/1
  no ip address
  shutdown
 !
 interface BRI4/2
  no ip address
  shutdown
 !
 interface BRI4/3
  no ip address
  shutdown
 !
 !--- Define the IP address pool for the VPN Client. ip
local pool test-pool 192.168.1.1 192.168.1.254
!--- Exclude the private network and VPN Client !---
traffic from the NAT process. ip nat inside source
route-map nonat interface FastEthernet0/0 overload
 ip classless
 ip route 0.0.0.0 0.0.0.0 10.64.10.33
 ip http server
 ip pim bidir-enable
 !
!--- Exclude the private network and VPN Client !---
traffic from the NAT process. access-list 110 deny   ip
192.168.100.0 0.0.0.255 192.168.200.0 0.0.0.255
 access-list 110 deny   ip 192.168.100.0 0.0.0.255
192.168.1.0 0.0.0.255
 access-list 110 permit ip 192.168.100.0 0.0.0.255 any
!--- Include the private network-to-private network
traffic !--- in the encryption process. access-list 115
permit ip 192.168.100.0 0.0.0.255 192.168.200.0
0.0.0.255
 !
!--- Exclude the private network and VPN Client !---
traffic from the NAT process. route-map nonat permit 10
  match ip address 110
 !
 !
 dial-peer cor custom
 !
 !
 !
 !
 !
 line con 0
 line 97 108
 line aux 0
 line vty 0 4
 !
 end
```

House 配置

```
Current configuration : 1689 bytes
 !
 version 12.2
 service timestamps debug uptime
 service timestamps log uptime
 no service password-encryption
 !
 hostname house
 !
 boot system flash:c3660-jk8o3s-mz.122-7.bin
 !
 ip subnet-zero
 !
 !
 no ip domain-lookup
 !
 ip audit notify log
 ip audit po max-events 100
 ip ssh time-out 120
 ip ssh authentication-retries 3
 !
!--- IPsec ISAKMP policy. crypto isakmp policy 5
  hash md5
  authentication pre-share
!--- ISAKMP key for static LAN-to-LAN tunnel without
xauth authenticaton. crypto isakmp key cisco123 address
10.64.10.44 no-xauth
 !
 !
 crypto ipsec transform-set testset esp-des esp-md5-hmac
 !
!--- Static crypto map for the LAN-to-LAN tunnel. crypto
map test 5 ipsec-isakmp
  set peer 10.64.10.44
  set transform-set testset
!--- Include the private network-to-private network
traffic !--- in the encryption process.  match address
115
 !
 call rsvp-sync
 cns event-service server
 !
 !
 !
 !
 !
 fax interface-type modem
 mta receive maximum-recipients 0
 !
 !
 !
 interface FastEthernet0/0
  ip address 10.64.10.45 255.255.255.224
  ip nat outside
  duplex auto
  speed auto
  crypto map test
 !
 interface FastEthernet0/1
  ip address 192.168.200.1 255.255.255.0
  ip nat inside
  duplex auto
```

```
 speed auto
!
interface BRI2/0
 no ip address
 shutdown
!
interface BRI2/1
 no ip address
 shutdown
!
interface BRI2/2
 no ip address
 shutdown
!
interface BRI2/3
 no ip address
 shutdown
!
interface FastEthernet4/0
 no ip address
 shutdown
 duplex auto
 speed auto
!
 !--- Exclude the private network traffic !--- from the
dynamic (dynamic association to a pool) NAT process. ip
nat inside source route-map nonat interface
FastEthernet0/0 overload
ip classless
ip route 0.0.0.0 0.0.0.0 10.64.10.33
no ip http server
ip pim bidir-enable
!
 !--- Exclude the private network traffic from the NAT
process. access-list 110 deny   ip 192.168.200.0
0.0.0.255 192.168.100.0 0.0.0.255
 access-list 110 permit ip 192.168.200.0 0.0.0.255 any
!--- Include the private network-to-private network
traffic !--- in the encryption process. access-list 115
permit ip 192.168.200.0 0.0.0.255 192.168.100.0
0.0.0.255
 !--- Exclude the private network traffic from the NAT
process. route-map nonat permit 10
  match ip address 110
!
!
!
dial-peer cor custom
!
!
!
!
!
line con 0
line aux 0
line vty 0 4
 login
!
end
```

VPN 客户端配置

Network Security policy:

```
      1- TOLIGHT
      My Identity
      Connection security: Secure
      Remote Party Identity and addressing
      ID Type: IP subnet
      192.168.100.0
      255.255.255.0
      Port all Protocol all

Connect using secure tunnel
       ID Type: IP address
       10.64.10.44


Pre-shared Key=123cisco


Authentication (Phase 1)
       Proposal 1
       Authentication method: pre-shared key
       Encryp Alg: DES
       Hash Alg: MD5
       SA life: Unspecified
       Key Group: DH 1


Key exchange (Phase 2)
       Proposal 1
       Encapsulation ESP
       Encrypt Alg: DES
       Hash Alg: MD5
       Encap: tunnel
       SA life: Unspecified
       no AH


2- Other Connections
       Connection security: Non-secure
       Local Network Interface
       Name: Any
       IP Addr: Any
       Port: All
```

验证

使用本部分可确认配置能否正常运行。

命令输出解释程序（仅限注册用户）(OIT) 支持某些 show 命令。使用 OIT 可查看对 show 命令输出的分析。

- **show crypto ipsec sa** — 显示第2阶段安全关联(SA)。
- **show crypto isakmp sa - 显示第 1 阶段 SA。**

故障排除

使用本部分可排除配置故障。

故障排除命令

命令输出解释程序（仅限注册用户）(OIT) 支持某些 show 命令。使用 OIT 可查看对 show 命令输出的分析。

注意：在使用debug命令之前，请参阅有关Debug命**令的**重要信息。

- **debug crypto ipsec - 显示第 2 阶段的 IPsec 协商。**
- **debug crypto isakmp - 显示第 1 阶段的 ISAKMP 协商。**
- **debug crypto engine - 显示已加密的数据流。**
- **clear crypto isakmp - 清除与第 1 阶段相关的 SA。**
- **clear crypto sa - 清除与第 2 阶段相关的 SA。**

相关信息

- **配置 IPSec 网络安全**
- **配置 Internet 密钥交换安全协议**
- **IPsec 协商/IKE 协议支持页**
- **思科安全VPN客户端支持页**
- **技术支持 - Cisco Systems**