Configurazione di più client VPN per un concentratore Cisco VPN 3000 con NAT-Traversal

Sommario

Introduzione

Questo documento mostra come configurare un NAT (Network Address Translation) Traversal (NAT-T) tra i client VPN Cisco posizionati dietro un dispositivo PAT (Port Address Translation)/NAT e un concentratore VPN Cisco remoto. NAT-T può essere utilizzato tra client VPN e un concentratore VPN o tra concentratori dietro un dispositivo NAT/PAT. NAT-T può essere utilizzato anche per la connessione a un router Cisco con software Cisco IOS® e PIX Firewall; tuttavia, queste configurazioni non vengono discusse in questo documento.

Prerequisiti

Requisiti

Nessun requisito specifico previsto per questo documento.

Componenti usati

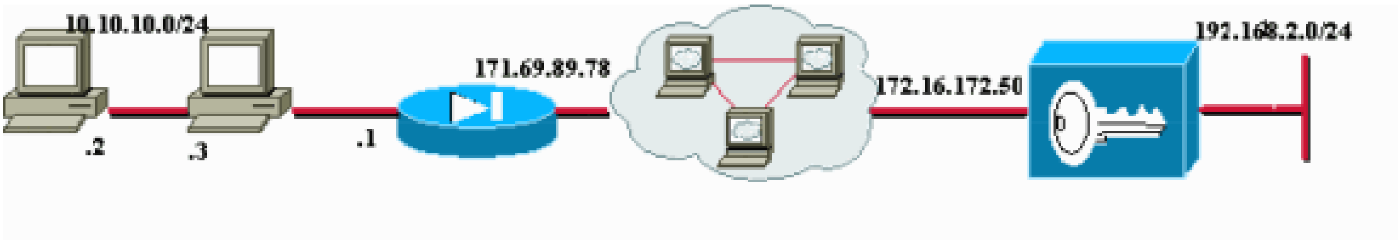
Le informazioni fornite in questo documento si basano sulle seguenti versioni software e hardware:

- Cisco VPN 3000 Concentrator 4.0(1)B
- Client VPN Cisco: 3.6.1 e 4.0(3) Rel
- Cisco PIX Firewall (dispositivo PAT) versione 6.3(3)

Le informazioni discusse in questo documento fanno riferimento a dispositivi usati in uno specifico ambiente di emulazione. Su tutti i dispositivi menzionati nel documento la configurazione è stata ripristinata ai valori predefiniti. Se la rete è operativa, valutare attentamente eventuali conseguenze derivanti dall'uso dei comandi.

Esempio di rete

Nel documento viene usata questa impostazione di rete:



I due PC (10.10.10.2 e 10.10.10.3) sono dotati di client VPN dietro il firewall PIX. In questo scenario, il PIX viene semplicemente utilizzato come dispositivo PAT e instrada il PAT su questi indirizzi a 171.69.89.78. È possibile utilizzare qualsiasi dispositivo in grado di instradare più connessioni interne. L'indirizzo pubblico del concentratore VPN 3000 è 172.16.172.50. L'esempio che segue mostra come configurare i client e il concentratore in modo che NAT-T venga utilizzato durante la negoziazione IKE.

Convenzioni

Per ulteriori informazioni sulle convenzioni usate, consultare il documento Cisco sulle convenzioni nei suggerimenti tecnici.

Premesse

Al termine della negoziazione NAT-T, l'iniziatore può utilizzare qualsiasi porta UDP (User Datagram Protocol) casuale. La porta di destinazione deve essere UDP 4500, come in UDP (Y, 4500), e il risponditore utilizza UDP (4500, Y). Tutte le successive negoziazioni IKE (Internet Key Exchange) e la rigenerazione delle chiavi vengono eseguite su queste porte. Durante le negoziazioni NAT-T, entrambi i peer IPSec negoziano le porte UDP e determinano anche se sono dietro a un dispositivo NAT/PAT. Il peer IPSec dietro il dispositivo NAT/PAT invia il pacchetto keepalive NAT IPSec-over-UDP al peer IPSec che non è dietro un dispositivo NAT/PAT. NAT-T incapsula il traffico IPSec nei datagrammi UDP, utilizzando la porta 4500, fornendo così ai dispositivi NAT le informazioni sulle porte. NAT-T rileva automaticamente tutti i dispositivi NAT e incapsula il traffico IPSec solo quando necessario.

Quando si implementa la conversione IPSec su NAT sul concentratore VPN 3000, IPSec su TCP ha la precedenza, quindi NAT-T e infine IPSec su UDP. Per impostazione predefinita, NAT-T è disattivato. È necessario abilitare NAT-T utilizzando una casella di controllo in Trasparenza NAT nella configurazione IPSec in Protocolli di tunneling. Inoltre, per un tunnel LAN-LAN, è necessario attivare NAT-T nel campo IPSec NAT-T delle configurazioni LAN-LAN.

Per utilizzare NAT-T, è necessario completare i seguenti passaggi:

1. Aprire la porta 4500 su qualsiasi firewall configurato davanti a un concentratore VPN.
2. Riconfigurare le configurazioni IPSec/UDP precedenti utilizzando la porta 4500 su una porta diversa.
3. Scegliere **Configurazione > Interfacce > Ethernet** e selezionare la seconda o la terza opzione per il parametro Criteri di frammentazione.Queste opzioni permettono al traffico di attraversare i dispositivi NAT che non supportano la frammentazione IP; non ostacolano il funzionamento dei dispositivi NAT che supportano la frammentazione IP.

Configurazione del PIX

Di seguito è riportato l'output di configurazione relativo al PIX:

PIX Firewall

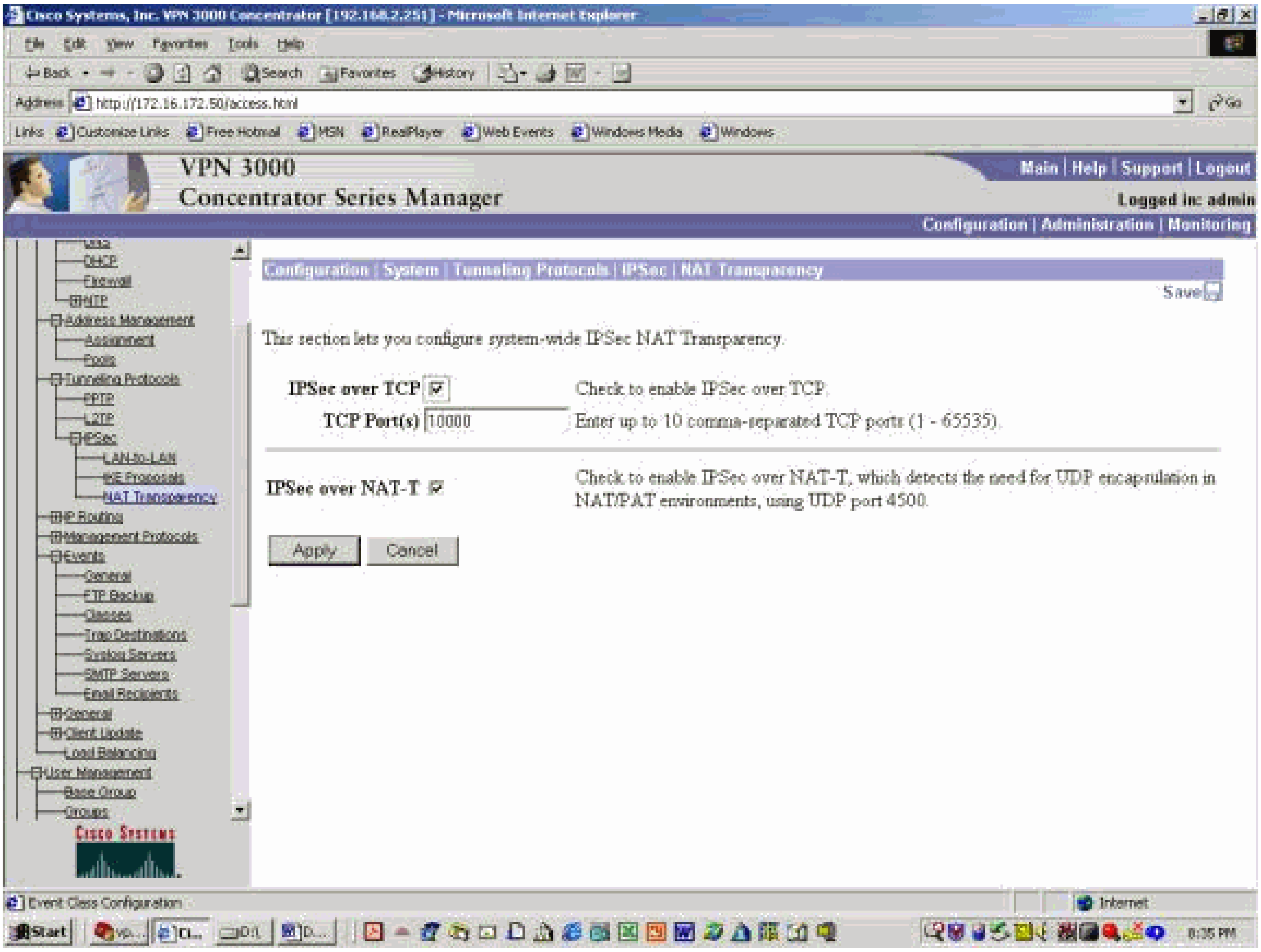
```
pix501(config)#
: Saved
:
PIX Version 6.3(3)
nameif ethernet0 outside security0
nameif ethernet1 inside security100
ip address outside 171.69.89.78 255.255.254.0
ip address inside 10.10.10.1 255.255.255.0
...
global (outside) 1 interface
nat (inside) 1 0.0.0.0 0.0.0.0 0 0
...
route outside 0.0.0.0 0.0.0.0 171.69.88.1 1
http server enable
http 10.10.10.2 255.255.255.255 inside
...
Cryptochecksum:6990adf6e0e2800ed409ae7364eecc9d
: end

[OK]
```

Configurazione di VPN 3000 Concentrator

In questa configurazione di esempio si presume che il concentratore VPN 3000 sia già stato configurato per la connettività IP e che siano già state stabilite connessioni VPN standard (non NAT-T).

Per abilitare NAT-T su un concentratore VPN 3000 versione precedente alla 4.1, scegliere **Configurazioni > Sistema > Protocolli di tunneling > IPSec > Trasparenza NAT**, quindi selezionare l'opzione **IPSec over NAT-T** sul concentratore, come mostrato nell'esempio seguente. L'opzione NAT-T è disattivata per impostazione predefinita.

Per abilitare NAT-T su un concentratore VPN versione 4.1 e successive, passare alla stessa finestra di trasparenza NAT scegliendo **Configurazione > Tunneling e sicurezza > IPSec > Trasparenza NAT**.


Cisco Systems, Inc. VPN 3000 Concentrator [192.168.2.251] - Microsoft Internet Explorer
File Edit View Favorites Tools Help
Back Search Favorites History
Address http://172.16.172.50/access.html
Go
Links Customize Links Free Hotmail MSN RealPlayer Web Events Windows Media Windows
VPN 3000
Concentrator Series Manager
Main | Help | Support | Logout
Logged in: admin
Configuration | Administration | Monitoring
DHCP
Firewall
NTP
Address Management
Assignment
Pools
Tunneling Protocols
PPTP
L2TP
IPSec
LAN-to-LAN
IKE Proposals
NAT Transparency
IP Routing
Management Protocols
Events
General
FTP Backup
Classes
Trap Destinations
Syslog Servers
SMTP Servers
Email Recipients
General
Client Update
Load Balancing
User Management
Base Group
Groups
Cisco Systems
Configuration | System | Tunneling Protocols | IPSec | NAT Transparency
Save
Apply
Cancel
Event Class Configuration
Internet
Start
8:35 PM

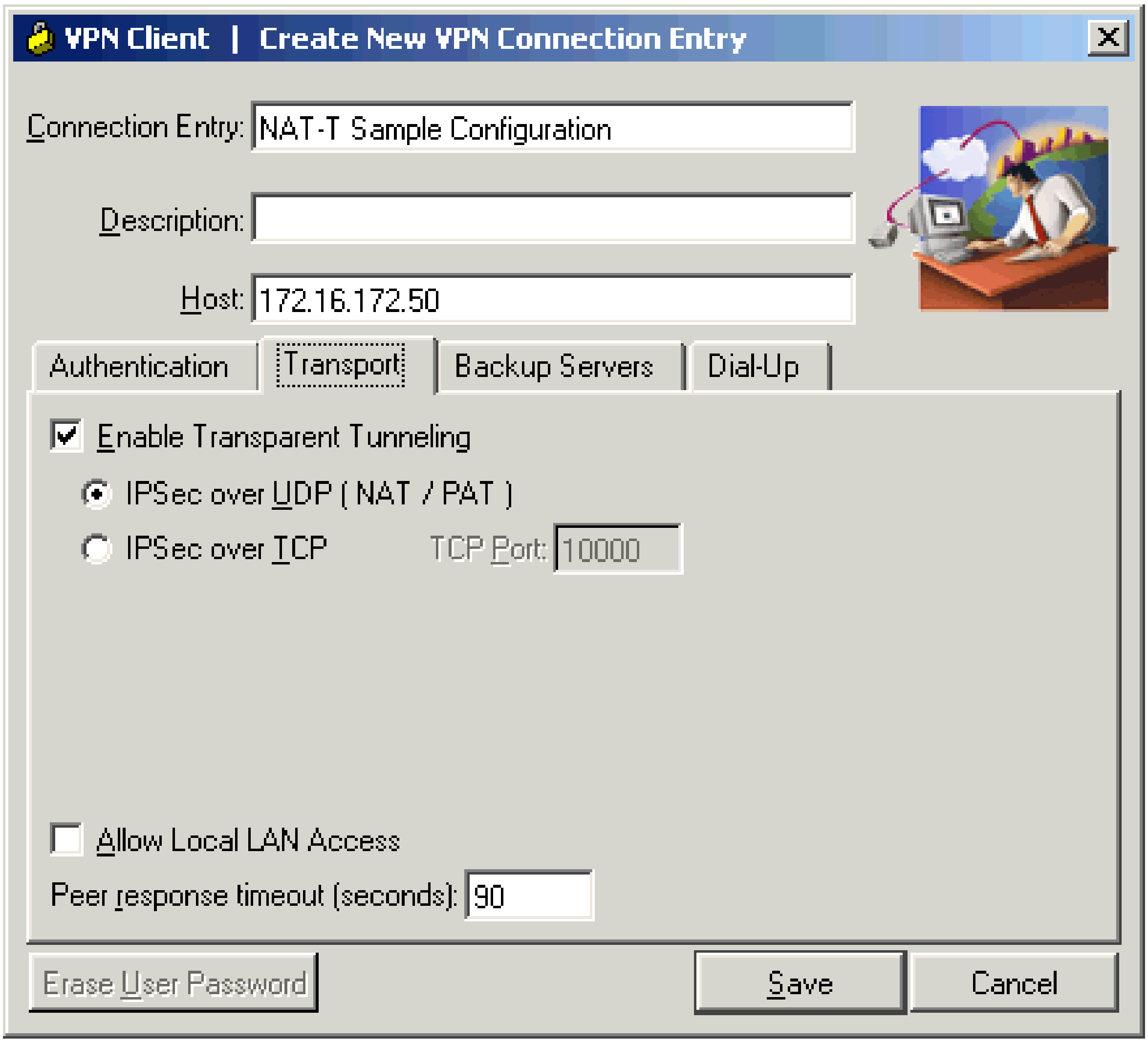
This section lets you configure system-wide IPSec NAT Transparency.

IPSec over TCP ☑	Check to enable IPSec over TCP.
TCP Port(s) 10000	Enter up to 10 comma-separated TCP ports (1 - 65535).
IPSec over NAT-T ☑	Check to enable IPSec over NAT-T, which detects the need for UDP encapsulation in NAT/PAT environments, using UDP port 4500.

Configurare il client VPN

Per utilizzare NAT-T, selezionare **Abilita tunneling trasparente**. Nell'esempio seguente viene illustrato ciò su un client VPN versione successiva alla 4.0.

Nota: la stessa opzione di configurazione è disponibile su VPN Client versione 3.x.



VPN Client | Create New VPN Connection Entry

Connection Entry: NAT-T Sample Configuration

Description:

Host: 172.16.172.50

☑ Enable Transparent Tunneling

● IPSec over UDP (NAT / PAT)

○ IPSec over TCP TCP Port: 10000

□ Allow Local LAN Access

Peer response timeout (seconds): 90

Verifica

Le informazioni contenute in questa sezione permettono di verificare che la configurazione funzioni correttamente.

Alcuni comandi **show sono supportati dallo** strumento Output Interpreter (solo utenti registrati); lo strumento permette di visualizzare un'analisi dell'output del comando **show.**

Per ulteriori informazioni sulla risoluzione dei problemi, consultare il documento sulla risoluzione dei problemi di sicurezza IP - descrizione e uso dei comandi di debug.

Verifica della configurazione PIX

Questi comandi vengono utilizzati per verificare la configurazione PIX:

- **show xlate**: come mostrato nell'output seguente, il PIX sta utilizzando porte di origine diverse per i due client VPN, ma le porte di destinazione sono le stesse. Tutti i pacchetti dati IPSec vengono raccolti sulla porta UDP 4500. Anche le successive negoziazioni di rigenerazione delle chiavi utilizzano le stesse porte di origine e di destinazione.

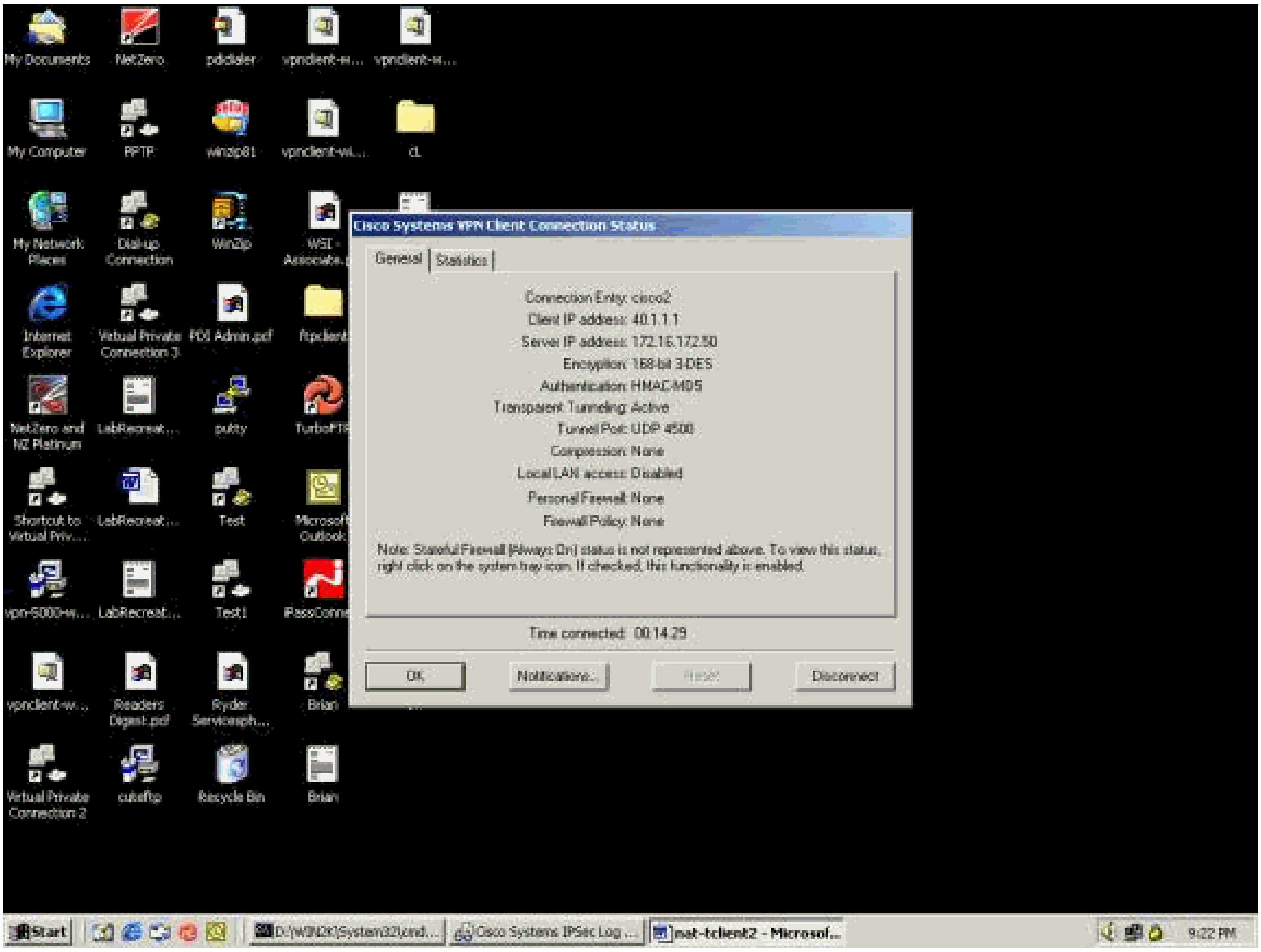
```
pix501(config)# show xlate
3 in use, 4 most used
PAT Global 171.69.89.78(1025) Local 10.10.10.3(4500)
PAT Global 171.69.89.78(1026) Local 10.10.10.2(4500)
PAT Global 171.69.89.78(4) Local 10.10.10.2(500)
```

- **show arp**: utilizzare questo comando per visualizzare la tabella ARP (Address Resolution Protocol) e determinare se le richieste ARP vengono elaborate.

```
pix501(config)# show arp
        outside 171.69.88.3 00d0.0132.e40a
        outside 171.69.88.2 00d0.0133.3c0a
        outside 171.69.88.1 0000.0c07.ac7b
        inside 10.10.10.3 0050.dabb.f093
        inside 10.10.10.2 0001.0267.55cc
pix501(config)#
```

Statistiche client VPN

Una volta stabilito il tunnel VPN, fare clic con il pulsante destro del mouse sul blocco giallo e scegliere **Status** (Stato). Di seguito è riportata una finestra simile. Notare che la porta del tunnel è UDP 4500, il che dimostra che si sta utilizzando NAT-T.



Connection Entry: cisco2
Client IP address: 40.1.1.1
Server IP address: 172.16.172.50
Encryption: 168-bit 3-DES
Authentication: HMAC-MD5
Transparent Tunneling: Active
Tunnel Port: UDP 4500
Compression: None
Local LAN access: Disabled
Personal Firewall: None
Firewall Policy: None

Note: Stateful Firewall (Always On) status is not represented above. To view this status, right click on the system tray icon. If checked, this functionality is enabled.

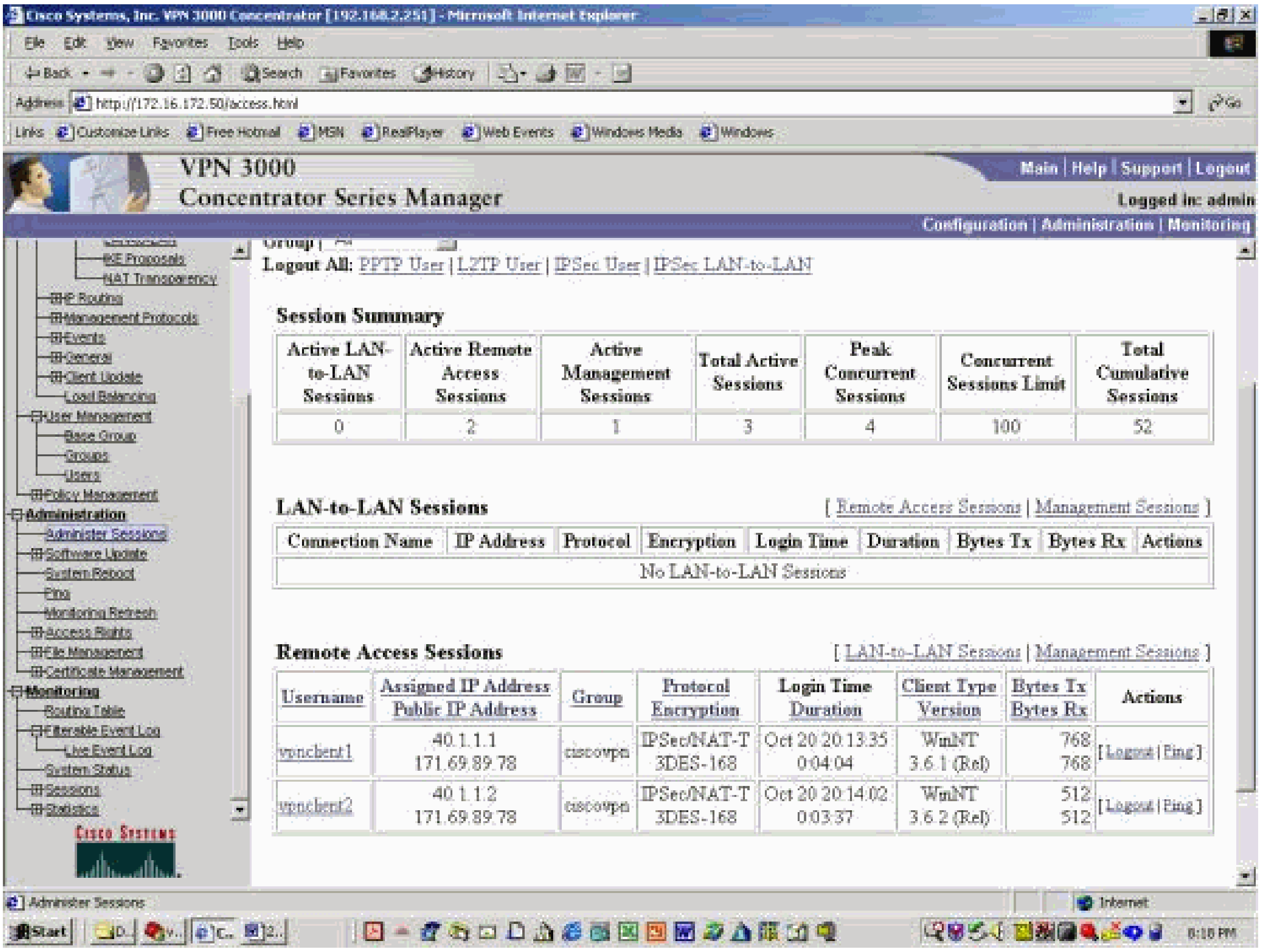
Time connected: 00:14:29

Statistiche di VPN Concentrator

Attenersi alla seguente procedura:

1. Sul concentratore VPN, scegliere **Amministrazione > Sessione amministratore**.La sessione client VPN può essere visualizzata in Sessioni di accesso remoto. Nell'esempio seguente vengono mostrate le sessioni dei due client dopo aver stabilito un tunnel IPSec per VPN Concentrator. Entrambi usano l'indirizzo IP pubblico 171.69.89.78 e sono stati assegnati,

rispettivamente, 40.1.1.1 e
40.1.1.2.



Logout All: PPTP User | L2TP User | IPSec User | IPSec LAN-to-LAN

Session Summary

Active LAN-to-LAN Sessions	Active Remote Access Sessions	Active Management Sessions	Total Active Sessions	Peak Concurrent Sessions	Concurrent Sessions Limit	Total Cumulative Sessions
0	2	1	3	4	100	52

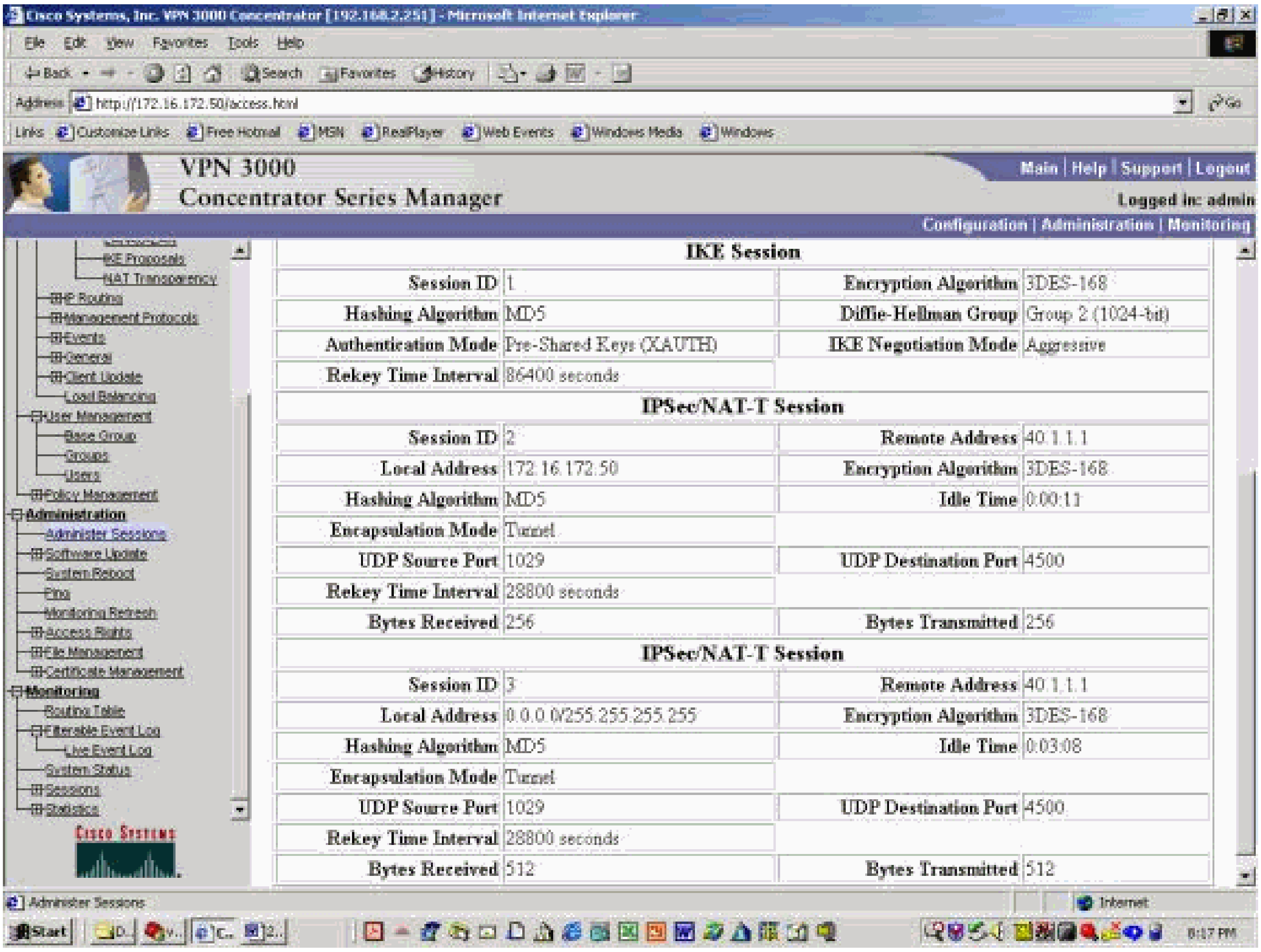
LAN-to-LAN Sessions [Remote Access Sessions | Management Sessions]

Connection Name	IP Address	Protocol	Encryption	Login Time	Duration	Bytes Tx	Bytes Rx	Actions
No LAN-to-LAN Sessions								

Remote Access Sessions [LAN-to-LAN Sessions | Management Sessions]

Username	Assigned IP Address Public IP Address	Group	Protocol Encryption	Login Time Duration	Client Type Version	Bytes Tx Bytes Rx	Actions
vpnclient1	40.1.1.1 171.69.89.78	ciscovpn	IPSec/NAT-T 3DES-168	Oct 20 20:13:35 0:04:04	WinNT 3.6.1 (Rel)	768 768	[Logout | Ping]
vpnclient2	40.1.1.2 171.69.89.78	ciscovpn	IPSec/NAT-T 3DES-168	Oct 20 20:14:02 0:03:37	WinNT 3.6.2 (Rel)	512 512	[Logout | Ping]

2. Fare doppio clic sul nome utente di un client.Vengono visualizzate le statistiche IPSec/IKE, come illustrato nell'esempio seguente. La porta di origine UDP utilizzata dal client è 1029, la porta di destinazione utilizzata è
4500.



IKE Session			
Session ID	1	Encryption Algorithm	3DES-168
Hashing Algorithm	MD5	Diffie-Hellman Group	Group 2 (1024-bit)
Authentication Mode	Pre-Shared Keys (XAUTH)	IKE Negotiation Mode	Aggressive
Rekey Time Interval	86400 seconds		
IPSec/NAT-T Session			
Session ID	2	Remote Address	40.1.1.1
Local Address	172.16.172.50	Encryption Algorithm	3DES-168
Hashing Algorithm	MD5	Idle Time	0:00:11
Encapsulation Mode	Tunnel		
UDP Source Port	1029	UDP Destination Port	4500
Rekey Time Interval	28800 seconds		
Bytes Received	256	Bytes Transmitted	256
IPSec/NAT-T Session			
Session ID	3	Remote Address	40.1.1.1
Local Address	0.0.0.0/255.255.255.255	Encryption Algorithm	3DES-168
Hashing Algorithm	MD5	Idle Time	0:03:08
Encapsulation Mode	Tunnel		
UDP Source Port	1029	UDP Destination Port	4500
Rekey Time Interval	28800 seconds		
Bytes Received	512	Bytes Transmitted	512

Risoluzione dei problemi

Le informazioni contenute in questa sezione permettono di risolvere i problemi relativi alla configurazione.

Nota: prima di usare i comandi di **debug**, consultare le informazioni importanti sui comandi di debug.

Nota: per ulteriori informazioni sulla risoluzione dei problemi relativi ai PIX, consultare il documento sulla risoluzione dei problemi di sicurezza IP - descrizione e uso dei comandi di debug.

Registri client VPN

Sul PC in cui è installato il client VPN, aprire il Visualizzatore log prima di stabilire una connessione al concentratore VPN. Questo output di log evidenzia i messaggi specifici di NAT-T:

```
1      21:06:48.208  10/18/02  Sev=Info/6   DIALER/0x63300002
Initiating connection.
2      21:06:48.218  10/18/02  Sev=Info/4   CM/0x63100002
Begin connection process
3      21:06:48.218  10/18/02  Sev=Info/4   CM/0x63100004
Establish secure connection using Ethernet
4      21:06:48.218  10/18/02  Sev=Info/4   CM/0x63100026
Attempt connection with server "172.16.172.50"
42     21:07:42.326  10/18/02  Sev=Info/6  IKE/0x6300003B
```

```
Attempting to establish a connection with 172.16.172.50.
43      21:07:42.366  10/18/02  Sev=Info/4  IKE/0x63000013
SENDING >>> ISAKMP OAK AG (SA, KE, NON, ID, VID, VID, VID, VID, VID)
 to 172.16.172.50
44      21:07:42.716  10/18/02  Sev=Info/5  IKE/0x6300002F
Received ISAKMP packet: peer = 172.16.172.50
45      21:07:42.716  10/18/02  Sev=Info/4  IKE/0x63000014
RECEIVING <<< ISAKMP OAK AG (SA, KE, NON, ID, HASH, VID, VID, VID,
 VID, NAT-D, NAT-D, VID, VID) from 172.16.172.50
46      21:07:42.716  10/18/02  Sev=Info/5  IKE/0x63000059
Vendor ID payload = 12F5F28C457168A9702D9FE274CC0100
47      21:07:42.716  10/18/02  Sev=Info/5  IKE/0x63000001
Peer is a Cisco-Unity compliant peer
48      21:07:42.716  10/18/02  Sev=Info/5  IKE/0x63000059
Vendor ID payload = 09002689DFD6B712
49      21:07:42.716  10/18/02  Sev=Info/5  IKE/0x63000001
Peer supports XAUTH
50      21:07:42.716  10/18/02  Sev=Info/5  IKE/0x63000059
Vendor ID payload = AFCAD71368A1F1C96B8696FC77570100
51      21:07:42.716  10/18/02  Sev=Info/5  IKE/0x63000001
Peer supports DPD
52      21:07:42.716  10/18/02  Sev=Info/5  IKE/0x63000059
Vendor ID payload = 90CB80913EBB696E086381B5EC427B1F
53      21:07:42.716  10/18/02  Sev=Info/5  IKE/0x63000001
Peer supports NAT-T
54      21:07:42.716  10/18/02  Sev=Info/5  IKE/0x63000059
Vendor ID payload = 4048B7D56EBCE88525E7DE7F00D6C2D3C0000000
55      21:07:42.716  10/18/02  Sev=Info/5  IKE/0x63000001
Peer supports IKE fragmentation payloads
56      21:07:42.716  10/18/02  Sev=Info/5  IKE/0x63000059
Vendor ID payload = 1F07F70EAA6514D3B0FA96542A500306
57      21:07:42.757  10/18/02  Sev=Info/4  IKE/0x63000013
SENDING >>> ISAKMP OAK AG *(HASH, NOTIFY:STATUS_INITIAL_CONTACT, NAT-D,
 NAT-D) to 172.16.172.50
58      21:07:42.767  10/18/02  Sev=Info/5  IKE/0x6300002F
Received ISAKMP packet: peer = 172.16.172.50
59      21:07:42.767  10/18/02  Sev=Info/4  IKE/0x63000014
RECEIVING <<< ISAKMP OAK TRANS *(HASH, ATTR) from 172.16.172.50
60      21:07:42.767  10/18/02  Sev=Info/4  CM/0x63100015
Launch xAuth application
61      21:07:42.967  10/18/02  Sev=Info/4  IPSEC/0x63700014
Deleted all keys
62      21:07:59.801  10/18/02  Sev=Info/4  CM/0x63100017
xAuth application returned
63      21:07:59.801  10/18/02  Sev=Info/4  IKE/0x63000013
SENDING >>> ISAKMP OAK TRANS *(HASH, ATTR) to 172.16.172.50
64      21:08:00.101  10/18/02  Sev=Info/5  IKE/0x6300002F
Received ISAKMP packet: peer = 172.16.172.50
65      21:08:00.101  10/18/02  Sev=Info/4  IKE/0x63000014
RECEIVING <<< ISAKMP OAK TRANS *(HASH, ATTR) from 172.16.172.50
66      21:08:00.101  10/18/02  Sev=Info/5  IKE/0x63000071
Automatic NAT Detection Status:
   Remote end is NOT behind a NAT device
   This end IS behind a NAT device
67      21:08:00.101  10/18/02  Sev=Info/4  CM/0x6310000E
Established Phase 1 SA.  1 Phase 1 SA in the system
68      21:08:00.111  10/18/02  Sev=Info/4  IKE/0x63000013
SENDING >>> ISAKMP OAK TRANS *(HASH, ATTR) to 172.16.172.50
69      21:08:00.111  10/18/02  Sev=Info/5  IKE/0x6300005D
Client sending a firewall request to concentrator
70      21:08:00.111  10/18/02  Sev=Info/5  IKE/0x6300005C
Firewall Policy: Product=Cisco Integrated Client, Capability=
(Centralized Protection Policy).
71      21:08:00.111  10/18/02  Sev=Info/4  IKE/0x63000013
```

```
SENDING >>> ISAKMP OAK TRANS *(HASH, ATTR) to 172.16.172.50
72     21:08:00.122  10/18/02  Sev=Info/5  IKE/0x6300002F
Received ISAKMP packet: peer = 172.16.172.50
73     21:08:00.122  10/18/02  Sev=Info/4  IKE/0x63000014
RECEIVING <<< ISAKMP OAK TRANS *(HASH, ATTR) from 172.16.172.50
74     21:08:00.122  10/18/02  Sev=Info/5  IKE/0x63000010
MODE_CFG_REPLY: Attribute = INTERNAL_IPV4_ADDRESS: , value = 40.1.1.1
75     21:08:00.122  10/18/02  Sev=Info/5  IKE/0x6300000D
MODE_CFG_REPLY: Attribute = MODECFG_UNITY_SAVEPWD: , value = 0x00000000
76     21:08:00.122  10/18/02  Sev=Info/5  IKE/0x6300000D
MODE_CFG_REPLY: Attribute = MODECFG_UNITY_PFS: , value = 0x00000000
77     21:08:00.122  10/18/02  Sev=Info/5  IKE/0x6300000E
MODE_CFG_REPLY: Attribute = APPLICATION_VERSION, value = Cisco Systems, Inc.
/VPN 3000 Concentrator Version 3.6.1.Rel built by vmurphy on Aug 29 2002
 18:34:44
78     21:08:00.122  10/18/02  Sev=Info/5  IKE/0x6300000D
MODE_CFG_REPLY: Attribute = Recieved and using NAT-T port number , value =
0x00001194
79     21:08:00.132  10/18/02  Sev=Info/4  CM/0x63100019
Mode Config data received
80     21:08:00.142  10/18/02  Sev=Info/5  IKE/0x63000055
Received a key request from Driver for IP address 172.16.172.50, GW IP =
172.16.172.50
81     21:08:00.142  10/18/02  Sev=Info/4  IKE/0x63000013
SENDING >>> ISAKMP OAK QM *(HASH, SA, NON, ID, ID) to 172.16.172.50
82     21:08:00.142  10/18/02  Sev=Info/5  IKE/0x63000055
Received a key request from Driver for IP address 10.10.10.255, GW IP =
172.16.172.50
83     21:08:00.142  10/18/02  Sev=Info/4  IKE/0x63000013
SENDING >>> ISAKMP OAK QM *(HASH, SA, NON, ID, ID) to 172.16.172.50
84     21:08:00.172  10/18/02  Sev=Info/5  IKE/0x6300002F
Received ISAKMP packet: peer = 172.16.172.50
85     21:08:00.172  10/18/02  Sev=Info/4  IKE/0x63000014
RECEIVING <<< ISAKMP OAK INFO *(HASH, NOTIFY:STATUS_RESP_LIFETIME) from
172.16.172.50
86     21:08:00.172  10/18/02  Sev=Info/5  IKE/0x63000044
RESPONDER-LIFETIME notify has value of 86400 seconds
87     21:08:00.172  10/18/02  Sev=Info/5  IKE/0x63000046
This SA has already been alive for 18 seconds, setting expiry to 86382
seconds from now
88     21:08:00.182  10/18/02  Sev=Info/5  IKE/0x6300002F
Received ISAKMP packet: peer = 172.16.172.50
89     21:08:00.182  10/18/02  Sev=Info/4  IKE/0x63000014
RECEIVING <<< ISAKMP OAK QM *(HASH, SA, NON, ID, ID, NOTIFY:STATUS_RESP_LIFETIME)
 from 172.16.172.50
90     21:08:00.182  10/18/02  Sev=Info/5  IKE/0x63000044
RESPONDER-LIFETIME notify has value of 28800 seconds
91     21:08:00.182  10/18/02  Sev=Info/4  IKE/0x63000013
SENDING >>> ISAKMP OAK QM *(HASH) to 172.16.172.50
92     21:08:00.182  10/18/02  Sev=Info/5  IKE/0x63000058
Loading IPsec SA (Message ID = 0x347A7363 OUTBOUND SPI = 0x02CC3526 INBOUND
 SPI = 0x5BEEBB4C)
93     21:08:00.182  10/18/02  Sev=Info/5  IKE/0x63000025
Loaded OUTBOUND ESP SPI: 0x02CC3526
94     21:08:00.182  10/18/02  Sev=Info/5  IKE/0x63000026
Loaded INBOUND ESP SPI: 0x5BEEBB4C
95     21:08:00.182  10/18/02  Sev=Info/4  CM/0x6310001A
One secure connection established
96     21:08:00.192  10/18/02  Sev=Info/6  DIALER/0x63300003
Connection established.
97     21:08:00.332  10/18/02  Sev=Info/5  IKE/0x6300002F
Received ISAKMP packet: peer = 172.16.172.50
98     21:08:00.332  10/18/02  Sev=Info/4  IKE/0x63000014
RECEIVING <<< ISAKMP OAK QM *(HASH, SA, NON, ID, ID, NOTIFY:STATUS_RESP_LIFETIME)
```

```
 from 172.16.172.50
99     21:08:00.332  10/18/02  Sev=Info/5  IKE/0x63000044
RESPONDER-LIFETIME notify has value of 28800 seconds
100    21:08:00.332  10/18/02  Sev=Info/4            IKE/0x63000013
SENDING >>> ISAKMP OAK QM *(HASH) to 172.16.172.50
101    21:08:00.342  10/18/02  Sev=Info/5            IKE/0x63000058
Loading IPsec SA (Message ID = 0x2F81FB2D OUTBOUND SPI = 0x3316C6C9 INBOUND
SPI = 0x6B96ED76)
102    21:08:00.342  10/18/02  Sev=Info/5            IKE/0x63000025
Loaded OUTBOUND ESP SPI: 0x3316C6C9
103    21:08:00.342  10/18/02  Sev=Info/5            IKE/0x63000026
Loaded INBOUND ESP SPI: 0x6B96ED76
104    21:08:00.342  10/18/02  Sev=Info/4            CM/0x63100022
Additional Phase 2 SA established.
105    21:08:01.203  10/18/02  Sev=Info/4            IPSEC/0x63700014
Deleted all keys
106    21:08:01.203  10/18/02  Sev=Info/4            IPSEC/0x63700010
Created a new key structure
107    21:08:01.203  10/18/02  Sev=Info/4            IPSEC/0x6370000F
Added key with SPI=0x2635cc02 into key list
108    21:08:01.203  10/18/02  Sev=Info/4            IPSEC/0x63700010
Created a new key structure
109    21:08:01.203  10/18/02  Sev=Info/4            IPSEC/0x6370000F
Added key with SPI=0x4cbbee5b into key list
110    21:08:01.203  10/18/02  Sev=Info/4            IPSEC/0x63700010
Created a new key structure
111    21:08:01.203  10/18/02  Sev=Info/4            IPSEC/0x6370000F
Added key with SPI=0xc9c61633 into key list
112    21:08:01.203  10/18/02  Sev=Info/4            IPSEC/0x63700010
Created a new key structure
113    21:08:01.203  10/18/02  Sev=Info/4            IPSEC/0x6370000F
Added key with SPI=0x76ed966b into key list
114    21:08:10.216  10/18/02  Sev=Info/6            IKE/0x63000054
Sent a ping on the Public IPSec SA
115    21:08:20.381  10/18/02  Sev=Info/4            IKE/0x63000013
SENDING >>> ISAKMP OAK INFO *(HASH, NOTIFY:HEARTBEAT) to 172.16.172.50
116    21:08:20.381  10/18/02  Sev=Info/6            IKE/0x63000052
Sent a ping on the IKE SA
```

Registri VPN Concentrator

Per visualizzare i log su VPN Concentrator, scegliere **Monitoraggio > Registro eventi filtrabili**, quindi selezionare **Classi di eventi IKE, IKEDBG, IKEDECODE** e **IPSECDBG** con livelli di gravità da 1 a 13.

```
2835 10/20/2002 20:22:42.390 SEV=8 IKEDECODE/0 RPT=8190 171.69.89.78
  Exchange Type :Oakley Quick Mode
  Flags         :1   (ENCRYPT )
  Message ID    : 1b050792
  Length        : 52
 2838 10/20/2002 20:22:42.390 SEV=8 IKEDBG/0 RPT=9197 171.69.89.78
RECEIVED Message (msgid=1b050792) with payloads :
HDR + HASH (8) + NONE (0)
total length : 48
2840 10/20/2002 20:22:42.390 SEV=9 IKEDBG/0 RPT=9198 171.69.89.78
Group [ciscovpn] User [vpnclient2]
processing hash
2841 10/20/2002 20:22:42.390 SEV=9 IKEDBG/0 RPT=9199 171.69.89.78
Group [ciscovpn] User [vpnclient2]
```

```
loading all IPSEC SAs
 2842 10/20/2002 20:22:42.390 SEV=9 IKEDBG/1 RPT=793 171.69.89.78
Group [ciscovpn] User [vpnclient2]
Generating Quick Mode Key!
2843 10/20/2002 20:22:42.390 SEV=9 IKEDBG/1 RPT=794 171.69.89.78
Group [ciscovpn] User [vpnclient2]
Generating Quick Mode Key!
2844 10/20/2002 20:22:42.400 SEV=4 IKE/173 RPT=41 171.69.89.78
Group [ciscovpn] User [vpnclient2]
NAT-Traversal successfully negotiated!
IPSec traffic will be encapsulated to pass through NAT devices.
2847 10/20/2002 20:22:42.400 SEV=7 IKEDBG/0 RPT=9200 171.69.89.78
Group [ciscovpn] User [vpnclient2]
Loading host:
  Dst: 172.16.172.50
  Src: 40.1.1.2
2849 10/20/2002 20:22:42.400 SEV=4 IKE/49 RPT=63 171.69.89.78
Group [ciscovpn] User [vpnclient2]
Security negotiation complete for User (vpnclient2)
Responder, Inbound SPI = 0x350f3cb1, Outbound SPI = 0xc74e30e5
2852 10/20/2002 20:22:42.400 SEV=9 IPSECDBG/6 RPT=309
IPSEC key message parse - msgtype 1, Len 704, vers 1, pid 00000000, seq 0, err 0
, type 2, mode 1, state 320, label 0, pad 0, spi c74e30e5, encrKeyLen 24, hashKe
yLen 16, ivlen 8, alg 2, hmacAlg 3, lifetype 0, lifetime1 21, lifetime2 0, dsId
0
2856 10/20/2002 20:22:42.400 SEV=9 IPSECDBG/1 RPT=1137
Processing KEY_ADD msg!
2857 10/20/2002 20:22:42.400 SEV=9 IPSECDBG/1 RPT=1138
key_msghdr2secassoc(): Enter
2858 10/20/2002 20:22:42.400 SEV=7 IPSECDBG/1 RPT=1139
No USER filter configured
2859 10/20/2002 20:22:42.400 SEV=9 IPSECDBG/1 RPT=1140
KeyProcessAdd: Enter
2860 10/20/2002 20:22:42.400 SEV=8 IPSECDBG/1 RPT=1141
KeyProcessAdd: Adding outbound SA
2861 10/20/2002 20:22:42.400 SEV=8 IPSECDBG/1 RPT=1142
KeyProcessAdd: src 172.16.172.50 mask 0.0.0.0, DST 40.1.1.2 mask 0.0.0.0
2862 10/20/2002 20:22:42.400 SEV=8 IPSECDBG/1 RPT=1143
KeyProcessAdd: FilterIpsecAddIkeSa success
2863 10/20/2002 20:22:42.400 SEV=9 IPSECDBG/6 RPT=310
IPSEC key message parse - msgtype 3, Len 376, vers 1, pid 00000000, seq 0, err 0
, type 2, mode 1, state 32, label 0, pad 0, spi 350f3cb1, encrKeyLen 24, hashKey
Len 16, ivlen 8, alg 2, hmacAlg 3, lifetype 0, lifetime1 21, lifetime2 0, dsId 0
2866 10/20/2002 20:22:42.400 SEV=9 IPSECDBG/1 RPT=1144
Processing KEY_UPDATE MSG!
2867 10/20/2002 20:22:42.400 SEV=9 IPSECDBG/1 RPT=1145
Update inbound SA addresses
2868 10/20/2002 20:22:42.400 SEV=9 IPSECDBG/1 RPT=1146
key_msghdr2secassoc(): Enter
2869 10/20/2002 20:22:42.400 SEV=7 IPSECDBG/1 RPT=1147
No USER filter configured
2870 10/20/2002 20:22:42.400 SEV=9 IPSECDBG/1 RPT=1148
KeyProcessUpdate: Enter
2871 10/20/2002 20:22:42.400 SEV=8 IPSECDBG/1 RPT=1149
KeyProcessUpdate: success
2872 10/20/2002 20:22:42.400 SEV=8 IKEDBG/7 RPT=63
IKE got a KEY_ADD MSG for SA: SPI = 0xc74e30e5
2873 10/20/2002 20:22:42.400 SEV=8 IKEDBG/0 RPT=9201
pitcher: rcv KEY_UPDATE, spi 0x350f3cb1
2874 10/20/2002 20:22:42.400 SEV=4 IKE/120 RPT=63 171.69.89.78
Group [ciscovpn] User [vpnclient2]
PHASE 2 COMPLETED (msgid=1b050792)
2875 10/20/2002 20:22:42.430 SEV=8 IKEDECODE/0 RPT=8191 171.69.89.78
ISAKMP HEADER : ( Version 1.0 )
```

```
  Initiator Cookie(8): C5 A0 F0 8B 69 60 D7 47
  Responder Cookie(8): 48 65 B1 6F 36 1F 9D 3A
  Next Payload  :HASH (8)
  Exchange Type :Oakley Quick Mode
  Flags         :1   (ENCRYPT )
  Message ID    : cf9d1420
  Length        : 52
2882 10/20/2002 20:22:42.430 SEV=8 IKEDBG/0 RPT=9202 171.69.89.78
RECEIVED Message (msgid=cf9d1420) with payloads :
HDR + HASH (8) + NONE (0)
total length : 48
2884 10/20/2002 20:22:42.430 SEV=9 IKEDBG/0 RPT=9203 171.69.89.78
Group [ciscovpn] User [vpnclient2]
processing hash

2885 10/20/2002 20:22:42.430 SEV=9 IKEDBG/0 RPT=9204 171.69.89.78
Group [ciscovpn] User [vpnclient2]
loading all IPSEC SAs
2886 10/20/2002 20:22:42.430 SEV=9 IKEDBG/1 RPT=795 171.69.89.78
Group [ciscovpn] User [vpnclient2]
Generating Quick Mode Key!
2887 10/20/2002 20:22:42.440 SEV=9 IKEDBG/1 RPT=796 171.69.89.78
Group [ciscovpn] User [vpnclient2]
Generating Quick Mode Key!
2888 10/20/2002 20:22:42.440 SEV=4 IKE/173 RPT=42 171.69.89.78
Group [ciscovpn] User [vpnclient2]
NAT-Traversal successfully negotiated!
IPSec traffic will be encapsulated to pass through NAT devices.
2891 10/20/2002 20:22:42.440 SEV=7 IKEDBG/0 RPT=9205 171.69.89.78
Group [ciscovpn] User [vpnclient2]
Loading subnet:
  DST: 0.0.0.0  mask: 0.0.0.0
  Src: 40.1.1.2
2893 10/20/2002 20:22:42.440 SEV=4 IKE/49 RPT=64 171.69.89.78
Group [ciscovpn] User [vpnclient2]
Security negotiation complete for User (vpnclient2)
Responder, Inbound SPI = 0x2a2e2dcd, Outbound SPI = 0xf1f4d328
2896 10/20/2002 20:22:42.440 SEV=9 IPSECDBG/6 RPT=311
IPSEC key message parse - msgtype 1, Len 704, vers 1, pid 00000000, seq 0, err 0
, type 2, mode 1, state 320, label 0, pad 0, spi f1f4d328, encrKeyLen 24, hashKe
yLen 16, ivlen 8, alg 2, hmacAlg 3, lifetype 0, lifetime1 21, lifetime2 0, dsId
0
2900 10/20/2002 20:22:42.440 SEV=9 IPSECDBG/1 RPT=1150
Processing KEY_ADD MSG!
2901 10/20/2002 20:22:42.440 SEV=9 IPSECDBG/1 RPT=1151
key_msghdr2secassoc(): Enter
2902 10/20/2002 20:22:42.440 SEV=7 IPSECDBG/1 RPT=1152
No USER filter configured
2903 10/20/2002 20:22:42.440 SEV=9 IPSECDBG/1 RPT=1153
KeyProcessAdd: Enter
2904 10/20/2002 20:22:42.440 SEV=8 IPSECDBG/1 RPT=1154
KeyProcessAdd: Adding outbound SA
2905 10/20/2002 20:22:42.440 SEV=8 IPSECDBG/1 RPT=1155
KeyProcessAdd: src 0.0.0.0 mask 255.255.255.255, DST 40.1.1.2 mask 0.0.0.0
2906 10/20/2002 20:22:42.440 SEV=8 IPSECDBG/1 RPT=1156
KeyProcessAdd: FilterIpsecAddIkeSa success
2907 10/20/2002 20:22:42.440 SEV=9 IPSECDBG/6 RPT=312
IPSEC key message parse - msgtype 3, Len 376, vers 1, pid 00000000, seq 0, err 0
, type 2, mode 1, state 32, label 0, pad 0, spi 2a2e2dcd, encrKeyLen 24, hashKey
Len 16, ivlen 8, alg 2, hmacAlg 3, lifetype 0, lifetime1 21, lifetime2 0, dsId 0
2910 10/20/2002 20:22:42.440 SEV=9 IPSECDBG/1 RPT=1157
Processing KEY_UPDATE MSG!
2911 10/20/2002 20:22:42.440 SEV=9 IPSECDBG/1 RPT=1158
Update inbound SA addresses
```

```
2912 10/20/2002 20:22:42.440 SEV=9 IPSECDBG/1 RPT=1159
key_msghdr2secassoc(): Enter
2913 10/20/2002 20:22:42.440 SEV=7 IPSECDBG/1 RPT=1160
No USER filter configured
2914 10/20/2002 20:22:42.440 SEV=9 IPSECDBG/1 RPT=1161
KeyProcessUpdate: Enter
2915 10/20/2002 20:22:42.440 SEV=8 IPSECDBG/1 RPT=1162
KeyProcessUpdate: success
2916 10/20/2002 20:22:42.440 SEV=8 IKEDBG/7 RPT=64
IKE got a KEY_ADD MSG for SA: SPI = 0xf1f4d328
2917 10/20/2002 20:22:42.440 SEV=8 IKEDBG/0 RPT=9206
pitcher: rcv KEY_UPDATE, spi 0x2a2e2dcd
2918 10/20/2002 20:22:42.440 SEV=4 IKE/120 RPT=64 171.69.89.78
Group [ciscovpn] User [vpnclient2]
PHASE 2 COMPLETED (msgid=cf9d1420)
2919 10/20/2002 20:22:44.680 SEV=7 IPSECDBG/1 RPT=1163
IPSec Inbound SA has received data!
2920 10/20/2002 20:22:44.680 SEV=8 IKEDBG/0 RPT=9207
pitcher: recv KEY_SA_ACTIVE spi 0x2a2e2dcd
2921 10/20/2002 20:22:44.680 SEV=8 IKEDBG/0 RPT=9208
KEY_SA_ACTIVE no old rekey centry found with new spi 0x2a2e2dcd, mess_id 0x0
2922 10/20/2002 20:22:47.530 SEV=9 IPSECDBG/18 RPT=828 171.69.89.78
Xmit IPSEC-over-UDP NAT keepalive packet: success
2923 10/20/2002 20:22:47.530 SEV=9 IPSECDBG/18 RPT=829 171.69.89.78
Xmit IPSEC-over-UDP NAT keepalive packet: success
2924 10/20/2002 20:22:48.280 SEV=9 IPSECDBG/17 RPT=668
Received an IPSEC-over-NAT-T NAT keepalive packet
2925 10/20/2002 20:22:52.390 SEV=9 IPSECDBG/17 RPT=669
Received an IPSEC-over-NAT-T NAT keepalive packet
2926 10/20/2002 20:22:52.720 SEV=7 IPSECDBG/1 RPT=1164
IPSec Inbound SA has received data!
2927 10/20/2002 20:22:52.720 SEV=8 IKEDBG/0 RPT=9209
pitcher: recv KEY_SA_ACTIVE spi 0x19fb2d12
2928 10/20/2002 20:22:52.720 SEV=8 IKEDBG/0 RPT=9210
KEY_SA_ACTIVE no old rekey centry found with new spi 0x19fb2d12, mess_id 0x0
2929 10/20/2002 20:22:56.530 SEV=9 IPSECDBG/18 RPT=830 171.69.89.78
Xmit IPSEC-over-UDP NAT keepalive packet: success
2930 10/20/2002 20:22:56.530 SEV=9 IPSECDBG/18 RPT=831 171.69.89.78
Xmit IPSEC-over-UDP NAT keepalive packet: success
2931 10/20/2002 20:22:58.300 SEV=8 IKEDECODE/0 RPT=8192 171.69.89.78
ISAKMP HEADER : ( Version 1.0 )
  Initiator Cookie(8): B6 92 24 F4 96 0A 2D 9E
  Responder Cookie(8): 76 FE F6 55 1F 9D 49 F3
  Next Payload  :HASH (8)
  Exchange Type :Oakley Informational
  Flags         :1   (ENCRYPT )
  Message ID    : d4a0ec25
  Length        : 76
2938 10/20/2002 20:22:58.300 SEV=8 IKEDBG/0 RPT=9211 171.69.89.78
RECEIVED Message (msgid=d4a0ec25) with payloads :
HDR + HASH (8) + NOTIFY (11) + NONE (0)
total length : 76
2940 10/20/2002 20:22:58.300 SEV=9 IKEDBG/0 RPT=9212 171.69.89.78
Group [ciscovpn] User [vpnclient1]
processing hash
2941 10/20/2002 20:22:58.300 SEV=9 IKEDBG/0 RPT=9213 171.69.89.78
Group [ciscovpn] User [vpnclient1]
Processing Notify payload
2942 10/20/2002 20:22:58.300 SEV=8 IKEDECODE/0 RPT=8193 171.69.89.78
Notify Payload Decode :
  DOI           :IPSEC (1)
  Protocol      :ISAKMP (1)
  Message       :Altiga keep-alive (40500)
  Spi           :B6 92 24 F4 96 0A 2D 9E 76 FE F6 55 1F 9D 49 F3
  Length        :28
2948 10/20/2002 20:22:58.300 SEV=9 IKEDBG/41 RPT=336 171.69.89.78
Group [ciscovpn] User [vpnclient1]
Received keep-alive of type Altiga keep-alive, not the negotiated type
2950 10/20/2002 20:22:58.310 SEV=8 IKEDECODE/0 RPT=8194 171.69.89.78
ISAKMP HEADER : ( Version 1.0 )
  Initiator Cookie(8): B6 92 24 F4 96 0A 2D 9E
  Responder Cookie(8): 76 FE F6 55 1F 9D 49 F3
  Next Payload  :HASH (8)
  Exchange Type :Oakley Informational
  Flags         :1   (ENCRYPT )
  Message ID    : d196c721
  Length        : 84
2957 10/20/2002 20:22:58.310 SEV=8 IKEDBG/0 RPT=9214 171.69.89.78
RECEIVED Message (msgid=d196c721) with payloads :
HDR + HASH (8) + NOTIFY (11) + NONE (0)
total length : 80
2959 10/20/2002 20:22:58.310 SEV=9 IKEDBG/0 RPT=9215 171.69.89.78
Group [ciscovpn] User [vpnclient1]
processing hash
2960 10/20/2002 20:22:58.310 SEV=9 IKEDBG/0 RPT=9216 171.69.89.78
Group [ciscovpn] User [vpnclient1]
Processing Notify payload
2961 10/20/2002 20:22:58.310 SEV=8 IKEDECODE/0 RPT=8195 171.69.89.78
Notify Payload Decode :
  DOI           :IPSEC (1)
  Protocol      :ISAKMP (1)
  Message       :DPD R-U-THERE (36136)
  Spi           :B6 92 24 F4 96 0A 2D 9E 76 FE F6 55 1F 9D 49 F3
  Length        :32
2967 10/20/2002 20:22:58.310 SEV=9 IKEDBG/36 RPT=92 171.69.89.78
Group [ciscovpn] User [vpnclient1]
Sending keep-alive of type DPD R-U-THERE-ACK (seq number 0x2d932552)
2969 10/20/2002 20:22:58.310 SEV=9 IKEDBG/0 RPT=9217 171.69.89.78
Group [ciscovpn] User [vpnclient1]
constructing blank hash
2970 10/20/2002 20:22:58.310 SEV=9 IKEDBG/0 RPT=9218 171.69.89.78
Group [ciscovpn] User [vpnclient1]
constructing qm hash
2971 10/20/2002 20:22:58.310 SEV=8 IKEDBG/0 RPT=9219 171.69.89.78
SENDING Message (msgid=d678099) with payloads :
HDR + HASH (8) + NOTIFY (11)
total length : 80
2973 10/20/2002 20:23:02.400 SEV=8 IKEDECODE/0 RPT=8196 171.69.89.78
ISAKMP HEADER : ( Version 1.0 )
  Initiator Cookie(8): C5 A0 F0 8B 69 60 D7 47
  Responder Cookie(8): 48 65 B1 6F 36 1F 9D 3A
  Next Payload  :HASH (8)
  Exchange Type :Oakley Informational
  Flags         :1   (ENCRYPT )
  Message ID    : 317b646a
  Length        : 76
2980 10/20/2002 20:23:02.400 SEV=8 IKEDBG/0 RPT=9220 171.69.89.78
RECEIVED Message (msgid=317b646a) with payloads :
HDR + HASH (8) + NOTIFY (11) + NONE (0)
total length : 76
2982 10/20/2002 20:23:02.400 SEV=9 IKEDBG/0 RPT=9221 171.69.89.78
Group [ciscovpn] User [vpnclient2]
processing hash
2983 10/20/2002 20:23:02.400 SEV=9 IKEDBG/0 RPT=9222 171.69.89.78
Group [ciscovpn] User [vpnclient2]
Processing Notify payload
2984 10/20/2002 20:23:02.400 SEV=8 IKEDECODE/0 RPT=8197 171.69.89.78
Notify Payload Decode :
  DOI           :IPSEC (1)
  Protocol      :ISAKMP (1)
  Message       :Altiga keep-alive (40500)
  Spi           :C5 A0 F0 8B 69 60 D7 47 48 65 B1 6F 36 1F 9D 3A
  Length        :28
2990 10/20/2002 20:23:02.400 SEV=9 IKEDBG/41 RPT=337 171.69.89.78
Group [ciscovpn] User [vpnclient2]
Received keep-alive of type Altiga keep-alive, not the negotiated type
2992 10/20/2002 20:23:02.410 SEV=9 IPSECDBG/17 RPT=670
Received an IPSEC-over-NAT-T NAT keepalive packet
2993 10/20/2002 20:23:05.530 SEV=9 IPSECDBG/18 RPT=832 171.69.89.78
Xmit IPSEC-over-UDP NAT keepalive packet: success
2994 10/20/2002 20:23:05.530 SEV=9 IPSECDBG/18 RPT=833 171.69.89.78
Xmit IPSEC-over-UDP NAT keepalive packet: success
2995 10/20/2002 20:23:08.310 SEV=9 IPSECDBG/17 RPT=671
Received an IPSEC-over-NAT-T NAT keepalive packet
2996 10/20/2002 20:23:12.420 SEV=9 IPSECDBG/17 RPT=672
Received an IPSEC-over-NAT-T NAT keepalive packet
2997 10/20/2002 20:23:14.530 SEV=9 IPSECDBG/18 RPT=834 171.69.89.78
Xmit IPSEC-over-UDP NAT keepalive packet: success
2998 10/20/2002 20:23:14.530 SEV=9 IPSECDBG/18 RPT=835 171.69.89.78
Xmit IPSEC-over-UDP NAT keepalive packet: success
2999 10/20/2002 20:23:18.330 SEV=8 IKEDECODE/0 RPT=8198 171.69.89.78
ISAKMP HEADER : ( Version 1.0 )
  Initiator Cookie(8): B6 92 24 F4 96 0A 2D 9E
  Responder Cookie(8): 76 FE F6 55 1F 9D 49 F3
  Next Payload  :HASH (8)
  Exchange Type :Oakley Informational
  Flags         :1   (ENCRYPT )
  Message ID    : f6457474
  Length        : 76
3006 10/20/2002 20:23:18.330 SEV=8 IKEDBG/0 RPT=9223 171.69.89.78
RECEIVED Message (msgid=f6457474) with payloads :
HDR + HASH (8) + NOTIFY (11) + NONE (0)
total length : 76
3008 10/20/2002 20:23:18.330 SEV=9 IKEDBG/0 RPT=9224 171.69.89.78
Group [ciscovpn] User [vpnclient1]
processing hash
3009 10/20/2002 20:23:18.330 SEV=9 IKEDBG/0 RPT=9225 171.69.89.78
Group [ciscovpn] User [vpnclient1]
Processing Notify payload
3010 10/20/2002 20:23:18.330 SEV=8 IKEDECODE/0 RPT=8199 171.69.89.78
Notify Payload Decode :
  DOI           :IPSEC (1)
  Protocol      :ISAKMP (1)
  Message       :Altiga keep-alive (40500)
  Spi           :B6 92 24 F4 96 0A 2D 9E 76 FE F6 55 1F 9D 49 F3
  Length        :28
3016 10/20/2002 20:23:18.330 SEV=9 IKEDBG/41 RPT=338 171.69.89.78
Group [ciscovpn] User [vpnclient1]
Received keep-alive of type Altiga keep-alive, not the negotiated type
3018 10/20/2002 20:23:18.330 SEV=9 IPSECDBG/17 RPT=673
Received an IPSEC-over-NAT-T NAT keepalive packet
3019 10/20/2002 20:23:22.430 SEV=8 IKEDECODE/0 RPT=8200 171.69.89.78
ISAKMP HEADER : ( Version 1.0 )
  Initiator Cookie(8): C5 A0 F0 8B 69 60 D7 47
  Responder Cookie(8): 48 65 B1 6F 36 1F 9D 3A
  Next Payload  :HASH (8)
  Exchange Type :Oakley Informational
  Flags         :1   (ENCRYPT )
  Message ID    : 358ae39e
  Length        : 76
3026 10/20/2002 20:23:22.430 SEV=8 IKEDBG/0 RPT=9226 171.69.89.78
RECEIVED Message (msgid=358ae39e) with payloads :
```

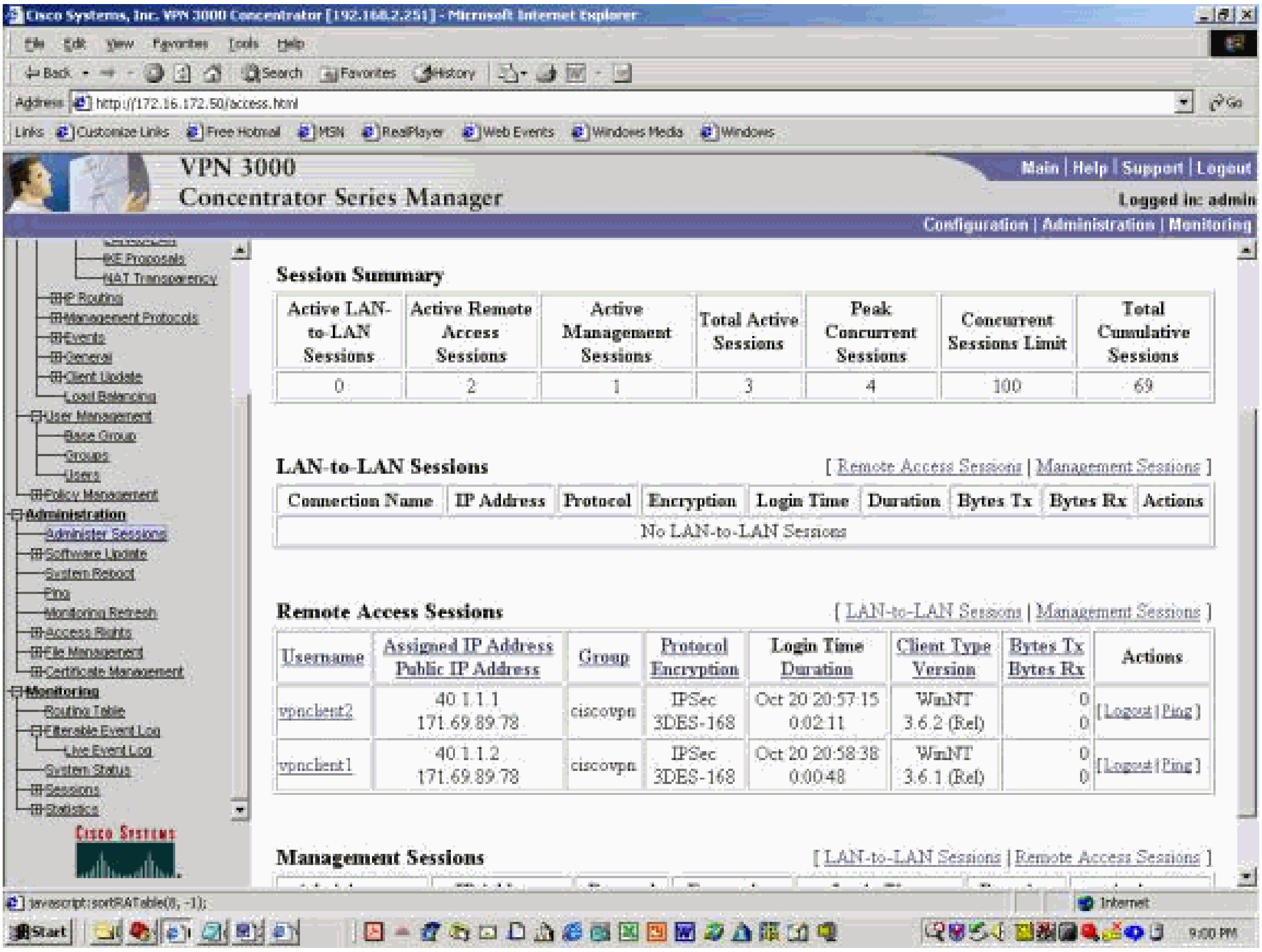
```
HDR + HASH (8) + NOTIFY (11) + NONE (0)
total length : 76
3028 10/20/2002 20:23:22.430 SEV=9 IKEDBG/0 RPT=9227 171.69.89.78
Group [ciscovpn] User [vpnclient2]
processing hash
3029 10/20/2002 20:23:22.430 SEV=9 IKEDBG/0 RPT=9228 171.69.89.78
Group [ciscovpn] User [vpnclient2]
Processing Notify payload
3030 10/20/2002 20:23:22.430 SEV=8 IKEDECODE/0 RPT=8201 171.69.89.78
Notify Payload Decode :
  DOI           :IPSEC (1)
  Protocol      :ISAKMP (1)
  Message       :Altiga keep-alive (40500)
  Spi           :C5 A0 F0 8B 69 60 D7 47 48 65 B1 6F 36 1F 9D 3A
  Length        :28
3036 10/20/2002 20:23:22.430 SEV=9 IKEDBG/41 RPT=339 171.69.89.78
Group [ciscovpn] User [vpnclient2]
Received keep-alive of type Altiga keep-alive, not the negotiated type
3038 10/20/2002 20:23:22.430 SEV=9 IPSECDBG/17 RPT=674
Received an IPSEC-over-NAT-T NAT keepalive packet
3039 10/20/2002 20:23:23.530 SEV=9 IPSECDBG/18 RPT=836 171.69.89.78
Xmit IPSEC-over-UDP NAT keepalive packet: success
3040 10/20/2002 20:23:23.530 SEV=9 IPSECDBG/18 RPT=837 171.69.89.78
Xmit IPSEC-over-UDP NAT keepalive packet: success
3041 10/20/2002 20:23:28.340 SEV=9 IPSECDBG/17 RPT=675
Received an IPSEC-over-NAT-T NAT keepalive packet
3042 10/20/2002 20:23:32.440 SEV=9 IPSECDBG/17 RPT=676
Received an IPSEC-over-NAT-T NAT keepalive packet
3043 10/20/2002 20:23:32.530 SEV=9 IPSECDBG/18 RPT=838 171.69.89.78
Xmit IPSEC-over-UDP NAT keepalive packet: success
3044 10/20/2002 20:23:32.530 SEV=9 IPSECDBG/18 RPT=839 171.69.89.78
Xmit IPSEC-over-UDP NAT keepalive packet: success
3045 10/20/2002 20:23:38.360 SEV=8 IKEDECODE/0 RPT=8202 171.69.89.78
ISAKMP HEADER : ( Version 1.0 )
  Initiator Cookie(8): B6 92 24 F4 96 0A 2D 9E
  Responder Cookie(8): 76 FE F6 55 1F 9D 49 F3
  Next Payload  :HASH (8)
  Exchange Type :Oakley Informational
  Flags         :1   (ENCRYPT )
  Message ID    : fa8597e6
  Length        : 76
3052 10/20/2002 20:23:38.360 SEV=8 IKEDBG/0 RPT=9229 171.69.89.78
RECEIVED Message (msgid=fa8597e6) with payloads :
HDR + HASH (8) + NOTIFY (11) + NONE (0)
total length : 76
3054 10/20/2002 20:23:38.360 SEV=9 IKEDBG/0 RPT=9230 171.69.89.78
Group [ciscovpn] User [vpnclient1]
processing hash
3055 10/20/2002 20:23:38.360 SEV=9 IKEDBG/0 RPT=9231 171.69.89.78
Group [ciscovpn] User [vpnclient1]
Processing Notify payload
3056 10/20/2002 20:23:38.360 SEV=8 IKEDECODE/0 RPT=8203 171.69.89.78
Notify Payload Decode :
  DOI           :IPSEC (1)
  Protocol      :ISAKMP (1)
  Message       :Altiga keep-alive (40500)
  Spi           :B6 92 24 F4 96 0A 2D 9E 76 FE F6 55 1F 9D 49 F3
  Length        :28
3062 10/20/2002 20:23:38.360 SEV=9 IKEDBG/41 RPT=340 171.69.89.78
Group [ciscovpn] User [vpnclient1]
Received keep-alive of type Altiga keep-alive, not the negotiated type
3064 10/20/2002 20:23:38.360 SEV=9 IPSECDBG/17 RPT=677
Received an IPSEC-over-NAT-T NAT keepalive packet
3065 10/20/2002 20:23:41.530 SEV=9 IPSECDBG/18 RPT=840 171.69.89.78
```

```
Xmit IPSEC-over-UDP NAT keepalive packet: success
3066 10/20/2002 20:23:41.530 SEV=9 IPSECDBG/18 RPT=841 171.69.89.78
Xmit IPSEC-over-UDP NAT keepalive packet: success
3067 10/20/2002 20:23:42.470 SEV=8 IKEDECODE/0 RPT=8204 171.69.89.78
ISAKMP HEADER : ( Version 1.0 )
  Initiator Cookie(8): C5 A0 F0 8B 69 60 D7 47
  Responder Cookie(8): 48 65 B1 6F 36 1F 9D 3A
  Next Payload  :HASH (8)
  Exchange Type :Oakley Informational
  Flags         :1   (ENCRYPT )
3073 10/20/2002 20:23:42.470 SEV=8 IKEDECODE/0 RPT=8204 171.69.89.78
  Message ID    : c892dd4c
  Length        : 76
RECEIVED Message (msgid=c892dd4c) with payloads :
HDR + HASH (8) + NOTIFY (11) + NONE (0)
total length : 76
3076 10/20/2002 20:23:42.470 SEV=9 IKEDBG/0 RPT=9233 171.69.89.78
Group [ciscovpn] User [vpnclient2]
processing hash
3077 10/20/2002 20:23:42.470 SEV=9 IKEDBG/0 RPT=9234 171.69.89.78
Group [ciscovpn] User [vpnclient2]
Processing Notify payload
3078 10/20/2002 20:23:42.470 SEV=8 IKEDECODE/0 RPT=8205 171.69.89.78
Notify Payload Decode :
  DOI           :IPSEC (1)
  Protocol      :ISAKMP (1)
  Message       :Altiga keep-alive (40500)
  Spi           :C5 A0 F0 8B 69 60 D7 47 48 65 B1 6F 36 1F 9D 3A
  Length        :28
3084 10/20/2002 20:23:42.470 SEV=9 IKEDBG/41 RPT=341 171.69.89.78
Group [ciscovpn] User [vpnclient2]
Received keep-alive of type Altiga keep-alive, not the negotiated type
3086 10/20/2002 20:23:42.470 SEV=9 IPSECDBG/17 RPT=678
Received an IPSEC-over-NAT-T NAT keepalive packet
3087 10/20/2002 20:23:48.370 SEV=9 IPSECDBG/17 RPT=679
Received an IPSEC-over-NAT-T NAT keepalive packet
3088 10/20/2002 20:23:50.530 SEV=9 IPSECDBG/18 RPT=842 171.69.89.78
Xmit IPSEC-over-UDP NAT keepalive packet: success
3089 10/20/2002 20:23:50.530 SEV=9 IPSECDBG/18 RPT=843 171.69.89.78
Xmit IPSEC-over-UDP NAT keepalive packet: success
3090 10/20/2002 20:23:52.470 SEV=9 IPSECDBG/17 RPT=680
Received an IPSEC-over-NAT-T NAT keepalive packet
3091 10/20/2002 20:23:58.380 SEV=8 IKEDECODE/0 RPT=8206 171.69.89.78
ISAKMP HEADER : ( Version 1.0 )
  Initiator Cookie(8): B6 92 24 F4 96 0A 2D 9E
  Responder Cookie(8): 76 FE F6 55 1F 9D 49 F3
  Next Payload  :HASH (8)
  Exchange Type :Oakley Informational
  Flags         :1   (ENCRYPT )
  Message ID    : 943c7d99
  Length        : 76
3098 10/20/2002 20:23:58.390 SEV=8 IKEDBG/0 RPT=9235 171.69.89.78
RECEIVED Message (msgid=943c7d99) with payloads :
HDR + HASH (8) + NOTIFY (11) + NONE (0)
total length : 76
3100 10/20/2002 20:23:58.390 SEV=9 IKEDBG/0 RPT=9236 171.69.89.78
Group [ciscovpn] User [vpnclient1]
processing hash
3101 10/20/2002 20:23:58.390 SEV=9 IKEDBG/0 RPT=9237 171.69.89.78
Group [ciscovpn] User [vpnclient1]
Processing Notify payload
3102 10/20/2002 20:23:58.390 SEV=8 IKEDECODE/0 RPT=8207 171.69.89.78
Notify Payload Decode :
  DOI           :IPSEC (1)
  Protocol      :ISAKMP (1)
  Message       :Altiga keep-alive (40500)
  Spi           :B6 92 24 F4 96 0A 2D 9E 76 FE F6 55 1F 9D 49 F3
  Length        :28
3108 10/20/2002 20:23:58.390 SEV=9 IKEDBG/41 RPT=342 171.69.89.78
Group [ciscovpn] User [vpnclient1]
Received keep-alive of type Altiga keep-alive, not the negotiated type
3110 10/20/2002 20:23:58.390 SEV=9 IPSECDBG/17 RPT=681
Received an IPSEC-over-NAT-T NAT keepalive packet
3111 10/20/2002 20:23:59.530 SEV=9 IPSECDBG/18 RPT=844 171.69.89.78
Xmit IPSEC-over-UDP NAT keepalive packet: success
3112 10/20/2002 20:23:59.530 SEV=9 IPSECDBG/18 RPT=845 171.69.89.78
Xmit IPSEC-over-UDP NAT keepalive packet: success
```

Ulteriori procedure di risoluzione dei problemi

NAT-T incapsula il traffico IPSec nei datagrammi UDP utilizzando la porta 4500. se NAT-T non è selezionato sul concentratore VPN o se la trasparenza NAT non è controllata sul client VPN, il tunnel IPSec viene stabilito; non è tuttavia possibile passare dati. Affinché NAT-T funzioni, è necessario che NAT-T sia controllato sul concentratore e la trasparenza NAT (su UDP) sul client.

L'esempio seguente mostra un caso in cui NAT-T non è stato controllato sul concentratore. Sul client, è stato controllato il tunneling trasparente. In questo caso, viene stabilito un tunnel IPSec tra il client e il concentratore. Tuttavia, poiché le negoziazioni della porta del tunnel IPSec non sono riuscite, non vengono trasmessi dati tra il client e il concentratore. Di conseguenza, i byte trasmessi e ricevuti sono zero per le sessioni di accesso remoto.



Session Summary

Active LAN-to-LAN Sessions	Active Remote Access Sessions	Active Management Sessions	Total Active Sessions	Peak Concurrent Sessions	Concurrent Sessions Limit	Total Cumulative Sessions
0	2	1	3	4	100	69

LAN-to-LAN Sessions [Remote Access Sessions | Management Sessions]

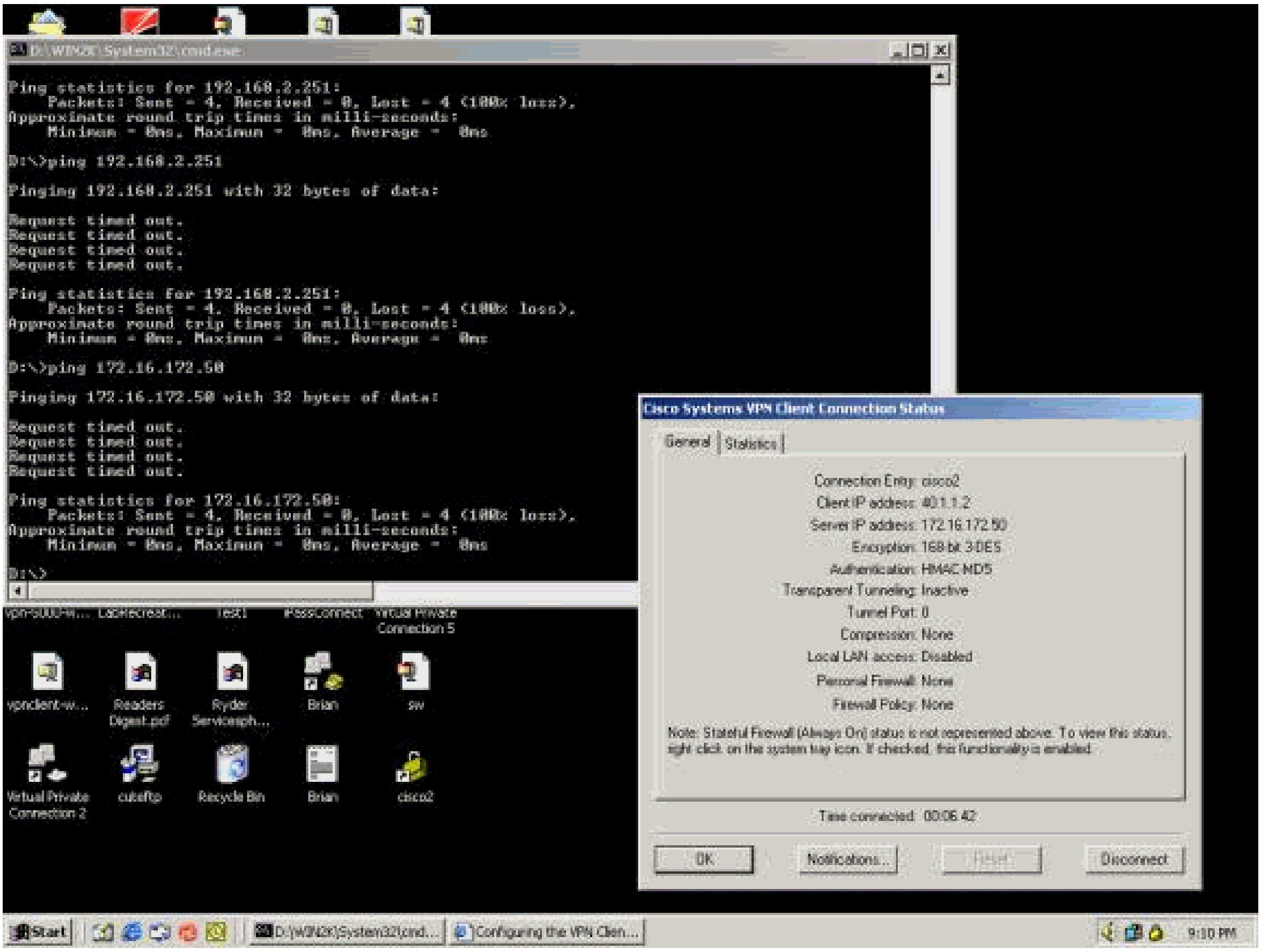
Connection Name	IP Address	Protocol	Encryption	Login Time	Duration	Bytes Tx	Bytes Rx	Actions
No LAN-to-LAN Sessions								

Remote Access Sessions [LAN-to-LAN Sessions | Management Sessions]

Username	Assigned IP Address Public IP Address	Group	Protocol Encryption	Login Time Duration	Client Type Version	Bytes Tx Bytes Rx	Actions
vpnclient2	40.1.1.1 171.69.89.78	ciscovpn	IPSec 3DES-168	Oct 20 20:57:15 0:02:11	WinNT 3.6.2 (Rel)	0 0	[Logout | Ping]
vpnclient1	40.1.1.2 171.69.89.78	ciscovpn	IPSec 3DES-168	Oct 20 20:58:38 0:00:48	WinNT 3.6.1 (Rel)	0 0	[Logout | Ping]

Management Sessions [LAN-to-LAN Sessions | Remote Access Sessions]

L'esempio seguente mostra le statistiche del client VPN. Si noti che la porta del tunnel negoziata è 0. Si è tentato di eseguire il ping tra 192.168.2.251 (interfaccia privata del concentratore VPN 3000) e 172.16.172.50 dal prompt di DOS. Tuttavia, questi ping hanno esito negativo perché non è stata negoziata alcuna porta tunnel e, pertanto, i dati IPSec vengono eliminati sul server VPN remoto.



```
Ping statistics for 192.168.2.251:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum =  0ms, Average =  0ms

D:\>ping 192.168.2.251

Pinging 192.168.2.251 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.2.251:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum =  0ms, Average =  0ms

D:\>ping 172.16.172.50

Pinging 172.16.172.50 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.16.172.50:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum =  0ms, Average =  0ms

D:\>
```

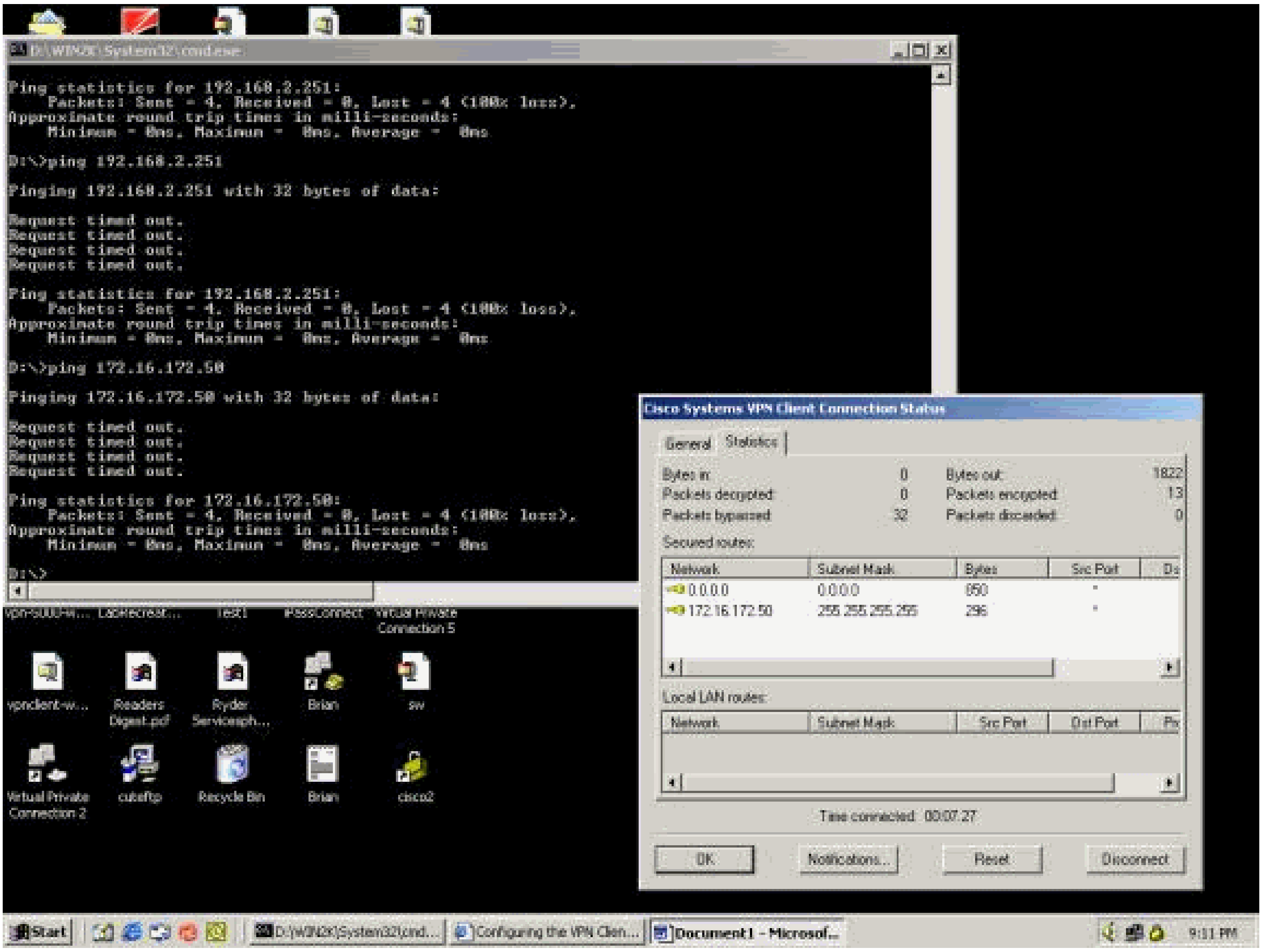
Cisco Systems VPN Client Connection Status

Connection Entry: cisco2
Client IP address: 40.1.1.2
Server IP address: 172.16.172.50
Encryption: 168-bit 3-DES
Authentication: HMAC-MD5
Transparent Tunneling: Inactive
Tunnel Port: 0
Compression: None
Local LAN access: Disabled
Personal Firewall: None
Firewall Policy: None

Note: Stateful Firewall (Always On) status is not represented above. To view this status, right click on the system tray icon. If checked, this functionality is enabled.

Time connected: 00:06:42

L'esempio seguente mostra che il client VPN sta inviando dati crittografati (13 pacchetti). Tuttavia, il numero di pacchetti decrittografati è zero per il server VPN remoto e non ha inviato indietro alcun dato crittografato. Poiché non è stata negoziata alcuna porta tunnel, il server VPN remoto scarta i pacchetti e non invia dati di risposta.



D:\WIN2K\System32\cmd.exe

```
Ping statistics for 192.168.2.251:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum =  0ms, Average =  0ms

D:\>ping 192.168.2.251

Pinging 192.168.2.251 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.2.251:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum =  0ms, Average =  0ms

D:\>ping 172.16.172.50

Pinging 172.16.172.50 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 172.16.172.50:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
Approximate round trip times in milli-seconds:
    Minimum = 0ms, Maximum =  0ms, Average =  0ms

D:\>
```

Cisco Systems VPN Client Connection Status

General | Statistics

Bytes in:	0	Bytes out:	1822
Packets decrypted:	0	Packets encrypted:	13
Packets bypassed:	32	Packets discarded:	0

Secured routes:

Network	Subnet Mask	Bytes	Src Port	Ds
0.0.0.0	0.0.0.0	050	*	
172.16.172.50	255.255.255.255	296	*	

Local LAN routes:

Network	Subnet Mask	Src Port	Dst Port	Pr

Time connected: 00:07:27

Informazioni correlate

- Cisco VPN serie 3000 Concentrator Support Page
- Cisco VPN serie 3000 Client Support Page
- Pagina di supporto per IPSec
- Documentazione e supporto tecnico – Cisco Systems