Stel L2TP-tunnelheid in tussen een Windows-machine en een Cisco-router

Inhoud

Inleiding

Dit document beschrijft hoe u een Layer 2 Tunneling Protocol (L2TP)-tunnels tussen een Windows-machine en een Cisco-router kunt configureren.

Voorwaarden

Vereisten

Cisco raadt u aan om kennis te hebben dat de Windows-machine het fysieke IP-adres van de interface op de router kan ping.

Gebruikte componenten

Dit document is niet beperkt tot specifieke software- en hardware-versies.

De informatie in dit document is gebaseerd op de apparaten in een specifieke laboratoriumomgeving. Alle apparaten die in dit document worden beschreven, hadden een opgeschoonde (standaard)configuratie. Als uw netwerk live is, moet u de potentiële impact van elke opdracht begrijpen.

Configureren

Netwerkdiagram

Het netwerk in dit document is als volgt opgebouwd:

Configuraties

Configuratie aggregator:

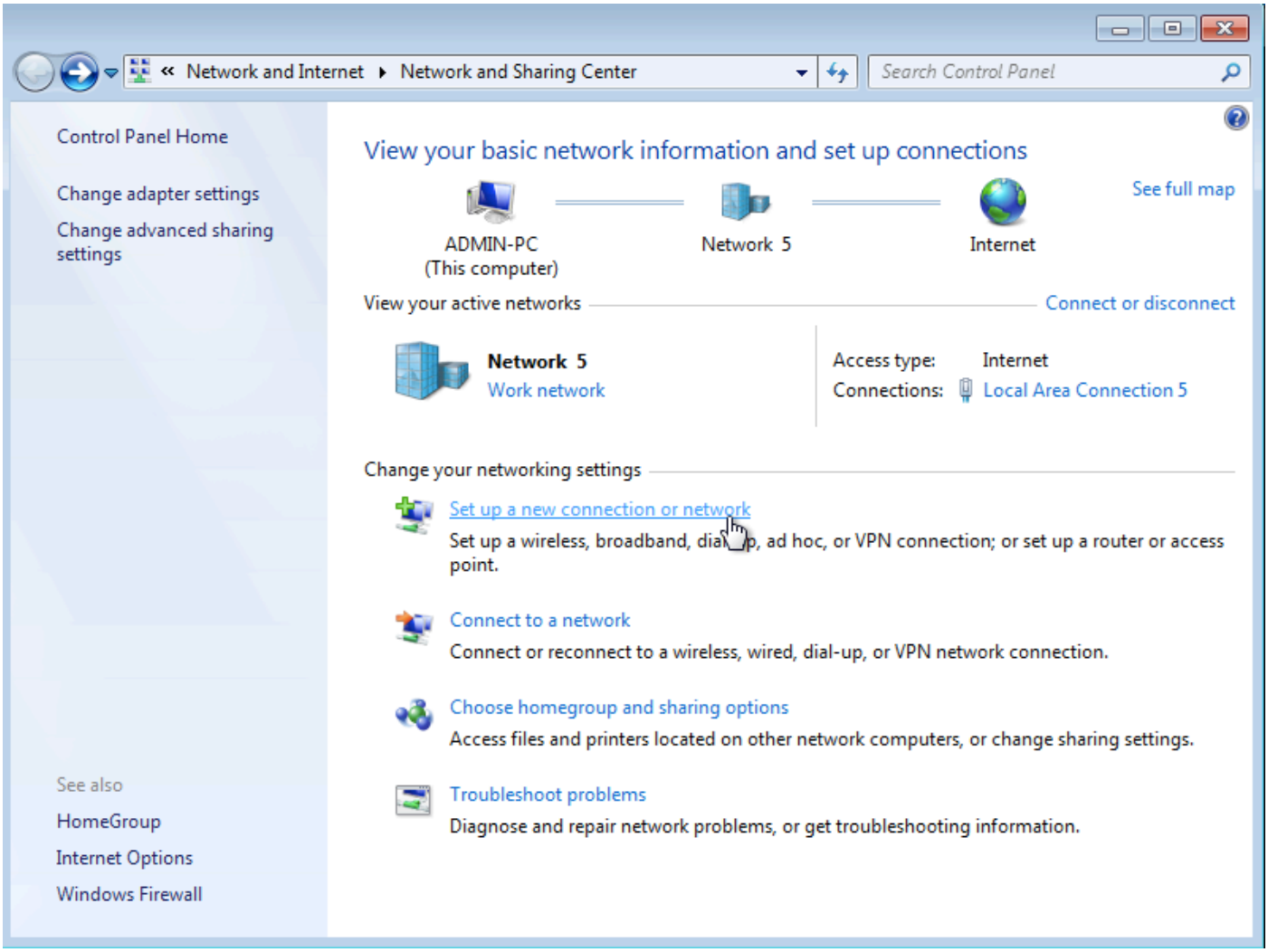
Een voorbeeld van de configuratie van de Aggregator is:

```
interface GigabitEthernet0/0/1
 ip address 192.168.1.1 255.255.255.0
 negotiation auto
end   interface Loopback100
 ip address 172.16.1.1 255.255.255.255
end   vpdn enable
vpdn-group 1
 ! Default L2TP VPDN group
 accept-dialin
 protocol l2tp
 virtual-template 1
 no l2tp tunnel authentication   interface Virtual-Template1
 ip unnumbered Loopback100
 peer default ip address pool test
 ppp authentication chap callout
 ppp ipcp dns 4.2.2.1 4.2.2.2
end   ip local pool test 10.1.1.2 10.1.1.100
```

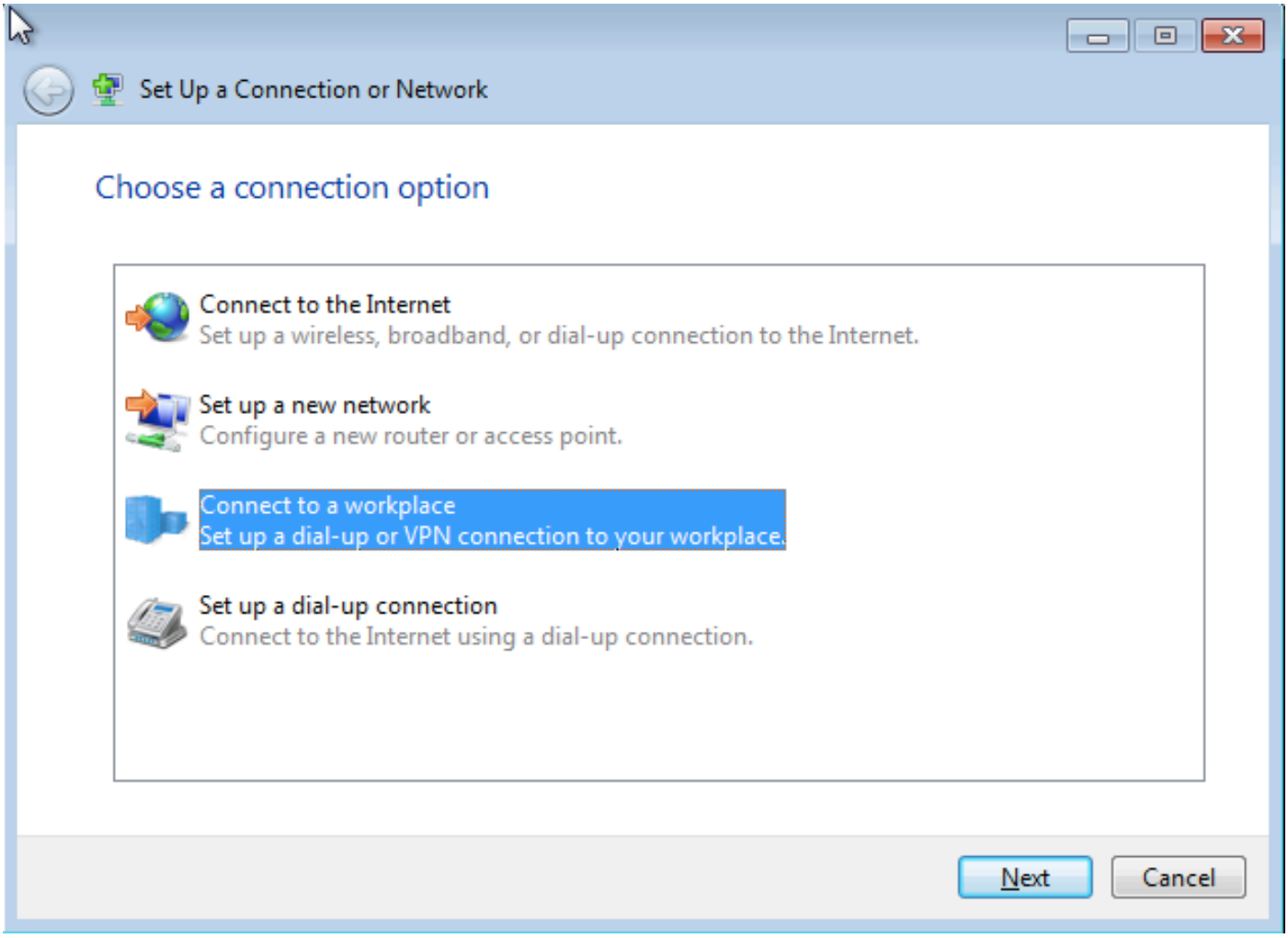
Windows Machine-configuraties en -instellingen

Voer de volgende stappen uit:

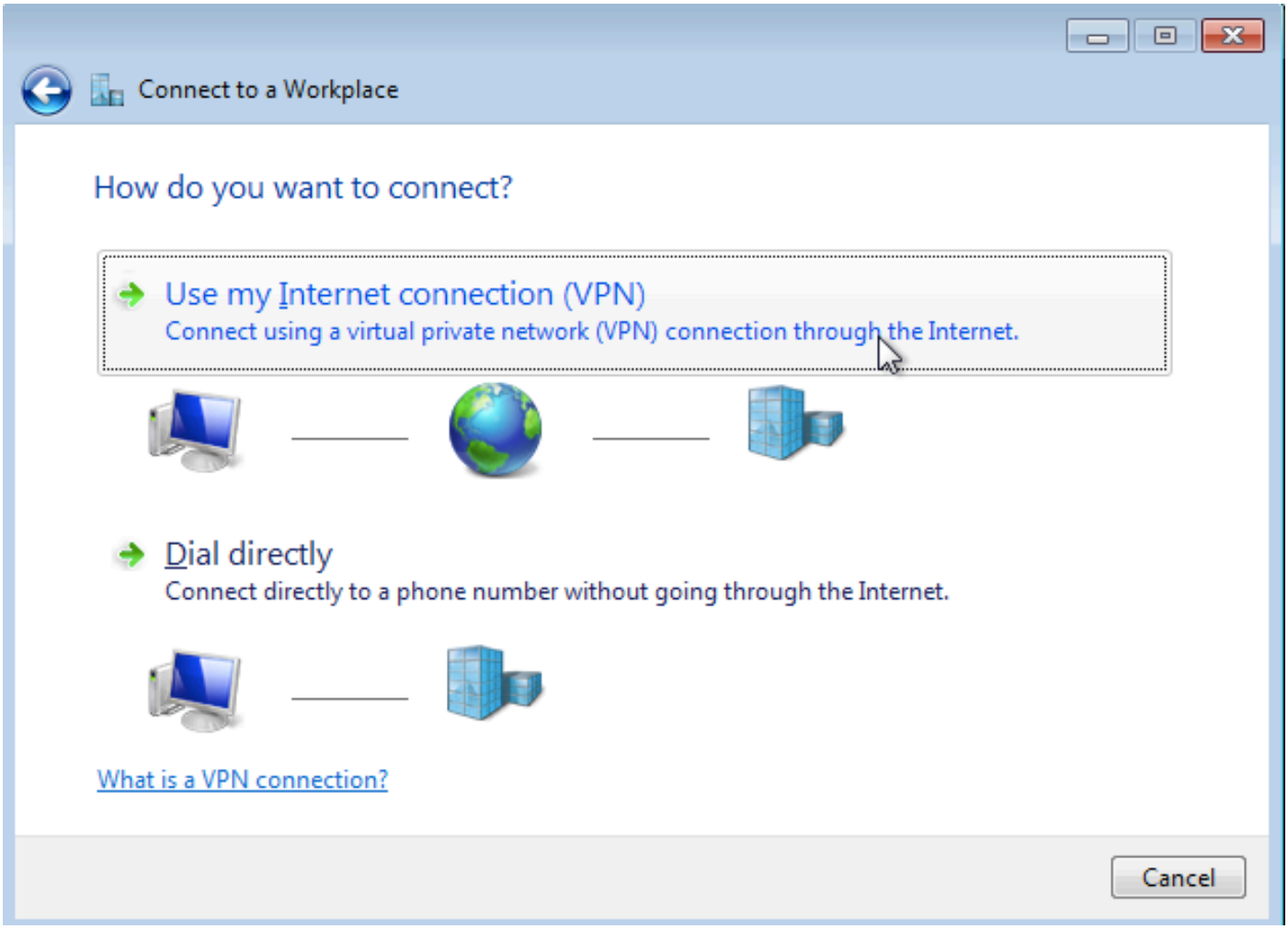
Stap 1. Open **Network and Sharing Center** en klik op **Stel een nieuwe verbinding of een nieuw netwerk** in zoals in deze afbeelding.



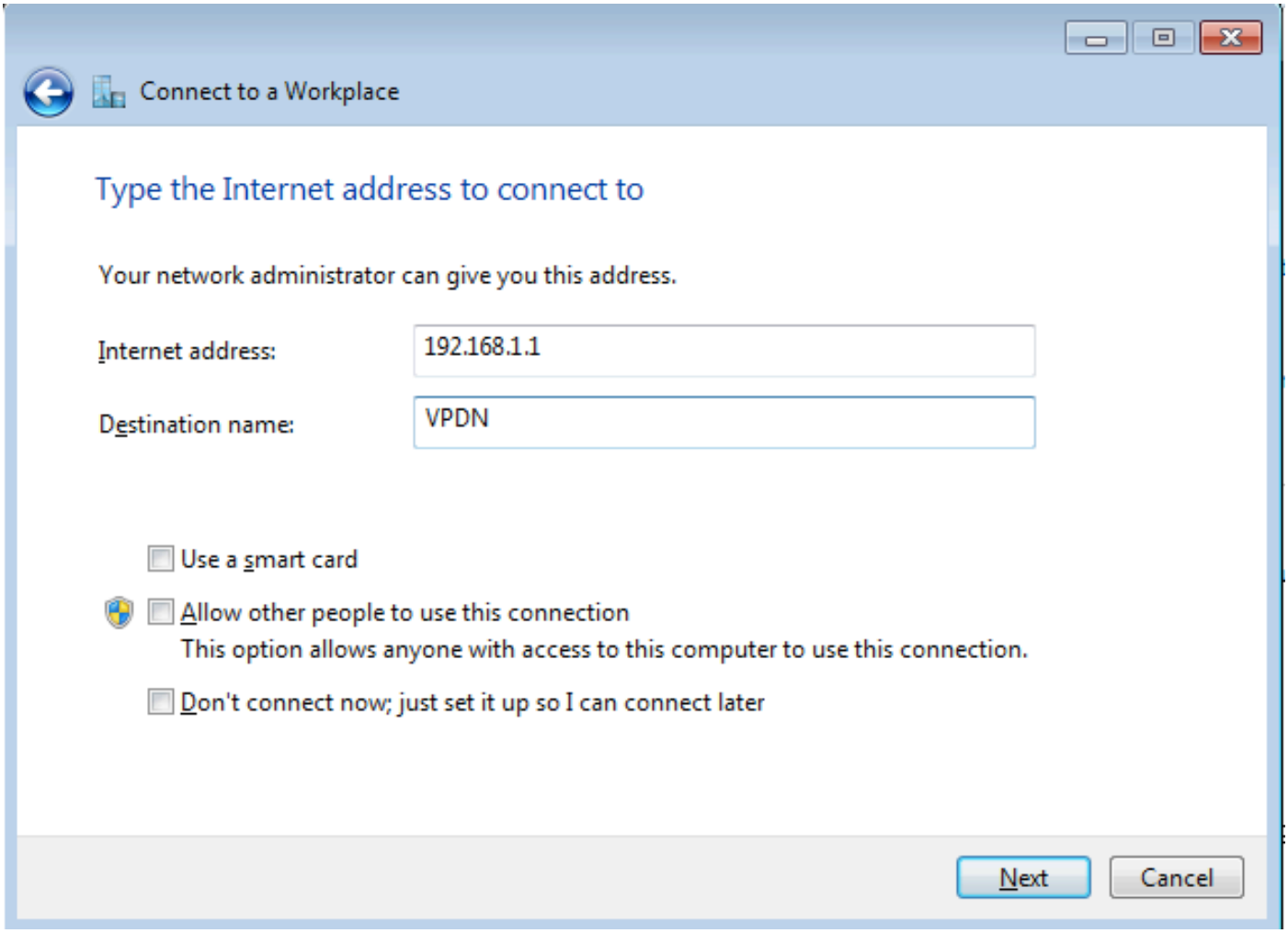
Stap 2. Selecteer **Connect met een werkplaats** en klik op **Volgende**



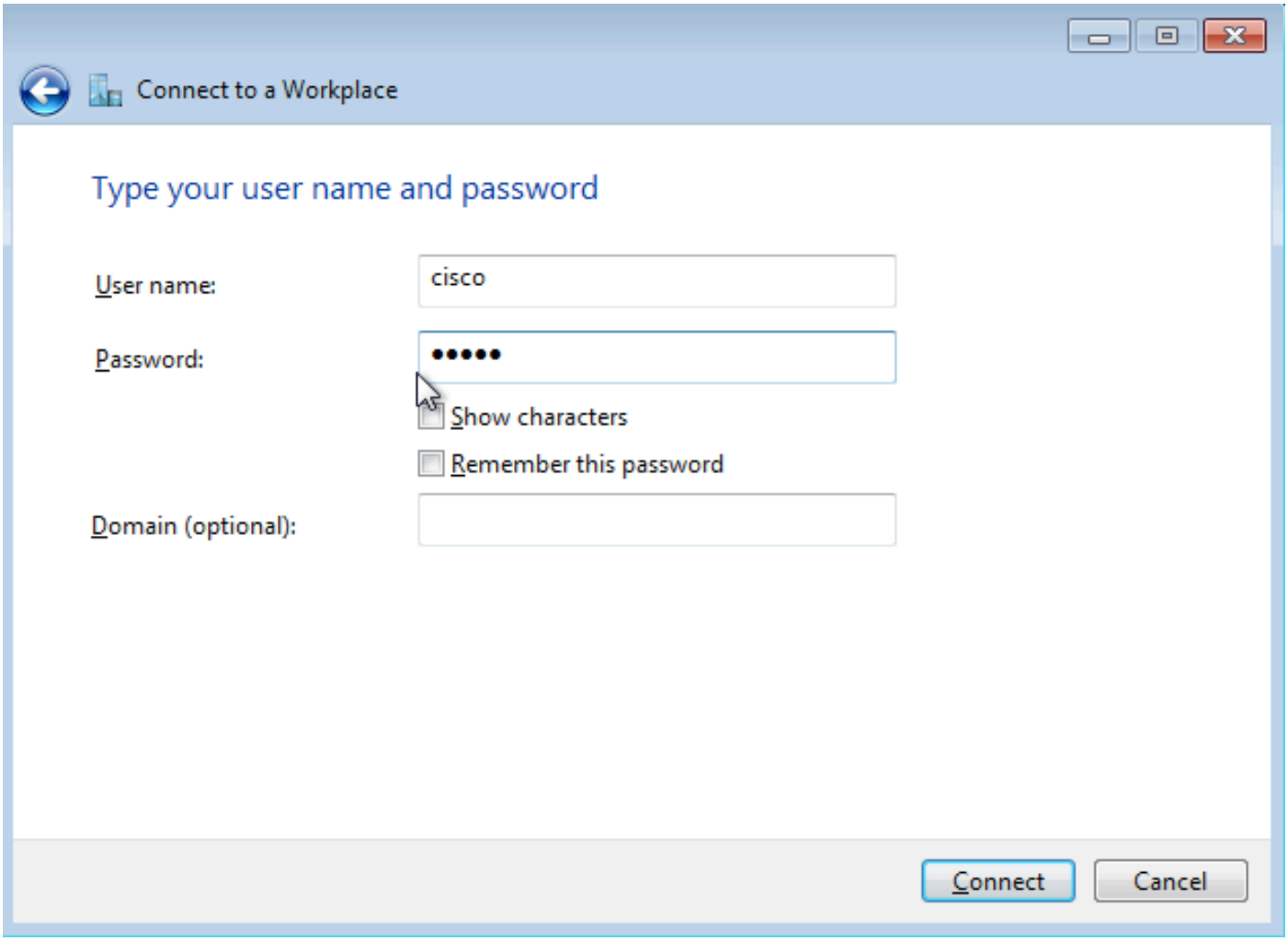
Stap 3. Selecteer **Gebruik mijn internetverbinding (VPN)**



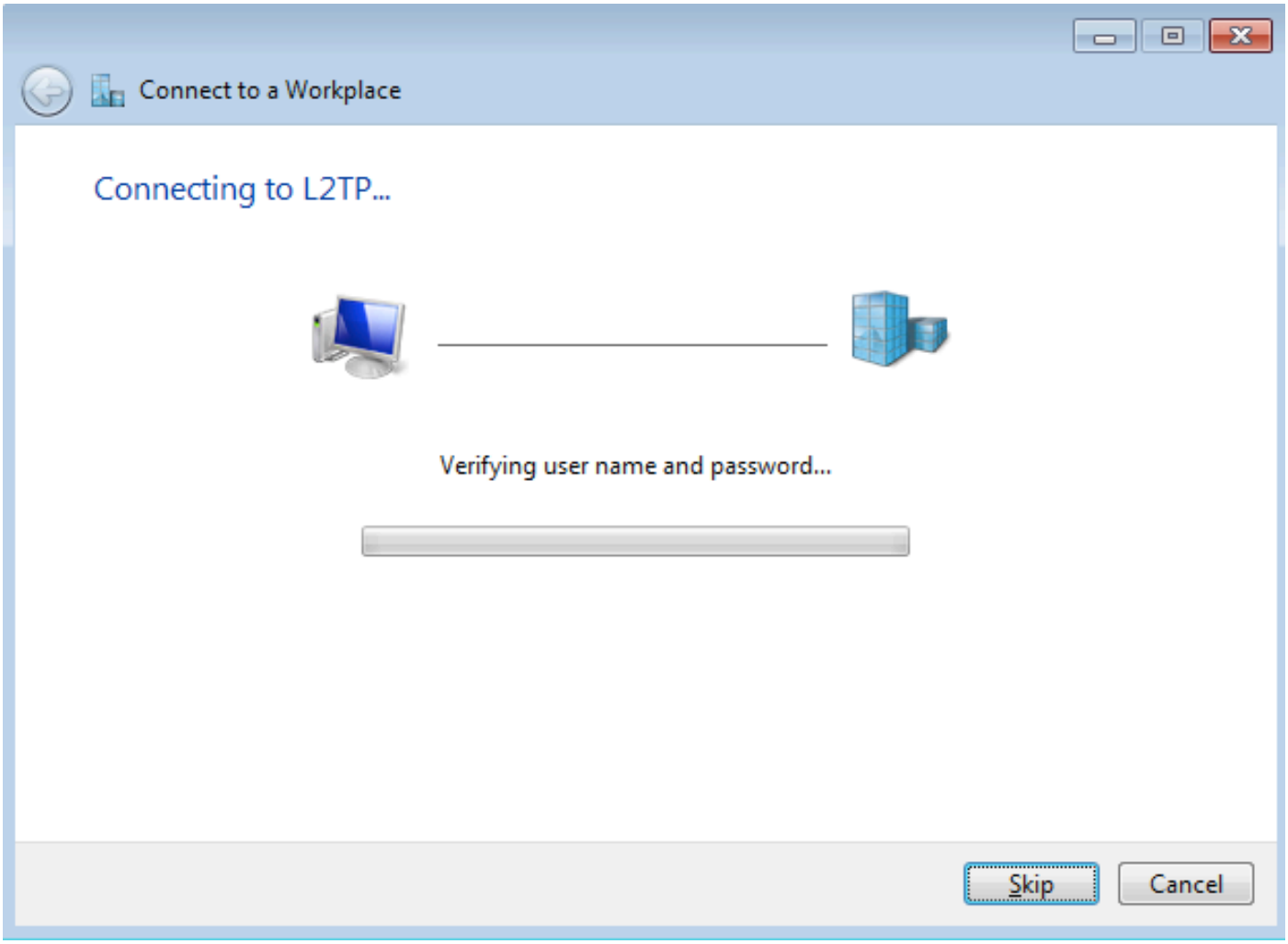
Stap 4. Voer het IP-adres van de aggregator in (in dit geval 192.168.1.1), geef een naam aan de verbinding (in dit geval met de naam VPDN) en klik op **Volgende**.



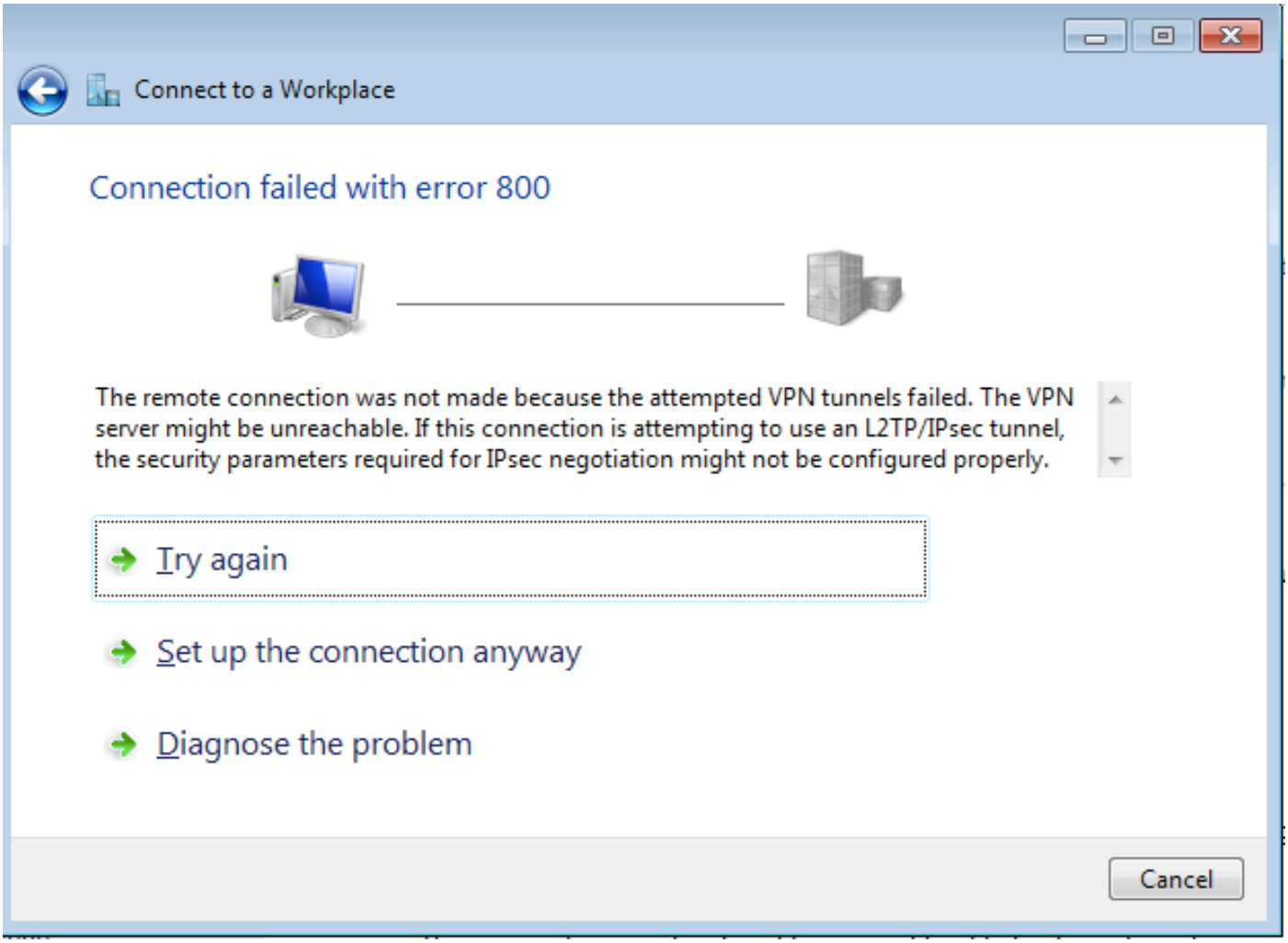
Stap 5. Voer de gebruikersnaam en het wachtwoord in en klik op **Connect**



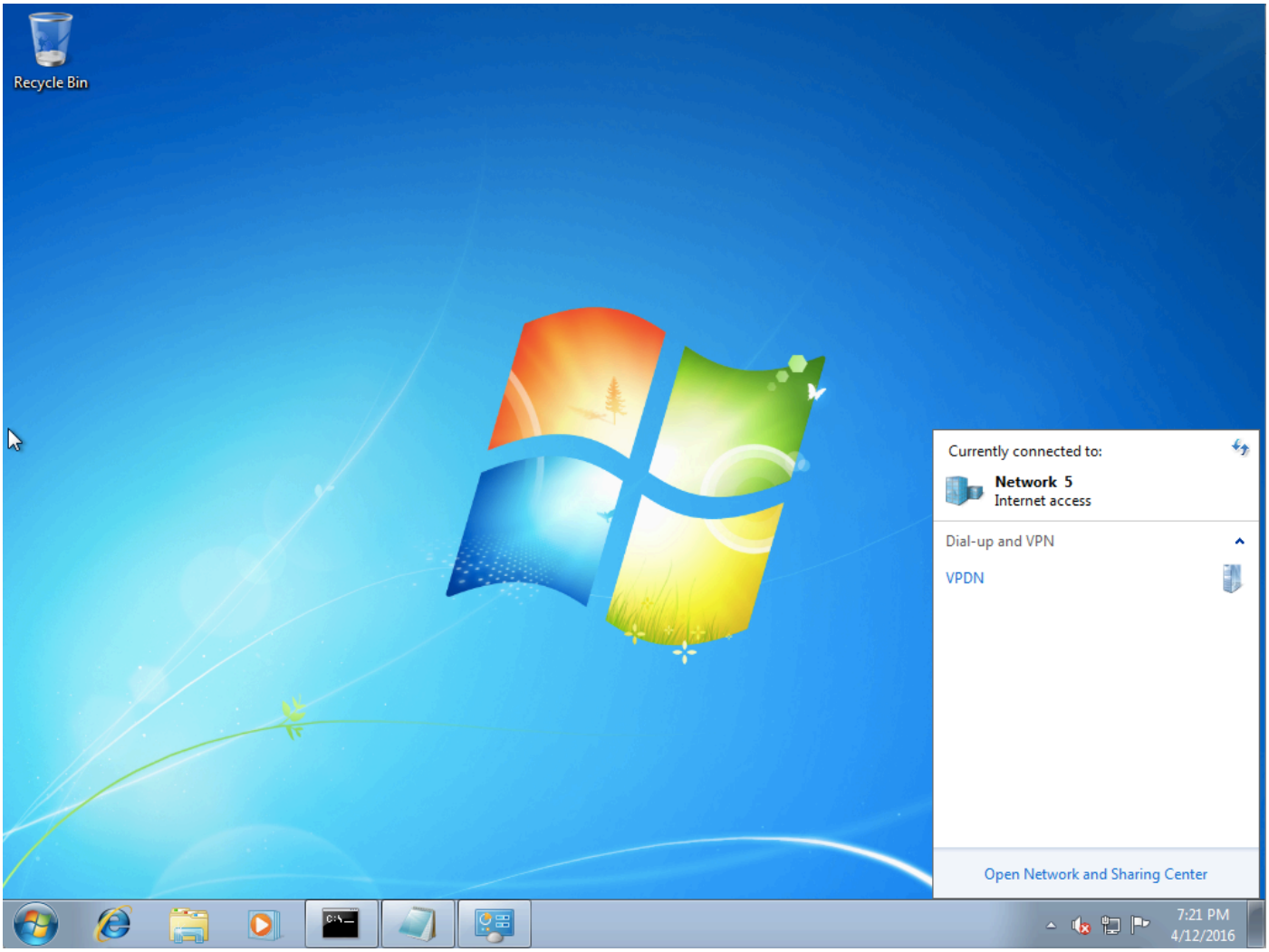
Stap 6. Controleer de gebruikersnaam en het wachtwoord



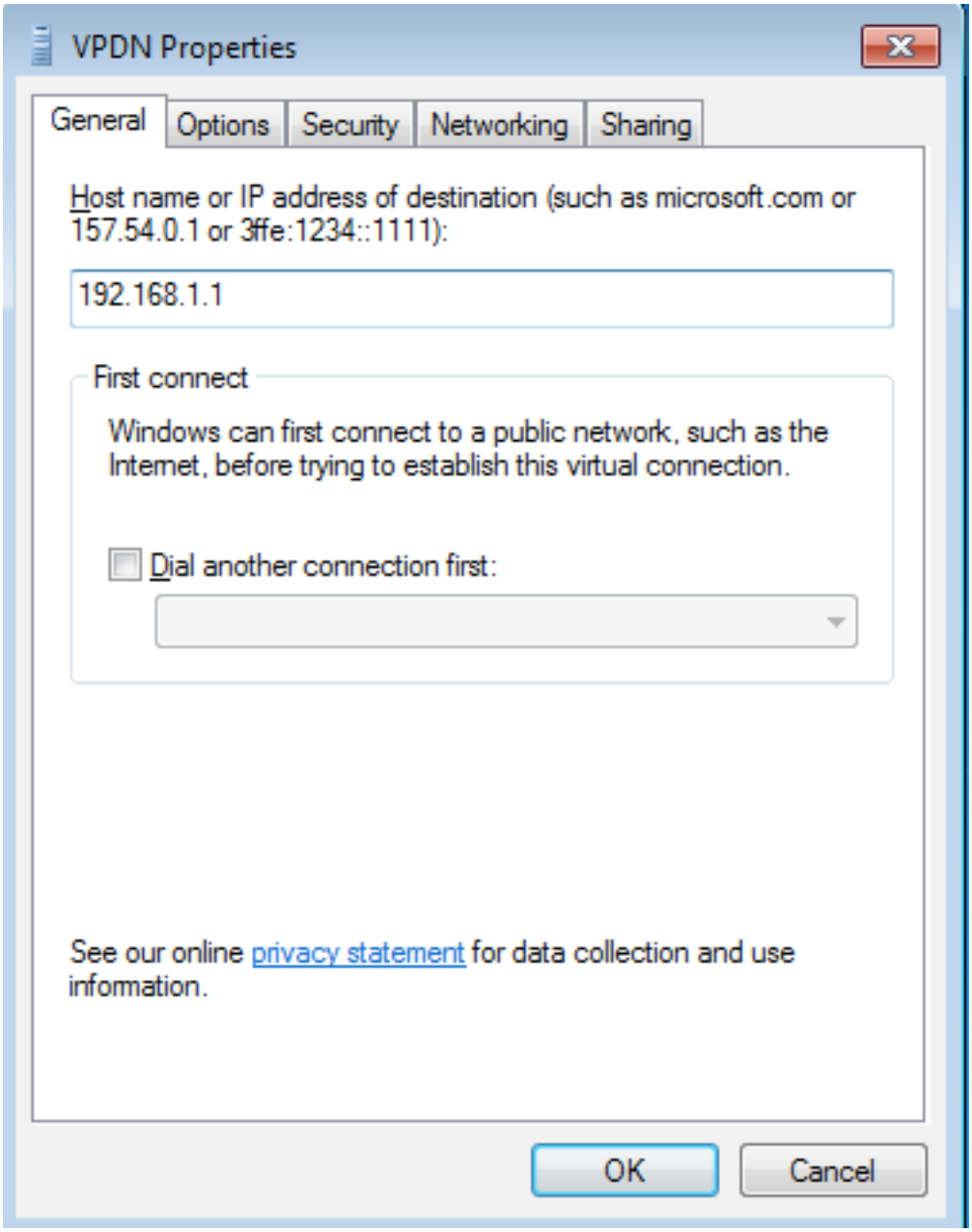
Stap 7. Mogelijk faalt dit voor het eerst zoals in deze afbeelding.



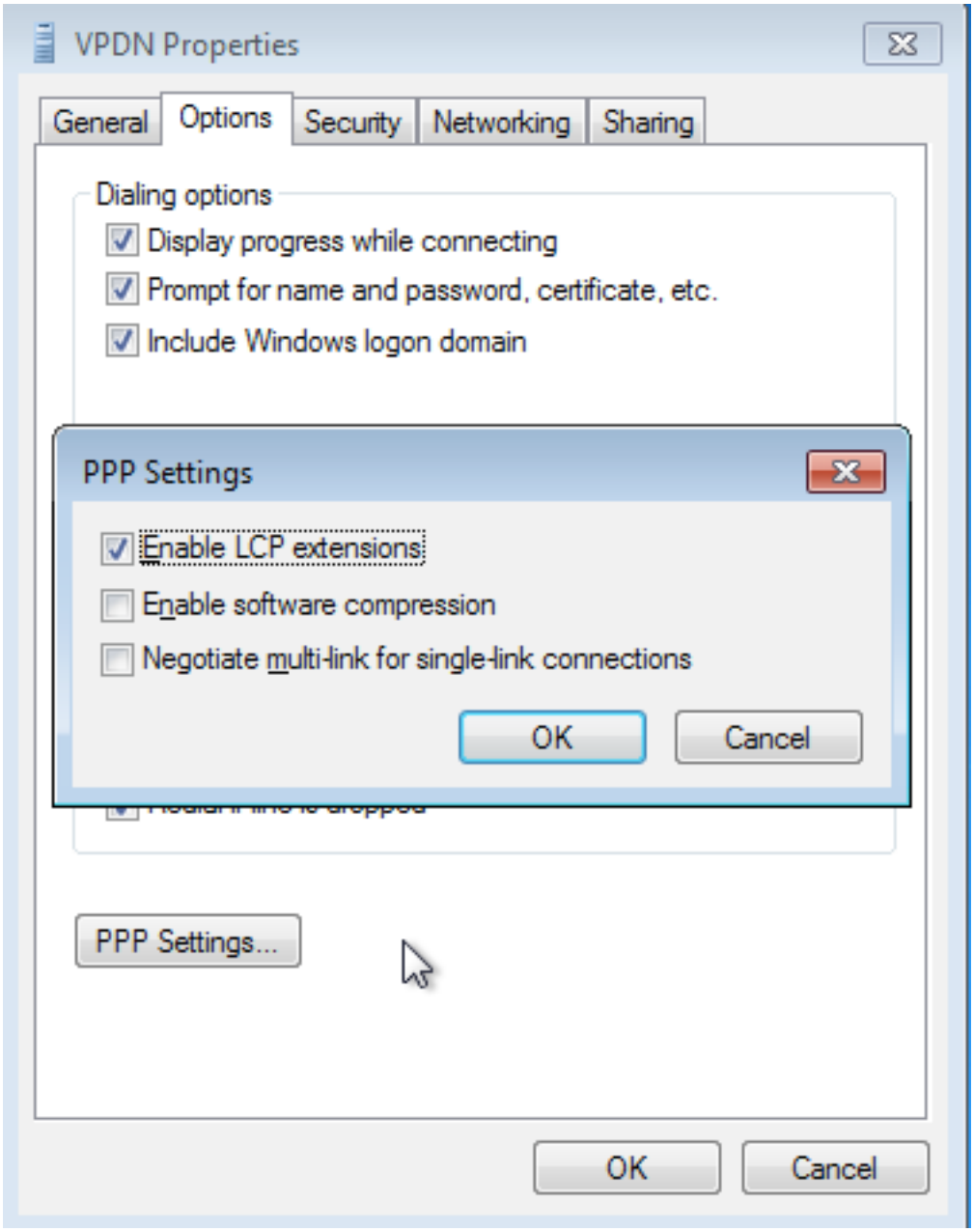
Stap 8. Klik op sowieso op Setup en open het tabblad Networks.



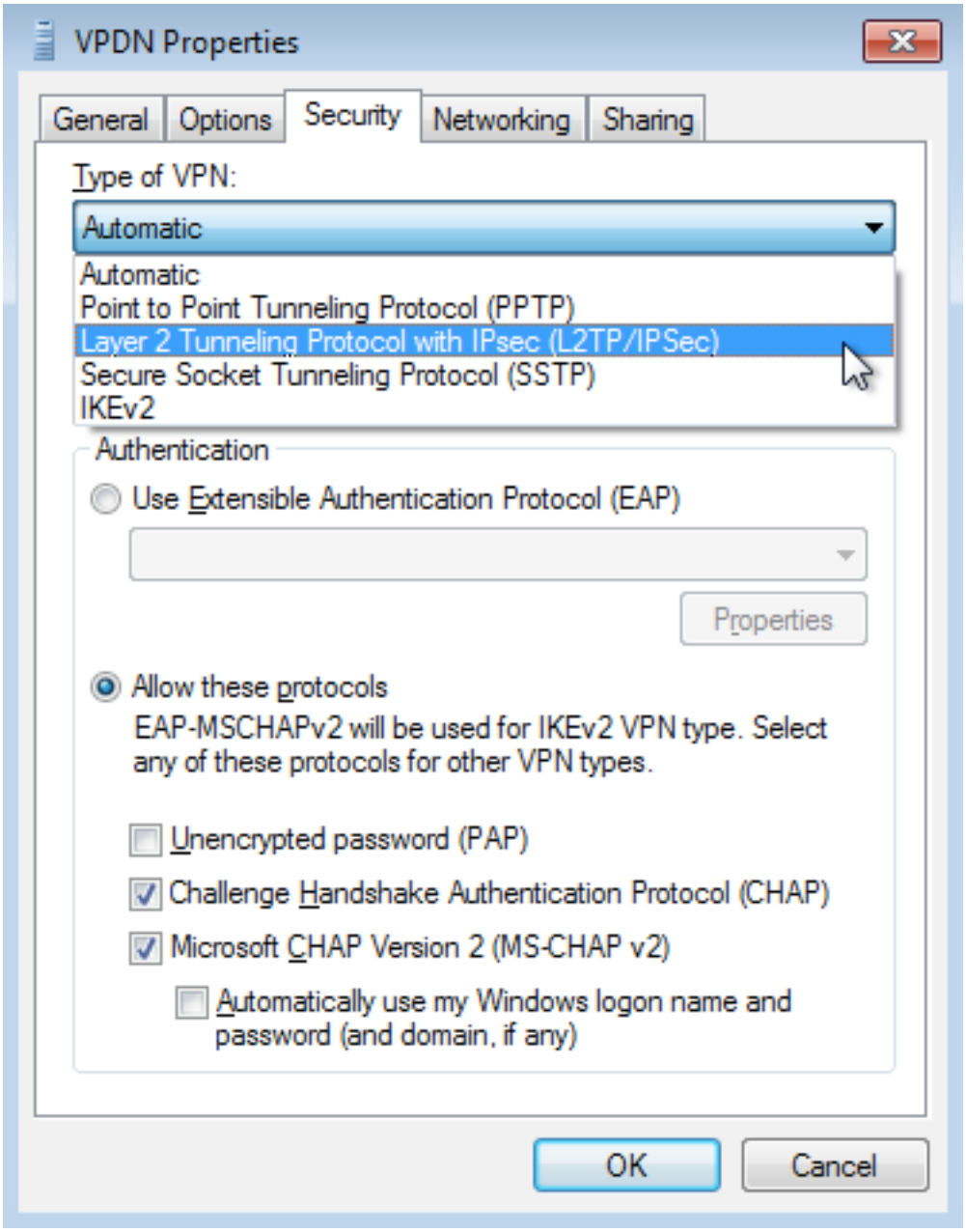
Stap 9. Klik met de rechtermuisknop op de verbinding (hier VPDN) en klik op **Eigenschappen**. Controleer het IP-adres van de Aggregator (hier 192.168.1.1)



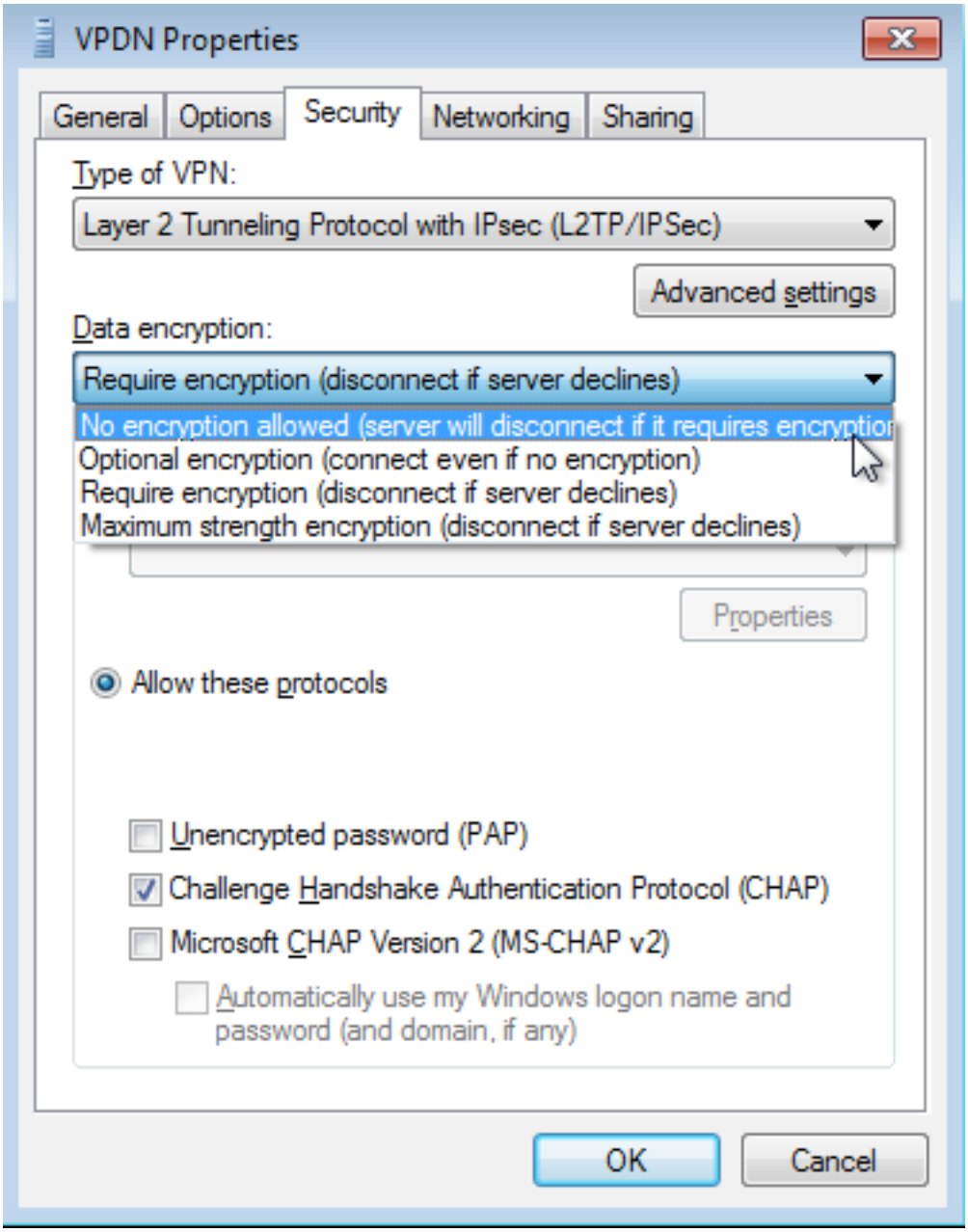
Stap 10. Navigeer naar **Opties>PPP-instellingen** en controleer de instellingen, zoals in deze afbeelding.



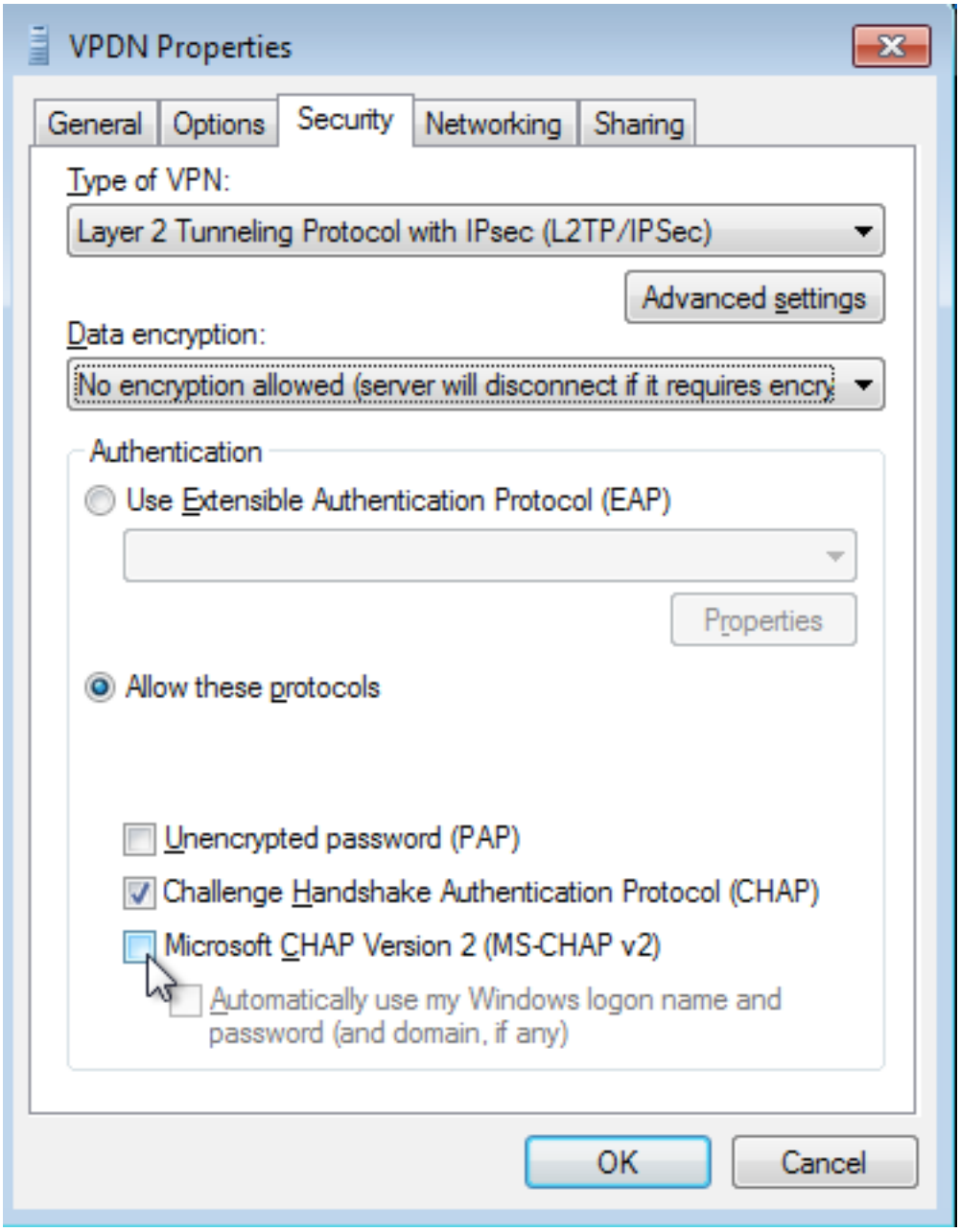
Stap 1. Navigeer naar **Security > Type VPN > Layer 2 Tunneling Protocol met IPsec,** zoals in deze afbeelding weergegeven.



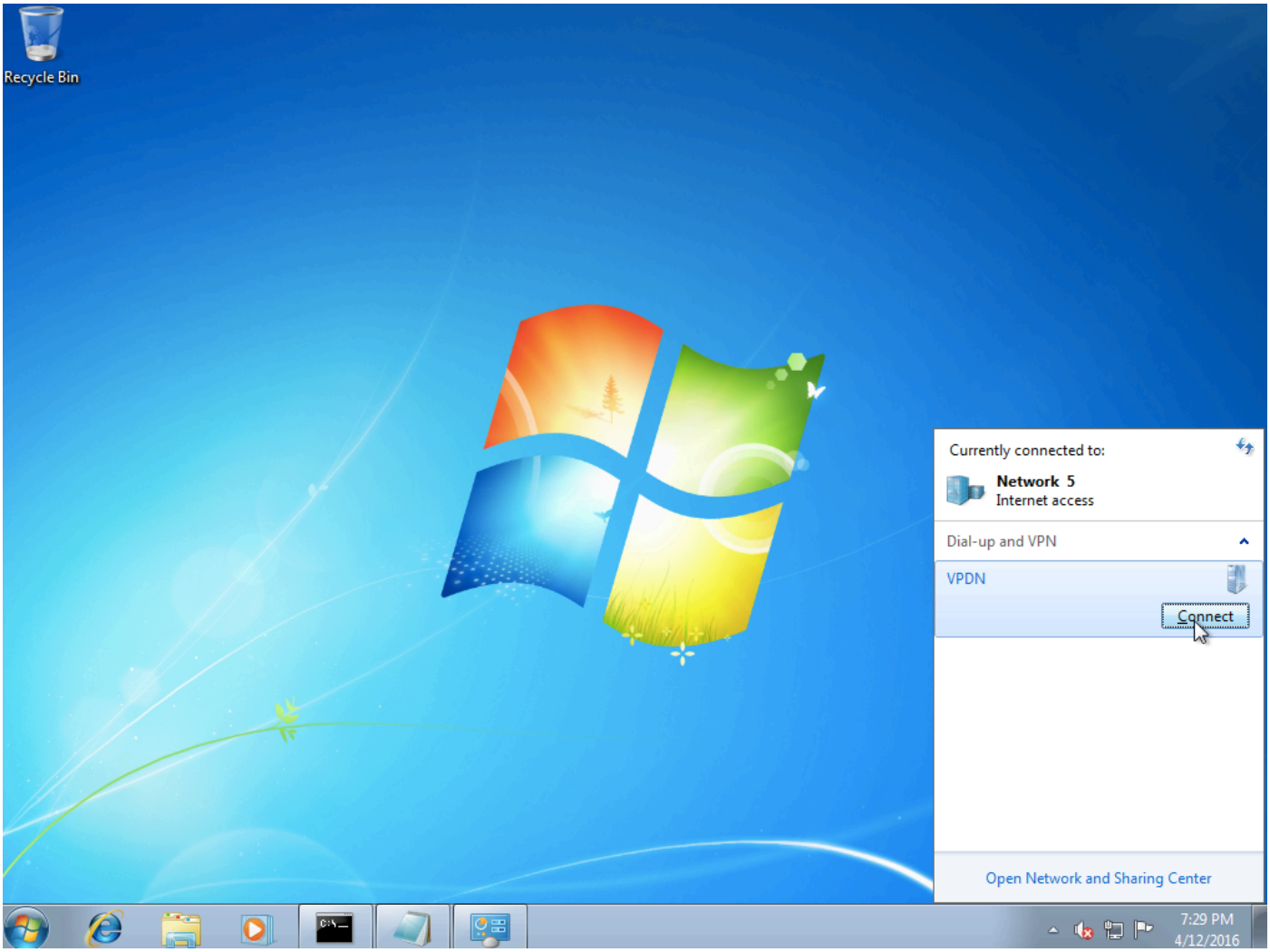
Stap 12. Selecteer **Geen encryptie toegestaan** optie onder het menu Datacenencryptie:



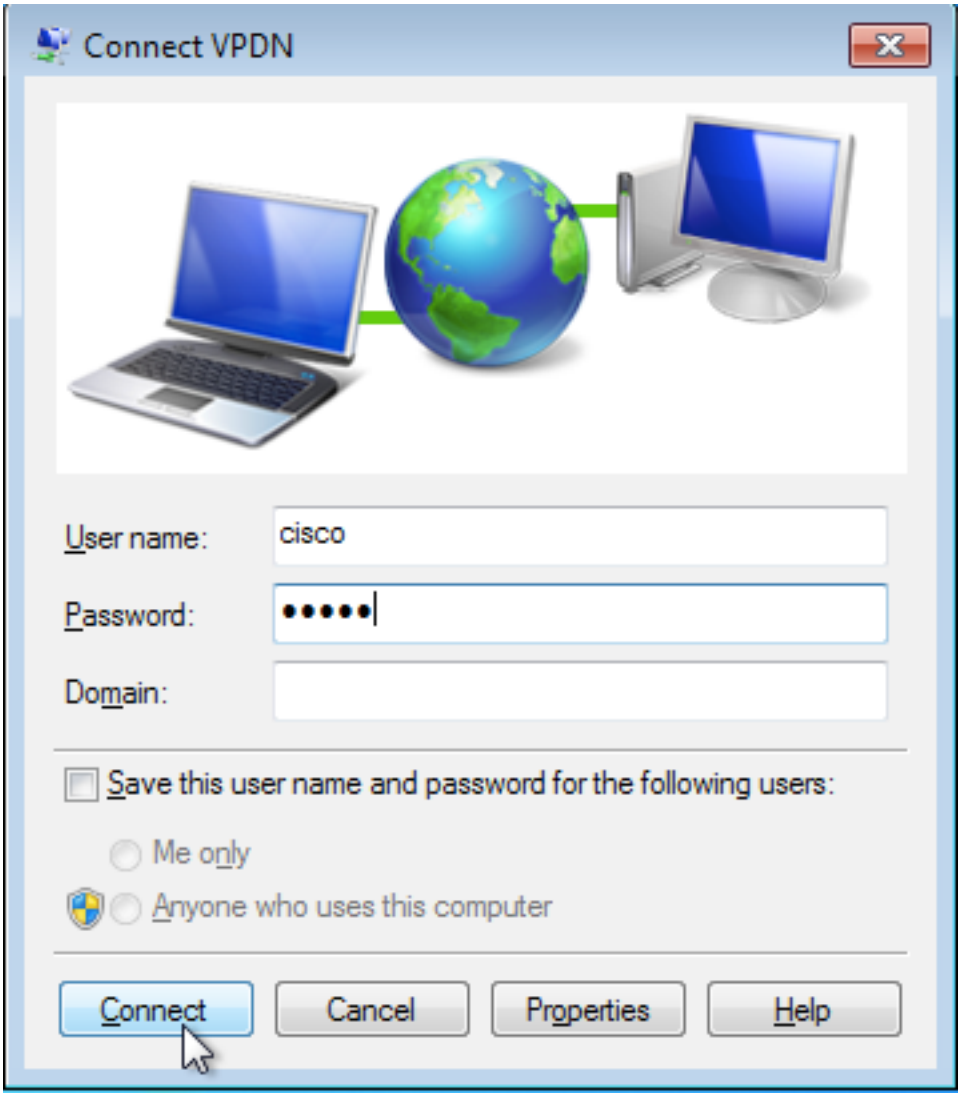
Stap 13. Controleer **Microsoft CHAP versie 2** en klik op **OK.**



Stap 14. Open een netwerk (hier VPDN) en klik op **Connect.**

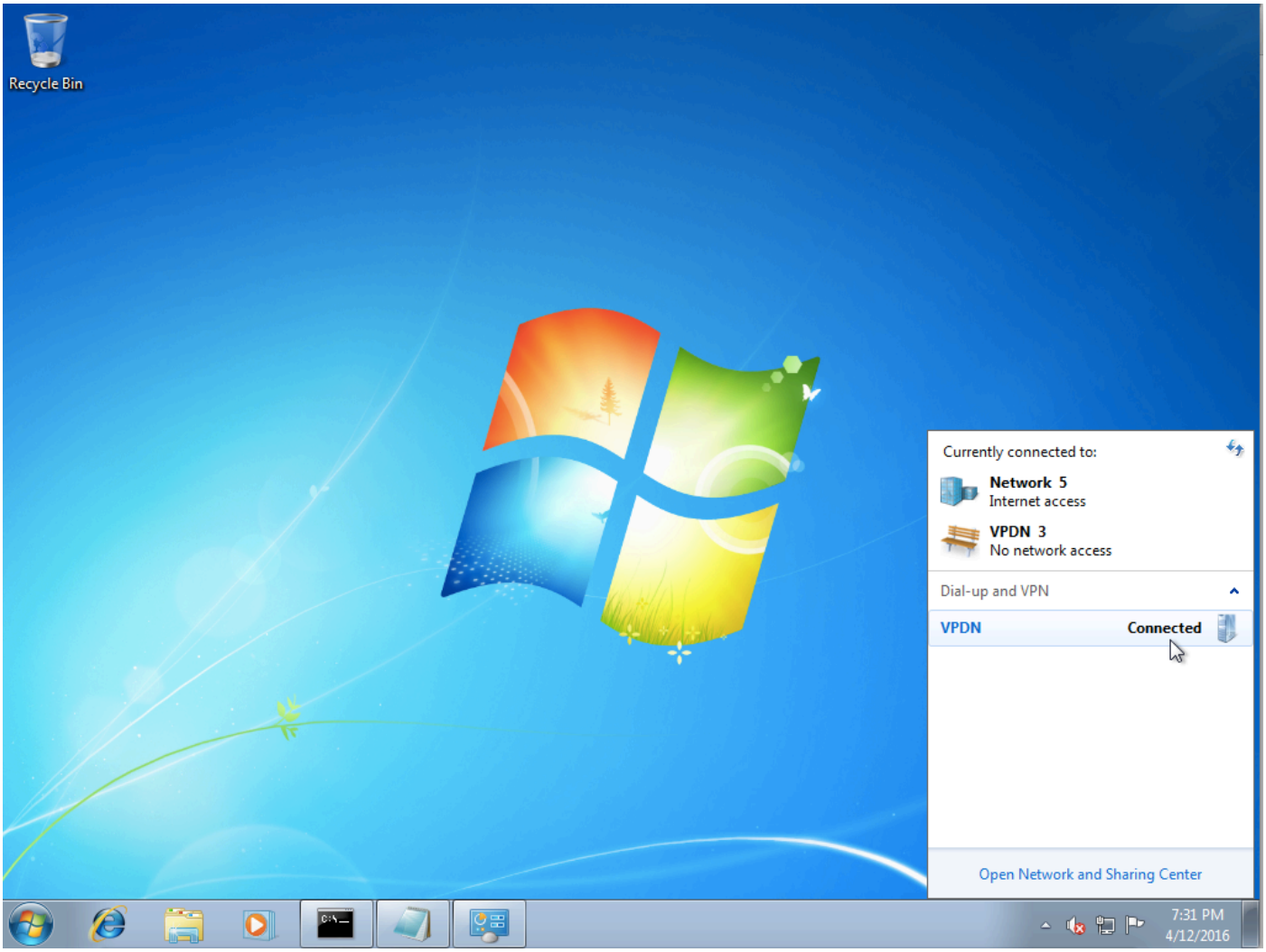


Stap 15. Voer een gebruikersnaam en wachtwoord in en klik op **Connect**



Verifiëren

Stap 1. Open opnieuw **het** tabblad **Networks**, selecteer het netwerk (met de naam VPDN in dit voorbeeld) en controleer of de status is aangesloten.



Stap 2. Open commando prompt en voer **ipfig /all** opdracht uit.

```
PPP adapter VPDN:

   Connection-specific DNS Suffix  . :
   Description . . . . . . . . . . . : VPDN
   Physical Address. . . . . . . . . :
   DHCP Enabled. . . . . . . . . . . : No
   Autoconfiguration Enabled . . . . : Yes
   IPv4 Address. . . . . . . . . . . : 10.1.1.9(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.255.255
   Default Gateway . . . . . . . . . : 0.0.0.0
   DNS Servers . . . . . . . . . . . : 4.2.2.1
                                       4.2.2.2
   NetBIOS over Tcpip. . . . . . . . : Enabled
```

IPv4-adres en Domian Name Server (DNS) worden door de Aggregator toegewezen na voltooiing van de IPCP-fase (PPP Internet Protocol Control Protocol).

Stap 3. Start **debug ppp onderhandeling** en de andere showopdrachten op Aggregator:

```
Aggregator#
*Apr 12 06:17:38.148: PPP: Alloc Context [38726D0C]
*Apr 12 06:17:38.148: ppp11 PPP: Phase is ESTABLISHING
*Apr 12 06:17:38.148: ppp11 PPP: Using vpn set call direction
*Apr 12 06:17:38.148: ppp11 PPP: Treating connection as a callin
```

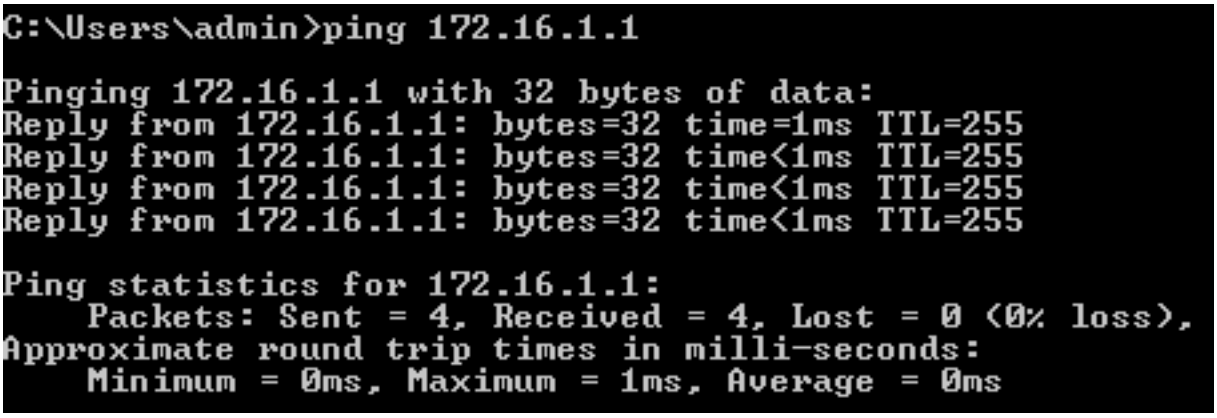
```
*Apr 12 06:17:38.148: ppp11 PPP: Session handle[A600000B] Session id[11]
*Apr 12 06:17:38.148: ppp11 LCP: Event[OPEN] State[Initial to Starting]
*Apr 12 06:17:38.148: ppp11 PPP: No remote authentication for call-in
*Apr 12 06:17:38.148: ppp11 PPP LCP: Enter passive mode, state[Stopped]
*Apr 12 06:17:38.607: ppp11 LCP: I CONFREQ [Stopped] id 0 len 21
*Apr 12 06:17:38.607: ppp11 LCP:    MRU 1400 (0x01040578)
*Apr 12 06:17:38.607: ppp11 LCP:    MagicNumber 0x795C7CD1 (0x0506795C7CD1)
*Apr 12 06:17:38.607: ppp11 LCP:    PFC (0x0702)
*Apr 12 06:17:38.607: ppp11 LCP:    ACFC (0x0802)
*Apr 12 06:17:38.607: ppp11 LCP:    Callback 6 (0x0D0306)
*Apr 12 06:17:38.608: ppp11 LCP: O CONFREQ [Stopped] id 1 len 10
*Apr 12 06:17:38.608: ppp11 LCP:    MagicNumber 0xF7C3D2B9 (0x0506F7C3D2B9)
*Apr 12 06:17:38.608: ppp11 LCP: O CONFREJ [Stopped] id 0 len 7
*Apr 12 06:17:38.608: ppp11 LCP:    Callback 6 (0x0D0306)
*Apr 12 06:17:38.608: ppp11 LCP: Event[Receive ConfReq-] State[Stopped to REQsent]
*Apr 12 06:17:38.615: ppp11 LCP: I CONFACK [REQsent] id 1 len 10
*Apr 12 06:17:38.615: ppp11 LCP:    MagicNumber 0xF7C3D2B9 (0x0506F7C3D2B9)
*Apr 12 06:17:38.615: ppp11 LCP: Event[Receive ConfAck] State[REQsent to ACKrcvd]
*Apr 12 06:17:38.615: ppp11 LCP: I CONFREQ [ACKrcvd] id 1 len 18
*Apr 12 06:17:38.615: ppp11 LCP:    MRU 1400 (0x01040578)
*Apr 12 06:17:38.615: ppp11 LCP:    MagicNumber 0x795C7CD1 (0x0506795C7CD1)
*Apr 12 06:17:38.616: ppp11 LCP:    PFC (0x0702)
*Apr 12 06:17:38.616: ppp11 LCP:    ACFC (0x0802)
*Apr 12 06:17:38.616: ppp11 LCP: O CONFNAK [ACKrcvd] id 1 len 8
*Apr 12 06:17:38.616: ppp11 LCP:    MRU 1500 (0x010405DC)
*Apr 12 06:17:38.616: ppp11 LCP: Event[Receive ConfReq-] State[ACKrcvd to ACKrcvd]
*Apr 12 06:17:38.617: ppp11 LCP: I CONFREQ [ACKrcvd] id 2 len 18
*Apr 12 06:17:38.617: ppp11 LCP:    MRU 1400 (0x01040578)
*Apr 12 06:17:38.617: ppp11 LCP:    MagicNumber 0x795C7CD1 (0x0506795C7CD1)
*Apr 12 06:17:38.617: ppp11 LCP:    PFC (0x0702)
*Apr 12 06:17:38.617: ppp11 LCP:    ACFC (0x0802)
*Apr 12 06:17:38.617: ppp11 LCP: O CONFNAK [ACKrcvd] id 2 len 8
*Apr 12 06:17:38.617: ppp11 LCP:    MRU 1500 (0x010405DC)
*Apr 12 06:17:38.617: ppp11 LCP: Event[Receive ConfReq-] State[ACKrcvd to ACKrcvd]
*Apr 12 06:17:38.618: ppp11 LCP: I CONFREQ [ACKrcvd] id 3 len 18
*Apr 12 06:17:38.618: ppp11 LCP:    MRU 1500 (0x010405DC)
*Apr 12 06:17:38.618: ppp11 LCP:    MagicNumber 0x795C7CD1 (0x0506795C7CD1)
*Apr 12 06:17:38.618: ppp11 LCP:    PFC (0x0702)
*Apr 12 06:17:38.618: ppp11 LCP:    ACFC (0x0802)
*Apr 12 06:17:38.618: ppp11 LCP: O CONFACK [ACKrcvd] id 3 len 18
*Apr 12 06:17:38.618: ppp11 LCP:    MRU 1500 (0x010405DC)
*Apr 12 06:17:38.618: ppp11 LCP:    MagicNumber 0x795C7CD1 (0x0506795C7CD1)
*Apr 12 06:17:38.618: ppp11 LCP:    PFC (0x0702)
*Apr 12 06:17:38.619: ppp11 LCP:    ACFC (0x0802)
*Apr 12 06:17:38.619: ppp11 LCP: Event[Receive ConfReq+] State[ACKrcvd to Open]
*Apr 12 06:17:38.621: ppp11 LCP: I IDENTIFY [Open] id 4 len 18 magic 0x795C7CD1MSRASV5.20
*Apr 12 06:17:38.621: ppp11 LCP: I IDENTIFY [Open] id 5 len 24 magic 0x795C7CD1MSRAS-0-ADMIN-PC
*Apr 12 06:17:38.621: ppp11 LCP: I IDENTIFY [Open] id 6 len 24 magic 0x795C7CD1Z8Of(U3G.cIwR<#!
*Apr 12 06:17:38.626: ppp11 PPP: Queue IPV6CP code[1] id[7]
*Apr 12 06:17:38.626: ppp11 PPP: Queue IPCP code[1] id[8]
*Apr 12 06:17:38.640: ppp11 PPP: Phase is FORWARDING, Attempting Forward
*Apr 12 06:17:38.640: ppp11 LCP: State is Open
*Apr 12 06:17:38.657: Vi3.1 PPP: Phase is ESTABLISHING, Finish LCP
*Apr 12 06:17:38.657: Vi3.1 PPP: Phase is UP
*Apr 12 06:17:38.657: Vi3.1 IPCP: Protocol configured, start CP. state[Initial]
*Apr 12 06:17:38.657: Vi3.1 IPCP: Event[OPEN] State[Initial to Starting]
*Apr 12 06:17:38.657: Vi3.1 IPCP: O CONFREQ [Starting] id 1 len 10
*Apr 12 06:17:38.657: Vi3.1 IPCP:    Address 172.16.1.1 (0x0306AC100101)
*Apr 12 06:17:38.657: Vi3.1 IPCP: Event[UP] State[Starting to REQsent]
*Apr 12 06:17:38.657: Vi3.1 PPP: Process pending ncp packets
*Apr 12 06:17:38.657: Vi3.1 IPCP: Redirect packet to Vi3.1
*Apr 12 06:17:38.657: Vi3.1 IPCP: I CONFREQ [REQsent] id 8 len 34
*Apr 12 06:17:38.657: Vi3.1 IPCP:    Address 0.0.0.0 (0x030600000000)
*Apr 12 06:17:38.657: Vi3.1 IPCP:    PrimaryDNS 0.0.0.0 (0x810600000000)
```

```
*Apr 12 06:17:38.657: Vi3.1 IPCP:    PrimaryWINS 0.0.0.0 (0x820600000000)
*Apr 12 06:17:38.657: Vi3.1 IPCP:    SecondaryDNS 0.0.0.0 (0x830600000000)
*Apr 12 06:17:38.657: Vi3.1 IPCP:    SecondaryWINS 0.0.0.0 (0x840600000000)
*Apr 12 06:17:38.657: Vi3.1 IPCP AUTHOR: Done. Her address 0.0.0.0, we want 0.0.0.0
*Apr 12 06:17:38.657: Vi3.1 IPCP: Pool returned 10.1.1.9
*Apr 12 06:17:38.657: Vi3.1 IPCP: O CONFREJ [REQsent] id 8 len 16
*Apr 12 06:17:38.658: Vi3.1 IPCP:    PrimaryWINS 0.0.0.0 (0x820600000000)
*Apr 12 06:17:38.658: Vi3.1 IPCP:    SecondaryWINS 0.0.0.0 (0x840600000000)
*Apr 12 06:17:38.658: Vi3.1 IPCP: Event[Receive ConfReq-] State[REQsent to REQsent]
*Apr 12 06:17:38.658: Vi3.1 IPV6CP: Redirect packet to Vi3.1
*Apr 12 06:17:38.658: Vi3.1 IPV6CP: I CONFREQ [UNKNOWN] id 7 len 14
*Apr 12 06:17:38.658: Vi3.1 IPV6CP:    Interface-Id F0AA:D7A4:5750:D93E (0x010AF0AAD7A45750D93E)
*Apr 12 06:17:38.658: Vi3.1 LCP: O PROTREJ [Open] id 2 len 20 protocol IPV6CP
(0x0107000E010AF0AAD7A45750D93E)
*Apr 12 06:17:38.672: Vi3.1 IPCP: I CONFACK [REQsent] id 1 len 10
*Apr 12 06:17:38.672: Vi3.1 IPCP:    Address 172.16.1.1 (0x0306AC100101)
*Apr 12 06:17:38.672: Vi3.1 IPCP: Event[Receive ConfAck] State[REQsent to ACKrcvd]
*Apr 12 06:17:38.672: Vi3.1 IPCP: I CONFREQ [ACKrcvd] id 9 len 22
*Apr 12 06:17:38.672: Vi3.1 IPCP:    Address 0.0.0.0 (0x030600000000)
*Apr 12 06:17:38.672: Vi3.1 IPCP:    PrimaryDNS 0.0.0.0 (0x810600000000)
*Apr 12 06:17:38.672: Vi3.1 IPCP:    SecondaryDNS 0.0.0.0 (0x830600000000)
*Apr 12 06:17:38.672: Vi3.1 IPCP: O CONFNAK [ACKrcvd] id 9 len 22
*Apr 12 06:17:38.672: Vi3.1 IPCP:    Address 10.1.1.9 (0x03060A010109)
*Apr 12 06:17:38.672: Vi3.1 IPCP:    PrimaryDNS 4.2.2.1 (0x810604020201)
*Apr 12 06:17:38.672: Vi3.1 IPCP:    SecondaryDNS 4.2.2.2 (0x830604020202)
*Apr 12 06:17:38.672: Vi3.1 IPCP: Event[Receive ConfReq-] State[ACKrcvd to ACKrcvd]
*Apr 12 06:17:38.747: Vi3.1 IPCP: I CONFREQ [ACKrcvd] id 10 len 22
*Apr 12 06:17:38.747: Vi3.1 IPCP:    Address 10.1.1.9 (0x03060A010109)
*Apr 12 06:17:38.747: Vi3.1 IPCP:    PrimaryDNS 4.2.2.1 (0x810604020201)
*Apr 12 06:17:38.747: Vi3.1 IPCP:    SecondaryDNS 4.2.2.2 (0x830604020202)
*Apr 12 06:17:38.747: Vi3.1 IPCP: O CONFACK [ACKrcvd] id 10 len 22
*Apr 12 06:17:38.748: Vi3.1 IPCP:    Address 10.1.1.9 (0x03060A010109)
*Apr 12 06:17:38.748: Vi3.1 IPCP:    PrimaryDNS 4.2.2.1 (0x810604020201)
*Apr 12 06:17:38.748: Vi3.1 IPCP:    SecondaryDNS 4.2.2.2 (0x830604020202)
*Apr 12 06:17:38.748: Vi3.1 IPCP: Event[Receive ConfReq+] State[ACKrcvd to Open]
*Apr 12 06:17:38.768: Vi3.1 IPCP: State is Open
*Apr 12 06:17:38.769: Vi3.1 Added to neighbor route AVL tree: topoid 0, address 10.1.1.9
*Apr 12 06:17:38.769: Vi3.1 IPCP: Install route to 10.1.1.9


Aggregator#show caller ip
 Line           User       IP Address      Local Number    Remote Number   <->
 Vi3.1          -          10.1.1.9       -               -               in

Aggregator#show ip interface brief | exclude un
Interface              IP-Address      OK? Method Status                Protocol
GigabitEthernet0/0/1   192.168.1.1     YES manual up                    up
Loopback100            172.16.1.1      YES manual up                    up
```

Stap 4. Controleer of de Windows-machine het externe netwerk achter Aggregator kan bereiken (in dit geval Loopback 100-interface)



Problemen oplossen

Er is momenteel geen specifieke troubleshooting-informatie beschikbaar voor deze configuratie.

Gerelateerde informatie

- Inzicht VPDN
- OTechnische ondersteuning en documentatie - Cisco-systemen