Configuración del Túnel L2TP entre un Equipo Windows y un Router Cisco

Contenido

Introducción

Este documento describe cómo configurar un túnel L2TP (Layer 2 Tunneling Protocol) entre una máquina de Windows y un router Cisco.

Prerequisites

Requirements

Cisco recomienda que tenga conocimiento de que windows machine puede hacer ping a la dirección IP de la interfaz física en el router.

Componentes Utilizados

Este documento no tiene restricciones específicas en cuanto a versiones de software y de hardware.

The information in this document was created from the devices in a specific lab environment. All of the devices used in this document started with a cleared (default) configuration. If your network is live, make sure that you understand the potential impact of any command.

Configurar

Diagrama de la red

En este documento, se utiliza esta configuración de red:

Configuraciones

Configuración del agregador:

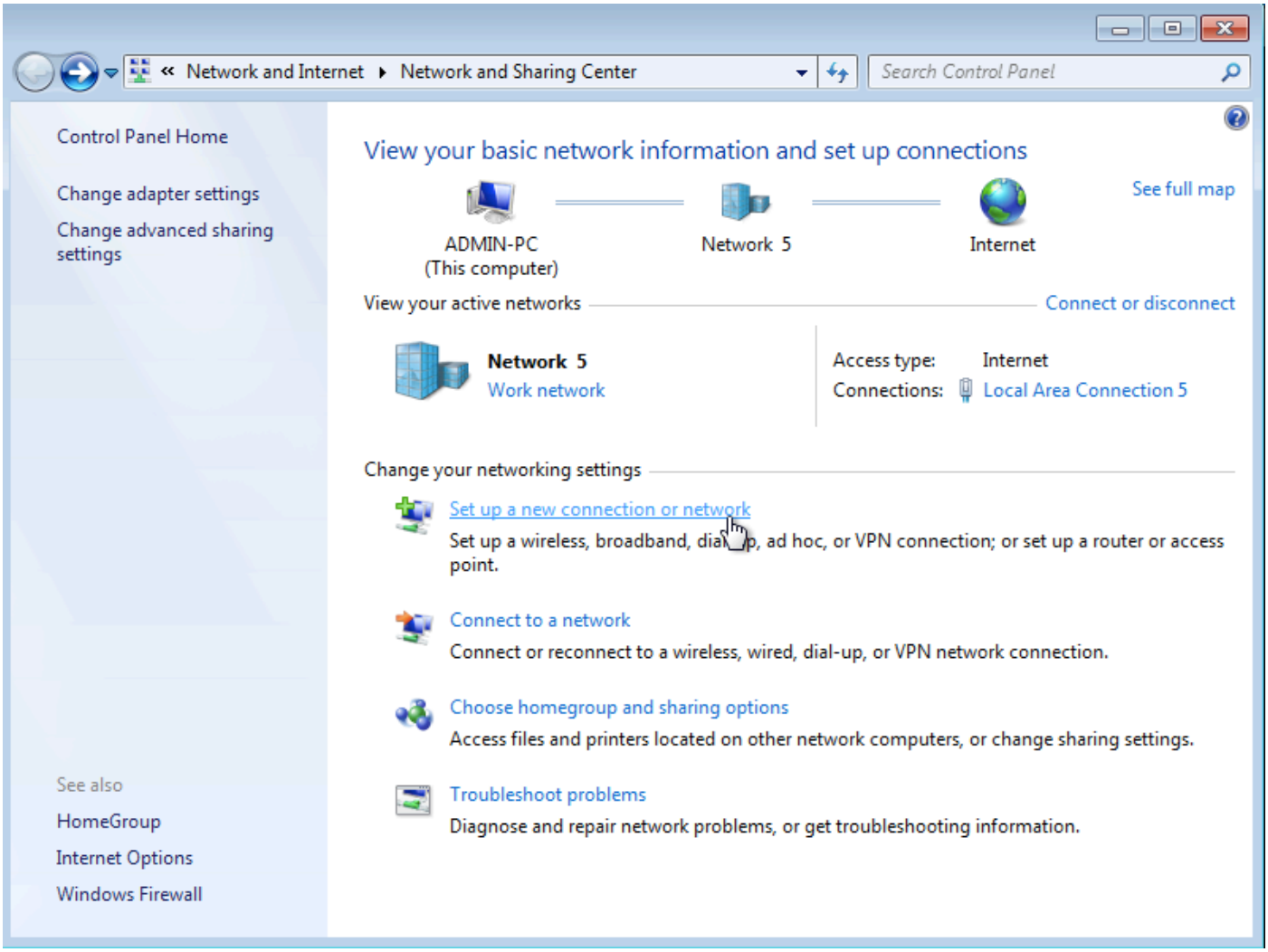
Se muestra un ejemplo de la configuración en el Agregador:

```
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
```

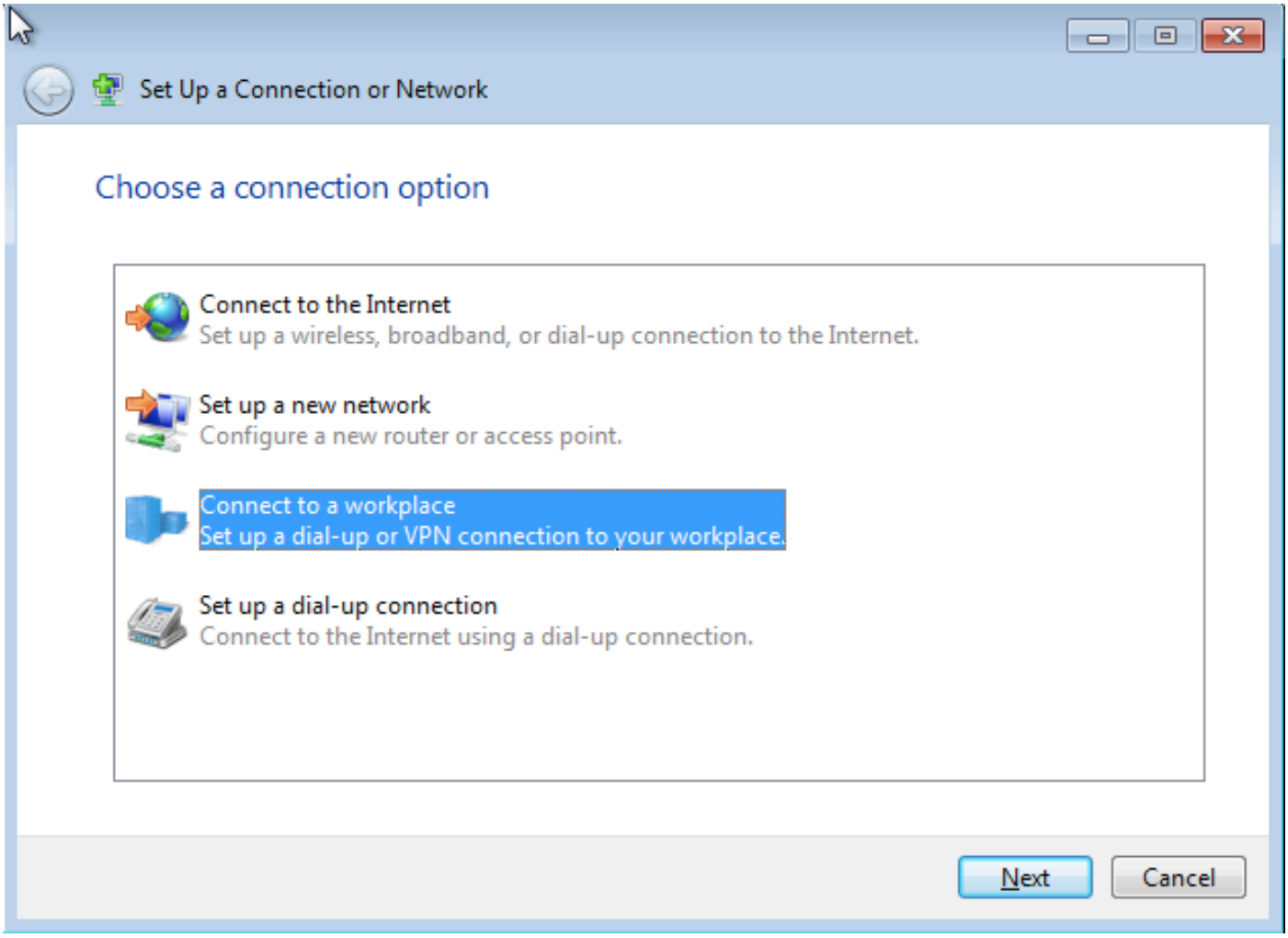
Configuración y configuración de Windows Machine

Complete estos pasos:

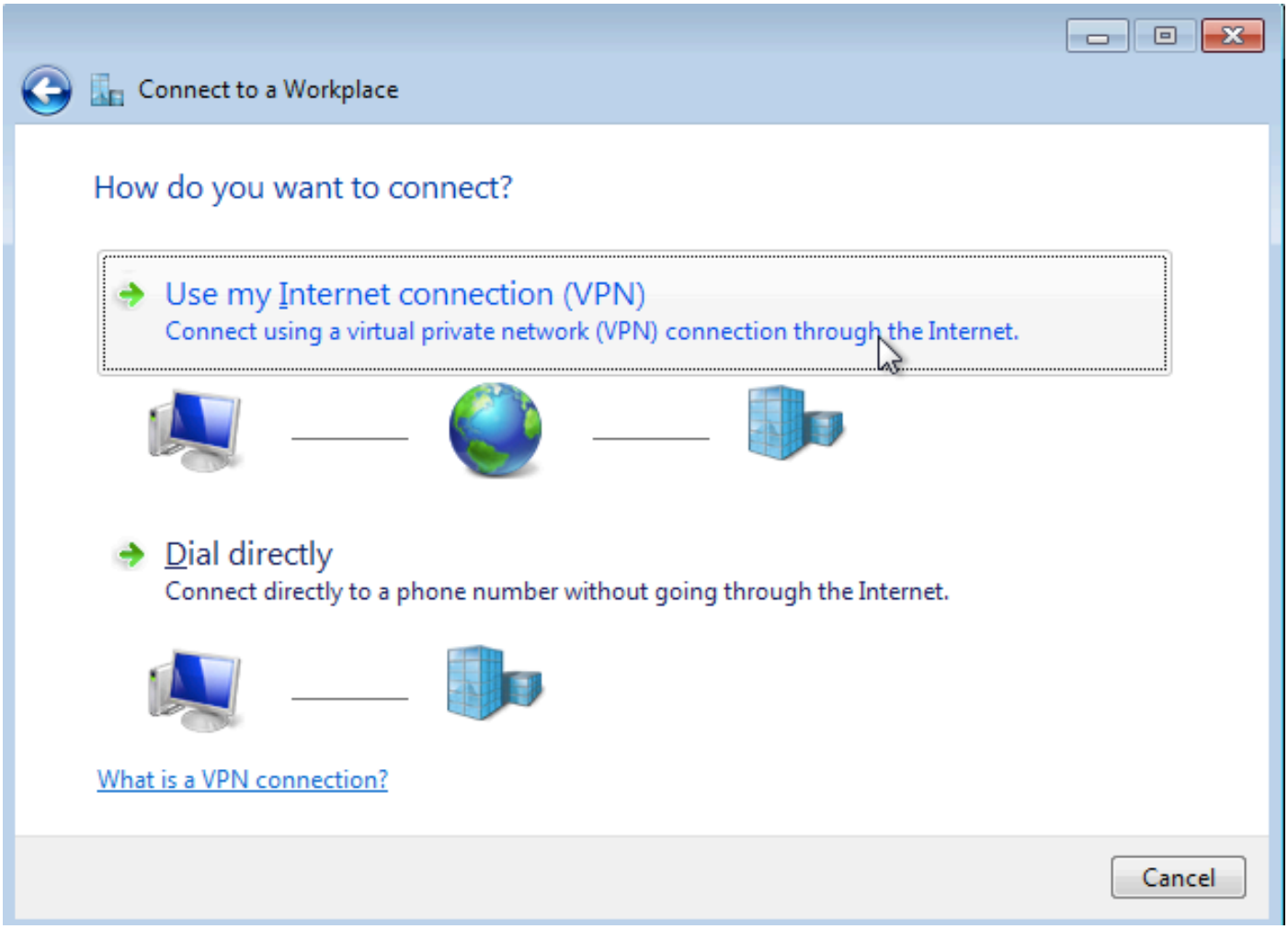
Paso 1. Abra **Network and Sharing Center** y haga clic en **Set up a new connection or network** como se muestra en esta imagen.



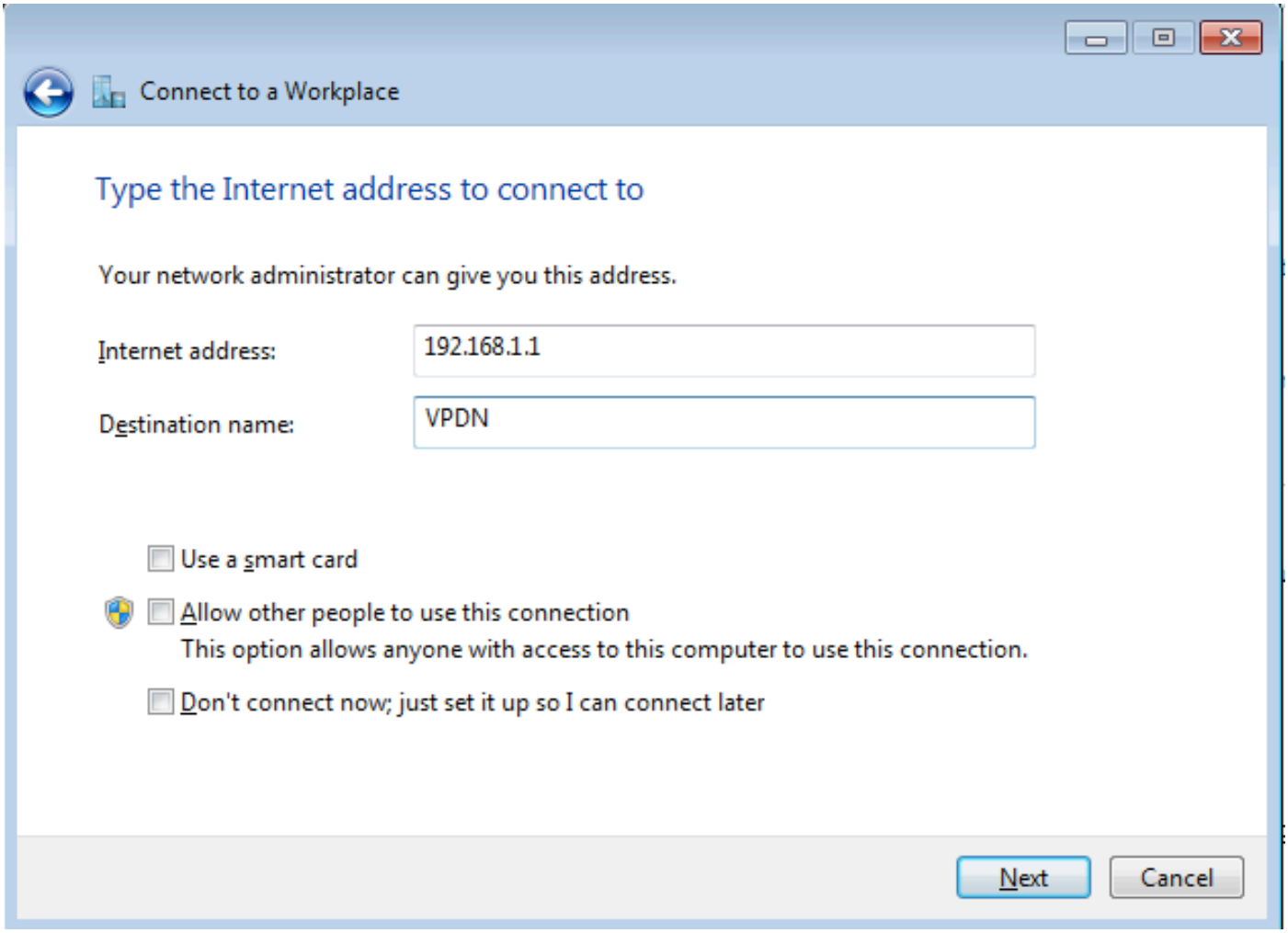
Paso 2. Seleccione **Connect to a Workplace** y haga clic en **Next**



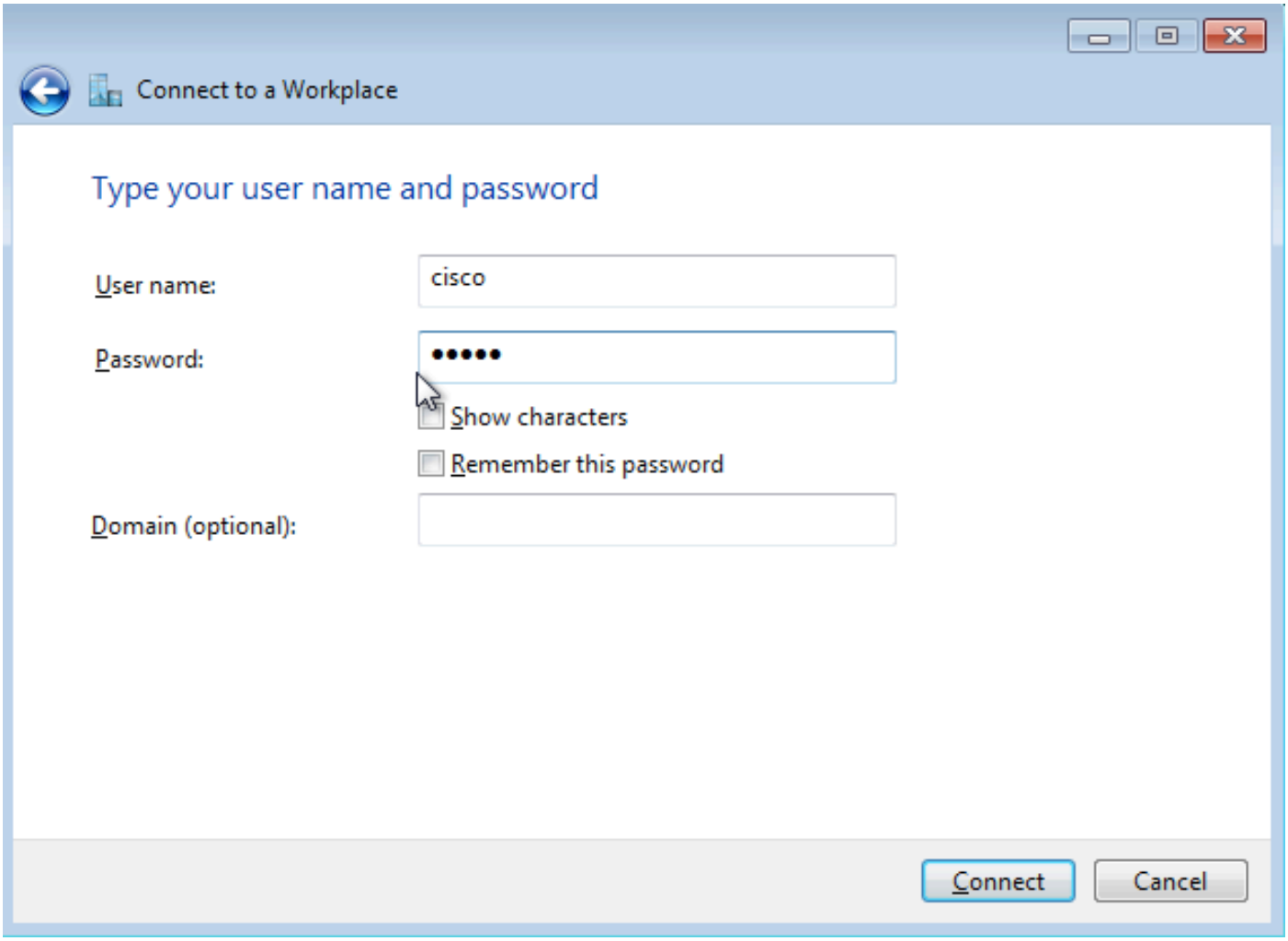
Paso 3. Seleccione **Usar mi conexión a Internet (VPN)**



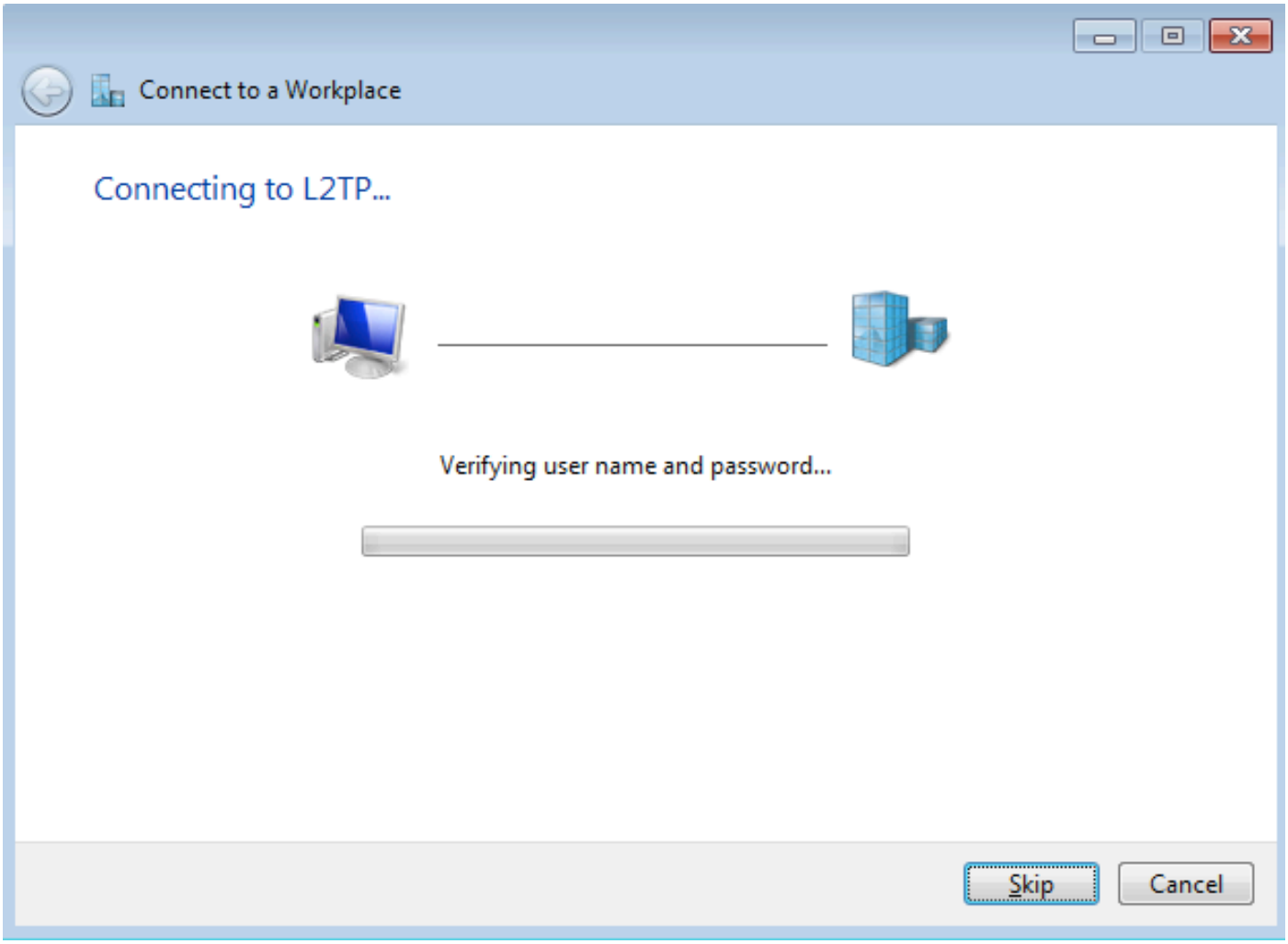
Paso 4. Introduzca la dirección IP del agregador (en este caso, 192.168.1.1), asigne un nombre a la conexión (en este caso dando el nombre como VPDN) y haga clic en **Siguiente**.



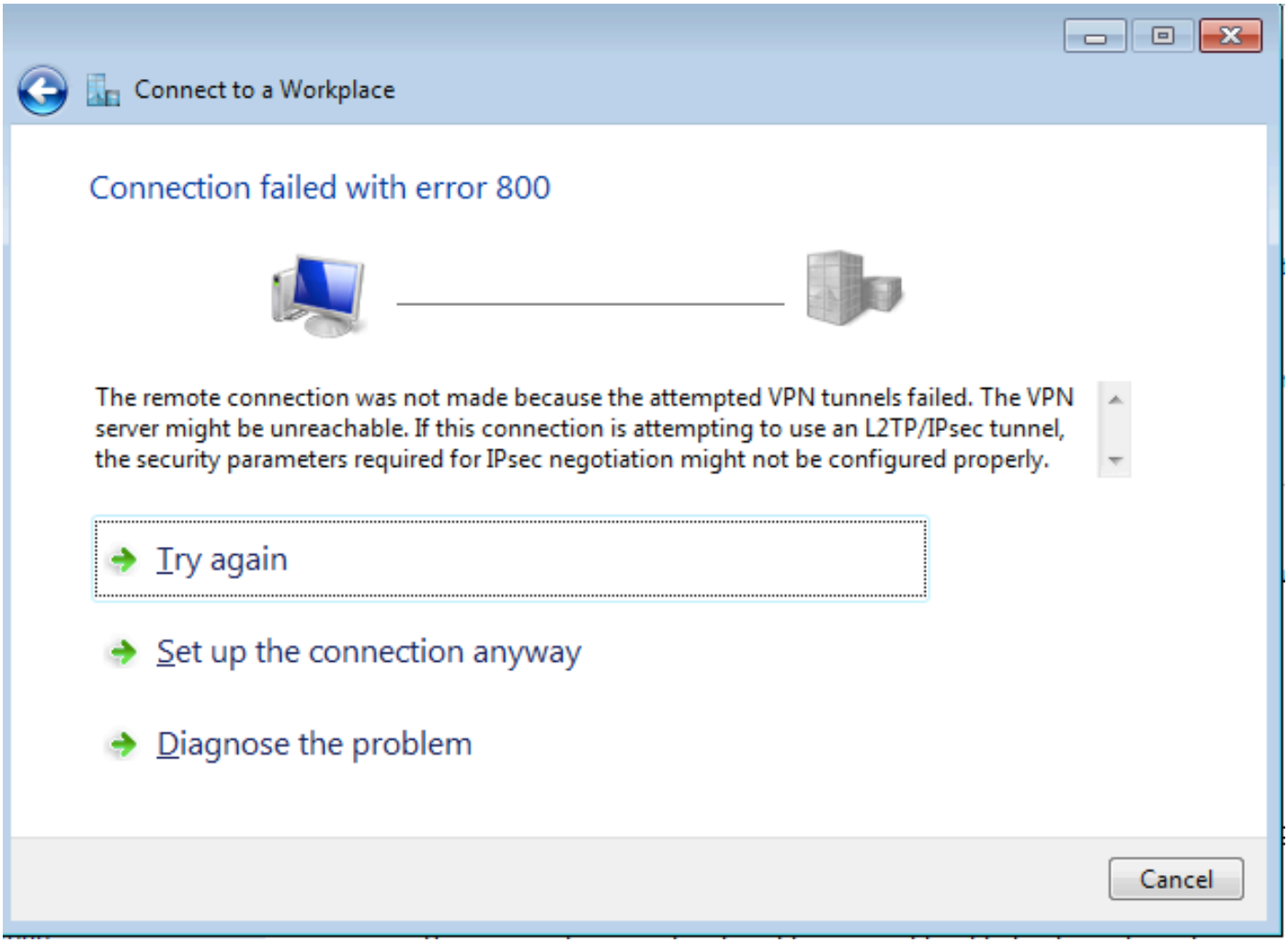
Paso 5. Introduzca el nombre de usuario y la contraseña y haga clic en **Connect**



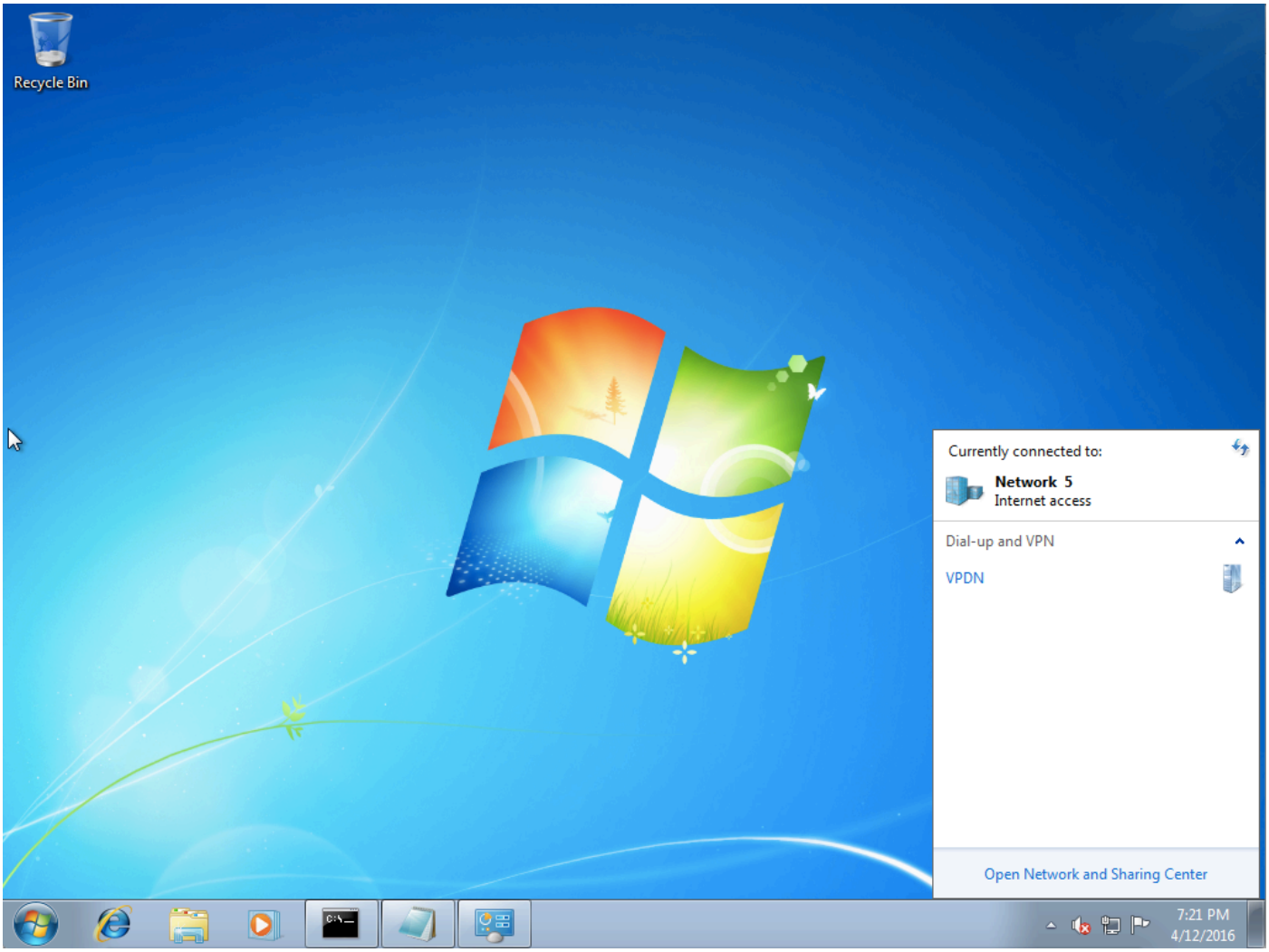
Paso 6. Verifique el nombre de usuario y la contraseña



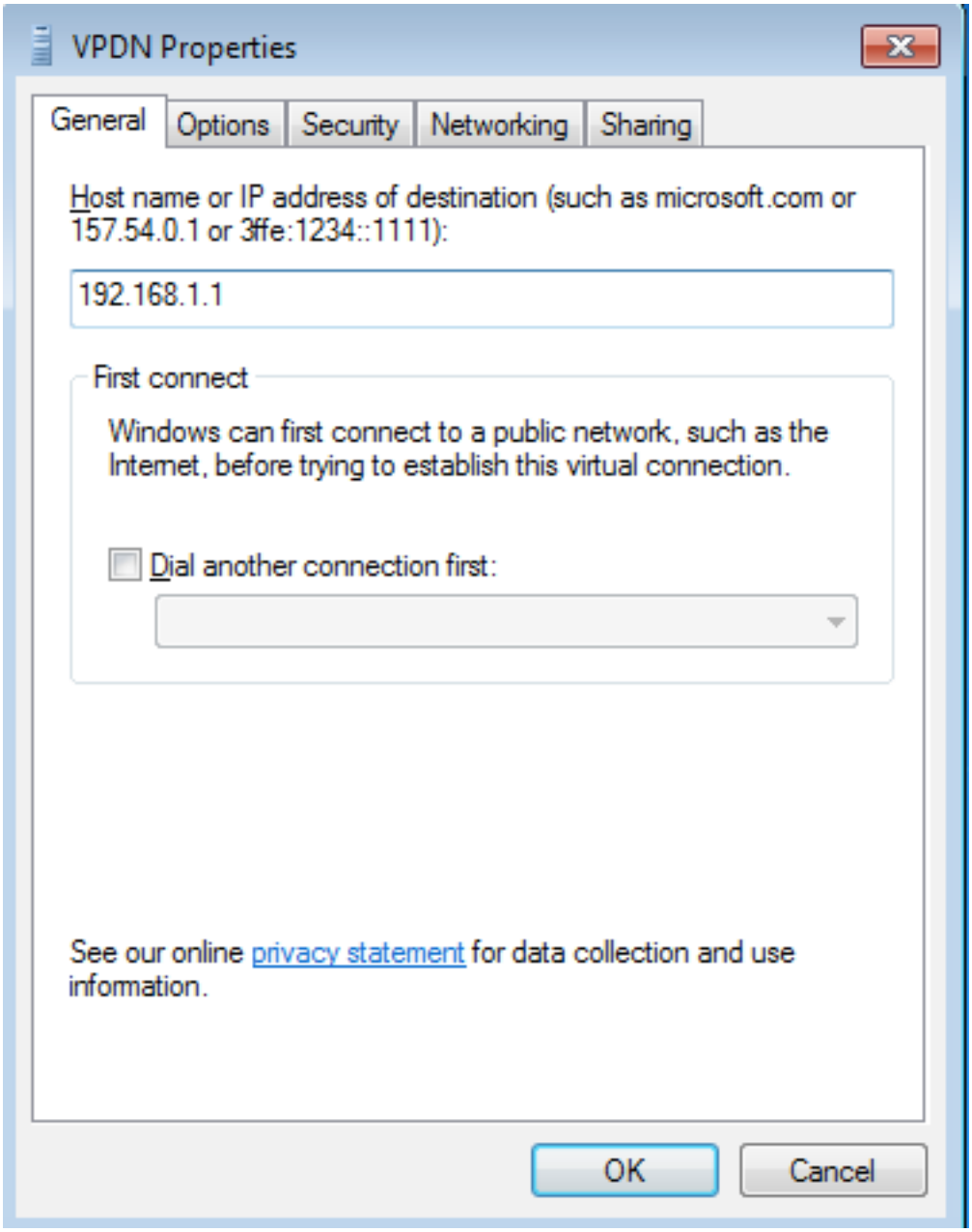
Paso 7. Podría fallar por primera vez, como se muestra en esta imagen.



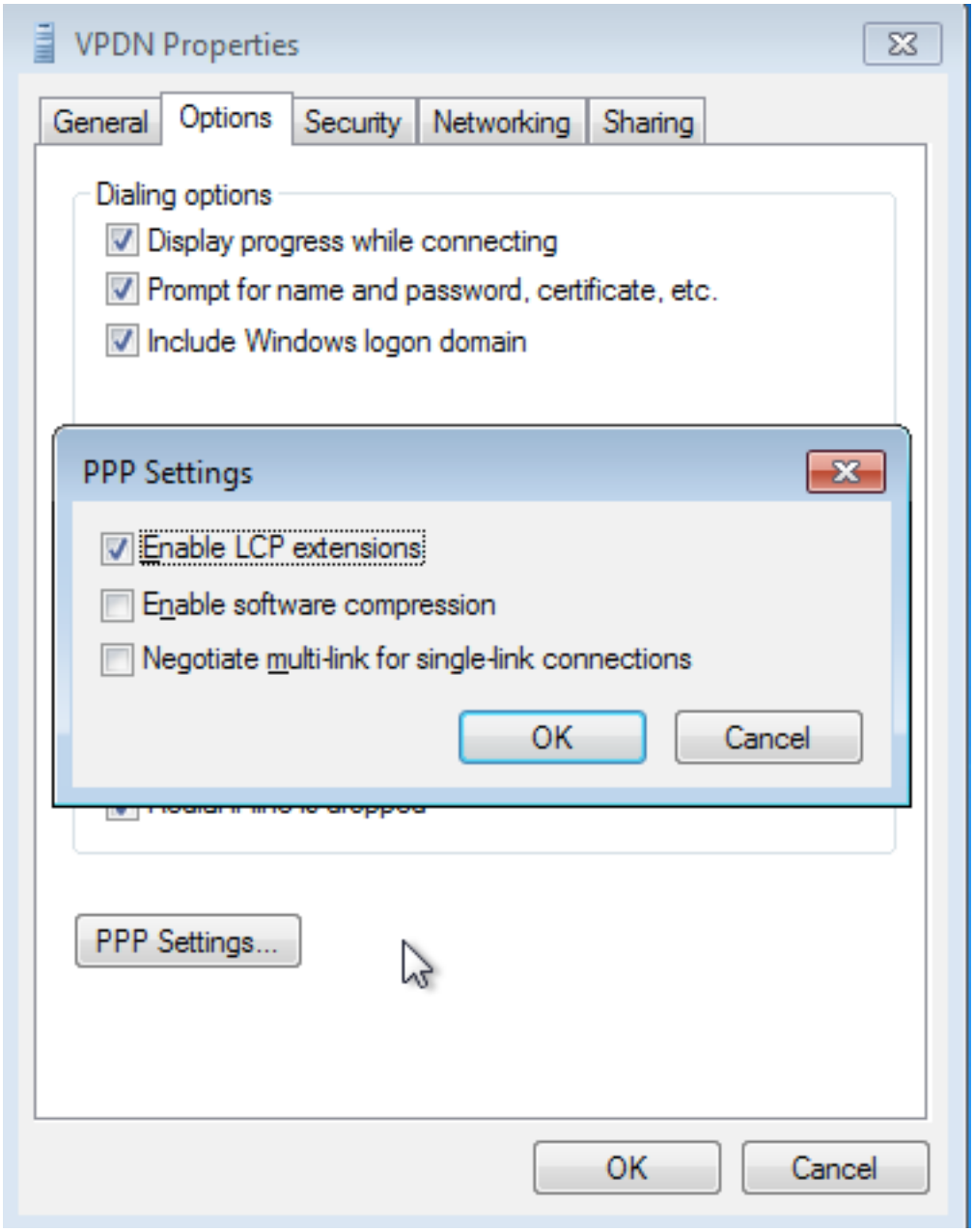
Paso 8. Haga clic en **Configurar la conexión de todos modos** y abra la **ficha Redes**.



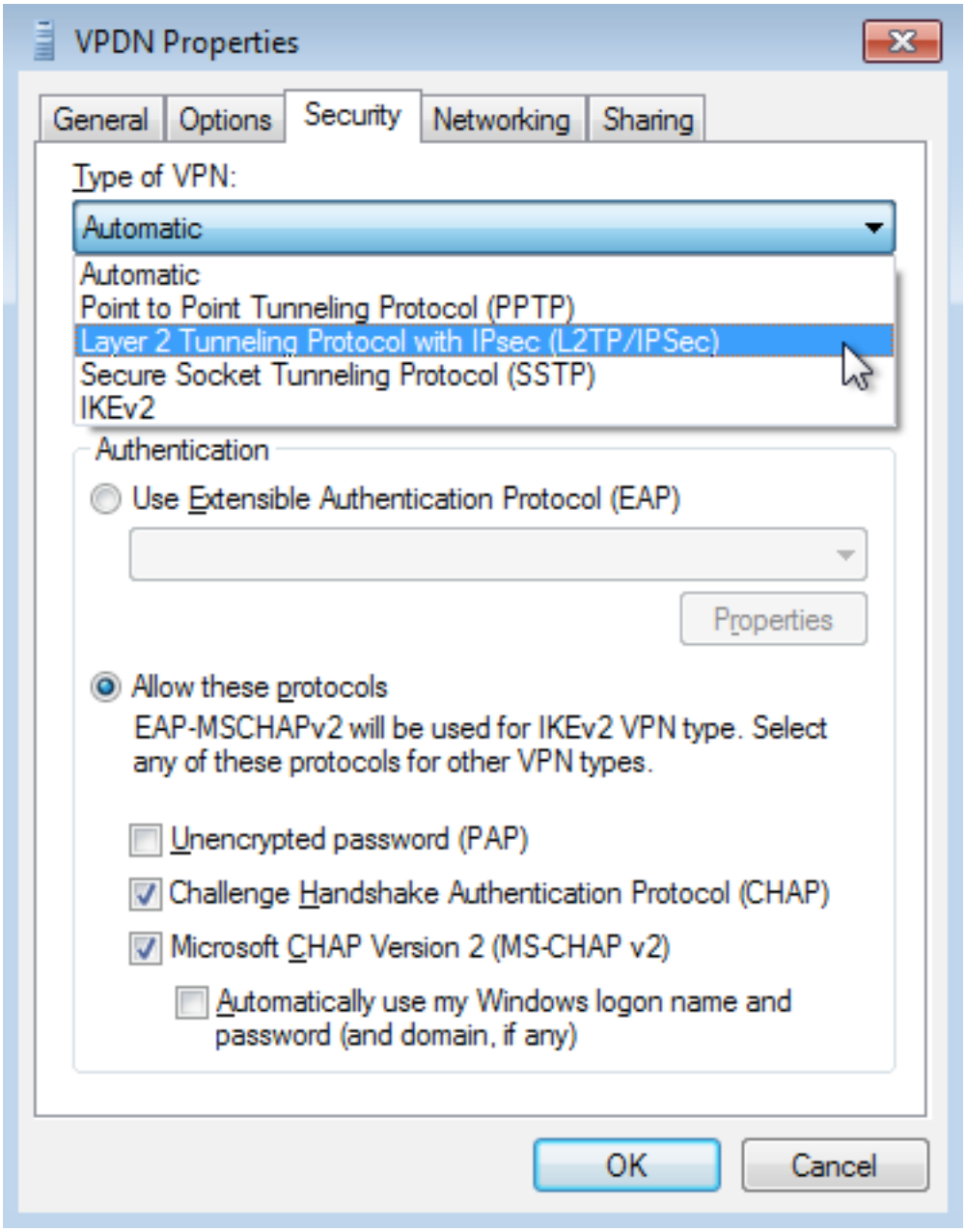
Paso 9. Haga clic con el botón derecho del ratón en la conexión (aquí VPDN) y haga clic en **Propiedades**. Verifique la dirección IP del Agregador (aquí 192.168.1.1)



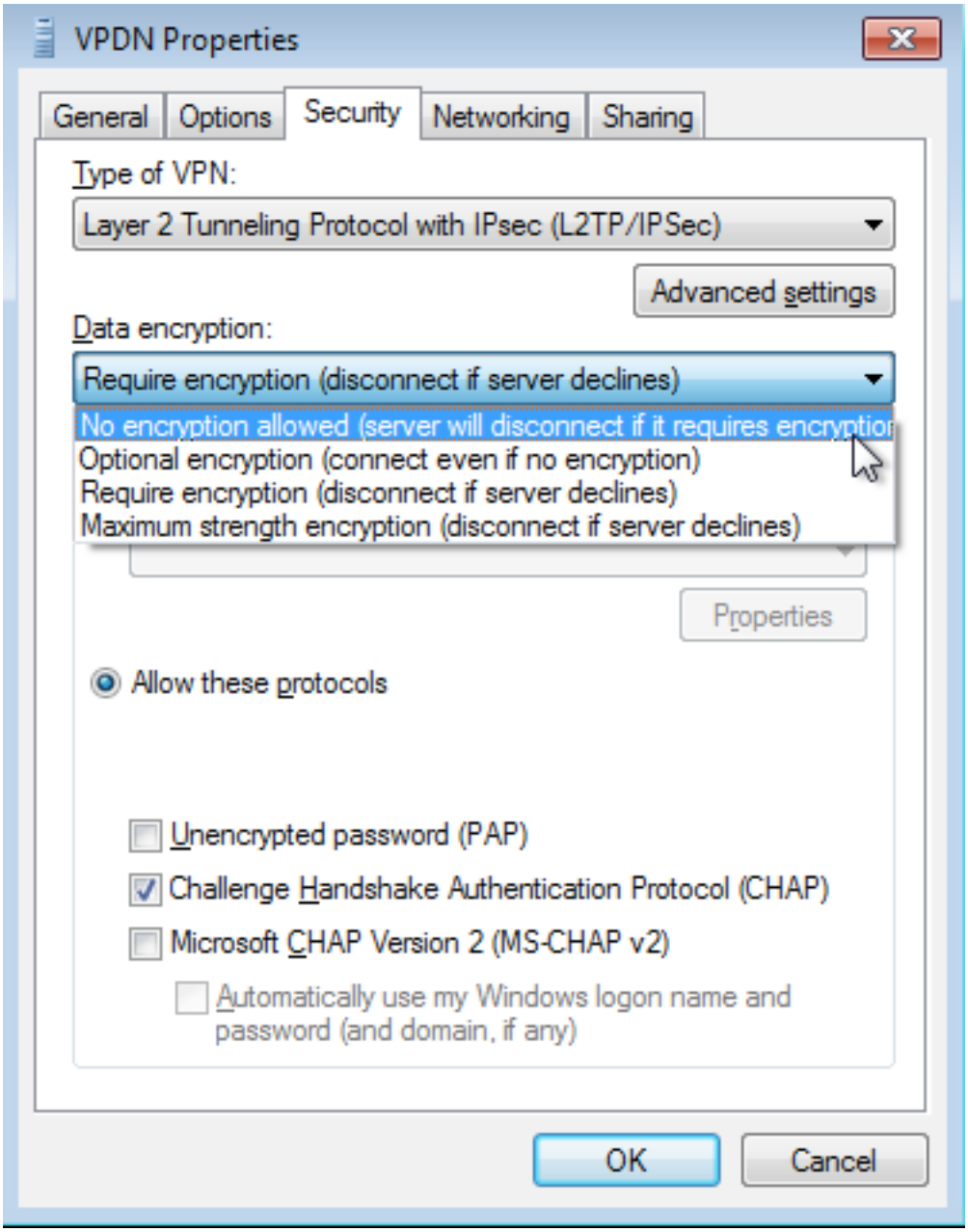
Paso 10. Navegue hasta **Opciones > Configuración PPP** y verifique los ajustes, como se muestra en esta imagen.



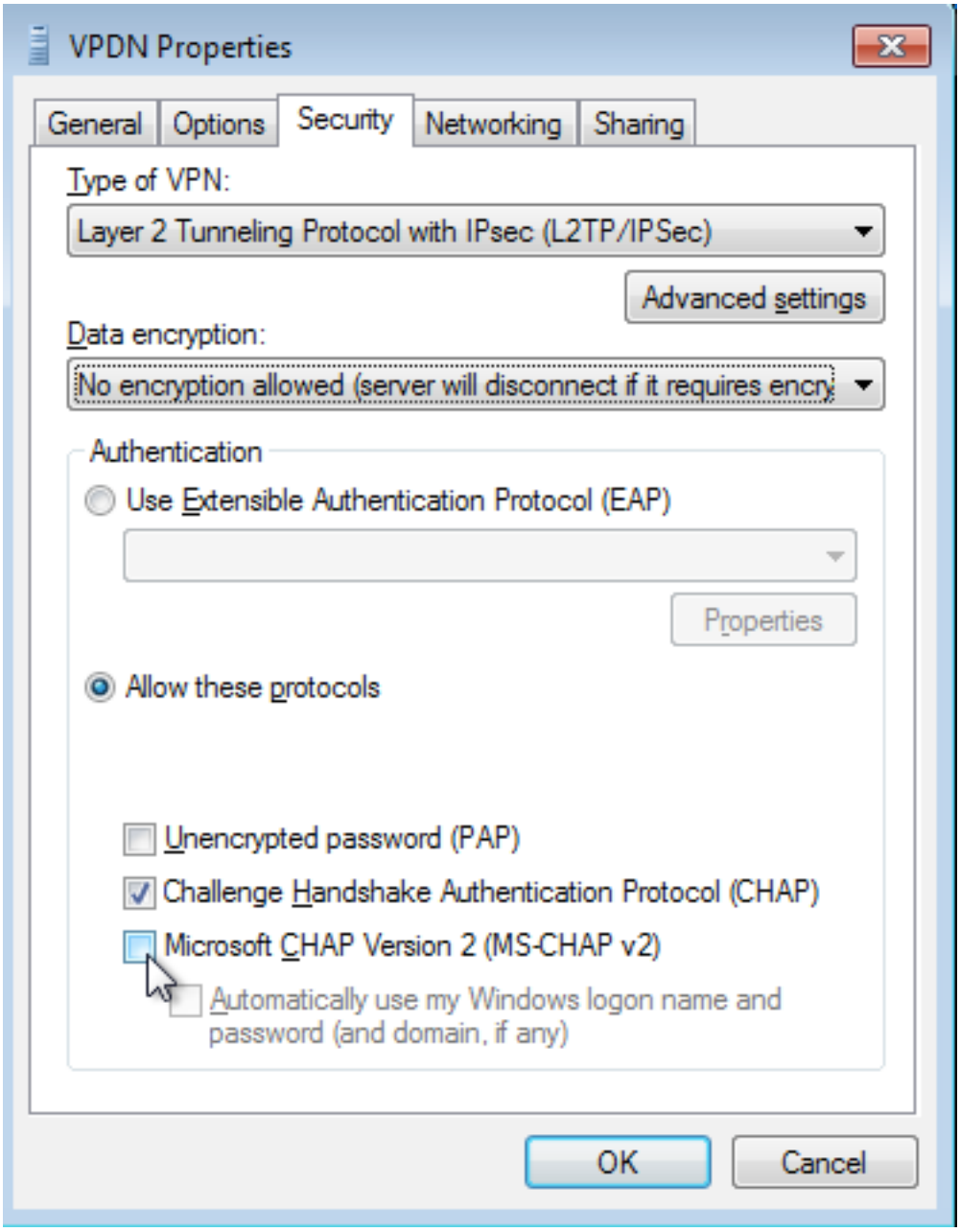
Paso 11. Navegue hasta **Security >Type of VPN >Layer 2 Tunneling Protocol with IPsec,** como se muestra en esta imagen.



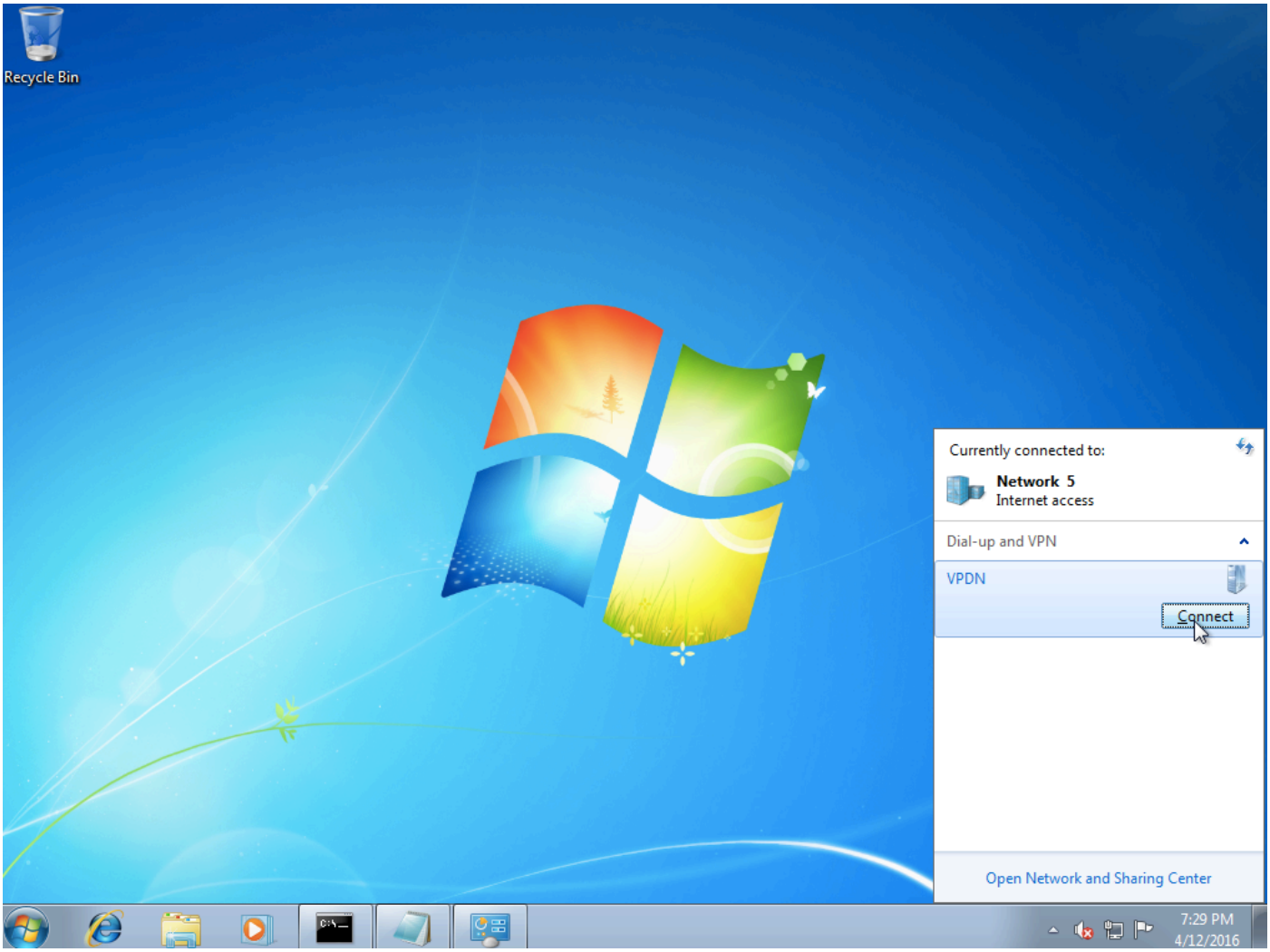
Paso 12. Seleccione la opción **No encryption allowed** en el menú desplegable Data encryption (Cifrado de datos):



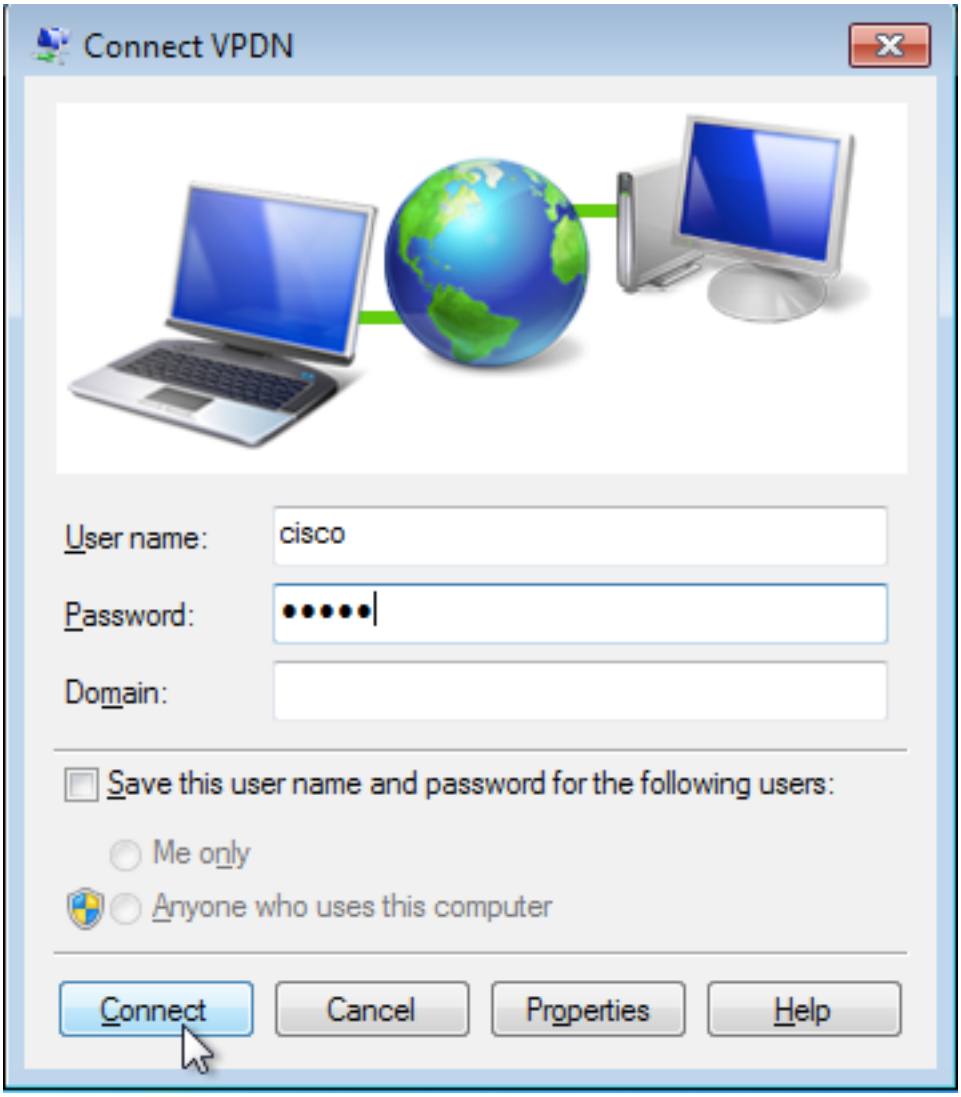
Paso 13. Desmarque **Microsoft CHAP Version 2** y haga clic en **Aceptar.**



Paso 14. Abra network (aquí VPDN) y haga clic en **Connect (Conectar).**

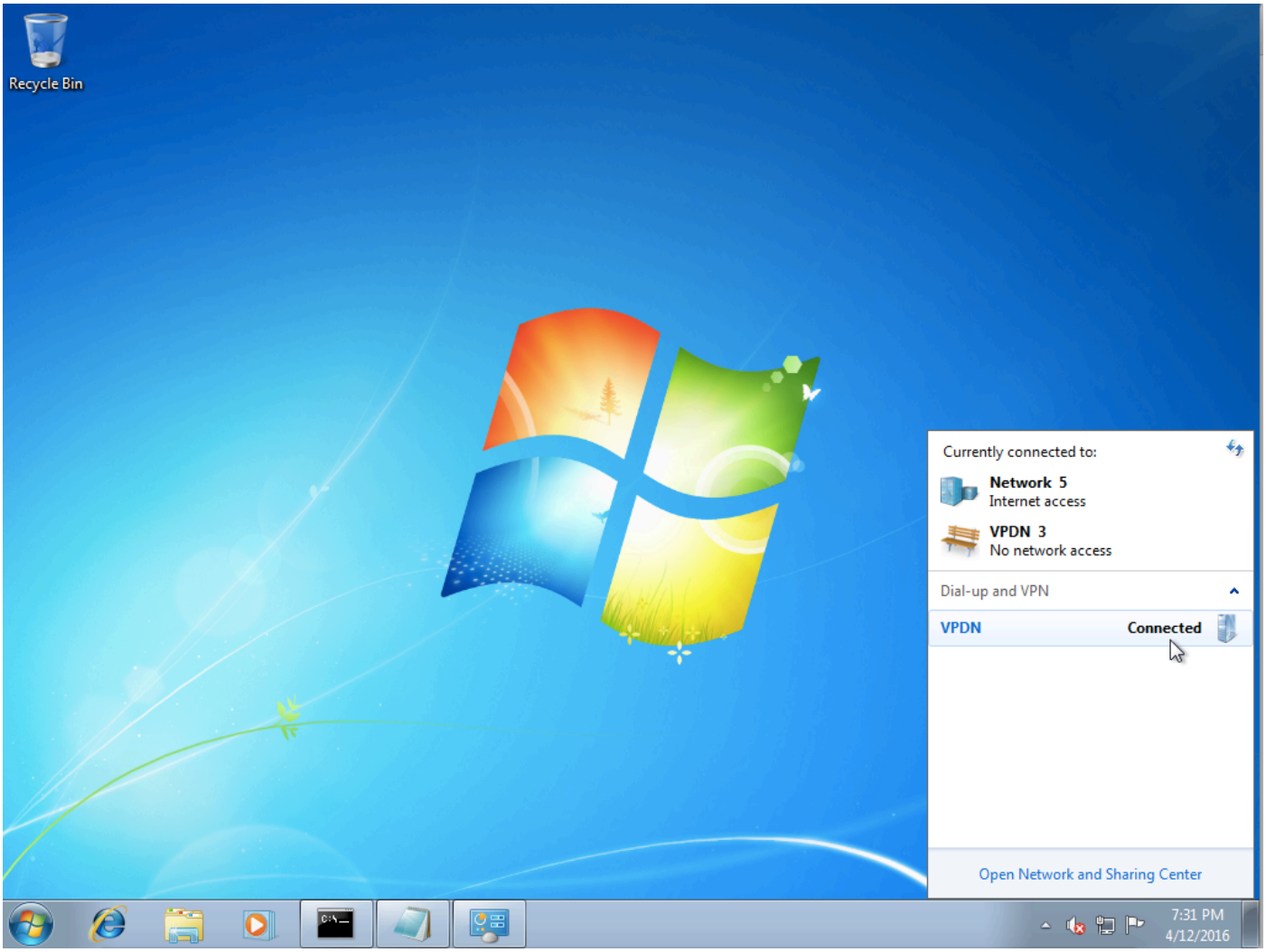


Paso 15. Introduzca el nombre de usuario y la contraseña y haga clic en **Conectar**



Verificación

Paso 1. Vuelva a abrir la ficha **Networks**, seleccione la red (denominada VPDN en este ejemplo) y verifique que el estado sea Connected (Conectado).



Paso 2. Abra el símbolo del sistema y ejecute el comando **ipconfig /all**.

```
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
```

La dirección IPv4 y el servidor de nombres de dominio (DNS) son asignados por el agregador después de completar la fase PPP Internet Protocol Control Protocol (IPCP).

Paso 3. Ejecute el comando **debug ppp negotiation** y los otros comandos show en 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
```

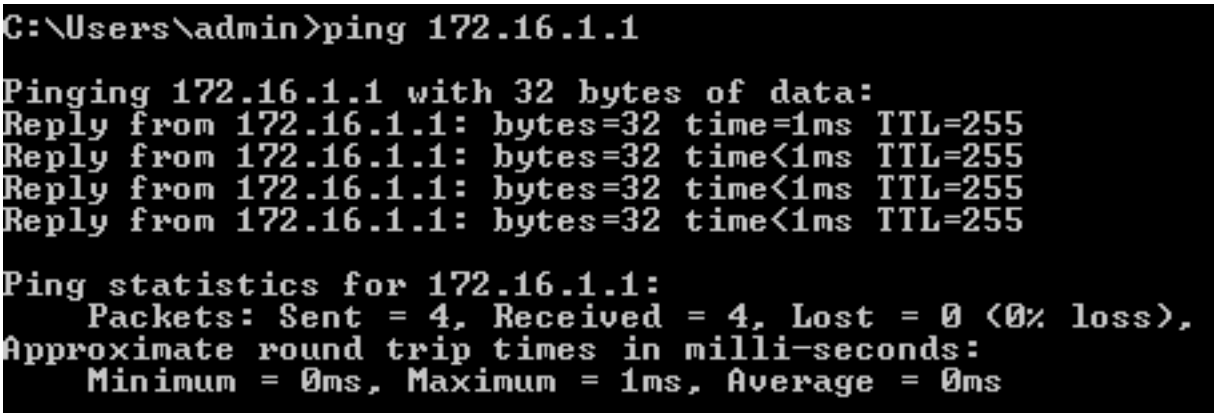
```
*Apr 12 06:17:38.148: ppp11 PPP: Session handle[A600000B] Session id[11]
*Apr 12 06:17:38.148: ppp11 LCP: Event[OPEN] State[Initial to Starting]
*Apr 12 06:17:38.148: ppp11 PPP: No remote authentication for call-in
*Apr 12 06:17:38.148: ppp11 PPP LCP: Enter passive mode, state[Stopped]
*Apr 12 06:17:38.607: 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
```

Paso 4. Verifique si la máquina Windows puede alcanzar la red remota detrás de Aggregator (en este caso, la interfaz Loopback 100)



Troubleshoot

Actualmente, no hay información específica de troubleshooting disponible para esta configuración.

Información Relacionada

- Introducción a VPDN'
- TSoporte técnico y documentación - Cisco Systems