Configurar o túnel L2TP entre uma máquina Windows e um roteador Cisco

Contents

Introduction Prerequisites Requirements Componentes Utilizados Configurar Diagrama de Rede Configurações Verificar Troubleshoot Informações Relacionadas

Introduction

Este documento descreve como configurar um túnel L2TP (Layer 2 Tunneling Protocol) entre uma máquina Windows e um roteador Cisco.

Prerequisites

Requirements

A Cisco recomenda que você saiba que o Windows Machine pode fazer ping no endereço IP da interface física no roteador.

Componentes Utilizados

Este documento não se restringe a versões de software e hardware específicas.

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 Rede

Este documento utiliza a seguinte configuração de rede:



Configurações

Configuração do agregador:

Um exemplo da configuração no Aggregator é mostrado:

```
interface GigabitEthernet0/0/1
ip address 192.168.1.1 255.255.255.0
negotiation auto
    interface Loopback100
end
ip address 172.16.1.1 255.255.255.255
end
    vpdn enable
vpdn-group 1
! Default L2TP VPDN group
accept-dialin
protocol 12tp
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
     ip local pool test 10.1.1.2 10.1.1.100
end
```

Configurações e configurações da máquina Windows

Conclua estes passos:

Etapa 1. Abra a **Central de Rede e Compartilhamento** e clique em **Configurar uma nova conexão ou rede** como mostrado nesta imagem.

Image: Search Control Panel Home Change adapter settings Change adapter settings Image: Search Control Panel Change advanced sharing settings Image: Search Control Panel Image: Settings Image: Search Control Panel View your basic network information and set up connections See full m Image: Advanced sharing settings Image: Search Control Panel Image: Advanced sharing settings Image: Search Control Panel Image: Advanced sharing settings Image: Search Control Panel Image: Advanced sharing settings Image: Set up a new connection or network Image: Advanced sharing settings Image: Set up a new connection or network Image: Set up a new connection or network Set up a new connection or network Set up a new connection or network Set up a new connection or network Set up a new connection or network Set up a new connection or network Set up a new connection or network Set up a new connection or network Set up a new connection or network Set up a new connection or network Set up a new connection or network Set up a network Set up a network Set up a network Set up a network Set up a network Set up a network Set up			
Control Panel Home Change adapter settings Change advanced sharing settings	💽 🗢 👯 « Network and Inte	rnet Network and Sharing Center	✓ ✓y Search Control Panel
Change adapter settings Change advanced sharing settings ADMIN-PC (This computer) View your active networks Connect or disconnet Metwork 5 Network 5 Access type: Internet Connection 5 Change your networking settings Change your networking settings Set up a new connection or network Set up a network	Control Panel Home	View your basic network informatio	on and set up connections
See also Choose homegroup and sharing options HomeGroup Troubleshoot problems Internet Options Diagnose and repair network problems, or get troubleshooting information. Windows Firewall Vindows Firewall	Change adapter settings Change advanced sharing settings Settings See also HomeGroup Internet Options Windows Firewall	ADMIN-PC Network ADMIN-PC Network (This computer) View your active networks Network 5 Work network Change your networking settings Set up a new connection or network Set up a wireless, broadband, dial provint. Set up a wireless, broadband, dial provint. Connect to a network Connect to a network Connect or reconnect to a wireless, v Choose homegroup and sharing opt Access files and printers located on optimized on the set of the set	See full map See full map York 5 Internet Connect or disconnect Access type: Internet Connections: Local Area Connection 5 k p, ad hoc, or VPN connection; or set up a router or access wired, dial-up, or VPN network connection. ptions o ther network computers, or change sharing settings. ems, or get troubleshooting information.

Etapa 2. Selecione Conectar-se a um local de trabalho e clique em Avançar

C3	
💮 🔄 Set Up a Connection or Network	
Choose a connection option	
Connect to the Internet Set up a wireless, broadband, or dial-up connection to the Internet.	
Set up a new network Configure a new router or access point.	
Connect to a workplace Set up a dial-up or VPN connection to your workplace.	
Set up a dial-up connection Connect to the Internet using a dial-up connection.	
Nex	t Cancel

Etapa 3. Selecione Usar minha conexão com a Internet (VPN)



Etapa 4. Insira o endereço IP do agregador (nesse caso, 192.168.1.1), dê um nome para a conexão (nesse caso, indicando o nome como VPDN) e clique em **Avançar**.

		- • ×							
🕝 🗽 Connect to a Workplac	e								
Type the Internet add	lress to connect to								
Versetundenderinisterte	i								
Your network administrato	r can give you this address.								
Internet address:	Internet address: 192.168.1.1								
Destination name:	Destination name: VPDN								
-		1							
Use a <u>s</u> mart card									
Allow other people to use this connection									
This option allows anyone with access to this computer to use this connection.									
<u>U</u> on t connect now	; just set it up so I can connect later								
	<u>N</u> e	xt Cancel							

Etapa 5. Digite o nome de usuário e a senha e clique em Connect (Conectar)

🚱 🗽 Connect to a Workplace		
Type your user name	and password	
<u>U</u> ser name:	cisco	
<u>P</u> assword:	•••••	
	Show characters <u>R</u> emember this password	
<u>D</u> omain (optional):		
		Connect Cancel

Etapa 6. Verifique o nome de usuário e a senha



Passo 7. Pode falhar pela primeira vez, como mostrado nesta imagem.

Connect to a Workplace	
Connection failed with error 800	
N	
The remote connection was not made because the attempted VPN tunnels failed. The VPN server might be unreachable. If this connection is attempting to use an L2TP/IPsec tunnel, the security parameters required for IPsec negotiation might not be configured properly.	* *
→ Iry again	
Set up the connection anyway	
Diagnose the problem	
	Cancel

Etapa 8. Clique em **Configurar a conexão assim mesmo** e abra a guia **Redes**.



Etapa 9. Clique com o botão direito do mouse na conexão (aqui VPDN) e clique em **Propriedades**. Verifique o endereço IP do agregador (aqui 192.168.1.1)

VPDN Properties								
General Options Security Networking Sharing								
<u>H</u> ost name or IP address of destination (such as microsoft.com or 157.54.0.1 or 3ffe:1234::1111):								
192.168.1.1								
- First connect								
Windows can first connect to a public network, such as the Internet, before trying to establish this virtual connection.								
Dial another connection first:								
See our online <u>privacy statement</u> for data collection and use information.								
OK Cancel								

Etapa 10. Navegue até **Opções> Configurações do PPP** e verifique as configurações, como mostrado nesta imagem.

VPDN Properties									
General Options Security Networking Sharing									
Dialing options Display progress while connecting Prompt for name and password, certificate, etc. Include Windows logon domain									
PPP Settings									
Enable LCP extensions Enable software compression Negotiate multi-link for single-link connections OK Cancel									
PPP Settings									
OK Cancel									

Etapa 11. Navegue até Security > Type of VPN >Layer 2 Tunneling Protocol with IPsec, como mostrado nesta imagem.

VPDN Properties										
General Options Security Networking Sharing										
Type of VPN:										
Automatic										
Automatic Point to Point Tunneling Protocol (PPTP) Laver 2 Tunneling Protocol with IPsec (L2TP/IPSec) Secure Socket Tunneling Protocol (SSTP) IKEv2										
Authentication										
Use Extensible Authentication Protocol (EAP)										
Properties										
Allow these protocols EAP-MSCHAPv2 will be used for IKEv2 VPN type. Select any of these protocols for other VPN types.										
Unencrypted password (PAP)										
Challenge Handshake Authentication Protocol (CHAP)										
Microsoft CHAP Version 2 (MS-CHAP v2)										
Automatically use my Windows logon name and password (and domain, if any)										
OK Cancel										

Etapa 12. Selecione a opção **Nenhuma criptografia permitida** no menu suspenso Criptografia de dados:

VPDN Properties
General Options Security Networking Sharing
Type of VPN:
Layer 2 Tunneling Protocol with IPsec (L2TP/IPSec)
Advanced settings
Require encryption (disconnect if server declines)
Optional encryption (connect even if no encryption) Require encryption (disconnect if server declines) Maximum strength encryption (disconnect if server declines)
Allow these protocols
Unencrypted password (PAP)
Challenge Handshake Authentication Protocol (CHAP)
Microsoft CHAP Version 2 (MS-CHAP v2)
Automatically use my Windows logon name and password (and domain, if any)
OK Cancel

Etapa 13. Desmarque Microsoft CHAP Version 2 e clique em OK.

VPDN Properties									
General Options Security Networking Sharing									
Type of VPN:									
Layer 2 Tunneling Protocol with IPsec (L2TP/IPSec)									
Advanced settings									
Data encryption:									
No encryption allowed (server will disconnect if it requires encry									
Authentication									
Use Extensible Authentication Protocol (EAP)									
Properties									
Allow these protocols									
Allow these protocols									
Unencrypted password (PAP)									
Challenge Handshake Authentication Protocol (CHAP)									
Microsoft CHAP Version 2 (MS-CHAP v2)									
Automatically use my Windows logon name and									
password (and domain, if any)									
OK Cancel									

Etapa 14. Abra a rede (aqui VPDN) e clique em Conectar.



Etapa 15. Digite o nome de usuário e a senha e clique em Connect (Conectar)

🔮 Connect VPDN 💽
User name: cisco
Password:
Do <u>m</u> ain:
Save this user name and password for the following users:
○ Me o <u>n</u> ly
O Anyone who uses this computer
Connect Cancel Properties Help

Verificar

Etapa 1. Abra novamente a guia **Redes**, selecione a rede (chamada VPDN neste exemplo) e verifique se o status está Conectado.



Etapa 2. Abra o prompt de comando e execute o comando ipconfig /all.

PPP	adapte	er VP	DN:											
(Connect	tion-	spec	if	ic	D١	IS	Sı	lft	i>	¢	-	=	117511
	escrip	ption	_ •	-	-	-	-	-	-	-	-	-		VPDN
	Physica	al Adu	dres	s.	-	-	-	-	-	-	-	-		
I)HCP Er	nabled	d		-	-	-	-	-	-	-	-	-	No
E F	lutocor	n f i gur	rati	ion	Еп	ıal)]@	ed	-	-	-	-		Yes
]	Pv4 Ad	ldres:	s		-	-	-	-	-	-	-	-	-	10.1.1.9(Preferred)
9	Subnet	Mask			-		-		_	_		-		255.255.255.255
I)efault	t Gate	eway		-	_	-	_	_	_	-	-		0.0.0.0
I	NS Sei	rvers			-	_	-	_	_	_	-	-		4.2.2.1
														4.2.2.2
h	letBI03	S over	r To	pi	p.	-	-	-	-	-	-	-	:	Enabled

O endereço IPv4 e o Servidor de Nome de Domínio (DNS) são atribuídos pelo agregador após concluir a fase do Protocolo de Controle de Protocolo Internet (IPCP - Internet Protocol Control Protocol) PPP.

Etapa 3. Execute o comando debug ppp negotiation e os outros comandos show no 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: pppl1 LCP: I IDENTIFY [Open] id 4 len 18 magic 0x795C7CD1MSRASV5.20 *Apr 12 06:17:38.621: pppl1 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 (0x03060000000)

```
*Apr 12 06:17:38.657: Vi3.1 IPCP: PrimaryDNS 0.0.0.0 (0x81060000000)
*Apr 12 06:17:38.657: Vi3.1 IPCP: PrimaryWINS 0.0.0.0 (0x82060000000)
*Apr 12 06:17:38.657: Vi3.1 IPCP: SecondaryDNS 0.0.0.0 (0x83060000000)
*Apr 12 06:17:38.657: Vi3.1 IPCP: SecondaryWINS 0.0.0.0 (0x84060000000)
*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 (0x82060000000)
*Apr 12 06:17:38.658: Vi3.1 IPCP: SecondaryWINS 0.0.0.0 (0x84060000000)
*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 (0x03060000000)
*Apr 12 06:17:38.672: Vi3.1 IPCP: PrimaryDNS 0.0.0.0 (0x81060000000)
*Apr 12 06:17:38.672: Vi3.1 IPCP: SecondaryDNS 0.0.0.0 (0x83060000000)
*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 int	cerface 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

Etapa 4. Verifique se a máquina Windows pode acessar a rede remota atrás do Aggregator (neste caso, a interface Loopback 100)

```
C:\Users\admin>ping 172.16.1.1

Pinging 172.16.1.1 with 32 bytes of data:

Reply from 172.16.1.1: bytes=32 time=1ms TTL=255

Reply from 172.16.1.1: bytes=32 time<1ms TTL=255

Reply from 172.16.1.1: bytes=32 time<1ms TTL=255

Reply from 172.16.1.1: bytes=32 time<1ms TTL=255

Ping statistics for 172.16.1.1:

Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),

Approximate round trip times in milli-seconds:

Minimum = 0ms, Maximum = 1ms, Average = 0ms
```

Troubleshoot

Atualmente, não existem informações disponíveis específicas sobre Troubleshooting para esta configuração.

Informações Relacionadas

- Entendendo o VPDN
- <u>TSuporte técnico e documentação Cisco Systems</u>