# cisco cp عم DMVPN تلكش - cisco cp

## المحتويات

المقدمة المتطلبات الأساسية المتطلبات المكونات المستخدمة الاصطلاحات معلومات أساسية التكوين الرسم التخطيطي للشبكة تح<u>دثت تشكيل يستعمل cisco cp</u> تکوین CLI ل Talk صرة تشكيل يستعمل cisco cp CLI تشكيل ل صرة تحرير تكوين DMVPN باستخدام CCP مزيد من المعلومات التحقق من الصحة معلومات ذات صلة

## <u>المقدمة</u>

يزود هذا وثيقة عينة تشكيل ل Dynamic Multipoint VPN (DMVPN) نفق بين صرة ويتكلم مسحاج تخديد يستعمل cisco تشكيل محترف (cisco cp). Dynamic Multipoint VPN هي تقنية تدمج مفاهيم مختلفة مثل GRE وتشفير IPSec و NHRP والتوجيه لتوفير حل متطور يسمح للمستخدمين النهائيين بالاتصال بشكل فعال من خلال أنفاق IPSec التي يتم التحدث إليها ديناميكيا.

## <u>المتطلبات الأساسية</u>

### <u>المتطلبات</u>

للحصول على أفضل وظائف DMVPN، يوصى بتشغيل برنامج Software ®Cisco IOS الإصدار 12.4 Mainline،12.4T والإصدارات الأحدث.

### <u>المكونات المستخدمة</u>

تستند المعلومات الواردة في هذا المستند إلى إصدارات البرامج والمكونات المادية التالية:

- سلسلة موجه IOS 3800 من Cisco مع البرنامج الإصدار 12.4 (22)
  - سلسلة موجه IOS 1800 من Cisco مع البرنامج الإصدار 12.3 (8)
    - Cisco Configuration Professional، الإصدار 2.5

تم إنشاء المعلومات الواردة في هذا المستند من الأجهزة الموجودة في بيئة معملية خاصة. بدأت جميع الأجهزة المُستخدمة في هذا المستند بتكوين ممسوح (افتراضي). إذا كانت شبكتك مباشرة، فتأكد من فهمك للتأثير المحتمل لأي أمر.

## <u>الاصطلاحات</u>

راجع <u>اصطلاحات تلميحات Cisco التقنية للحصول على مزيد من المعلومات حول اصطلاحات المستندات.</u>

## <u>معلومات أساسية</u>

يزود هذا وثيقة معلومات كيف أن يشكل مسحاج تخديد كتكلم وآخر مسحاج تخديد كصرة يستعمل cisco cp. في البداية يتم عرض تكوين التحدث، ولكن لاحقا في المستند، يتم أيضا عرض التكوين المرتبط بالموجه بالتفصيل لتوفير فهم أفضل. كما يمكن أيضا تكوين مسارات أخرى باستخدام النهج المماثل للاتصال بالموجه. يستخدم السيناريو الحالي هذه المعلمات:

- شبكة موجه الشبكة العامة 209.165.201.0
  - شبكة النفق 192.168.10.0
  - بروتوكول التوجيه المستخدم OSPF

## <u>التكوين</u>

في هذا القسم، تُقدّم لك معلومات تكوين الميزات الموضحة في هذا المستند.

**ملاحظة:** أستخدم <u>أداة بحث الأوامر</u> (للعملاء <u>المسجلين</u> فقط) للحصول على مزيد من المعلومات حول الأوامر المستخدمة في هذا القسم.

### <u>الرسم التخطيطي للشبكة</u>

يستخدم هذا المستند إعداد الشبكة التالي:



<u>تحدثت تشكيل يستعمل cisco cp</u>

يوضح هذا القسم كيفية تكوين موجه كتحدث باستخدام معالج DMVPN بالتفصيل في محترف تكوين Cisco.

1. in order to بدأت ال cisco cp تطبيق وأطلقت ال DMVPN معالج، ذهبت إلى *يشكل>أمن>VPN>Dynamic* معالج، ذهبت إلى *يشكل>أمن>VPN>Dynamic* . Multipoint VPN. ثم حدد خيار *إنشاء a* الذي *يتم التحدث به في DMVPN* وانقر فوق *تشغيل المهمة* ..



2. طقطقت *بعد ذلك* أن يبدأ.

UMVPN Spoke Wizard	
VPN Wizard	Configure a DMVPN spoke
	DMVPN allows you to create a scalable network that connects multiple remote routers to a central hub router using the same security features offered by site-to-site VPNs. DMVPN uses IPSec, NHRP, GRE and routing protocols to create secure tunnels between a hub and a spoke. This wizard allows you to configure the router as a DMVPN spoke. The wizard guides you through these tasks: * Specifying the DMVPN network topology. * Providing hub information. * Configuring a GRE tunnel interface. * Configuring a pre-shared key. * Configuring a IPSec transform set. * Configuring a dynamic routing protocol. To begin, click Next.
	Back Next> Finish Cancel Help

3. حدد خيار *شبكة الموزع والمتكلم* وانقر *التالي*.

DMVPN Spoke Wizard - 1	0% Complete 🛛 🔀
VPN Wizard	DMVPN Network Topology Select the DMVPN network topology.
	Thub and Spoke network
	In this topology, all DMVPN traffic is routed through the hub. A point-to-point GRE interface will be configured on the spoke, and the spoke will use it to create a tunnel to the hub which will remain up. Spokes do not create GRE tunnels to other spokes in this topology.
	C Fully meshed network
	In this topology, the spoke dynamically establishes a direct tunnel to another spoke device, and sends DMVPN traffic directly to it. A multipoint GRE tunnel interface is configured on the spoke to support this functionality.
A	Note: Cisco supports fully meshed DMVPN networks only in the following Cisco IOS images: 12.3(8)T1 and 12.3(9) or later. Hub and Spoke Network
	Spoke Hub DMVPN Cloud
	< Back Next > Finish Cancel Help

4. حدد المعلومات ذات الصلة بالموجه، مثل الواجهة العامة لموجه الموزع وواجهة نفق موجه الموزع.

DMVPN Spoke Wizard (Hu	b and Spoke Topology) - 20% Complete		×
VPN Wizard	Specify Hub Information Enter the IP address of the hub and the IP addre Contact your network administrator to get this in	ess of the hub's mGRE tunnel interface. Iformation.	
	Hub Information IP address of hub's physical interface: IP address of hub's mGRE tunnel interface:	209.165.201.2	
	Spoke You are configuring this spoke router Biological and the spoke router Spoke router	Ablic IP address be entered above Hub RE tunnel	
	_ <u>_</u>	Back Next > Finish Cancel He	lp

5. حدد تفاصيل واجهة النفق للتكلم والواجهة العامة للكلام. ثم انقر على *خيارات* م*تقدمة*.

IPN Wizard	Select the interface that conne	ects to the Inte	met:	FastEthernet0	) 🗸
~	A Selecting an interface cont be always up.	igured for a di	ialup connec	ion may cause the c	onnection 1
$\sim 1$	GRE Tunnel Interface	the former line for her being			Stational co.
	A GRE tunnel interface will b address information for this	e created for t interface.	INIS DMVPN (	connection. Please e	inter the
	IP address of the tunne	interface —	Advance	ed settings	
	IP Address:		Click Advar	iced to verify that valu	Jes
	192.168.10.5		match peer	settings.	10 M
N 2	Subnet Mask:	20 2020 - 2020		Adva	inced
	255.255.255.0	24		3 <del>.</del>	
	Interface connected to Internet. This is the interface from which GRE/mGRE Tunnel originaties- Internet	Logic IP ad interfi are p in the For m help I	al GRE/mGRE dress of GRE/m see on all hube rivate IP addres same subnet. nore information button.	Tunnel interface. GRE tunnel and spoke routers ses and must be please click the	

6. تحقق من معلمات النفق ومعلمات NHRP، وتأكد من مطابقتها تماما لمعلمات

ome of the following parameters all devices in this DMVPN. Obta om your network administrator t isco CP defaults. NHRP	s should be identical ain the correct values before changing the
NHRP Authentication String:	DMVPN_NW
NHRP Network ID:	100000
NHRP Hold Time:	360
GRE Tunnel Interface Inform	nation
Tunnel Key:	100000
Bandwidth:	1000
MTU:	1400
Tunnel Throughput Delay:	1000

7. حدد المفتاح المشترك مسبقا وانقر *بعد* 

				ذلك.
DMVPN Spoke Wizard (H	Hub and Spoke Topology	/) - 40% Comple	te -	
VPN Wizard (H	Authentication Select the method you DMVPN network. You o the router must have a on this router must mat Oligital Certificate Pre-shared Keys pre-shared key: Reenter key:	y) - 40% Comple want to use to aut an use digital cer valid certificate co itch the keys confi s	te thenticate this router to the peer device(s) infigured. If pre-shared key is used, the k gured on all other routers in the DMVPN r	in the cate is used, ey configured etwork.
K			< Back Next Finish Cance	Help

8. طقطقة *يضيف* in order to أضفت منفصل IKE مقترح.

### DMVPN Spoke Wizard (Hub and Spoke Topology) - 50% Complete

### VPN Wizard

#### **IKE Proposals**

IKE proposals specify the encryption algorithm, authentication algorithm and key exchange method that is used by this router when negotiating a VPN connection with the remote device. For the VPN connection to be established with the remote device, the remote device should be configured with at least one of the policies listed below.

Click the Add... button to add more policies and the Edit... button to edit an existing policy.

1 3DES SHA_1 group2 PRE_SHARE Cisco CP Def

9. حدد معلمات التشفير والمصادقة والتجزئة. ثم انقر فوق

riority:	Auth	entica	tion:	
2	PRE	_SHA	RE	*
Encryption:	D-H	Group	00	
AES_192	grou	ip1		~
Hash:	Lifeti	me:		
SHA H	24	0	0	HHMMSS

10. يمكن رؤية سياسة IKE التي تم إنشاؤها حديثا هنا. انقر فوق *Next (التالي)*.

### DMVPN Spoke Wizard (Hub and Spoke Topology) - 50% Complete

### **VPN Wizard**

#### **IKE Proposals**

IKE proposals specify the encryption algorithm, authentication algorithm and key exchange method that is used by this router when negotiating a VPN connection with the remote device. For the VPN connection to be established with the remote device, the remote device should be configured with at least one of the policies listed below.

Click the Add... button to add more policies and the Edit... button to edit an existing policy.

11. انقر *التالي* لمتابعة مجموعة التحويل الافتراضي.

### DMVPN Spoke Wizard (Hub and Spoke Topology) - 60% Complete

MON	144	in a second	- Inc.
VPN	AV.	ıza	rc

#### Transform Set

A transform set specifies the encryption and authentication algorithms used to protect the data in the VPN tunnel. Since the two devices must use the same algorithms to communicate, the remote device must be configured with the same transform set as the one selected below.

Click the Add... button to add a new transform set and the Edit... button to edit the specified transform set.

Select Transform Set:

-	ivanie	ESP Encryption	ESP Integrity	AH Integrity
8	ESP-3DES-SHA	ESP_3DES	ESP_SHA_HMAC	
	in I have			

12. حدد بروتوكول التوجيه المطلوب. هنا، يتم تحديد OSPF.

DMVPN Spoke Wizard (Hu	ib and Spoke Topology) - 70% Complete	×
VPN Wizard	Select Routing Protocol Routing protocols are used to advertise private networks behind this router to other routers in the DMVPN. Select the dynamic routing protocol you want to use. Note: You can only create as many OSPF processes as the number of interfaces that are configured with an IP address and have the status administratively up. C EIGRP OSPFI	
	< Back (Next >) Finish Cancel Help	

13. حدد معرف عملية OSPF ومعرف المنطقة. انقر فوق *إضافة* لإضافة الشبكات التي سيتم الإعلان عنها بواسطة OSPF.

DMVPN Spoke Wizard (	Hub and Spoke Topolo	gy) - 80% Compl	ete		
VPN Wizard	Routing Information				
	C Select an existing	OSPF process ID		<u> </u>	
le	Create a new OSI	PF process ID:		(10)	
A (	OSPF Area ID for tur	nel network:		2	
	Add the private network	orice that you want	lo advartice to the	other reuters in this DM	UPN OPPE
	must be enabled on	the other routers t	o send and receiv	e these advertisements.	VEN, OSEF
	Private networks	s advertised using	OSPF	es 7.5	
	Network	Wildcard Mask	Area	Add	
				Edit	
				Delete	
	Private Network th	nat will be			
	advertised to the t	DMVPN cloud.			
		1			
These 1	Internet				
	DMVPN Cloud	*			
			< Back	Next > Finish Cance	el Help
	Add a Netwo	irk			
	Network:	192.16	8.10.0		
	Wildcard Ma	sk 0.0.0.2	55		
	Contraction Court				
	Area:	4			
	C		i i		
	LOK		ancel	- <i>1</i>	
				, شبخه وطفطفه <i>UK</i> .	14. اضفت النفو

15. إضافة الشبكة الخاصة خلف الموجه الذي يتحدث. ثم انقر فوق *التالي*.

VPN Wizard	Routing Information	on.		
	C Select an existin	ng OSPF process ID		1
	Create a new O	SPF process ID:		10
	OSPF Area ID for t	unnel network:		2
	Add the private net must be enabled o	works that you want in the other routers t ks advertised using	lo advertise to o send and rei OSPF	the other routers in this DMVPN. OSPF ceive these advertisements.
	Network	Wildcard Mask	Area	Add
	192.168.10.0 172.16.18.0	0.0.0.255 0.0.0.255	2 2	Edit Delete
RA	Private Network advertised to the	k that will be e DMVPN cloud.		
	Internet	1		

16. انقر فوق *إنهاء*" لإكمال تكوين المعالج.

PN Wizard	Summary of the Configuration	
	Click Finish to deliver the configuration to the router.	
	Role of this router: DMVPNSpoke (Hub & Spoke topology) Public IP address of primary hub:209.165.201.2 IP address of primary hubs mGRE tunnel:{0} Interface that connects this router to the Internet:FastEthernet0 IP address of this router's tunnel interface:192.168.10.5 Mask 255.255.255.0 Advanced configuration for the tunnel interface: NHRP Authentication String:DMVPN_NW NHRP Network ID:100,000 NHRP Holdtime:360 Tunnel Key:100,000 Bandwidth:1,000 MTU:1,400	
Da	Delay:1,000 Routing Protocol:OSPF OSPF Process ID :10 OSPF Area ID for tunnel network:2 Private networks advertised: 192.168.10.0Area2	
ه تشغیل الجهاز إذا ک	Back Next Finish Cancel مع Back Cancel مي مأن ينفذ الأمر. حدد خانة الاختيار حفظ running config في تكوين بدء	Help J Help J Help
ه تشغیل الجهاز إذا ک iver Configuration	Back Next Finish Cancel که Back کم أن ينفذ الأمر. حدد خانة الاختيار <i>حفظ running config في تكوين بد</i> ء ملم أن ينفذ الأمر. Turning config في تكوين بدء	Heip لقطقة <i>يب</i> ريد حفظ تكوين.
، تشغیل الجهاز إذا ک iver Configuration	Back Next Finish Cancel في تكوين بدء ملم أن ينفذ الأمر. حدد خانة الاختيار <i>حفظ running config في تكوين بد</i> ء to Device في تكوين من المرابع o the device's running config.	Heip لقطقة <i>يب</i> ريد حفظ تكوين.
، <i>تشغیل الجهاز</i> إذا ک iver Configuration liver delta commands that v	Back <u>Next</u> Finish Cancel <u>م</u> لم أن ينفذ الأمر. حدد خانة الاختيار <i>حفظ running config في تكوين بدء</i> ملم أن ينفذ الأمر. حدد خانة الاختيار <i>حفظ running config</i> في <i>تكوين بدء</i> to Device o the device's running config. will be delivered to the device's running configuration.	Help لقطقة ي <i>س</i> يد حفظ تكوين.
ی تشغیل الجهاز إذا ک <b>iver Configuration</b> diver delta commands the eview commands that w ypto ipsec transform-s ode transport xit ypto ipsec profile Cisco et transform-set ESP-31	Back Ned Finish Cancel من حمد خانة الاختيار حفظ running config في تكوين بدء A to Device o the device's running config. will be delivered to the device's running configuration. et ESP-3DES-SHA esp-sha-hinac esp-3des	Help لقطقة يس ريد حفظ تكوين. الأ
iver Configuration الجهاز إذا ك iver Configuration eview commands that w eview commands that w ypto ipsec transform-s node transport xit ypto ipsec profile Cisco et transform-set ESP-31 xit ierface Tunnel0 xit sfault interface Tunnel0 ierface Tunnel0	<u>Back Next</u> Finish Cancel في تكوين بدء علم أن ينفذ الأمر. حدد خانة الاختيار <i>حفظ running config في تكوين بدء</i> to Device o the device's running config. will be delivered to the device's running configuration. et ESP-3DES-SHA esp-sha-hmac esp-3des pCP_Profile1 DES-SHA	Heip لقطقة ي <i>ن</i> يد حفظ تكوين. ا
ی تشغیل الجهاز إذا ک <b>Iver Configuration</b> eliver delta commands the eview commands that we rypto ipsec transform-s node transport xit terface Tunnel0 xit efoult interface Tunnel0 endettionel0 endettionel0 endettionel0 endettionel0	<u>Back Treat</u> Finish Cancel علم أن ينفذ الأمر. حدد خانة الاختيار <i>حفظ running config في تكوين بدء</i> <b>n to Device</b> o the device's running config. will be delivered to the device's running configuration. et ESP-3DES-SHA esp-sha-hmac esp-3des acP_Profile1 DES-SHA	Help لقطقة يس يد حفظ تكوين. ا
iver Configuration الجهاز إذا ك iver Configuration eview commands that we will be profile Cisco eview commands that we poto ipsec profile Cisco et transform-set ESP-31 xit erface TunnelO xit erface TunnelO and the face TunnelO an	<u>Back Next</u> (Finish) Cancel في تكوين بدء علم أن ينفذ الأمر. حدد خانة الاختيار حفظ running config في تكوين بدء n to Device o the device's running config. will be delivered to the device's running configuration. et ESP-3DES-SHA esp-sha-himac esp-3des DCP_Profile1 DES-SHA	Help Jack Help Jack Cadd Tables Tables Tables Tables The tell Tables Tab
iver Configuration الجهاز إذا ك iver Configuration eview commands that w ypto ipsec transform-s node transport xit ypto ipsec profile Cisco et transform-set ESP-31 xit terface Tunnel0 and therface turnel0 and tu	< Back	Heip Jack Heip Jack Cadd Table Cadd Cadd Table Cadd Cadd Cadd Table Cadd Cadd Cadd Cadd Cadd Cadd Cadd Cad

يتم عرض تكوين CLI ذي الصلة هنا:

### الموجه الذي تم التحدث عنه

```
crypto ipsec transform-set ESP-3DES-SHA esp-sha-hmac
                                             esp-3des
                                     mode transport
                                                exit
               crypto ipsec profile CiscoCP_Profile1
                     set transform-set ESP-3DES-SHA
                                                exit
                                   interface Tunnel0
                                                exit
                           default interface Tunnel0
                                   interface Tunnel0
                                     bandwidth 1000
                                         delay 1000
                               ip nhrp holdtime 360
                          ip nhrp network-id 100000
                    ip nhrp authentication DMVPN_NW
                ip ospf network point-to-multipoint
                                        ip mtu 1400
                                        no shutdown
              ip address 192.168.10.5 255.255.255.0
                             ip tcp adjust-mss 1360
                           ip nhrp nhs 192.168.10.2
             ip nhrp map 192.168.10.2 209.165.201.2
                        tunnel source FastEthernet0
                   tunnel destination 209.165.201.2
  tunnel protection ipsec profile CiscoCP_Profile1
                                  tunnel key 100000
                                                exit
                                      router ospf 10
              network 192.168.10.0 0.0.0.255 area 2
               network 172.16.18.0 0.0.0.255 area 2
                                                exit
   crypto isakmp key ******* address 209.165.201.2
                              crypto isakmp policy 2
                           authentication pre-share
                                       encr aes 192
                                           hash sha
                                            group 1
                                     lifetime 86400
                                                exit
                              crypto isakmp policy 1
                           authentication pre-share
                                          encr 3des
                                           hash sha
                                             group 2
                                     lifetime 86400
                                                exit
```

### <u>صرة تشكيل يستعمل cisco cp</u>

يتم عرض نهج مفصل خطوة بخطوة على كيفية تكوين موجه الموزع ل DMVPN في هذا القسم.

1. انتقل إلى *تكوين > الأمان > VPN > Dynamic Multipoint VPN وحدد خيار إنشاء صرة في DMVPN*. انقر

Configure > Security > VPN > Dynamic Multipoint VPN

Create Dynamic Multipoint VPN (D	MVPN) Edit Dynamic Multipoint VPN (DMVPN)	
Create a spoke (client) in a D	Hub Hub	
Use this option to configure and spoke network topolog know the hub's IP address, policy, IPSec Transform se	the router as a spoke in a full mesh or hub y. To complete this configuration, you must NHRP information, pre-shared key, IKE and dynamic routing protocol information.	
Create a hub (server or head	end) in a DMVPN	
Use this option to configure are configuring a backup hi information, pre-shared ke dynamic routing protocol in	the router as a primary or backup hub. If you ib, you must know the primary hub's NHRP , IKE policy, IPSec Transform set and formation.	

ر وي (التالي).

### **DMVPN Hub Wizard**

### VPN Wizard



#### **Configure a DMVPN hub**

DMVPN allows you to create a scalable network that connects multiple remote routers to a central hub router using the same security features offered by site-to-site VPNs. DMVPN uses IPSec, NHRP, GRE and routing protocols to create secure tunnels between a hub and a spoke.

This wizard allows you to configure the router as a DMVPN hub.

- The wizard guides you through these tasks:
- \* Specifying the DMVPN network topology.
- \* Specifying the hub type.
- \* Configuring a multipoint GRE tunnel.
- \* Configuring a pre-shared key.
- \* Configuring IKE policies.
- \* Configuring an IPSec transform set.
- \* Configuring a dynamic routing protocol.

To begin, click Next.

Sack Next > Finish Cancel Help

3. حدد خيار *شبكة الموزع والمتكل*م وانقر *التالي*.

DMVPN Hub Wizard - 1	10% Complete	X
VPN Wizard	DMVPN Network Topology Select the DMVPN network topology.	
lai	Hub and Spoke network	
	In this topology, all DMVPN traffic is routed through the hub. A point-to-point G will be configured on the spoke, and the spoke will use it to create a tunnel to will remain up. Spokes do not create GRE tunnels to other spokes in this top	RE interface the hub which ology.
	C Fully meshed network	
	In this topology, the spoke dynamically establishes a direct tunnel to another and sends DMVPN traffic directly to it. A multipoint GRE tunnel interface is cor spoke to support this functionality.	spoke device, nligured on the
A	Note: Cisco supports fully meshed DMVPN networks only in the following Ci images: 12.3(8)T1 and 12.3(9) or later. Hub and Spoke Network	sco IOS
	Spoke Hub Hub DMVPN Cloud	
	< Back Next > Finish Ca	ancel Help

4. حدد *الموزع الأساسي*. ثم انقر فوق *التالي*.

### DMVPN Hub Wizard (Hub and Spoke Topology) - 15% Complete



### Type of Hub

In a DMVPN network there will be a hub router and multiple spoke routers connecting to the hub. You can also configure multiple routers as hubs. The additional routers will act as backups. Select the type of hub you want to configure this router as.

Primary hub

C Backup Hub(Cisco CP does not support backup hub configuration on this router)

< Back (Next >) Finish Cancel Help

5. حدد معلمات واجهة النفق وانقر *خيارات* م*تقدمة*.

VPN Wizard	Multipoint GRE Tunnel Interface Configuration					
	Selecting an interface co be always up. Multi point GRE (mGRE	) Tunnel Interfac	ialup connection may cause the connection to			
	A GRE tunnel interface wi address information for the IP address of the tun	l be created for is interface. nel interface —	this DMVPN connection. Please enter the Advanced settings			
	IP Address:		Click Advanced to verify that values match neer settings			
	Subnet Mask:	17.5	Advanced			
h 🔪 🏸	255.255.255.0	24				
	Interface connected to Internet. This is the interface from which GRE/mGRE Tunnel originaties	Logic IP ad interf are p in the For n help	al GRE/mGRE Tunnel interface. dress of GRE/mGRE tunnel ace on all hubs and spoke routers rivate IP addresses and must be same subnet. nore information please click the button.			

and man brook bound the

## 6. حدد معلمات النفق ومعلمات NHRP. ثم انقر فوق

sco CP defaults.	
NHRP	
NHRP Authentication String:	DMVPN_NW
NHRP Network ID:	100000
NHRP Hold Time:	360
— GRE Tunnel Interface Inform Tunnel Key:	100000
Bandwidth:	1000
MTU:	1400
Tunnel Throughput Delay:	1000

7. حدد الخيار استنادا إلى إعداد



8. حدد مفاتيح مشتركة مسبقا وحدد المفاتيح المشتركة مسبقا. ثم انقر فوق

				التالي.
DMVPN Hub Wizard (Hub	and Spoke Topology) -	40% Complete		×
VPN Wizard	Authentication Select the method you v DMVPN network. You ca the router must have a v on this router must mat	vant to use to authenticate th an use digital certificate or a p valid certificate configured. If ch the keys configured on all	is router to the peer device pre-shared key. If digital cer pre-shared key is used, the other routers in the DMVPP	(s) in the tificate is used, key configured V network.
	C Digital Certificates	)		
	pre-shared key.			
	Reenter key:		]	
		< Back	(Next>) Finish Can	cel Help

9. طقطقة *يضيف* in order to أضفت منفصل IKE مقترح.

### DMVPN Hub Wizard (Hub and Spoke Topology) - 50% Complete

### **VPN Wizard**

#### **IKE Proposals**

IKE proposals specify the encryption algorithm, authentication algorithm and key exchange method that is used by this router when negotiating a VPN connection with the remote device. For the VPN connection to be established with the remote device, the remote device should be configured with at least one of the policies listed below.

Click the Add... button to add more policies and the Edit... button to edit an existing policy.

	Priority	Encryption	Hash	D-H Group	Authentication	Туре
2	1	3DES	SHA_1	group2	PRE_SHARE	Cisco CP Defa
6	1	- Country	Ť.			
1	\dd	Edit				
2.4						
				< Back Nex	de Einish (	ancel Hel

10. حدد معلمات التشفير والمصادقة والتجزئة. ثم انقر فوق

riority:	Authentication:
	PRE_SHARE
ncryption:	D-H Group:
JES_192	group1 👻
lash:	Lifetime:
3HA 1	24 0 0 HH:MM:SS

- (التالي).

### DMVPN Hub Wizard (Hub and Spoke Topology) - 50% Complete

### **VPN Wizard**

#### **IKE Proposals**

IKE proposals specify the encryption algorithm, authentication algorithm and key exchange method that is used by this router when negotiating a VPN connection with the remote device. For the VPN connection to be established with the remote device, the remote device should be configured with at least one of the policies listed below.

Click the Add... button to add more policies and the Edit... button to edit an existing policy.

	Priority	Encryption	Hash	D-H Group	Authentication	Туре
	1	3DES	SHA_1	group2	PRE_SHARE	Cisco CP Def
	ŕ	NE0_192	SINC!	group	THE SHARE	Osel Delineu
(*****		e de la compañía de l	1			
(7)	Add	Edit	]			
	Add	Edit	]			

12. انقر *التالي* لمتابعة مجموعة التحويل الافتراضي.

### DMVPN Hub Wizard (Hub and Spoke Topology) - 60% Complete

VPN Wizard	Transform Set A transform set specifies the data in the VPN tunnel. Since communicate, the remote de one selected below. Click the Add button to add transform set. Select Transform Set:	e encryption and auti e the two devices mi evice must be config a new transform se	hentication algoriti ust use the same ured with the sam it and the Edit bu	hms used to protect the algorithms to e transform set as the tton to edit the specified
	Cisco CP Default Tran Details of the specified tr Name	ansform Set 💽 – ansform set ESP Encryption	ESP Integrity	AH Integrity
RA	ESP-3DES-SHA	ESP_3DES	ESP_SHA_HMAC	×
	Add Edit	-	Back (Next >) F	inish Cancel Help

13. حدد بروتوكول التوجيه المطلوب. هنا، يتم تحديد OSPF.

DMVPN Hub Wizard (Hub	and Spoke Topology) - 70% Complete 🛛 🛛 🔯
	Select Routing Protocol Routing protocols are used to advertise private networks behind this router to other routers in the DMVPN. Select the dynamic routing protocol you want to use. Note: You can only create as many OSPF processes as the number of interfaces that are configured with an IP address and have the status administratively up. C EIGRP COSPF
	< Back Next > Finish Cancel Help

14. حدد معرف عملية OSPF ومعرف المنطقة. انقر فوق *إضافة* لإضافة الشبكات التي سيتم الإعلان عنها بواسطة OSPF.

AVPN Hub Wizard (H	ub and Spoke Topolo	gy) • 80% Complet	te		×
VPN Wizard	Routing Informatio	on			
	C Select an existin	ng OSPF process ID		2	
*	Create a new O	SPF process ID:		10	Ϋ́
A 8	OSPF Area ID for t	unnel network:		2	
ALL	Add the private net must be enabled o	works that you want on the other routers t	to advertise to th o send and rece	e other routers in this DM ive these advertisements	IVPN. OSPF 5.
	Finate fieldor	Ks adventised dsing	USFr		
	Network	VVIIdcard Mask	Area	Add	2
				Edit	
	M			Delete	
	Internet DMVPN Cloud				
	Add a Net	work	< Back	Next > Finish Cano	el Help
	Network:	192.10	68,10.0		
	Wildcard	Mask: 0.0.0.3	255		
		2			
	Area:	2			
			-		
			ancel		<u>.</u>
				شبكة وطقطقة <i>ok</i>	اضفت النفق

16. أضفت الشبكة الخاصة خلف الصرة مسحاج تخديد وطقطقة *بعد* 

PN Wizard	rouning mormado	n			
- Harris	C Select an exister	ig OSPF process ID	ć		26
	(F Create a new Or	SPF process ID:		10	
	OSPF Area ID for t	unnel network:		2	=
	-				
	Add the private net must be enabled o	works that you want in the other routers (	to advertise to t to send and rece	he other routers in thi rive these advertisen	s DMVPN. OSPF tents.
all a	Private network	ks advertised using	OSPF		
	Network	Wildcard Mask	Area	Add	l.
	192.168.10.0	0.0.0.255	2	Ent	
	172.16.20.0	0.0.0.255	2	Tielete	
				ale le le	l.
	Dervpn Grad	7	< Back (	Next >) Finish	Cancel Help
				ال تکوین	فوق <i>إنهاء</i> " لإكم
					الج.
ıb Wizard (Hub	and Seeks Topology				
	and shoke tohomotical	1 - 90% Comple	te		
	and spoke topology	1) - 90% Comple	te		
lizard	Summary of the Con	niguration	te		
lizard	Summary of the Con	niguration	te		
lizard	Summary of the Con	niguration	te n to the router.		
lizard	Summary of the Con Click Finish to delive	nfiguration	te 1 to the router.		
lizard	Summary of the Con Click Finish to delive Role of this router: D	niguration r the configuration MVPNHub (Prima	to the router. ary)	abitEthernet0/0	~
lizard	Summary of the Con Click Finish to delive Role of this router: D Interface that conne IP address of this ro	nfiguration r the configuration DMVPNHub (Prim- cts this router to to outer's tunnel inter	to the router. ary) face:192.168.1	abitEthernetD/0 0.2 Mask 255.255	255.0
lizard	Summary of the Con Click Finish to delive Role of this router: D Interface that conne IP address of this ro Advanced configura	niguration r the configuration MVPNHub (Prima cts this router to to puter's tunner tion for the tunner	to the router. ary) 1e Internet:Gig: face:192.168.1 interface: 2007691_NW	abitEthernet0/0 0.2 Mask 255.255.	255.0
lizard	Summary of the Con Click Finish to delive Role of this router: D Interface that conne IP address of this ro Advanced configura NHRP Auth NHRP Net	nfiguration of the configuration MVPNHub (Prima cts this router to the puter's tunnel inter tion for the tunnel mentication String: work ID:100.000	to to the router. ary) he Internet:Gig: face:192.168.1 interface: DMVPN_NW	abitEthernet0/0 0.2 Mask 255.255.	255.0
lizard	Summary of the Con Click Finish to delive Role of this router: D Interface that conne IP address of this ro Advanced configura NHRP Auth NHRP Net NHRP Hole	Ifiguration ifiguration in the configuration OMVPNHub (Prima cts this router to the outer's tunnel inter tion for the tunnel mentication String: work ID:100,000 dtime:360	to the router. ary) he Internet:Gig: face:192.168.1 interface: DMVPN_NW	abitEthernet0/0 0.2 Mask 255.255.	255.0
lizard	Summary of the Con Click Finish to delive Role of this router: D Interface that conne IP address of this ro Advanced configura NHRP Auth NHRP Net NHRP Net NHRP Hole Tunnel Key	r the configuration moves the configuration MVPNHub (Prima cts this router to the buter's tunnel inter tion for the tunnel intertication String: work ID:100,000 dtime:360 c:100,000	to the router. any) he Internet:Gig: face:192.168.1 interface: DMVPN_NW	abitEthernetD/0 0.2 Mask 255.255.	255.0
lizard	Summary of the Con Click Finish to delive Role of this router: D Interface that conne IP address of this ro Advanced configura NHRP Auth NHRP Nett NHRP Hole Tunnel Key Bandwidth MTU:1 400	nfiguration figuration of the configuration DMVPNHub (Prima cts this router to the puter's tunnel inter tion for the tunnel mentication String: work ID:100,000 dtime:360 (100,000	to the router. ary) he Internet:Gig: face:192.168.1 interface: DMVPN_NW	abitEthernet0/0 0.2 Mask 255.255.	255.0
lizard	Summary of the Con Click Finish to delive Role of this router: D Interface that conne IP address of this ro Advanced configura NHRP Auth NHRP Nett NHRP Hole Tunnel Key Bandwidth: MTU:1,400 Delay:1,000	r the configuration of the con	to the router. ary) he Internet:Gig: face:192.168.1 interface: DMVPN_NW	abitEthernet0/0 0.2 Mask 255.255.	255.0
izard	Summary of the Con Click Finish to delive Role of this router: D Interface that conne IP address of this ro Advanced configura NHRP Auth NHRP Neth NHRP Hole Tunnel Key Bandwidth: MTU:1,400 Delay:1,000 Routing Protocol:05	of 90% compte figuration r the configuration DMVPNHub (Prima cts this router to the buter's tunnel inter tion for the tunnel nentication String: work ID:100,000 dtime:360 c:100,000 1,000 0 SPF	to the router. any) he Internet:Gig: face:192.168.1 interface: DMVPN_NW	abitEthernetD/0 0.2 Mask 255.255.	255.0
lizard	Summary of the Con Click Finish to delive Role of this router: D Interface that conne IP address of this ro Advanced configura NHRP Auth NHRP Nett NHRP Nett NHRP Hole Tunnel Key Bandwidth. MTU:1,400 Delay:1,00 Routing Protocol:05 OSPF Proc	r the configuration of the configuration of the configuration DMVPNHub (Prima cts this router to the buter's tunnel inter tion for the tunnel nentication String: work ID:100,000 dtime:360 c100,000 dtime:360 dti	to the router. ary) he Internet:Gig: face:192.168.1 interface: DMVPN_NW	abitEthernet0/0 0.2 Mask 255.255	255.0
lizard	Summary of the Con Click Finish to delive Role of this router: D Interface that conne IP address of this ro Advanced configura NHRP Auth NHRP Nett NHRP Nett NHRP Hole Tunnel Key Bandwidth MTU:1,400 Delay:1,000 Routing Protocol:05 OSPF Proc OSPF Area Private networks ad	r the configuration of the configuration o	to the router. ary) he Internet:Gigs face:192.168.1 interface: DMVPN_NW	abitEthernet0/0 0.2 Mask 255.255.	255.0
lizard	Summary of the Con Click Finish to delive Role of this router: D Interface that conne IP address of this ro Advanced configura NHRP Auth NHRP Neth NHRP Hole Tunnel Key Bandwidth: MTU:1,400 Delay:1,000 Routing Protocol:05 OSPF Proc OSPF Area Private networks ad 192.168.10	ifiguration if the configuration onthe configurat	to the router. any) he Internet:Gig: face:192.168.1 interface: DMVPN_NW	abitEthernet0/0 0.2 Mask 255.255.	255.0
Fizard	Summary of the Con Click Finish to delive Role of this router: D Interface that conne IP address of this ro Advanced configura NHRP Autr NHRP Nett NHRP Nett NHRP Hole Tunnel Key Bandwidth. MTU:1,400 Delay:1,00 Routing Protocol:05 OSPF Area Private networks ad 192.168.10 172.16.20.	r the configuration r the configuration DMVPNHub (Prima cts this router to the buter's tunnel inter tion for the tunnel nentication String: work ID:100,000 dtime:360 c100,000 dtime:360 c100,000 t1,000 0 SPF ess ID :10 ID for tunnel network vertised: 0.0Area2 0Area2	to the router. ary) he Internet:Gig: face:192.168.1 interface: DMVPN_NW	abitEthernet0/0 0.2 Mask 255.255	255.0
Fizard	Summary of the Con Click Finish to delive Role of this router: D Interface that conne IP address of this ro Advanced configura NHRP Auth NHRP Nett NHRP Nett NHRP Hole Tunnel Key Bandwidth MTU:1,400 Delay:1,000 Routing Protocol:05 OSPF Proc OSPF Area Private networks ad 192.168.10 172.16.20.1	Infiguration In	to the router. ary) he Internet:Gig: face:192.168.1 interface: DMVPN_NW	abitEthernet0/0 0.2 Mask 255.255.	255.0
lizard	Summary of the Con Click Finish to delive Role of this router: D Interface that conne IP address of this ro Advanced configura NHRP Auth NHRP Neth NHRP Hole Tunnel Key Bandwidth: MTU:1,400 Delay:1,000 Routing Protocol:05 OSPF Proc OSPF Area Private networks ad 192.168.10 172.16.20.1	Infiguration Infiguration In the configuration OMVPNHub (Prima cts this router to the outer's tunnel inter tion for the tunnel nentication String: work ID:100,000 thime:360 c100,000 1,000 0 SPF ess ID :10 ID for tunnel network vertised: 0.0Area2 0.0Area2 0.0Area2	to the router. any) he Internet:Gig: face:192.168.1 interface: DMVPN_NW	abitEthernetD/0 0.2 Mask 255.255.	255.0
lizard	Summary of the Con Click Finish to delive Role of this router: D Interface that conne IP address of this ro Advanced configura NHRP Auth NHRP Nett NHRP Nett NHRP Nett NHRP Hole Tunnel Key Bandwidth MTU:1,400 Delay:1,000 Routing Protocol:05 OSPF Proc OSPF Area Private networks ad 192.168.10 172.16.20.1	Infiguration In	to the router. ary) he Internet:Gig: face:192.168.1 interface: DMVPN_NW	abitEthernet0/0 0.2 Mask 255.255.	255.0
Fizard	Summary of the Con Click Finish to delive Role of this router: D Interface that conne IP address of this ro Advanced configura NHRP Autr NHRP Nett NHRP Hole Tunnel Key Bandwidth: MTU:1,400 Delay:1,00 Routing Protocol:05 OSPF Proc OSPF Area Private networks ad 192.168.10 172.16.20.1	Infiguration Infiguration In the configuration DMVPNHub (Prima cts this router to the buter's tunnel inter tion for the tunnel mentication String: work ID:100,000 dtime: 360 c100,000 1,000 0 SPF ess ID :10 ID for tunnel network vertised: 0.0Area2 0.Area2 0.0Area2	to the router. any) he Internet:Gig: face:192.168.1 interface: DMVPN_NW	abitEthernetD/0 0.2 Mask 255.255	255.0

D

PT LINE .

18. طقطقة *يسلم* أن ينفذ

Preview commands that will be delivered to the device's running configuration.	Deliver delta commands to the device's r	unning config.			
crypto keyring ccp-dinvpn-keyring pre-shared-key address 0.0.0.0 0.0.0.0 key ******** ext crypto ipsec transform-set ESP-3DES-SHA esp-sha-himac esp-3des mode transport ext crypto isakmp profile ccp-dinvpn-isakmprofile keyring ccp-dinvpn-keyring match identify address 0.0.0 ext crupto issec worfile CiscoCD. Profile1 The differences between the running configuration and the startup configuration are lost whenever the device is turned off. Save running config. to device's startup config. This operation can take several minutes.	Preview commands that will be delivered	d to the device's ru	nning configuration.		
crypto ipsec transform-set ESP-3DES-SHA esp-sha-hmac esp-3des mode transport ext crypto isakmp profile ccp-dmvpn-isakmprofile keyring ccp-dmvpn-keyring match identity address 0.0.0.0 exit crupto insec profile CiscoCP. Profile1 The differences between the running configuration and the startup configuration are lost whenever the device is turned off. Save running config. to device's startup config. This operation can take several minutes.	crypto keyring ccp-dmvpn-keyring pre-shared-key address 0.0.0.0 0.0.0.0 ext	) key ******			^
exit crypto isakmp profile ccp-dmvpn-isakmprofile keyring ccp-dmvpn-keyring metch identity address 0.0.0.0 exit crypto isses profile CiscoCD. Evofile1 The differences between the running configuration and the startup configuration are lost whenever the device is turned off. Save running config. to device's startup config. This operation can take several minutes.	crypto ipsec transform-set ESP-3DES-S mode transport	HA esp-sha-hmac	esp-3des		
exit crunto insec worlde CiscoCD Profile1 The differences between the running configuration and the startup configuration are lost whenever the device is turned off. Save running config. to device's startup config. This operation can take several minutes.	exit crypto isakmp profile ccp-dmvpn-isakmp keyring ccp-dmvpn-keyring match identity address 0.0.0.0	profile			
The differences between the running configuration and the startup configuration are lost whenever he device is turned off. Save running config. to device's startup config. This operation can take several minutes.	exit nrunto incen rentile Cieno/D. Dentilet C				>
Save running config. to device's startup config. This operation can take several minutes.	The differences between the runni he device is turned off.	ing configuration	n and the startup cor	figuration are lost	whenever
This operation can take several minutes.	Save running config. to device's s	startup config.			
	This operation can take several min.	utes.			

## <u>CLI تشکیل ل صرة</u>

يتم عرض تكوين CLI ذي الصلة هنا:

موجه الموزع
!
crypto isakmp policy 1
encr 3des
authentication pre-share
group 2
!
crypto isakmp policy 2
encr aes 192
authentication pre-share
crypto isakmp key abcd123 address 0.0.0.0 0.0.0.0
crypto ipsec transform-set ESP-3DES-SHA esp-3des esp-
mode transport
crypto ipsec profile CiscoCP Profile1
set transform-set ESP-3DES-SHA
interface Tunnel0
bandwidth 1000
ip address 192.168.10.2 255.255.255.0
no ip redirects
ip mtu 1400
ip nhrp authentication DMVPN_NW
ip nhrp map multicast dynamic
ip nhrp network-id 100000

ip nhrp holdtime 3	60
ip tcp adjust-mss 13	60
ip ospf network point-to-multipoi	nt
delay 10	00
tunnel source GigabitEthernet0	/0
tunnel mode gre multipoi	nt
tunnel key 1000	00
tunnel protection ipsec profile CiscoCP_Profil	e1
	!
router ospf	10
log-adjacency-chang	es
network 172.16.20.0 0.0.0.255 area	. 2
network 192.168.10.0 0.0.0.255 area	. 2

## <u>تحرير تكوين DMVPN باستخدام CCP</u>

يمكنك تحرير معلمات نفق DMVPN الموجودة يدويا عند تحديد واجهة النفق والنقر فوق *تحرير*.

VPN				
reate Dynamic Multip	ooint VPN (DMVPN)	Edit Dynamic	: Multipoint VPN (DMVPN)	Add
Interface	IPSec Pr	ofile	IP Address	Description
Funnel0	CiscoCP	Profile1	192.168.10.2	<none></none>
Details for interface T	unnel0:			
Details for interface T Item Name	unnelO:		Item Value	
Details for interface T Item Name Interface	unnel0:		Item Value Tunnel0	n
Details for interface T Item Name nterface PSec Profile	unnelO:		Item Value Tunnel0 CiscoCP_Profile1	
Details for interface T Item Name nterface PSec Profile P Address Description	unnelO:		Item Value Tunnel0 CiscoCP_Profile1 192.168.10.2	
Details for interface T Item Name Interface PSec Profile P Address Description Funnel Bandwidth	unnelO:		Item Value Tunnel0 CiscoCP_Profile1 192.168.10.2 <none> 1000</none>	
Details for interface T Item Name Interface PSec Profile P Address Description Funnel Bandwidth WTU	unnel0:		Item Value Tunnel0 CiscoCP_Profile1 192.168.10.2 <none> 1000 1400</none>	
Details for interface T Item Name Interface IPSec Profile IP Address Description Funnel Bandwidth VITU NHRP Authentication	unnelO:		Item Value Tunnel0 CiscoCP_Profile1 192.168.10.2 «None» 1000 1400 DMVPN_NW	
Details for interface T Item Name Interface IPSec Profile IP Address Description Tunnel Bandwidth MTU NHRP Authentication NHRP Network ID	unnelO:		Item Value Tunnel0 CiscoCP_Profile1 192.168.10.2 «None» 1000 1400 DMVPN_NW 100000	
Details for interface T Item Name Interface IPSec Profile IP Address Description Tunnel Bandwidth MTU NHRP Authentication NHRP Network ID NHRP Hold Time	unnelO:		Item Value           Tunnel0           CiscoCP_Profile1           192.168.10.2           «None»           1000           1400           DMVPN_NW           100000           360	

يتم تعديل معلمات واجهة النفق مثل MTU ومفتاح النفق تحت علامة التبويب *عام.* 

eneral NHRP R	outing
IP address:	192.168.10.2
Mask:	255.255.255.0 24
(* Interface:	GigabitEthernet0/0
C IP address:	
Tunnel Destination: This is an multipoin C IP / Hostname:	t GRE Tunnel
Tunnel Destination: This is an multipoin P / Hostname: PSec Profile:	t GRE Tunnel
Tunnel Destination: This is an multipoin P / Hostname: PSec Profile: MTU:	t GRE Tunnel CiscoCP_Proti  Add 1400
Tunnel Destination: This is an multipoin P / Hostname: PSec Profile: MTU: Bandwidth:	t GRE Tunnel CiscoCP_Proti Add 1400 1000
Tunnel Destination: This is an multipoin P / Hostname: PSec Profile: MTU: Bandwidth: Delay:	t GRE Tunnel  CiscoCP_Proti  Add  1400  1000  1000

1. تم العثور على معلمات NHRP ذات الصلة وتعديلها وفقا للمتطلبات بموجب علامة تبويب *NHRP*. بالنسبة للموجه المتصل، يجب أن تكون قادرا على عرض NHS كعنوان IP للموجه الموزع. انقر فوق *إضافة* في قسم

	ng	- 1	
Authentication String:	DMVPN_N/V		
fold Time:	360		
letwork ID:	100000		
-Next Hop Servers			
Next Hop Servers		Add	
		Delete	
NHRP Map			
NHRP Map Destination Ma	sk 🚺	Add	
NHRP Map Destination Ma «None» «No	sk (	Add	
NHRP Map Destination Ma «None» «No	sk (	Add Edit	
NHRP Map Destination Ma «None» «No	sk j	Add Edit Delete	
NHRP Map Destination Ma «None» «No	sk one>	Add Eat	

2. استنادا إلى إعداد الشبكة، يمكن تكوين معلمات تعيين NHRP كما هو موضح

of IP destinations co	nnected to a NBMA network.
Destination reach	able through NBMA network
IP Address:	
Mask (Optional)	
NBMA address di	rectly reachable
IP Address	
Configure NBMA addr r multicast packets to C Dynamically add s IP address of NBM	esses used as destinations for broadcast be sent over a tunnel network. pokes' IP addresses to hub's multicast cache IA address directly reachable

يتم عرض المعلمات ذات الصلة بالتوجيه وتعديلها ضمن علامة التبويب *توجيه*.

Beneral NHRP Routin	9
Routing Protocol:	OSPF
Ø OSPF	
OSPF Network Type:	point-to-multipoint
OSPF Priority:	
Hello Interval:	-
Dead Interval:	

## <u>مزيد من المعلومات</u>

يتم تكوين أنفاق DMVPN بهذه الطريقتين:

- الاتصال بالمتحدثين من خلال المركز
  - اتصال هاتفي بدون المركز

في هذا المستند، تتم مناقشة الطريقة الأولى فقط. من أجل السماح بإنشاء أنفاق IPSec ديناميكية يتم التحدث عنها، يتم إستخدام هذا النهج لإضافة السحابة التي يتم التحدث بها إلى شبكة DMVPN:

- 1. قم بتشغيل معالج DMVPN وحدد خيار *تكوين Tal*k.
- 2. من نافذة مخطط شبكة DMVPN، حدد خيار *الشبكة المتكاملة* بدلا من خيار *الشبكة المحولة* و*المحورية*.

DMVPN Spoke Wizard	- 10% Complete
VPN Wizard	DMVPN Network Topology         Select the DMVPN network topology. <ul> <li>Hub and Spoke network</li> <li>In this topology, all DMVPN traffic is routed through the hub. A point-to-point GRE interface will be configured on the spoke, and the spoke will use it to create a tunnel to the hub which will remain up. Spokes do not create GRE tunnels to other spokes in this topology.</li></ul>
	<ul> <li>Fully meshed network</li> <li>In this topology, the spoke dynamically establishes a direct tunnel to another spoke device, and sends DMVPN traffic directly to it. A multipoint GRE tunnel interface is configured on the spoke to support this functionality.</li> </ul>
	Note: Cisco supports fully meshed DMVPN networks only in the following Cisco IOS images: 12.3(8)T1 and 12.3(9) or later.
	A Back Next > Finish Cancel Help

3. أكمل بقية التكوين باستخدام الخطوات نفسها التي تستخدمها التكوينات الأخرى في هذا المستند.

## <u>التحقق من الصحة</u>

لا يوجد حاليًا إجراء للتحقق من صحة هذا التكوين.

## معلومات ذات صلة

- شبكة VPN الديناميكية متعددة النقاط من Cisco: إتصالات بسيطة وآمنة من فرع إلى فرع
  - (IOS 12.2 Dynamic Multipoint VPN (DMVPN
    - الدعم التقني والمستندات Cisco Systems

ةمجرتاا مذه لوح

تمجرت Cisco تايان تايانق تال نم قعومجم مادختساب دنتسمل اذه Cisco تمجرت ملاعل العامي عيمج يف نيم دختسمل لمعد يوتحم ميدقت لقيرشبل و امك ققيقد نوكت نل قيل قمجرت لضفاً نأ قظعالم يجرُي .قصاخل امهتغلب Cisco ياخت .فرتحم مجرتم اممدقي يتل القيفارت عال قمجرت اعم ل احل اوه يل إ أم اد عوجرل اب يصوُتو تامجرت الاذة ققد نع اهتي لوئسم Systems الما يا إ أم الا عنه يل الان الانتيام الال الانتيال الانت الما