Mikrotik VPN for windows domain Remote users

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About Me

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- Tamkeen Vocational Institute Executive Manager 2016

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- Mikrotik VPN server configuration
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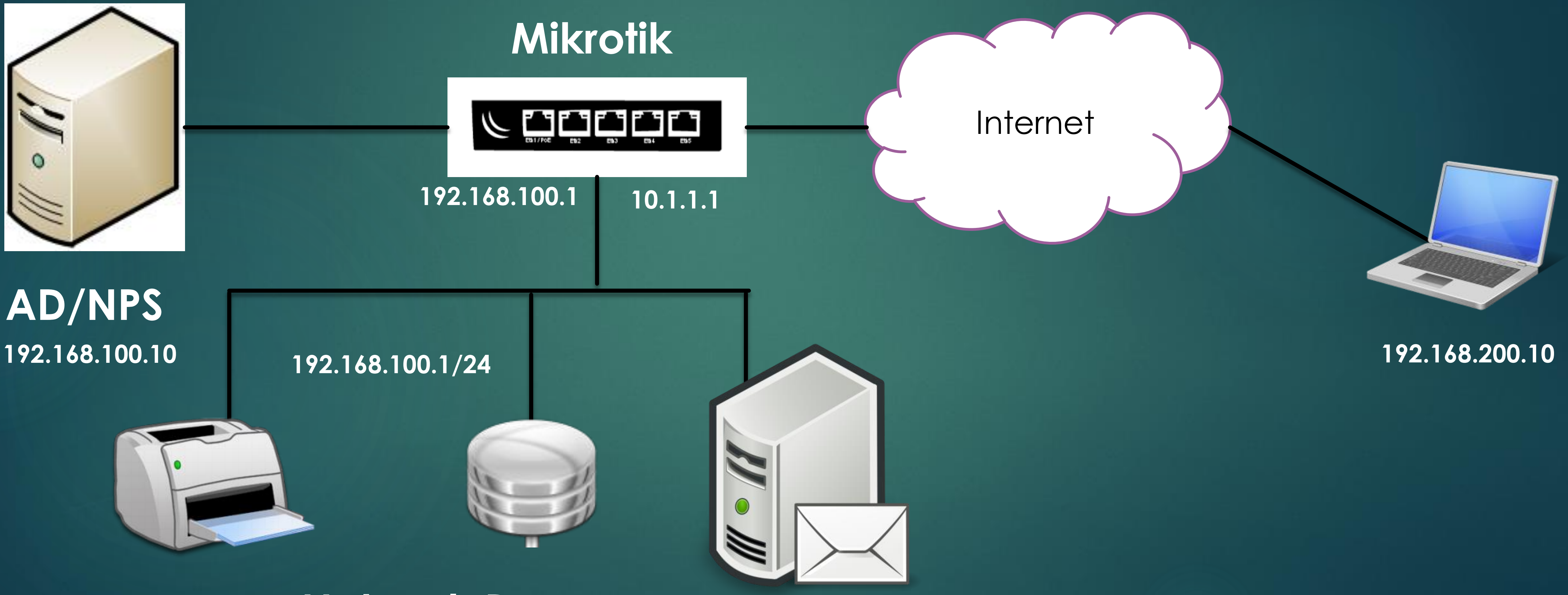
Network Diagram



Mikrotik

Internet

AD/NPS

192.168.100.10

192.168.100.1

10.1.1.1

192.168.100.1/24

192.168.200.10

Network Resources

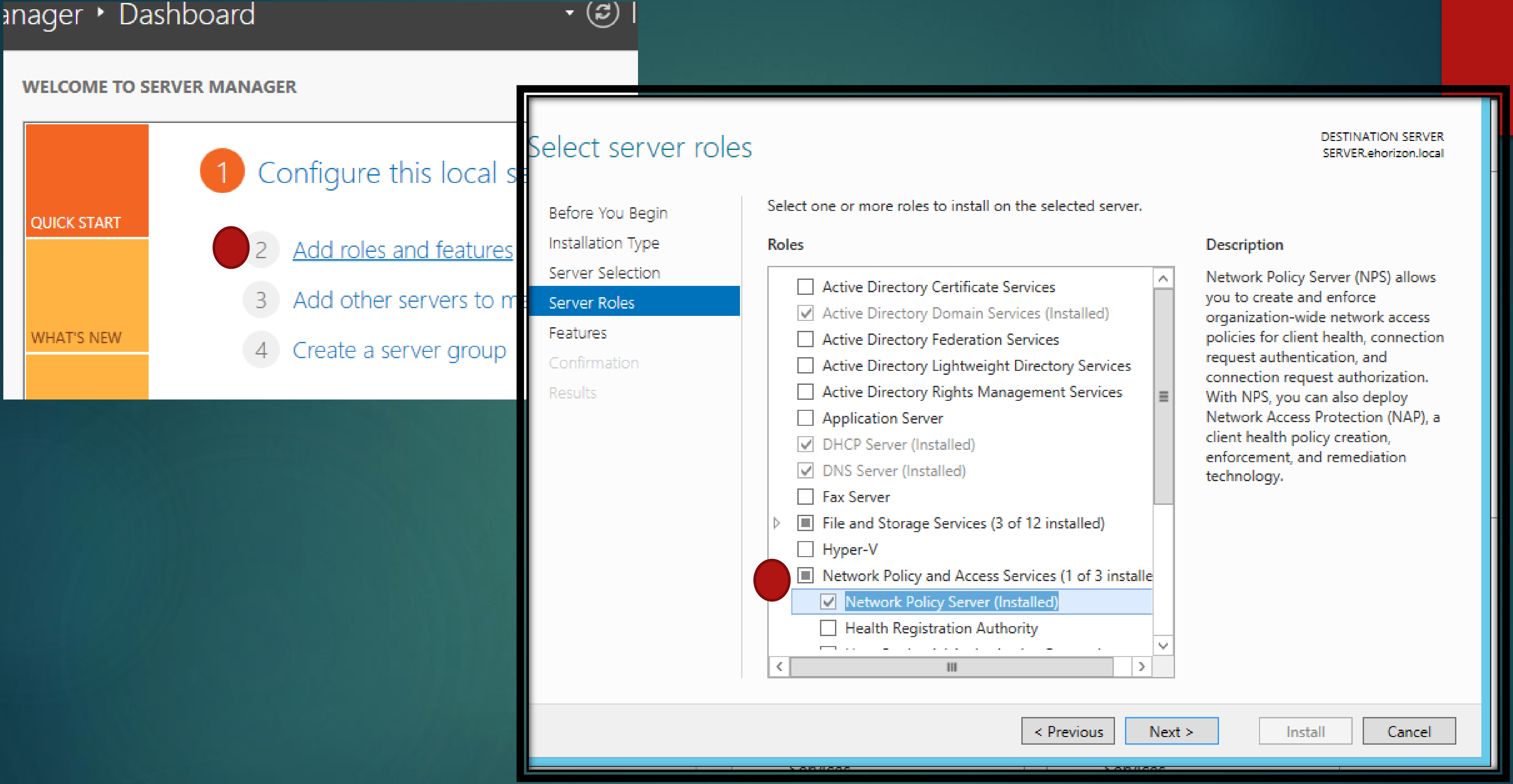
Setup and roles

- Windows server 2012:
  - Active directory
  - DNS
  - NPS
- Mikrotik Router
  - L2TP/IPSEC VPN Edge
  - RADIUS client
- Windows Client
  - L2TP/IPSEC VPN client
  - Windows domain user

Benefits

- One centralized User Authentication database.
- No need to create PPP secrets on Mikrotik
- Users will use their windows credentials to connect to VPN and Active directory
- Group policy will be applied to connected users
- Remote users will get benefit of all network resources
- Securing remote user connection using good security standards

Windows server 2012 Configuration



WELCOME TO SERVER MANAGER

1 Configure this local s

2 Add roles and features

3 Add other servers to m

4 Create a server group

Select server roles

DESTINATION SERVER
SERVER.ehorizon.local

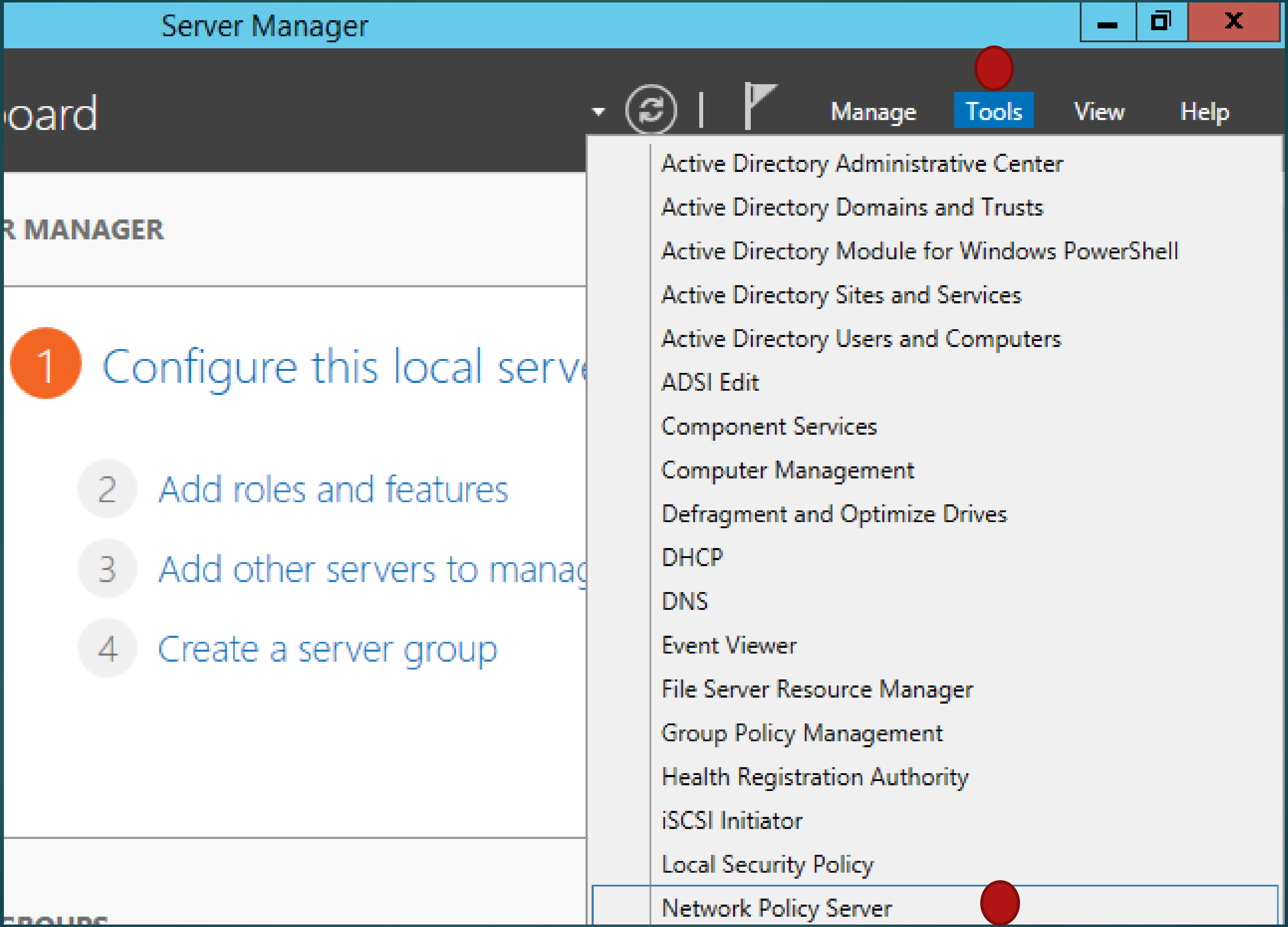
Select one or more roles to install on the selected server.

Roles

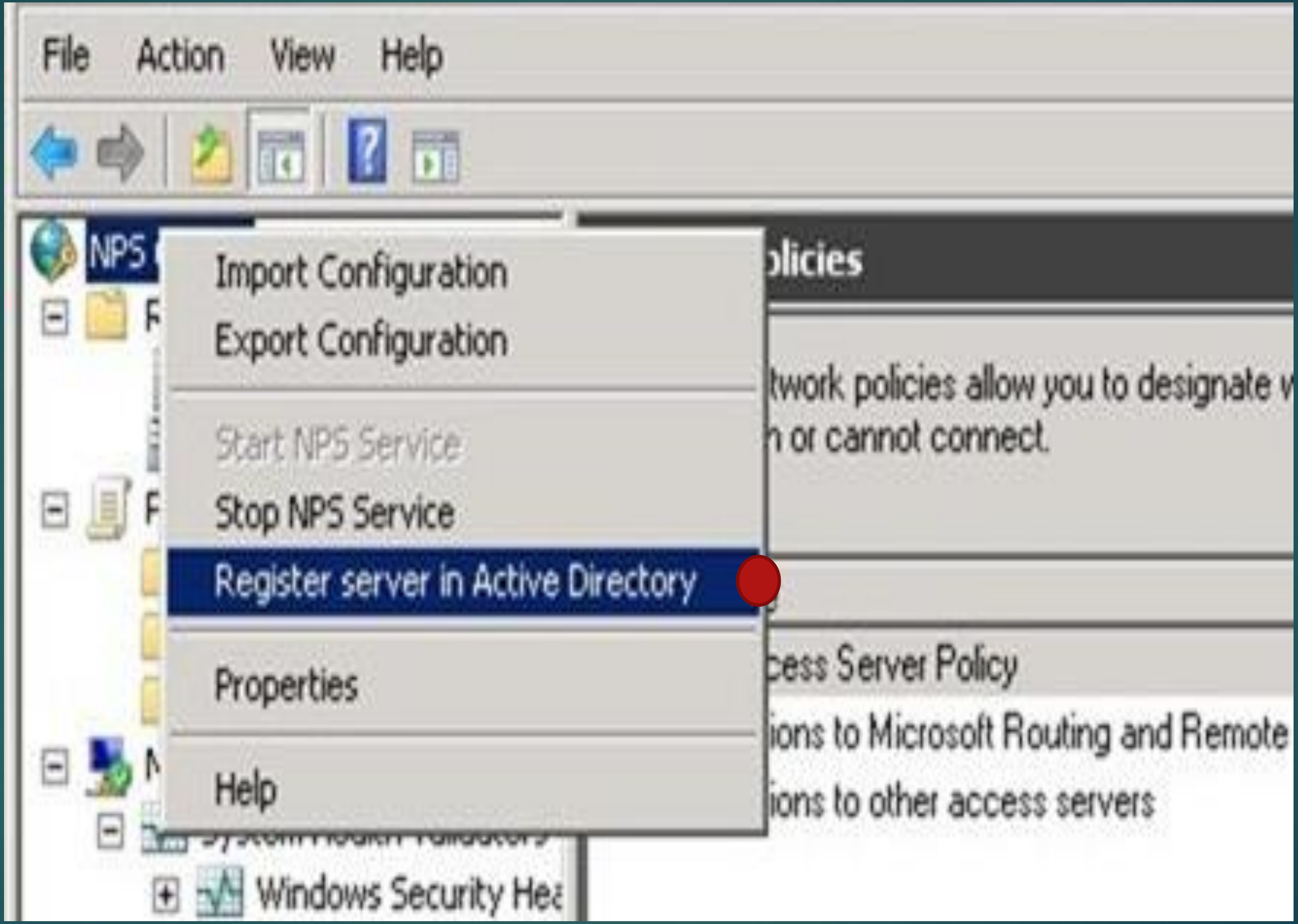
- □ Active Directory Certificate Services
- ☑ Active Directory Domain Services (Installed)
- □ Active Directory Federation Services
- □ Active Directory Lightweight Directory Services
- □ Active Directory Rights Management Services
- □ Application Server
- ☑ DHCP Server (Installed)
- ☑ DNS Server (Installed)
- □ Fax Server
- ▣ File and Storage Services (3 of 12 installed)
- □ Hyper-V
- ▣ Network Policy and Access Services (1 of 3 installe
  - ☑ Network Policy Server (Installed)
  - □ Health Registration Authority

Description

Network Policy Server (NPS) allows you to create and enforce organization-wide network access policies for client health, connection request authentication, and connection request authorization. With NPS, you can also deploy Network Access Protection (NAP), a client health policy creation, enforcement, and remediation technology.

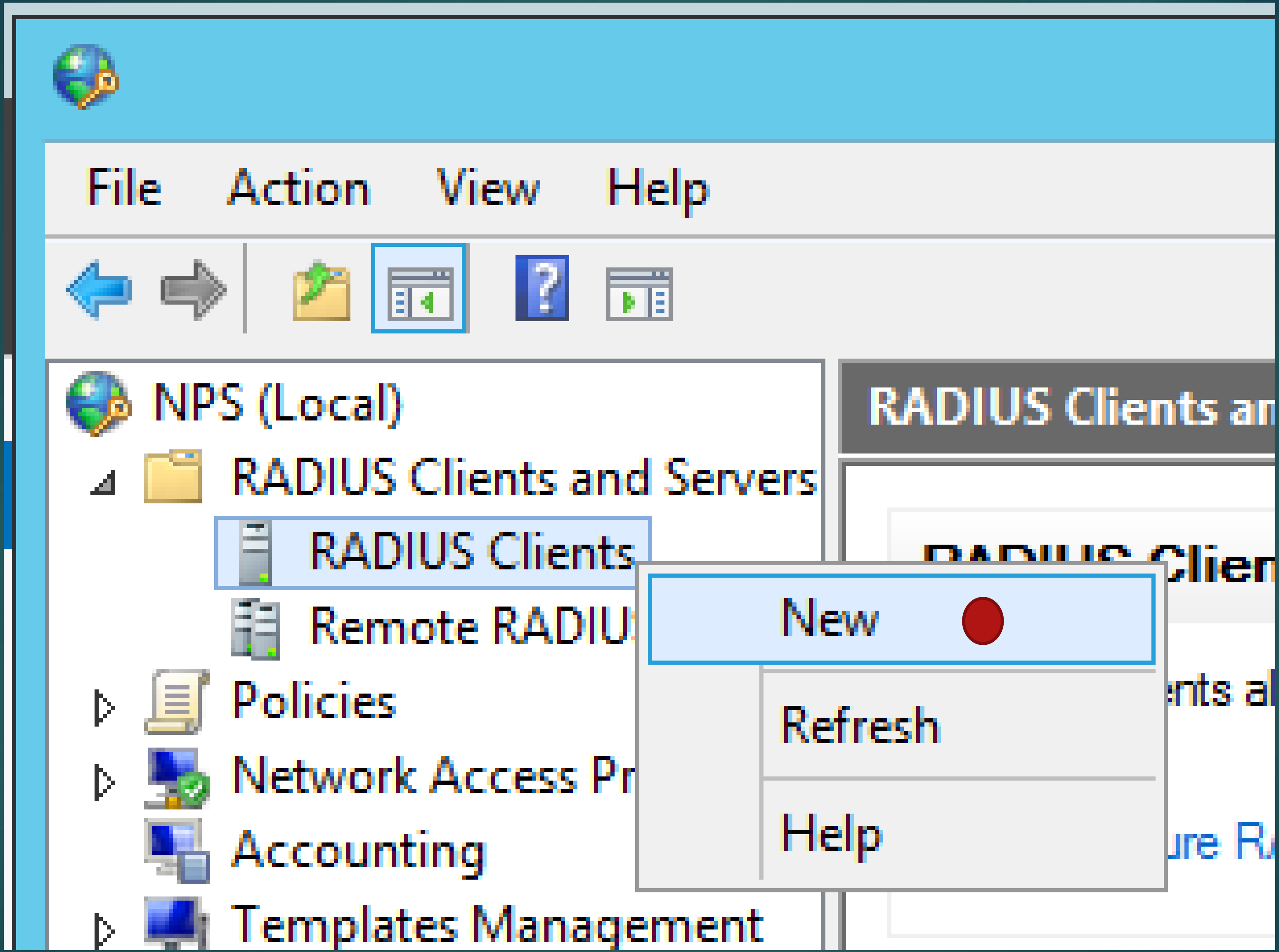


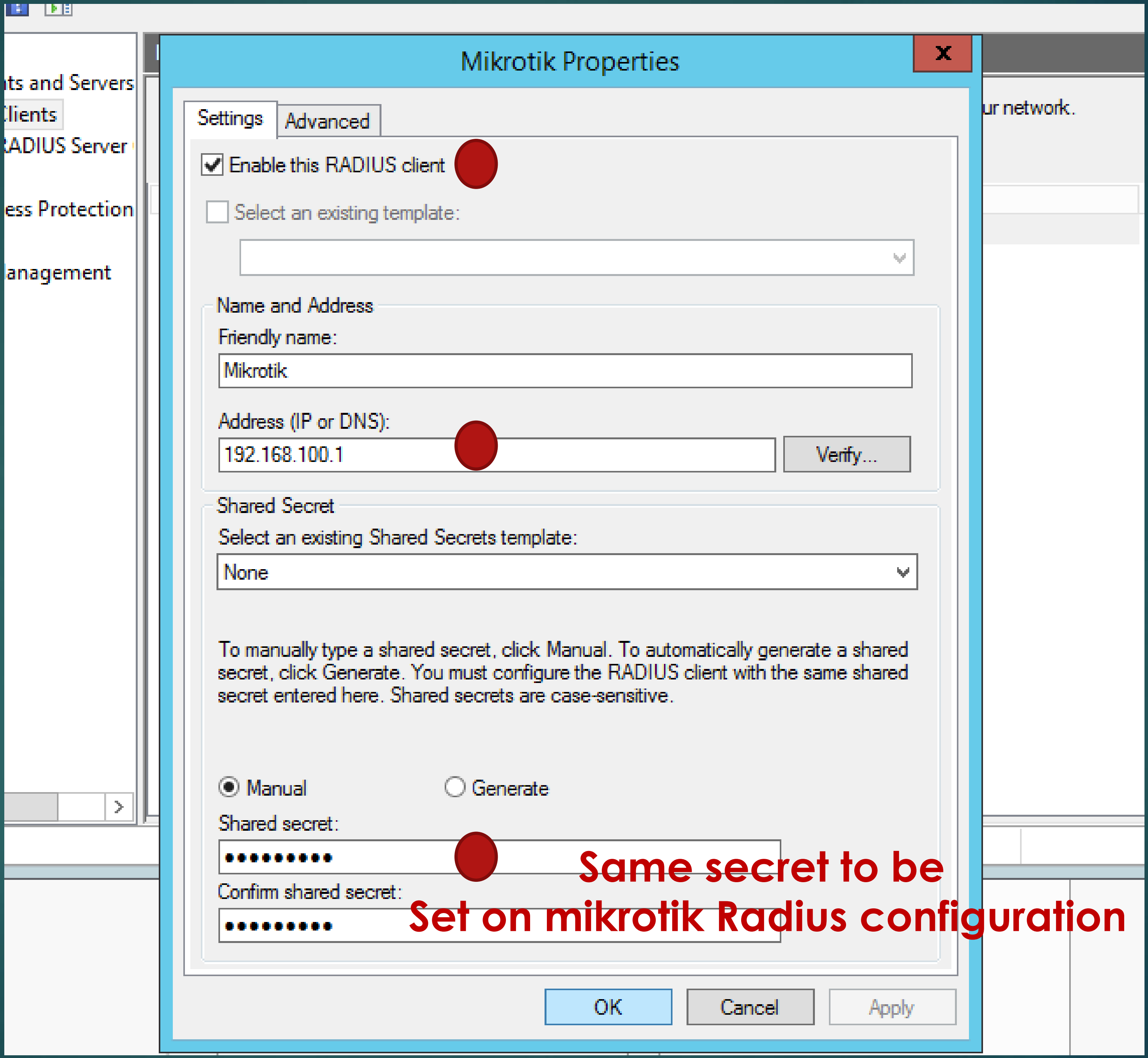
Server Manager
oard
Manage
Tools
View
Help
R MANAGER
1 Configure this local serv
2 Add roles and features
3 Add other servers to manag
4 Create a server group
GROUPS
Active Directory Administrative Center
Active Directory Domains and Trusts
Active Directory Module for Windows PowerShell
Active Directory Sites and Services
Active Directory Users and Computers
ADSI Edit
Component Services
Computer Management
Defragment and Optimize Drives
DHCP
DNS
Event Viewer
File Server Resource Manager
Group Policy Management
Health Registration Authority
iSCSI Initiator
Local Security Policy
Network Policy Server



twork policies allow you to designate w
n or cannot connect.

ions to Microsoft Routing and Remote
ions to other access servers


File
Action
View
Help
NPS (Local)
RADIUS Clients and Servers
RADIUS Clients
Remote RADIU
Policies
Network Access Pr
Accounting
Templates Management
RADIUS Clients an
RADIUS Clien
nts al
ure R
New
Refresh
Help



Mikrotik Properties

☑ Enable this RADIUS client

□ Select an existing template:

Name and Address

Friendly name: Mikrotik

Address (IP or DNS): 192.168.100.1

Shared Secret

Select an existing Shared Secrets template: None

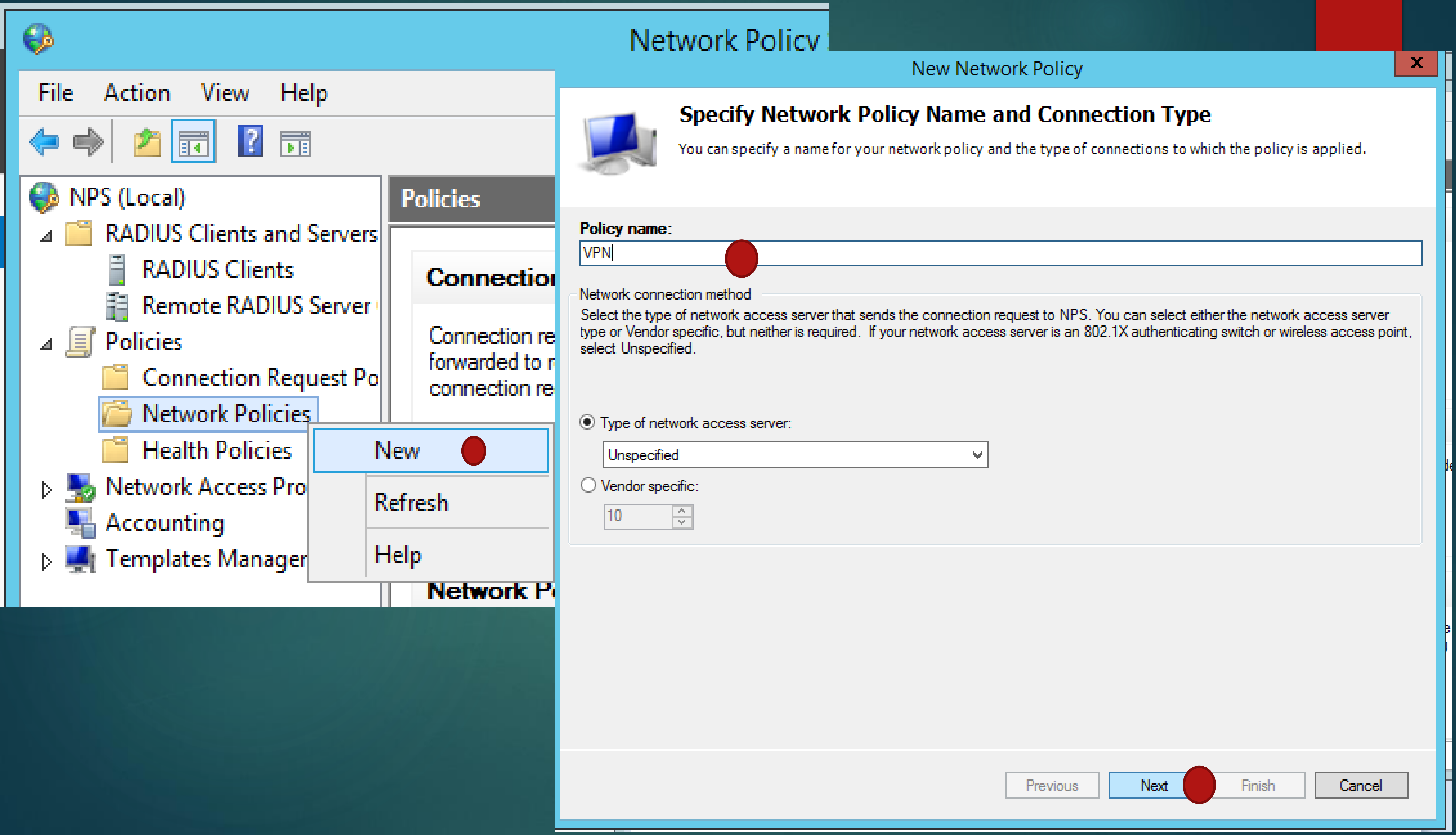
To manually type a shared secret, click Manual. To automatically generate a shared secret, click Generate. You must configure the RADIUS client with the same shared secret entered here. Shared secrets are case-sensitive.

● Manual ○ Generate

Shared secret: ••••••••••

Confirm shared secret: ••••••••••

Same secret to be
Set on mikrotik Radius configuration



Specify Network Policy Name and Connection Type

You can specify a name for your network policy and the type of connections to which the policy is applied.

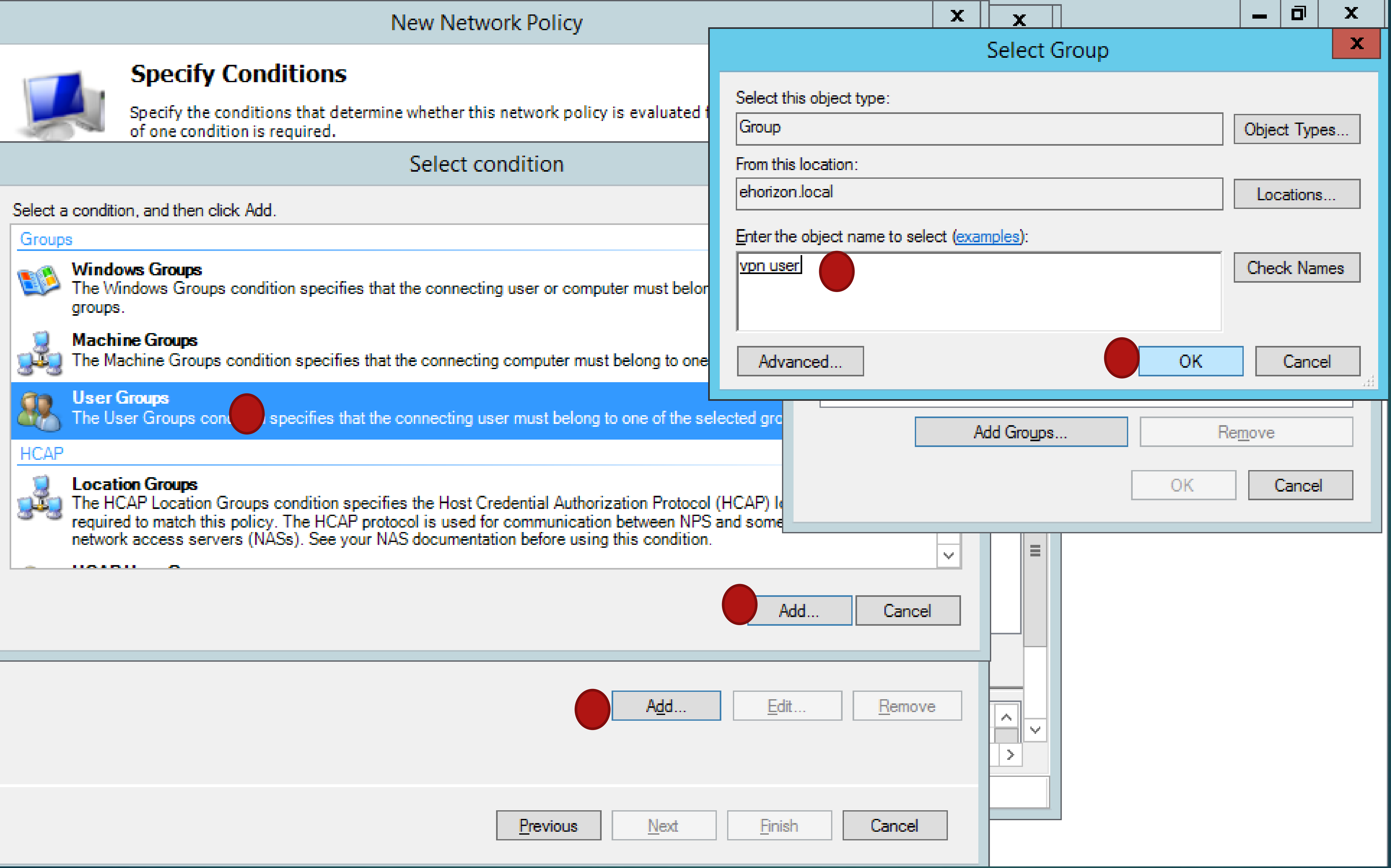
Policy name: VPN

Network connection method

Select the type of network access server that sends the connection request to NPS. You can select either the network access server type or Vendor specific, but neither is required. If your network access server is an 802.1X authenticating switch or wireless access point, select Unspecified.

● Type of network access server: Unspecified

○ Vendor specific: 10



New Network Policy

Specify Conditions

Specify the conditions that determine whether this network policy is evaluated f
of one condition is required.

Select condition

Select a condition, and then click Add.

Groups

Windows Groups
The Windows Groups condition specifies that the connecting user or computer must belon
groups.

Machine Groups
The Machine Groups condition specifies that the connecting computer must belong to one

User Groups
The User Groups con specifies that the connecting user must belong to one of the selected gro

HCAP

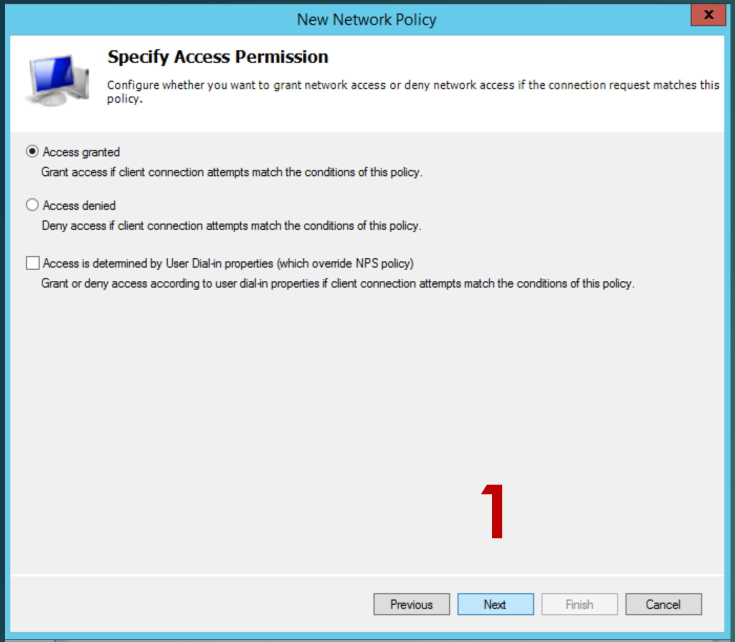
Location Groups
The HCAP Location Groups condition specifies the Host Credential Authorization Protocol (HCAP) l
required to match this policy. The HCAP protocol is used for communication between NPS and some
network access servers (NASs). See your NAS documentation before using this condition.

Select Group

Select this object type:
Group

From this location:
ehorizon.local

Enter the object name to select (examples):
vpn user



1

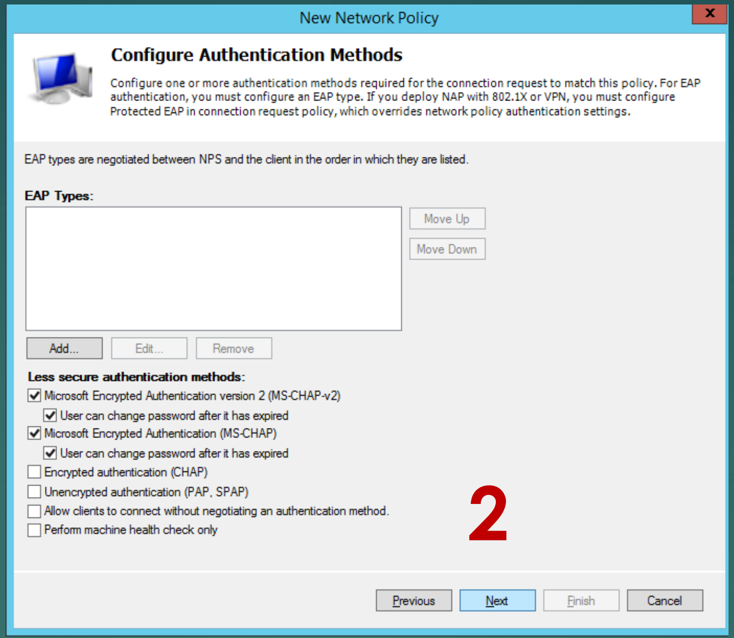
Specify Access Permission

Configure whether you want to grant network access or deny network access if the connection request matches this policy.

● Access granted
Grant access if client connection attempts match the conditions of this policy.

○ Access denied
Deny access if client connection attempts match the conditions of this policy.

□ Access is determined by User Dial-in properties (which override NPS policy)
Grant or deny access according to user dial-in properties if client connection attempts match the conditions of this policy.



2

Configure Authentication Methods

Configure one or more authentication methods required for the connection request to match this policy. For EAP authentication, you must configure an EAP type. If you deploy NAP with 802.1X or VPN, you must configure Protected EAP in connection request policy, which overrides network policy authentication settings.

EAP types are negotiated between NPS and the client in the order in which they are listed.

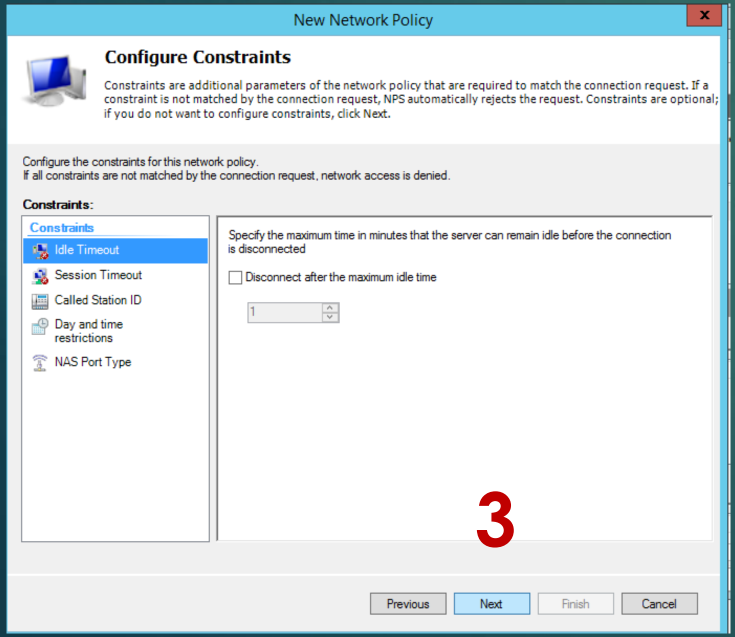
EAP Types:

Less secure authentication methods:

☑ Microsoft Encrypted Authentication version 2 (MS-CHAP-v2)
- ☑ User can change password after it has expired

☑ Microsoft Encrypted Authentication (MS-CHAP)
- ☑ User can change password after it has expired

□ Encrypted authentication (CHAP)
□ Unencrypted authentication (PAP, SPAP)
□ Allow clients to connect without negotiating an authentication method.
□ Perform machine health check only



3

Configure Constraints

Constraints are additional parameters of the network policy that are required to match the connection request. If a constraint is not matched by the connection request, NPS automatically rejects the request. Constraints are optional; if you do not want to configure constraints, click Next.

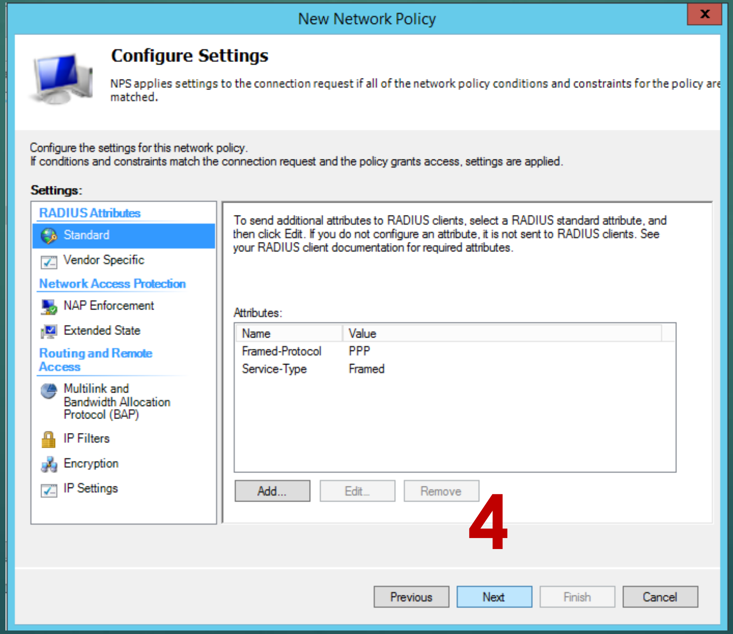
Configure the constraints for this network policy.
If all constraints are not matched by the connection request, network access is denied.

Constraints:

Specify the maximum time in minutes that the server can remain idle before the connection is disconnected

□ Disconnect after the maximum idle time

1



4

Configure Settings

NPS applies settings to the connection request if all of the network policy conditions and constraints for the policy are matched.

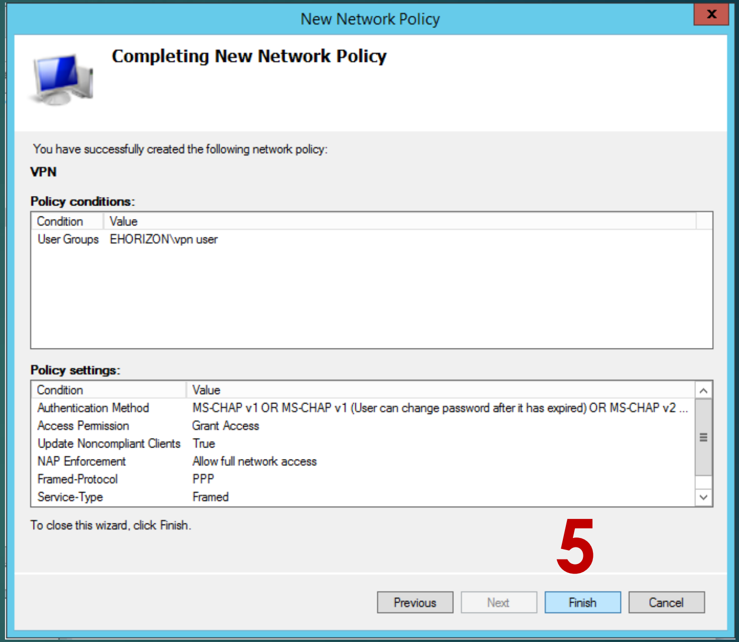
Configure the settings for this network policy.
If conditions and constraints match the connection request and the policy grants access, settings are applied.

Settings:

To send additional attributes to RADIUS clients, select a RADIUS standard attribute, and then click Edit. If you do not configure an attribute, it is not sent to RADIUS clients. See your RADIUS client documentation for required attributes.

Attributes:

Name	Value
Framed-Protocol	PPP
Service-Type	Framed



5

Completing New Network Policy

You have successfully created the following network policy:

VPN

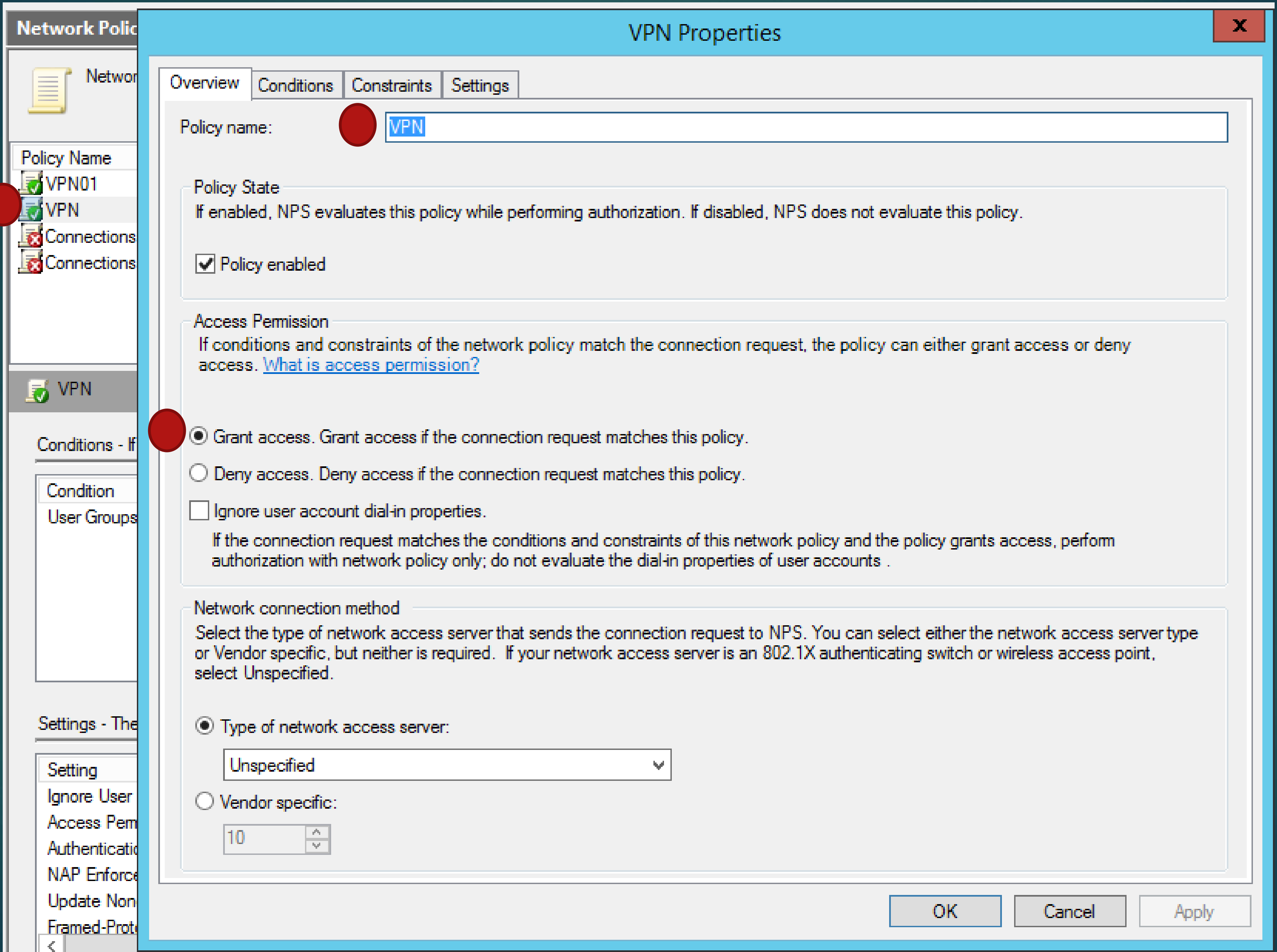
Policy conditions:

Condition	Value
User Groups	EHORIZON\vpn user

Policy settings:

Condition	Value
Authentication Method	MS-CHAP v1 OR MS-CHAP v1 (User can change password after it has expired) OR MS-CHAP v2 ...
Access Permission	Grant Access
Update Noncompliant Clients	True
NAP Enforcement	Allow full network access
Framed-Protocol	PPP
Service-Type	Framed

To close this wizard, click Finish.



VPN Properties

Policy name: VPN

Policy State

If enabled, NPS evaluates this policy while performing authorization. If disabled, NPS does not evaluate this policy.

☑ Policy enabled

Access Permission

If conditions and constraints of the network policy match the connection request, the policy can either grant access or deny access. What is access permission?

● Grant access. Grant access if the connection request matches this policy.

○ Deny access. Deny access if the connection request matches this policy.

□ Ignore user account dial-in properties.

If the connection request matches the conditions and constraints of this network policy and the policy grants access, perform authorization with network policy only; do not evaluate the dial-in properties of user accounts .

Network connection method

Select the type of network access server that sends the connection request to NPS. You can select either the network access server type or Vendor specific, but neither is required. If your network access server is an 802.1X authenticating switch or wireless access point, select Unspecified.

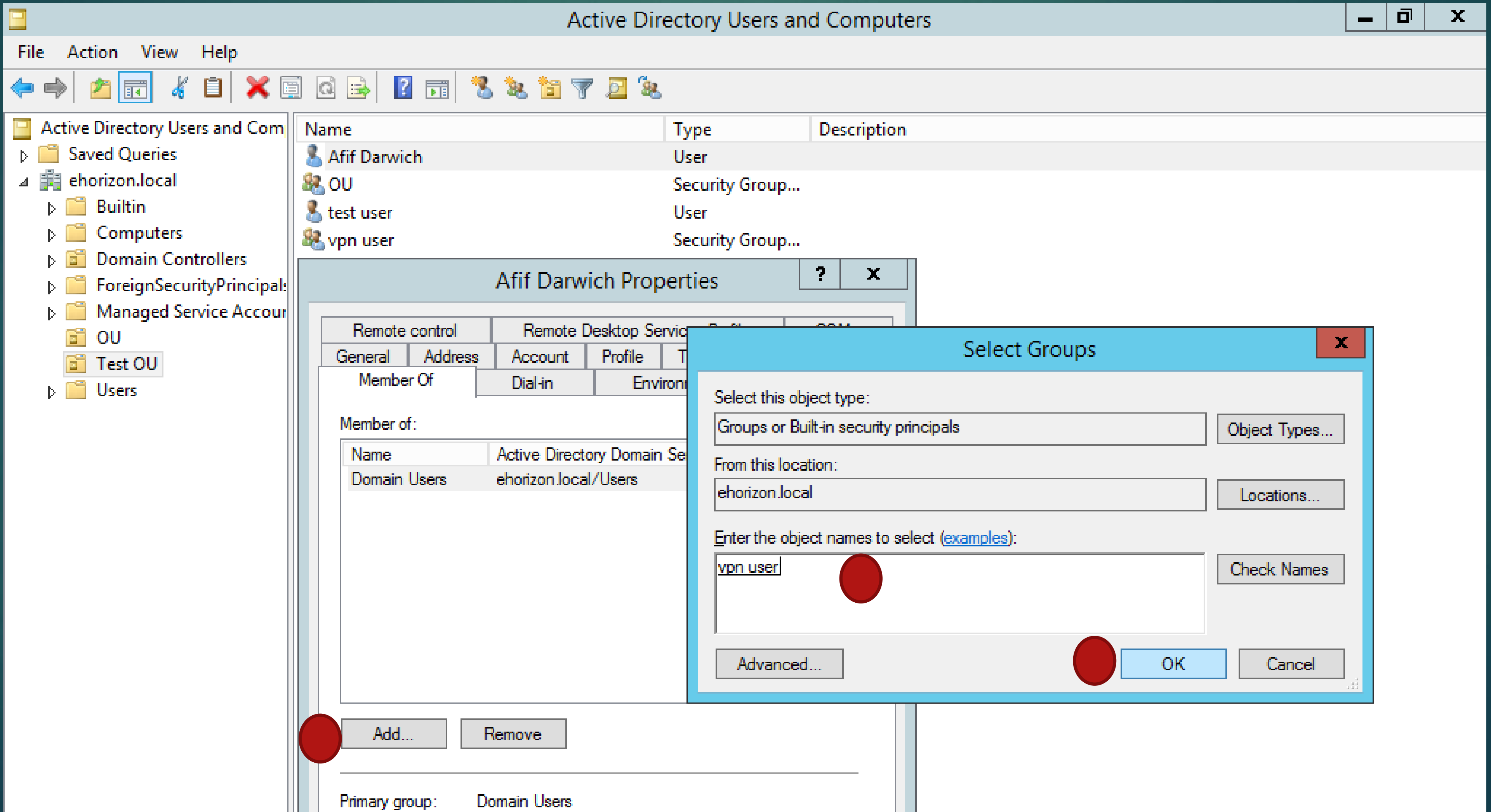
● Type of network access server:

Unspecified

○ Vendor specific:

10

Make sure the user is member of the groups allowed to connect



Name	Type	Description
Afif Darwich	User	
OU	Security Group...	
test user	User	
vpn user	Security Group...	

Member of:

Name	Active Directory Domain Se
Domain Users	ehorizon.local/Users

Primary group: Domain Users

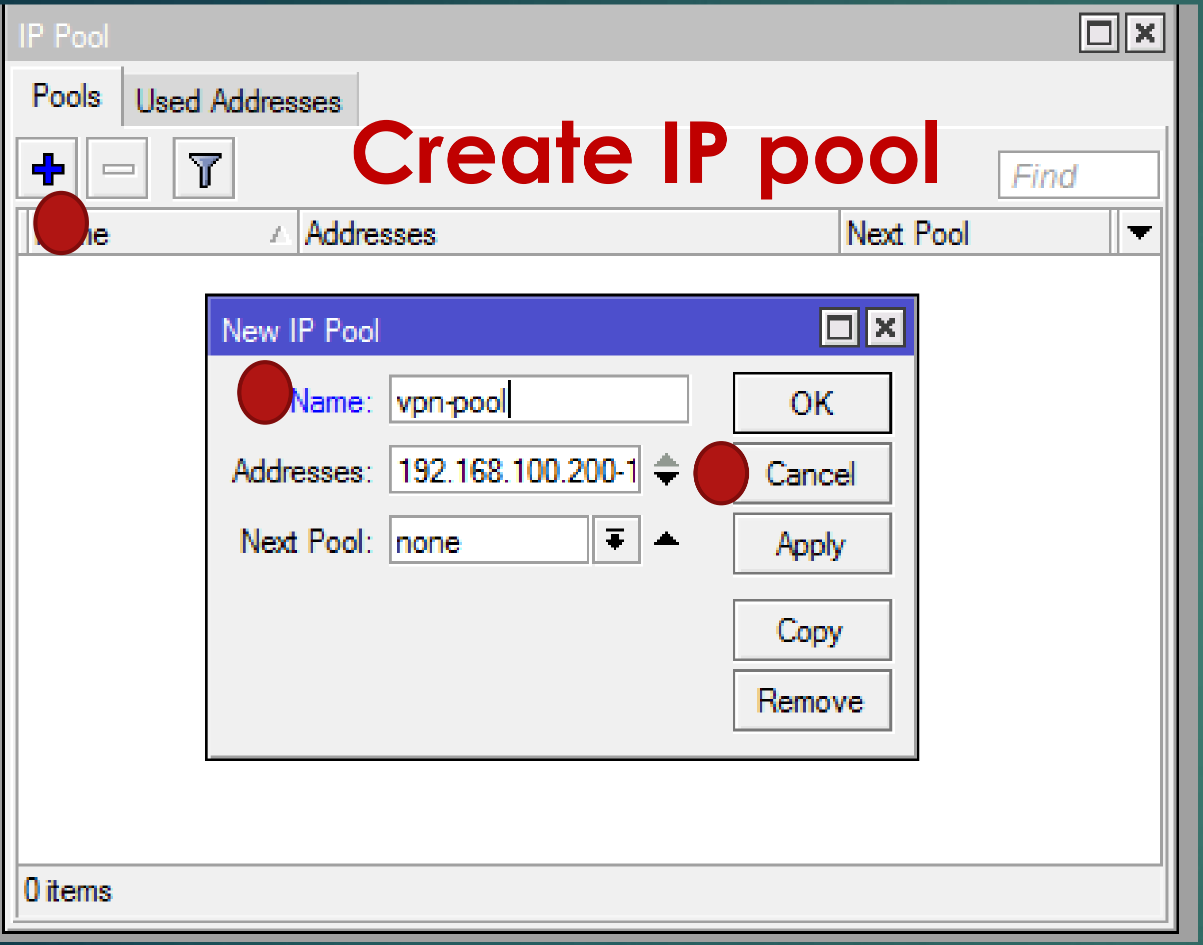
Select this object type:
Groups or Built-in security principals

From this location:
ehorizon.local

Enter the object names to select (examples):
vpn user

Mikrotik Router Configuration

Create IP pool



IP Pool

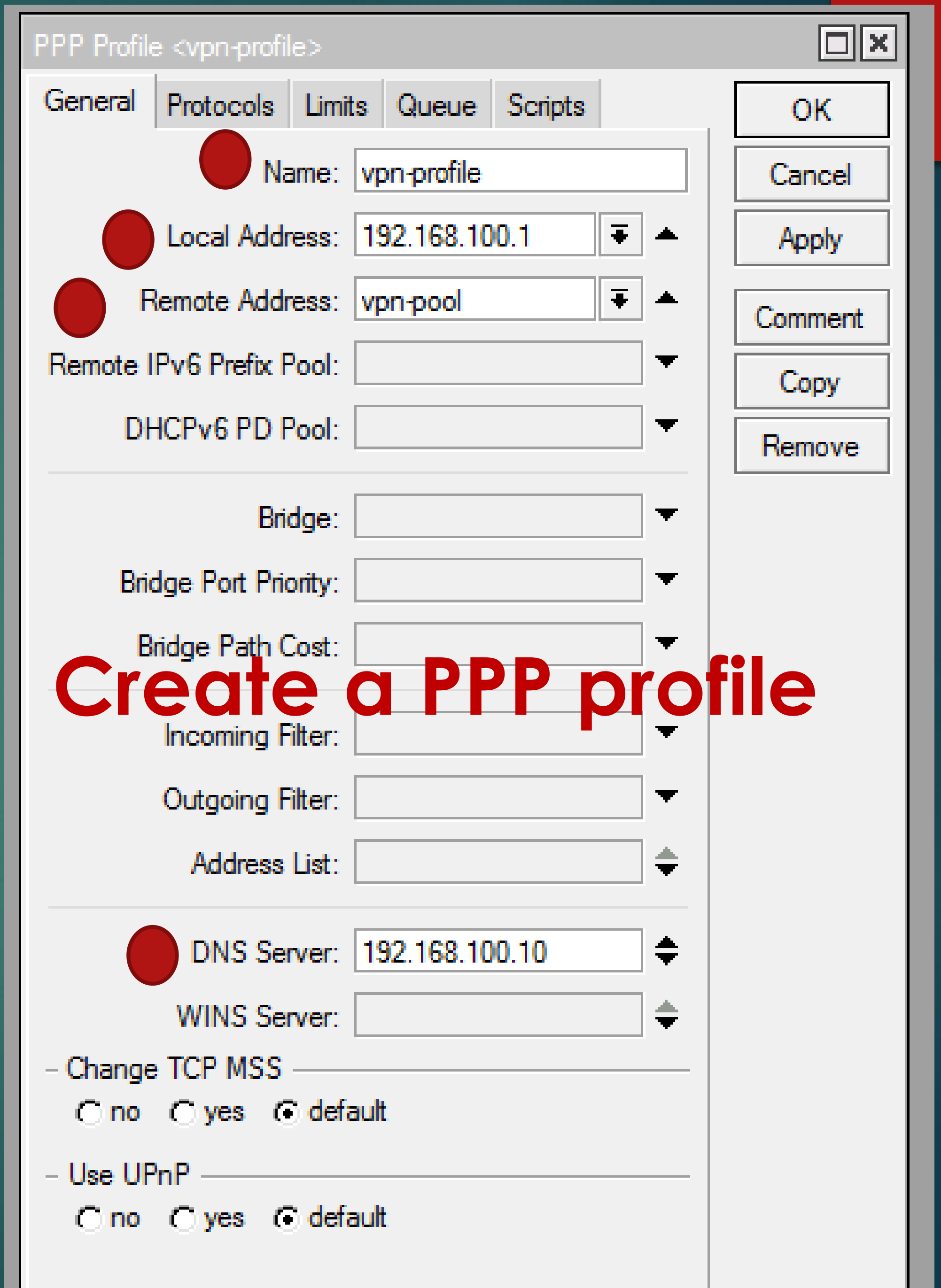
New IP Pool

Name: vpn-pool

Addresses: 192.168.100.200-1

Next Pool: none

Create a PPP profile



PPP Profile <vpn-profile>

Name: vpn-profile

Local Address: 192.168.100.1

Remote Address: vpn-pool

Remote IPv6 Prefix Pool:

DHCPv6 PD Pool:

Bridge:

Bridge Port Priority:

Bridge Path Cost:

Incoming Filter:

Outgoing Filter:

Address List:

DNS Server: 192.168.100.10

WINS Server:

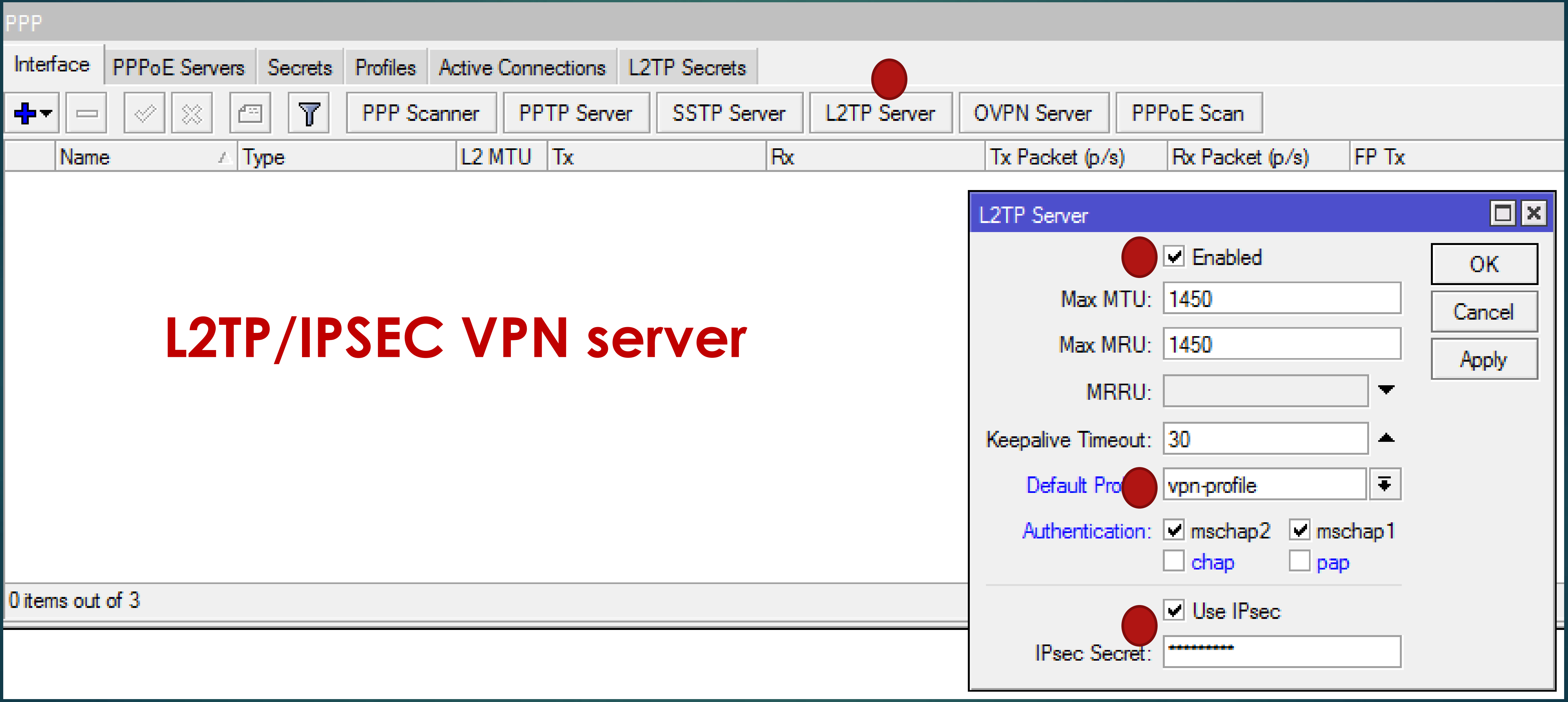
Change TCP MSS

○ no ○ yes ● default

Use UPnP

○ no ○ yes ● default

L2TP/IPSEC VPN server



0 items out of 3

L2TP Server

☑ Enabled

Max MTU: 1450

Max MRU: 1450

MRRU:

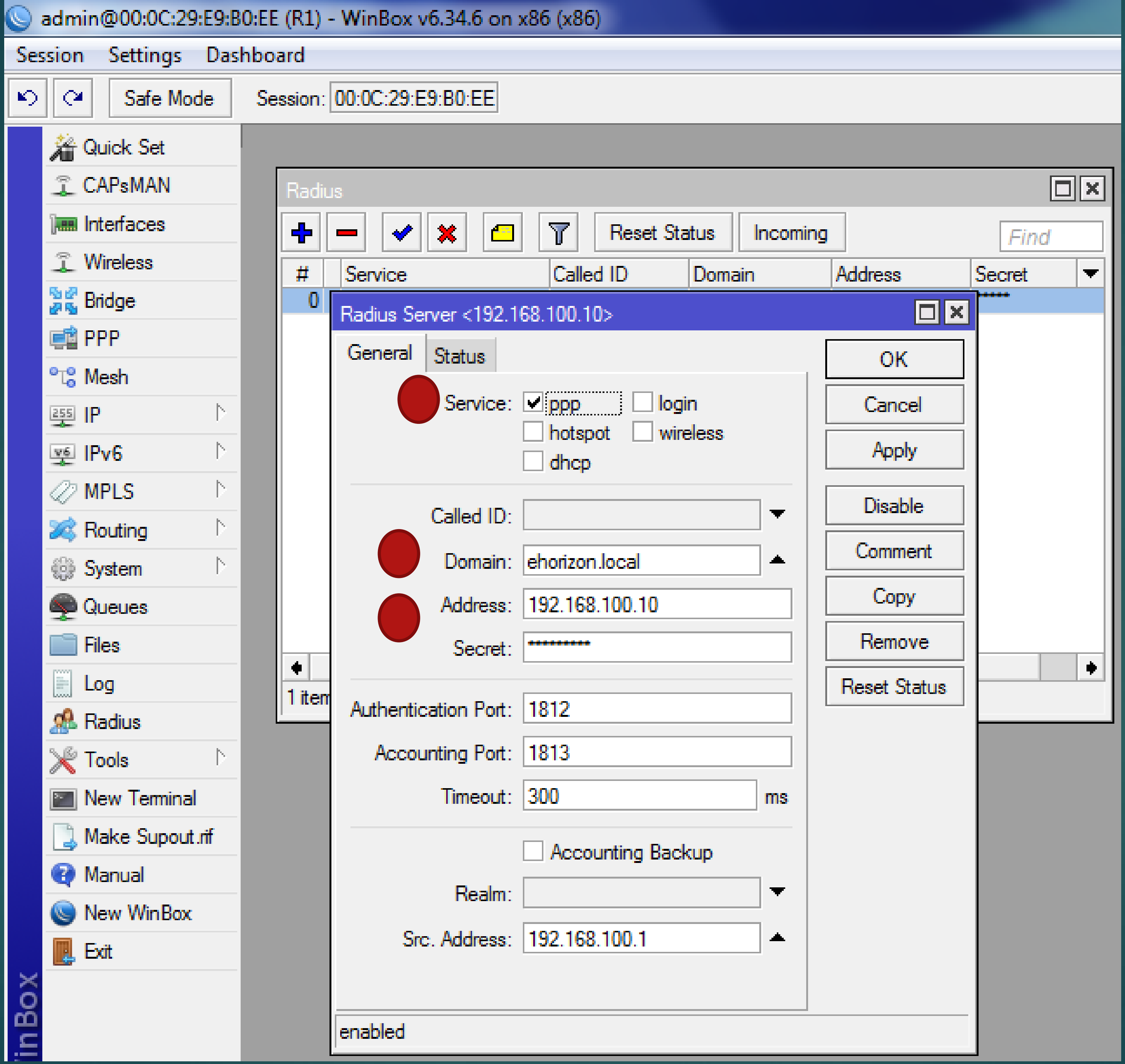
Keepalive Timeout: 30

Default Pro: vpn-profile

Authentication: ☑ mschap2 ☑ mschap1 □ chap □ pap

☑ Use IPsec

IPsec Secret: **********



Service: ☑ ppp □ login
□ hotspot □ wireless
□ dhcp

Called ID:

Domain: ehorizon.local

Address: 192.168.100.10

Secret: **********

Authentication Port: 1812

Accounting Port: 1813

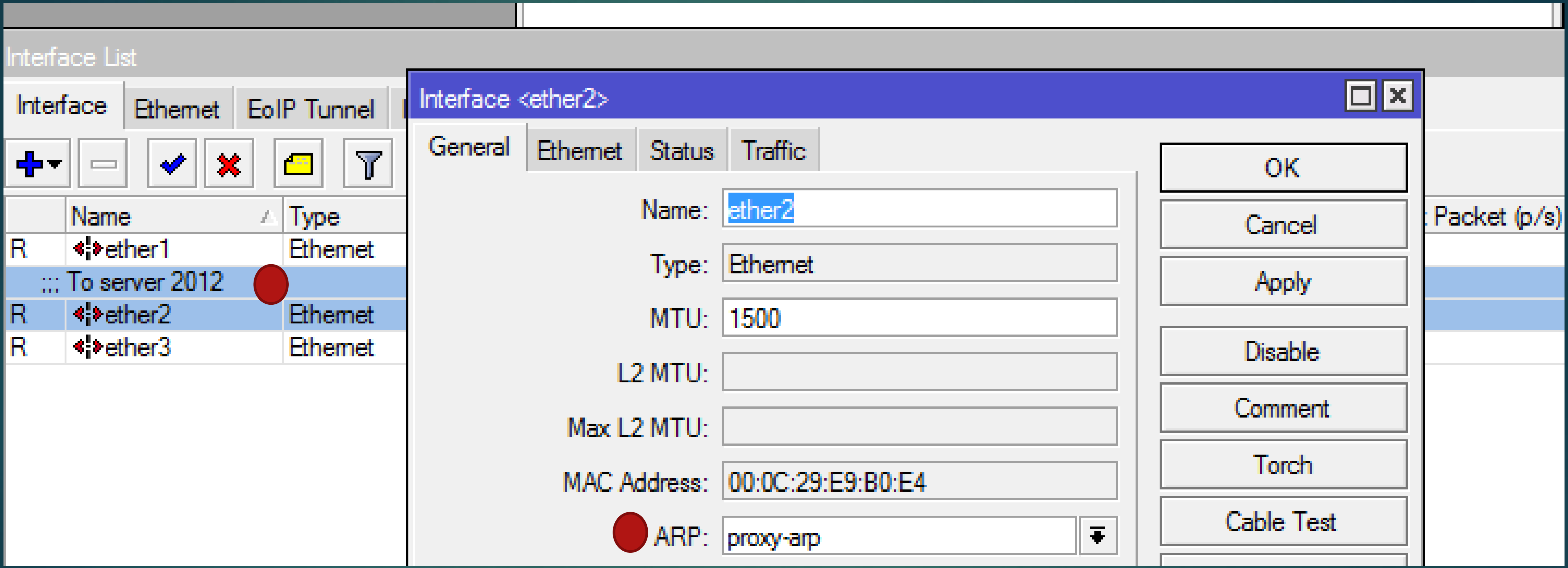
Timeout: 300 ms

□ Accounting Backup

Realm:

Src. Address: 192.168.100.1

enabled



	Name	Type
R	ether1	Ethernet
::: To server 2012		
R	ether2	Ethernet
R	ether3	Ethernet

Name: ether2

Type: Ethernet

MTU: 1500

L2 MTU:

Max L2 MTU:

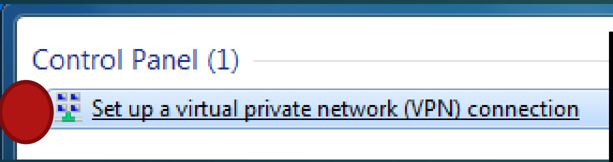
MAC Address: 00:0C:29:E9:B0:E4

ARP: proxy-arp

Firewall Configuration

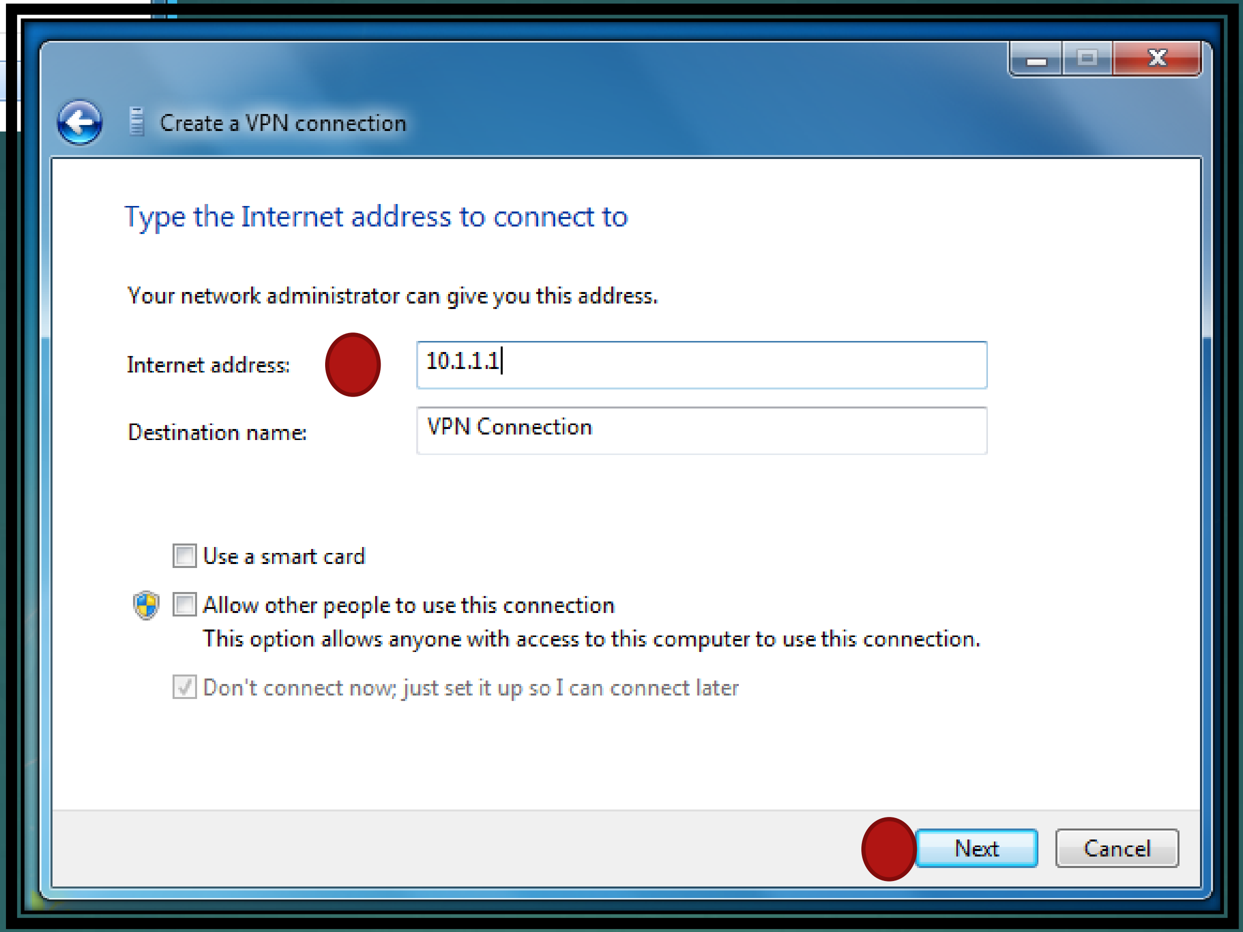
```
/ip firewall filter
add chain=input protocol=udp port=1701,500,4500
add chain=input protocol=ipsec-esp
```

Windows VPN client configuration



Control Panel (1)

Set up a virtual private network (VPN) connection



Create a VPN connection

Type the Internet address to connect to

Your network administrator can give you this address.

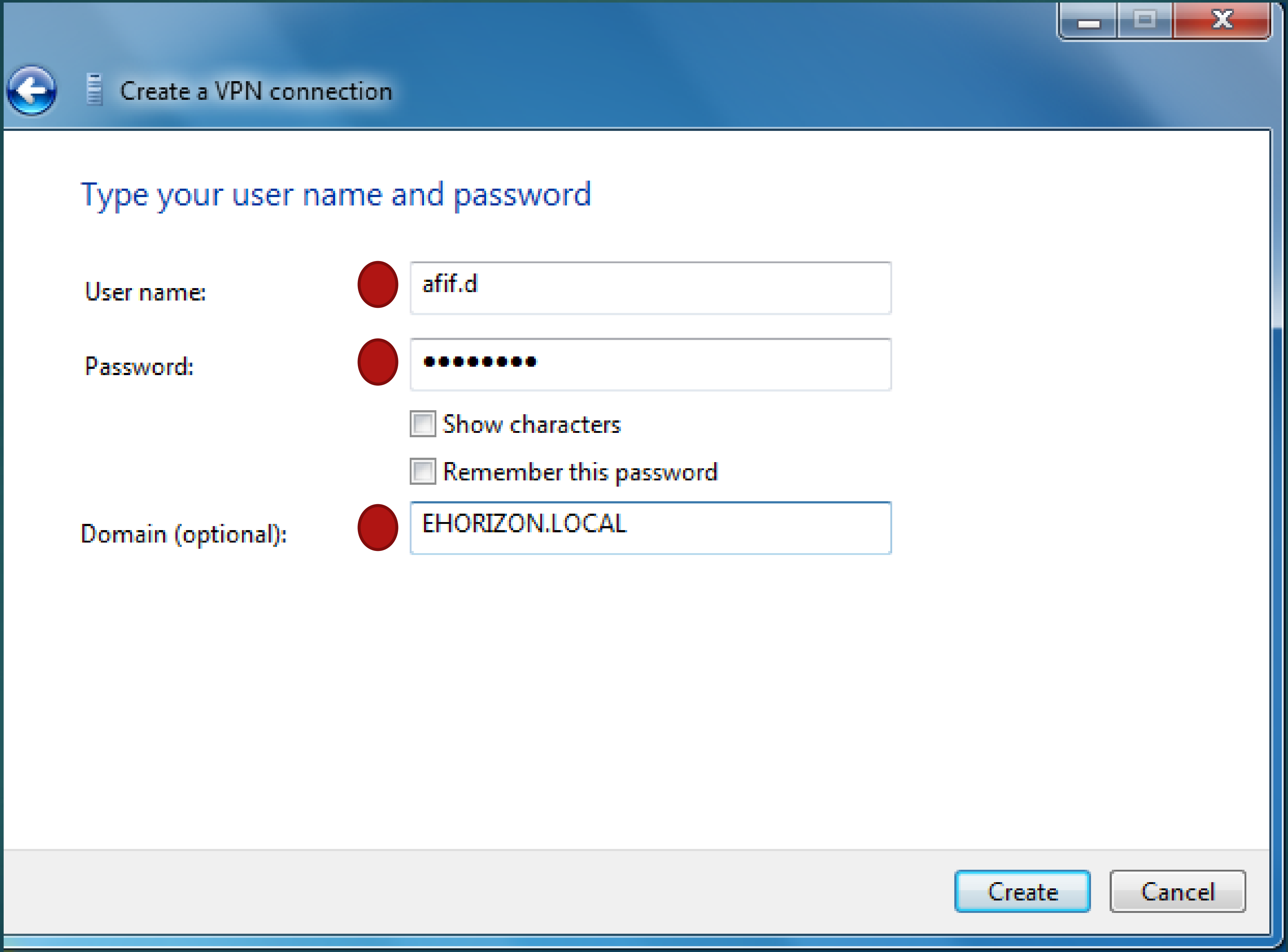
Internet address: 10.1.1.1

Destination name: VPN Connection

□ Use a smart card

□ Allow other people to use this connection
This option allows anyone with access to this computer to use this connection.

☑ Don't connect now; just set it up so I can connect later



Create a VPN connection

Type your user name and password

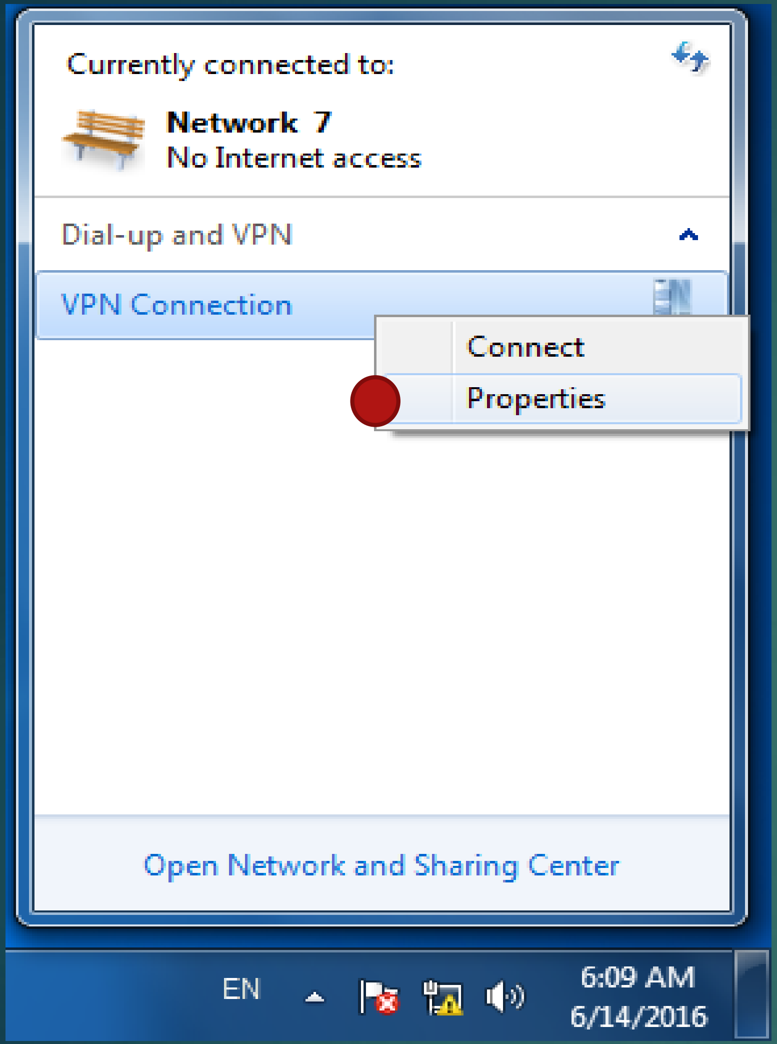
User name: ● afif.d

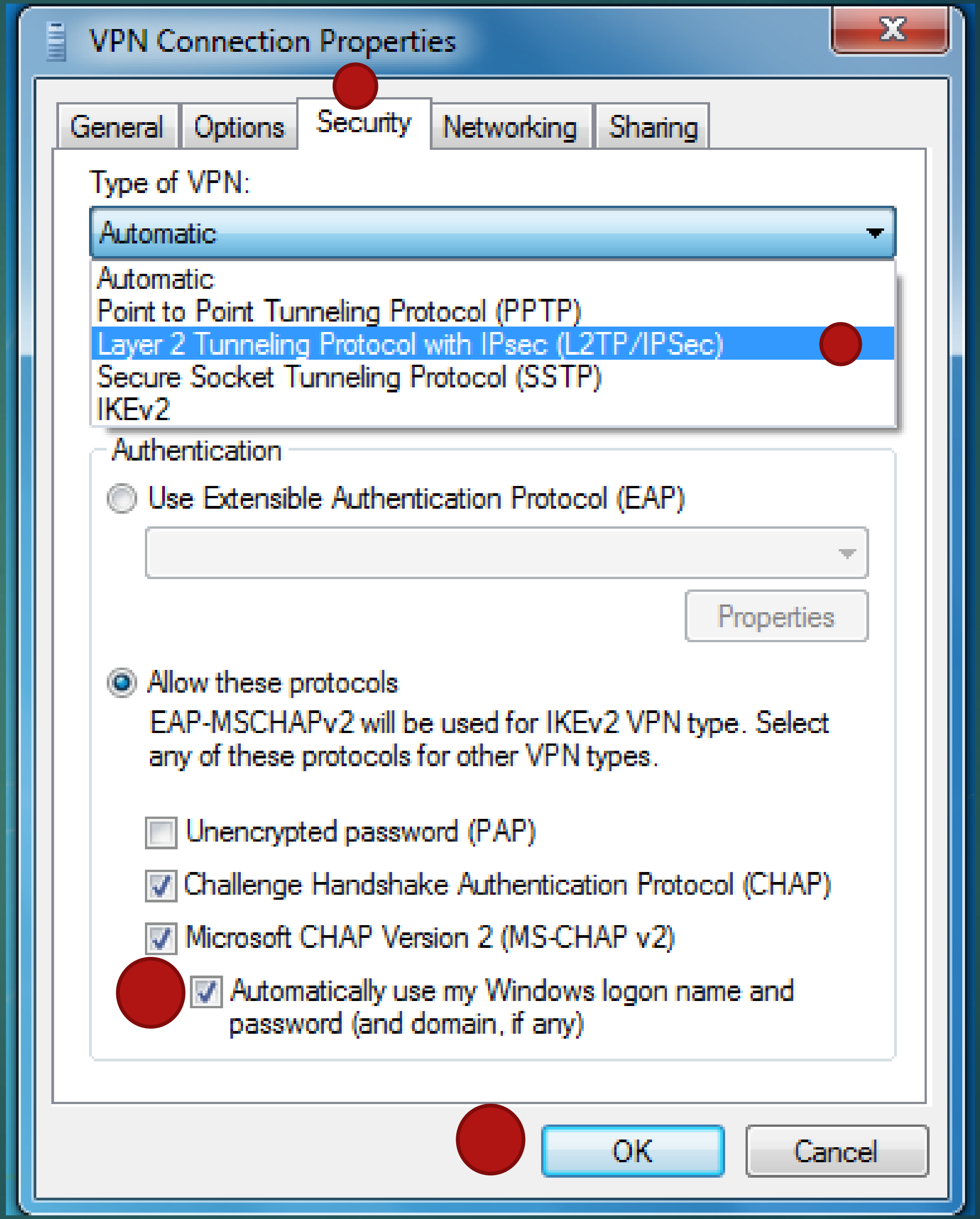
Password: ● •••••••••

□ Show characters

□ Remember this password

Domain (optional): ● EHORIZON.LOCAL





Type of VPN:

Automatic

- Automatic
- Point to Point Tunneling Protocol (PPTP)
- Layer 2 Tunneling Protocol with IPsec (L2TP/IPSec)
- Secure Socket Tunneling Protocol (SSTP)
- IKEv2

Authentication

○ Use Extensible Authentication Protocol (EAP)

● Allow these protocols

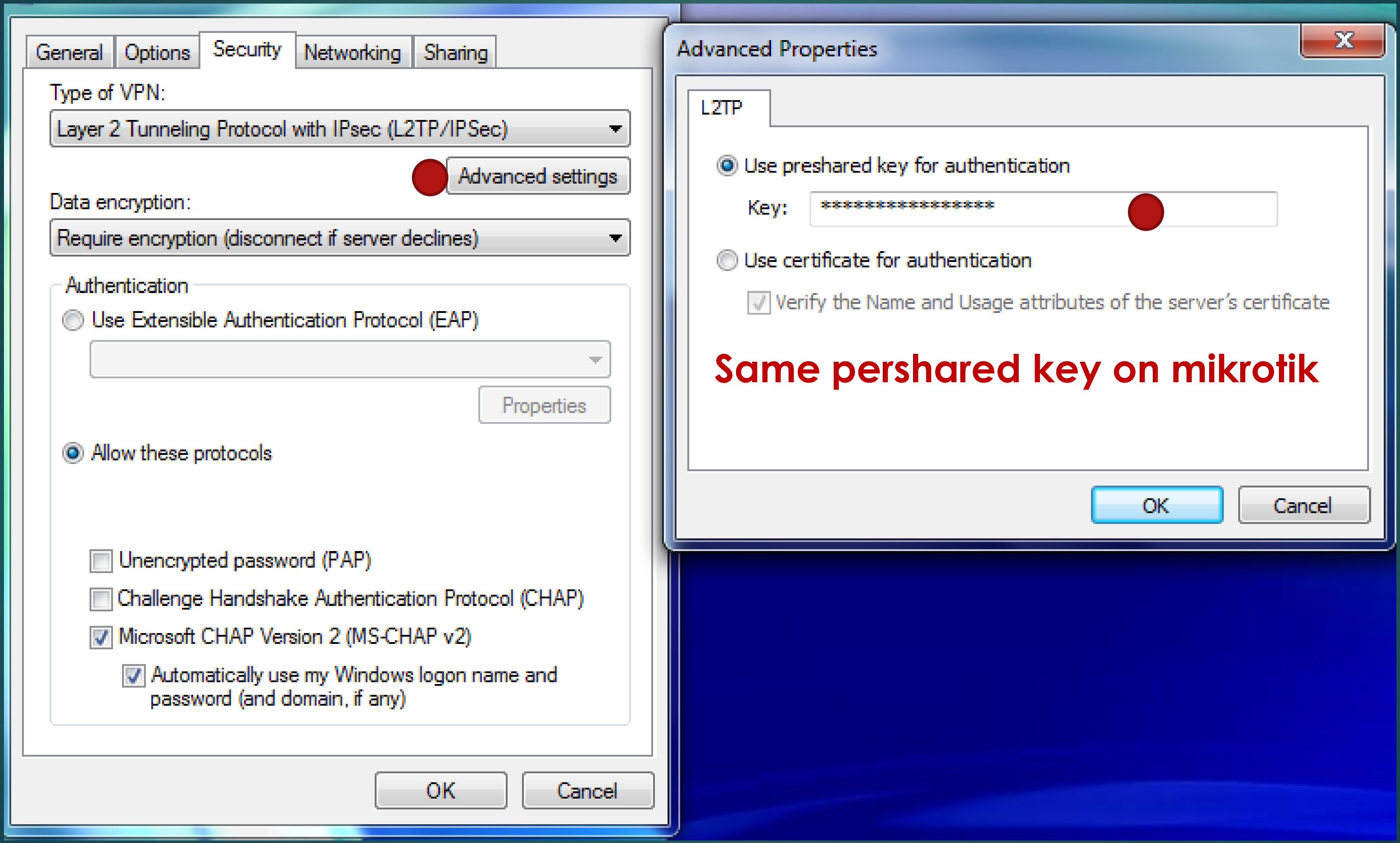
EAP-MSCHAPv2 will be used for IKEv2 VPN type. Select any of these protocols for other VPN types.

□ 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)



Type of VPN:

Layer 2 Tunneling Protocol with IPsec (L2TP/IPSec)

Data encryption:

Require encryption (disconnect if server declines)

Authentication

○ Use Extensible Authentication Protocol (EAP)

● 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)

Advanced Properties

● Use preshared key for authentication

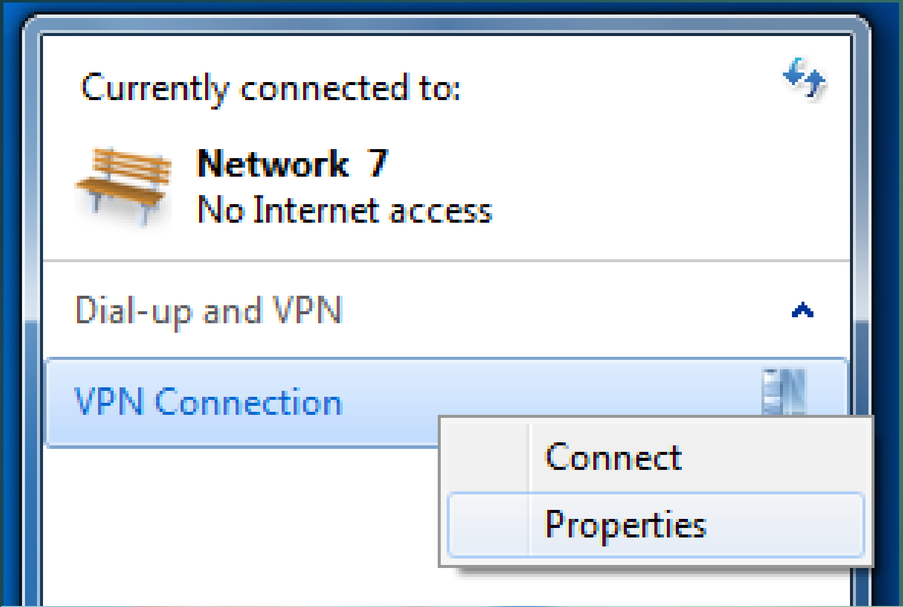
Key: *****************

○ Use certificate for authentication

☑ Verify the Name and Usage attributes of the server's certificate

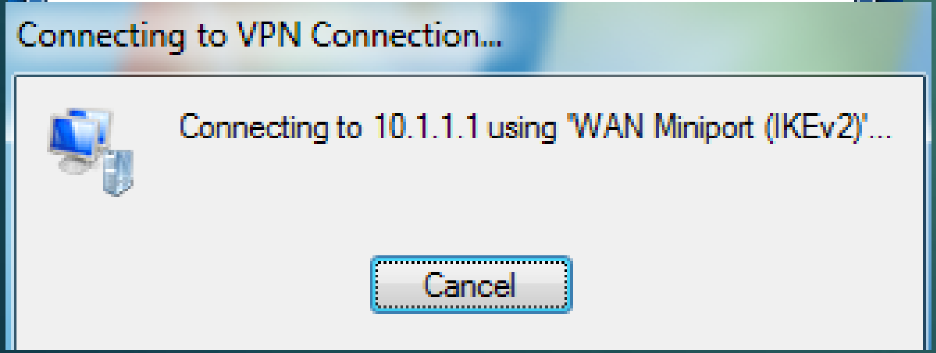
Same pershared key on mikrotik

Verify / test



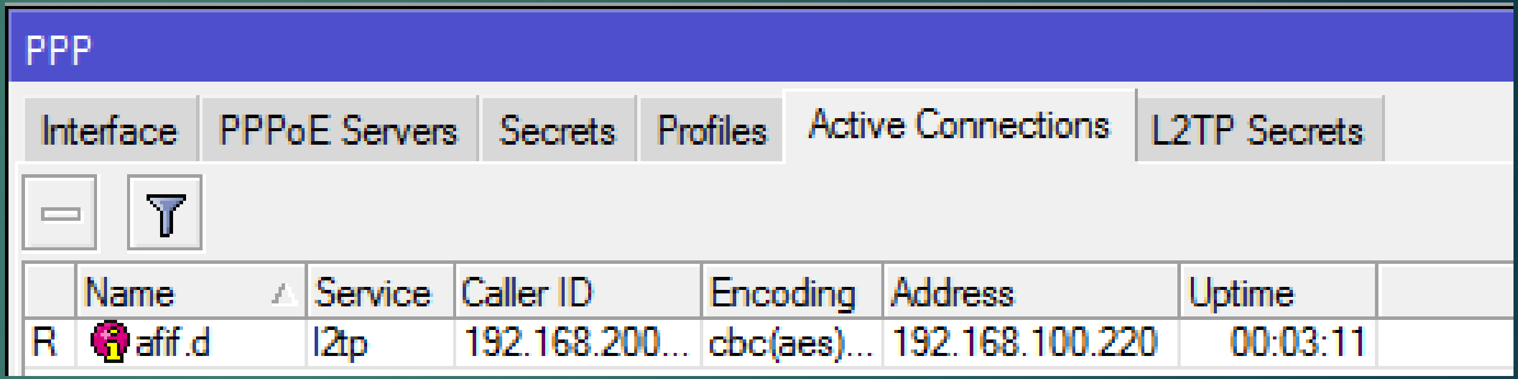
Currently connected to:

Network 7
No Internet access



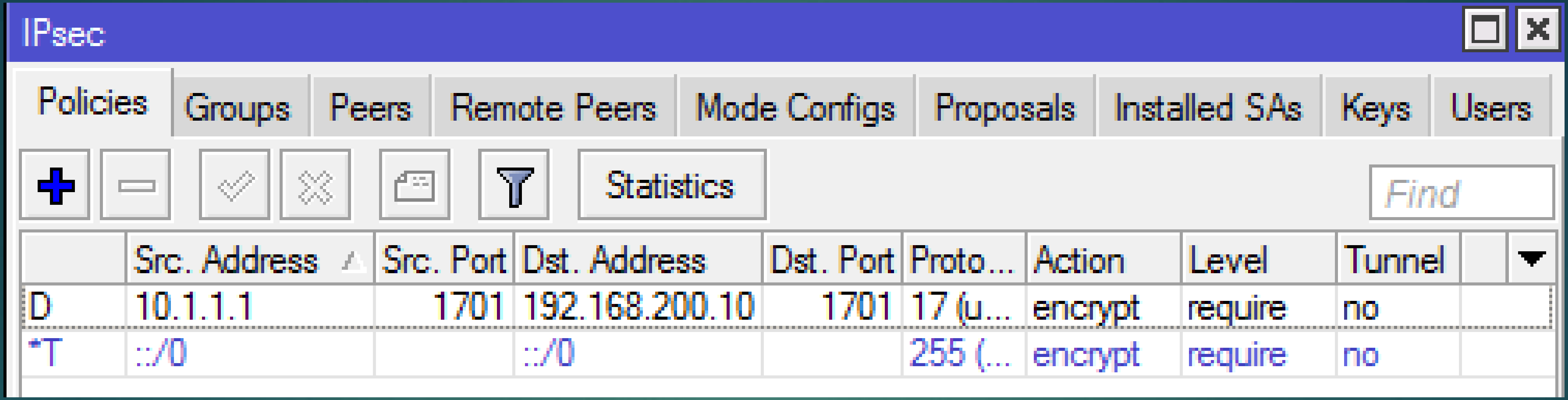
Connecting to VPN Connection...

Connecting to 10.1.1.1 using 'WAN Miniport (IKEv2)'...

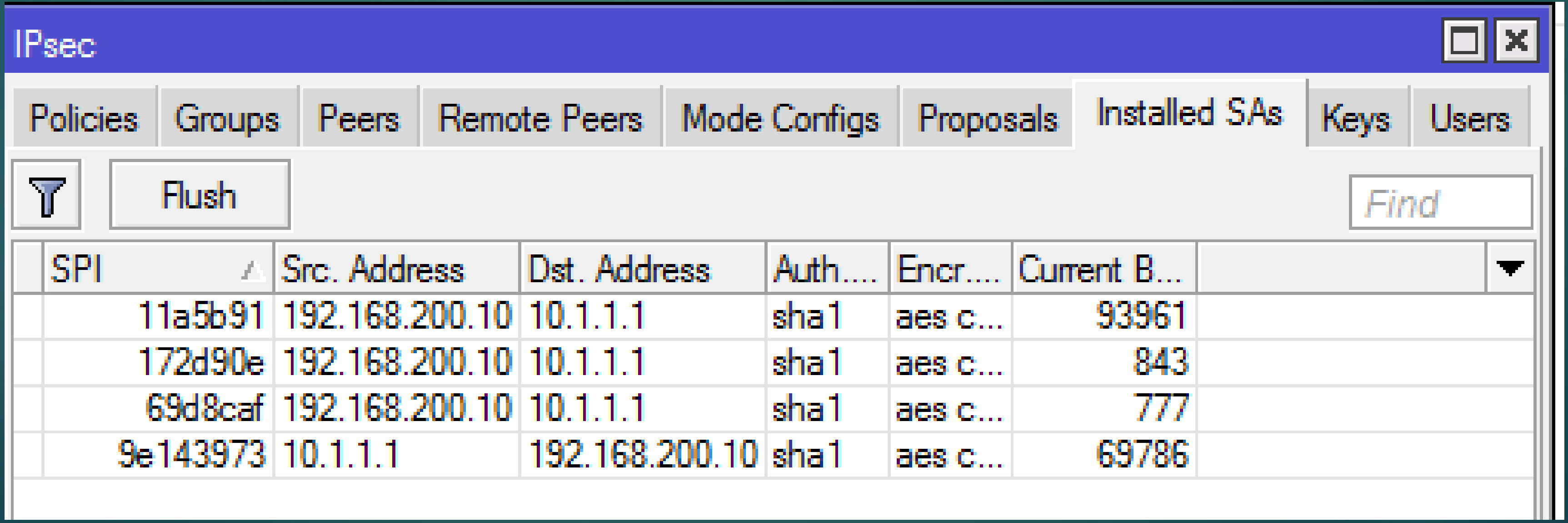


	Name	Service	Caller ID	Encoding	Address	Uptime
R	afif.d	l2tp	192.168.200...	cbc(aes)...	192.168.100.220	00:03:11

Verify / test



	Src. Address	Src. Port	Dst. Address	Dst. Port	Proto...	Action	Level	Tunnel
D	10.1.1.1	1701	192.168.200.10	1701	17 (u...	encrypt	require	no
*T	::/0		::/0		255 (...	encrypt	require	no



SPI	Src. Address	Dst. Address	Auth....	Encr....	Current B...
11a5b91	192.168.200.10	10.1.1.1	sha1	aes c...	93961
172d90e	192.168.200.10	10.1.1.1	sha1	aes c...	843
69d8caf	192.168.200.10	10.1.1.1	sha1	aes c...	777
9e143973	10.1.1.1	192.168.200.10	sha1	aes c...	69786

Thank you