

شرح

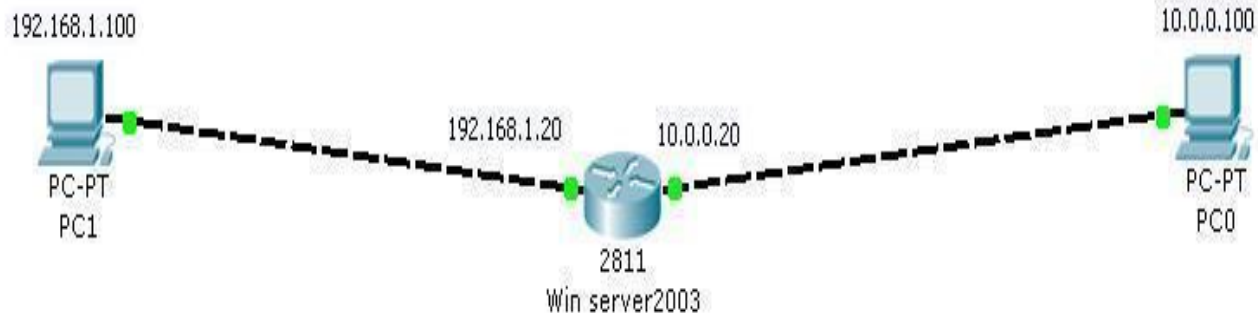
Routing

يقدمه لكم IT Tamer zein



Routing in win2003

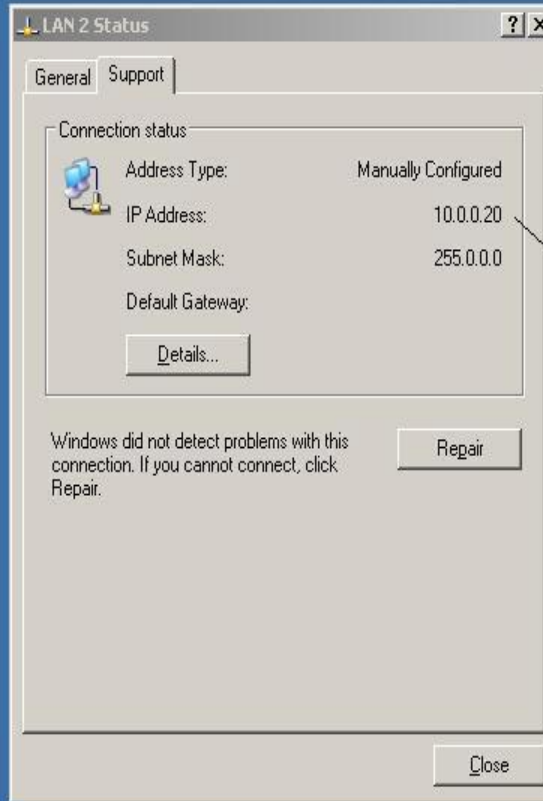
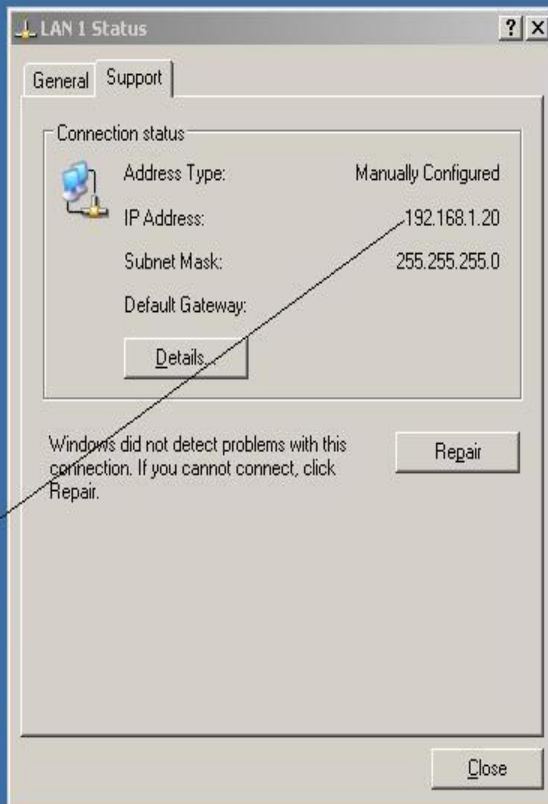
ده مخطط الشبكة بتاعتنا والراوتينج واحد بين سيسكو ومايكروسوفت ... ففي مايكروسوفت بعمل الراوتينج سيرفس على ويندوز سيرفر ... وفي سيسكو بتطبقهاع الراوتر ويقوم بنفس المهمة مع اختلاف الكفاءة طبعا



Simple routing نبدأ مع بعض لبحاجة خفيفة

موضوع الراوتينج

عندى كارتين شبكة على راوتر ١



مربوط مع مكنة كلاينت على
سويتش واحد
وطبعاً ليها نفس رينج الـ ip

مربوطة برضه مع
مكنة كلاينت في
سويتش واحد وليها
نفس رينج الـ ip

الطبيعي ان اى حد من الشبكة الأولى ماقدرش يكلم اى حد من الشبكة الثانية

الإ بعد

توجيه الباكيث يعنى الراوتينج

الشبكات اللي حاسس بيها الراوتر ككل

الـ ip اللي على كارت الشبكة

```

C:\>netstat -r

IPv4 Route Table
=====
Interface List
0x1 ..... MS TCP Loopback interface
0x10003 ...00 0c 29 32 e3 56 ..... Intel(R) PRO/1000 MT Network Connection
0x10004 ...00 0c 29 32 e3 60 ..... Intel(R) PRO/1000 MT Network Connection #2
=====
Active Routes:
Network Destination    Netmask          Gateway          Interface        Metric
10.0.0.0                255.0.0.0        10.0.0.20        10.0.0.20         10
10.0.0.20               255.255.255.255  127.0.0.1        127.0.0.1         10
10.255.255.255          255.255.255.255  10.0.0.20        10.0.0.20         10
127.0.0.0               255.0.0.0        127.0.0.1        127.0.0.1         1
192.168.1.0             255.255.255.0    192.168.1.20     192.168.1.20      10
192.168.1.20           255.255.255.255  127.0.0.1        127.0.0.1         10
192.168.1.255          255.255.255.255  192.168.1.20     192.168.1.20      10
224.0.0.0               240.0.0.0        10.0.0.20        10.0.0.20         10
224.0.0.0               240.0.0.0        192.168.1.20     192.168.1.20      10
255.255.255.255        255.255.255.255  10.0.0.20        10.0.0.20         1
255.255.255.255        255.255.255.255  192.168.1.20     192.168.1.20      1
=====
Persistent Routes:
None

C:\>
C:\>
C:\>
C:\>
C:\>route print

IPv4 Route Table
=====
Interface List
0x1 ..... MS TCP Loopback interface
0x10003 ...00 0c 29 32 e3 56 ..... Intel(R) PRO/1000 MT Network Connection
0x10004 ...00 0c 29 32 e3 60 ..... Intel(R) PRO/1000 MT Network Connection #2
=====
Active Routes:
Network Destination    Netmask          Gateway          Interface        Metric
10.0.0.0                255.0.0.0        10.0.0.20        10.0.0.20         10
10.0.0.20               255.255.255.255  127.0.0.1        127.0.0.1         10
10.255.255.255          255.255.255.255  10.0.0.20        10.0.0.20         10
127.0.0.0               255.0.0.0        127.0.0.1        127.0.0.1         1
192.168.1.0             255.255.255.0    192.168.1.20     192.168.1.20      10
192.168.1.20           255.255.255.255  127.0.0.1        127.0.0.1         10
192.168.1.255          255.255.255.255  192.168.1.20     192.168.1.20      10
224.0.0.0               240.0.0.0        10.0.0.20        10.0.0.20         10
224.0.0.0               240.0.0.0        192.168.1.20     192.168.1.20      10
255.255.255.255        255.255.255.255  10.0.0.20        10.0.0.20         1
255.255.255.255        255.255.255.255  192.168.1.20     192.168.1.20      1
=====
Persistent Routes:
None

```

المجيت واى على كارت الشبكة

اوامر اظهار
الراوتينج تيبيل

حاسس بشبكتين هذه الأولى
البرود كاست الخاص بهذه الشبكة
الثانية
البرود كاست الخاص بهذه الشبكة
البرود كاست العام لكل الشبكات





My Documents

Internet Protocol (TCP/IP) Properties

General

You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.

Obtain an IP address automatically
 Use the following IP address:

IP address:
 Subnet mask:
 Default gateway:

Obtain DNS server address automatically
 Use the following DNS server addresses:

Preferred DNS server:
 Alternate DNS server:

Advanced... OK Cancel

Connection Status

Limited or no connectivity

00:31:30
1.0 Gbps

Sent — Received

21,299 | 0

Disable Close

کلابت ۱



Recycle Bin



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Local Area Connectio... Local Area Connectio...

EN

11:59 ص



```
Command Prompt
C:\>ping 10.0.0.20
Pinging 10.0.0.20 with 32 bytes of data:
Destination host unreachable.
Destination host unreachable.
Destination host unreachable.
Destination host unreachable.

Ping statistics for 10.0.0.20:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>
```

معناها الراجل اللي بكلمة ده مش معايا في نفس الـ **network id** وانا مش
لاقي **gateway** على كارت الشبكة بتاعى اعرج منه

Local Area Connection Status

General Support

Connection status

| | |
|------------------|---------------------|
| Address Type: | Manually Configured |
| IP Address: | 192.168.1.100 |
| Subnet Mask: | 255.255.255.0 |
| Default Gateway: | |

Details...

Windows did not detect problems with this connection. If you cannot connect, click Repair.

Repair

Close



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My Documents

My Computer

My Network Places

الكابنت ٢

Local Area Connection Status

General Support

Connection status:

| | |
|------------------|---------------------|
| Address Type: | Manually Configured |
| IP Address: | 10.0.0.100 |
| Subnet Mask: | 255.0.0.0 |
| Default Gateway: | |

Details...

Windows did not detect problems with this connection. If you cannot connect, click Repair.

Repair

Close

Recycle Bin

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My Documents

My Computer

My Network Places

```
C:\WINDOWS\system32\cmd.exe

C:\>ping 10.0.0.100

Pinging 10.0.0.100 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 10.0.0.100:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\>
```

لو حاولت تكلم الكلاينت اللي هناك مش

حتقدر لأن الراوتينج مش شغال لسه

معناها اني لقيت جيت واى وطلعت منه

لكن المكنة اللي انا بأكملها مش موجودة

Local Area Connection Status

General Support

Connection status

| | |
|------------------|---------------------|
| Address Type: | Manually Configured |
| IP Address: | 192.168.1.100 |
| Subnet Mask: | 255.255.255.0 |
| Default Gateway: | 192.168.1.20 |

Details...

Windows did not detect problems with this connection. If you cannot connect, click Repair.

Repair

Close

فرضنا انك الان حطيت جيت واى هنا
لازم عشان توصل للكلاينت التاني يبقى عنده
هو كمان جيت واى للباكيت تدخول منها

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start

Local Area Connectio...

C:\WINDOWS\sys...

EN

12:30



```
C:\WINDOWS\system32\cmd.exe

C:\>ping 192.168.1.100

Pinging 192.168.1.100 with 32 bytes of data:

Request timed out.
Request timed out.
Request timed out.
Request timed out.

Ping statistics for 192.168.1.100:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),

C:\>
```

Local Area Connection Status

General Support

Connection status

| | |
|------------------|---------------------|
| Address Type: | Manually Configured |
| IP Address: | 10.0.0.100 |
| Subnet Mask: | 255.0.0.0 |
| Default Gateway: | 10.0.0.20 |

Details...

Windows did not detect problems with this connection. If you cannot connect, click Repair.

Repair

حظينا هنا جيت واى بس لازم الراوتينج برضه
بشغل
وتعالى نشغله.

Close

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Routing and Remote Access

File Action View Help

Routing and Remote Access SERVER (local)

Server Status

SERVER (local)

- Configure and Enable Routing and Remote Access
- Disable Routing and Remote Access
- All Tasks
- View
- Delete
- Refresh
- Properties
- Help

Configure and Enable Routing and Remote Access Server

...ccess, on the Action menu, click Configure and Enable Routing and Remote Access.

...ng up a Routing and Remote Access, deployment scenarios, and troubleshooting, see [Help](#).

Configures Routing and Remote Access for the selected server

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Routing and Remote Access

File Action View Help

Routing and Remote Access

- Server Status
- SERVER (local)

SERVER (local)

Configuration

To set up...
For more...

Routing and Remote Access Server Setup Wizard

Configuration

You can enable any of the following combinations of services, or you can customize this server.

- Remote access (dial-up or VPN)
Allow remote clients to connect to this server through either a dial-up connection or a secure Virtual Private Network (VPN) Internet connection.
- Network address translation (NAT)
Allow internal clients to connect to the Internet using one public IP address.
- Virtual Private Network (VPN) access and NAT
Allow remote clients to connect to this server through the Internet and local clients to connect to the Internet using a single public IP address.
- Secure connection between two private networks
Connect this network to a remote network, such as a branch office.
- Custom configuration
Select any combination of the features available in Routing and Remote Access.

For more information about these options, see [Routing and Remote Access Help](#).

< Back Next > Cancel

nd Remote Access.
troubleshooting, see [Help](#).

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Routing and Remote Access

File Action View Help

Routing and Remote Access

- Server Status
- SERVER (local)

SERVER (local)

Routing and Remote Access Server Setup Wizard

Custom Configuration

To set up...
For more...

When this wizard closes, you can configure the selected services in the Routing and Remote Access console.

Select the services that you want to enable on this server.

- VPN access
- Dial-up access
- Demand-dial connections (used for branch office routing)
- NAT and basic firewall
- LAN routing

ده الدور اللى حياعبه السيرفر ده ... انه راوتر ...

< Back Next > Cancel

nd Remote Access.
troubleshooting, see [Help](#).

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TTL اللى معناها **time to leave** يعنى وصلت للهدف بتاعى بعد كام راوتر ... فى حالتنا راوتر

واحد ... لأن الديفولط بتاعها **TTL=128**

```
C:\WINDOWS\system32\cmd.exe

C:\>ping 10.0.0.100

Pinging 10.0.0.100 with 32 bytes of data:
Reply from 10.0.0.100: bytes=32 time=6ms TTL=127
Reply from 10.0.0.100: bytes=32 time<1ms TTL=127
Reply from 10.0.0.100: bytes=32 time=1ms TTL=127
Reply from 10.0.0.100: bytes=32 time=1ms TTL=127

Ping statistics for 10.0.0.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 6ms, Average = 2ms

C:\>
```

تمام

Local Area Connection Status

General Support

Connection status

| | |
|------------------|---------------------|
| Address Type: | Manually Configured |
| IP Address: | 192.168.1.100 |
| Subnet Mask: | 255.255.255.0 |
| Default Gateway: | 192.168.1.20 |

Details...

Windows did not detect problems with this connection. If you cannot connect, click Repair.

Repair

Close

Windows XP Professional

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```

C:\WINDOWS\system32\cmd.exe
C:\>ping 10.0.0.100
Pinging 10.0.0.100 with 32 bytes of data:
Reply from 10.0.0.100: bytes=32 time=5ms TTL=127
Reply from 10.0.0.100: bytes=32 time=1ms TTL=127
Reply from 10.0.0.100: bytes=32 time=1ms TTL=127
Reply from 10.0.0.100: bytes=32 time=1ms TTL=127

Ping statistics for 10.0.0.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 5ms, Average = 2ms

C:\>route print
=====
Interface List
0x1 ..... MS TCP Loopback interface
0x10003 ...00 0c 29 b0 97 d3 ..... AMD PCNET Family PCI Ethernet Adapter - Pack
et Scheduler Miniport
=====
Active Routes:
Network Destination    Netmask          Gateway          Interface        Metric
0.0.0.0                0.0.0.0          192.168.1.20    192.168.1.100    10
127.0.0.0              255.0.0.0        127.0.0.1      127.0.0.1        1
192.168.1.0            255.255.255.0    192.168.1.100  192.168.1.100    10
192.168.1.100          255.255.255.255  127.0.0.1      127.0.0.1        10
192.168.1.255          255.255.255.255  192.168.1.100  192.168.1.100    10
224.0.0.0              240.0.0.0        192.168.1.100  192.168.1.100    10
255.255.255.255        255.255.255.255  192.168.1.100  192.168.1.100    1
Default Gateway:       192.168.1.20
=====
Persistent Routes:
None
C:\>

```

لاحظ هنا بعد ماحتينا جيت واى تم
 اضافة الروت ده .. ومعناه لو حد
 سألك على شبكة ماتعرفهاش ارمى على
 ولو شيلنا الجيت واى الروت ده
 حيتشان طبعا

Local Area Connection Status

General Support

Connection status

Address Type: Manually Configured

IP Address: 192.168.1.100

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.20

Details...

Windows did not detect problems with this connection. If you cannot connect, click Repair.

Repair

Close



Windows XP Professional

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Local Area Connection Status

General Support

Connection status

Address Type: Manually Configured

IP Address: 192.168.1.100

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.20

Details...

Windows did not detect problems with this connection. If you cannot connect, click Repair.

Repair

Close

Command Prompt

```
C:\>ping 10.0.0.100

Pinging 10.0.0.100 with 32 bytes of data:

Reply from 10.0.0.100: bytes=32 time=6ms TTL=127
Reply from 10.0.0.100: bytes=32 time=2ms TTL=127
Reply from 10.0.0.100: bytes=32 time=1ms TTL=127
Reply from 10.0.0.100: bytes=32 time=1ms TTL=127

Ping statistics for 10.0.0.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 6ms, Average = 2ms

C:\>getmac

Physical Address      Transport Name
-----
00-0C-29-B0-97-D3    \Device\NPF{AAAF4E8A-7F69-4F76-A6E7-30C82AE94284}
```

C:\>

لما كلمت المكنة دي = source mac

الـ = dest mac next hop يعني كارت الشبكة اللي قدامي على طول (في حالتها هو الراوتر)

لكن في الحقيقة يبقى هناك سويتش بين الراوتر والأجهزة .. ف الـ next hop ساعتها حقيقي الإنترنت بتاع السويتش المتصل الكلايت

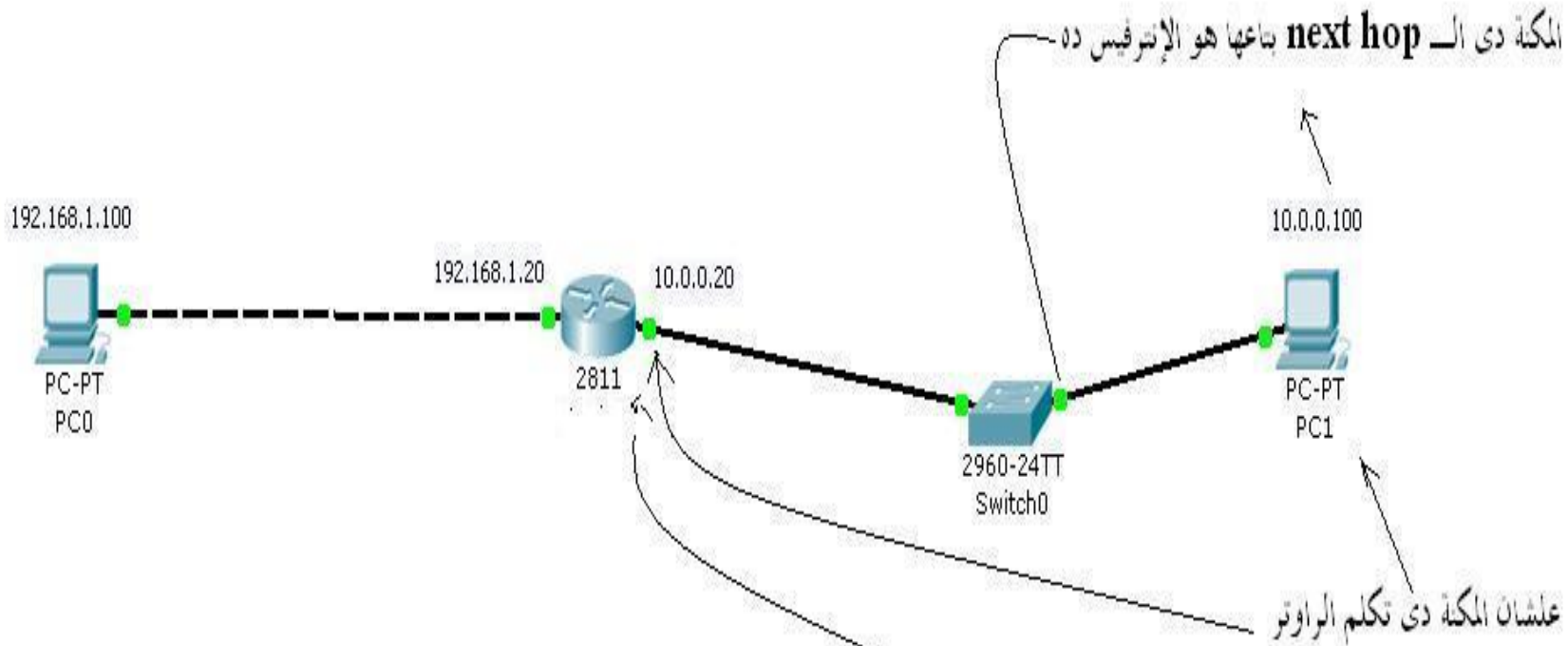
والسؤال : ازاي جعرف الـ mac address بتاع الراوتر ده علشان السويتش يد forward البايت للراوتر ؟؟؟؟



Recycle Bin



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ع الإنترنت ده لازم يكون عندي ٤ معلومات

source mac هو ماك المكبة دى

dest mac الخاص بالإنترنت

source ip 10.0.0.100

dest ip 10.0.0.20

وعشان احبب الـ **dest mac** بتاع اى مكبة بستخدم الـ **ip** بتاعها ومعلوماته تحبب الـ **mac** وذلك بعملة
 السبستم عن طريق بروتوكول الـ **ARP address resolution protocol** (سوفت وير)

وبتسم عن طريق ارسال **Broadcast ARP** فى الشبكة .. يقول اللي الـ **ip** بتاعه ١٠,٠,٠,٢٠ يرد علينا بالماك ... ثم يكيش المعلومة
 عنده فى الكاش ... ونفترج ع الكاش من خلال **arp -a**


```

c:\ Command Prompt
C:\>ping 10.0.0.100
Pinging 10.0.0.100 with 32 bytes of data:
Reply from 10.0.0.100: bytes=32 time=28ms TTL=127
Reply from 10.0.0.100: bytes=32 time=3ms TTL=127
Reply from 10.0.0.100: bytes=32 time=2ms TTL=127
Reply from 10.0.0.100: bytes=32 time=2ms TTL=127

Ping statistics for 10.0.0.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 2ms, Maximum = 28ms, Average = 8ms

C:\>arp -a

Interface: 192.168.1.100 --- 0x10003
Internet Address      Physical Address      Type
192.168.1.20         00-0c-29-32-e3-56    dynamic
C:\>_

```

لأن فيه ستاتيك علشان نوفر
 عمله الـ **arp B.cast**
 بس محدش بيعمل كده

لاحظ جابلك الماك بتاع الإنترنت بتاع الراوتر لأن الراوتر بالنسبة له
 هو آخر نقطة ف الشبكة دي .. وهو اللي حيوصله لـ
 فهو الـ **gateway** اللى بيطلع منه ١٠,٠,٠,١٠٠

Local Area Connection Status

General Support

Connection status

Address Type: Manually Configured

IP Address: 192.168.1.100

Subnet Mask: 255.255.255.0

Default Gateway: 192.168.1.20

Details...

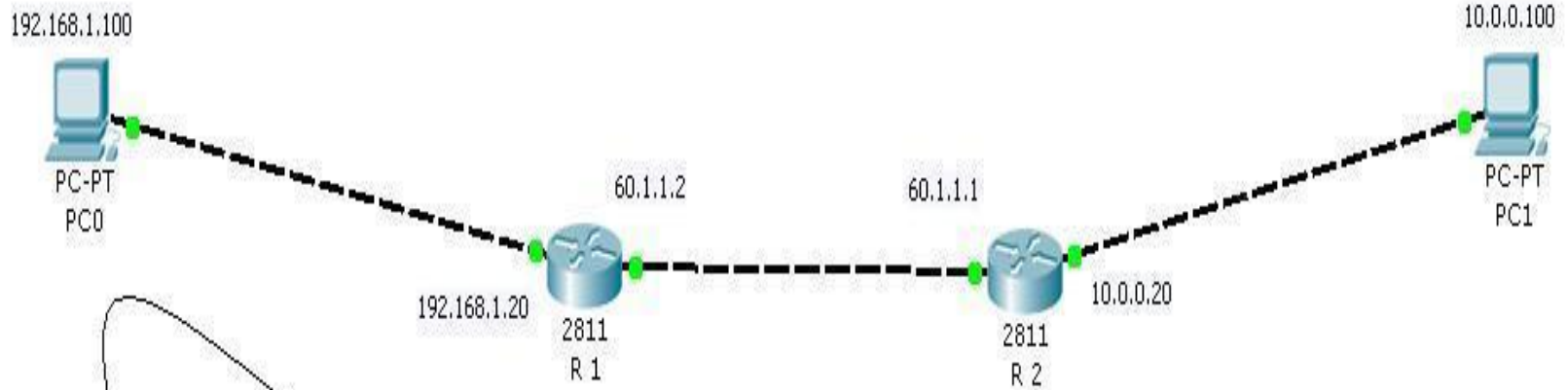
Windows did not detect problems with this connection. If you cannot connect, click Repair.

Repair

Close



Advanced Routing



اساسيات المسألة

pc1 يمكن بكلم R 2 فيما يعلمه R 2 من شبكات ، و R 2 يعرف شبكتين فقط اللتي هما **Directlyconnected** به وهم 10.0.0.0 و 60.0.0.0

ولكن لا يعلم شيء عن شبكة 192.168.1.0 ، العكس صحيح طبعاً في pc0

فلو pc1 حاول pc0 مثلاً مش حيقدر ، لأن الراوترات ما كلنتش بعض ، لازم كل راوتر يعرف الراوتر اخوه الشبكات اللتي يعرفها وده بيتم بطريقتين

اما **static** او **dynamic**

وتعالى نتعلمها



```
C:\> Command Prompt

IPv4 Route Table
=====
Interface List
=====
0x1 ..... MS TCP Loopback interface
0x10003 ...00 0c 29 32 e3 56 ..... Intel(R) PRO/1000 MT Network Connection
0x10004 ...00 0c 29 32 e3 60 ..... Intel(R) PRO/1000 MT Network Connection #2
=====

Active Routes:
Network Destination     Netmask          Gateway          Interface        Metric
-----
60.0.0.0                 255.0.0.0        60.1.1.2         60.1.1.2         10
60.1.1.2                 255.255.255.255 127.0.0.1        127.0.0.1        10
60.255.255.255          255.255.255.255 60.1.1.2         60.1.1.2         10
127.0.0.0                255.0.0.0        127.0.0.1        127.0.0.1         1
192.168.1.0              255.255.255.0   192.168.1.20    192.168.1.20     10
192.168.1.20            255.255.255.255 127.0.0.1        127.0.0.1        10
192.168.1.255           255.255.255.255 192.168.1.20    192.168.1.20     10
224.0.0.0                240.0.0.0        60.1.1.2         60.1.1.2         10
224.0.0.0                240.0.0.0        192.168.1.20    192.168.1.20     10
255.255.255.255         255.255.255.255 60.1.1.2         60.1.1.2         1
255.255.255.255         255.255.255.255 192.168.1.20    192.168.1.20     1
=====

Persistent Routes:
None

C:\Documents and Settings\Administrator>
```

راوتر ا
يعرف شبكتين بس

عايزه يعرف الشبكة المالتة علشان يقدر
يكلها

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زاوتو ۳
يعرف برضه شبكتين بس زي اخوه

```
cmd C:\WINDOWS\system32\cmd.exe
IPv4 Route Table
=====
Interface List
-----
0x1 ..... MS TCP Loopback interface
0x10003 ...00 0c 29 71 43 ba ..... Intel(R) PRO/1000 MT Network Connection
0x10004 ...00 0c 29 71 43 c4 ..... Intel(R) PRO/1000 MT Network Connection #2
=====

Active Routes:
Network Destination    Netmask          Gateway          Interface        Metric
-----
10.0.0.0                255.0.0.0        10.0.0.20       10.0.0.20        10
10.0.0.20              255.255.255.255 127.0.0.1       127.0.0.1        10
10.255.255.255         255.255.255.255 10.0.0.20       10.0.0.20        10
60.0.0.0               255.0.0.0        60.1.1.1        60.1.1.1         10
60.1.1.1               255.255.255.255 127.0.0.1       127.0.0.1        10
60.255.255.255        255.255.255.255 60.1.1.1        60.1.1.1         10
127.0.0.0              255.0.0.0        127.0.0.1       127.0.0.1         1
224.0.0.0              240.0.0.0        10.0.0.20       10.0.0.20        10
224.0.0.0              240.0.0.0        60.1.1.1        60.1.1.1         10
255.255.255.255       255.255.255.255 10.0.0.20       10.0.0.20         1
255.255.255.255       255.255.255.255 60.1.1.1        60.1.1.1         1
=====

Persistent Routes:
None

C:\Documents and Settings\Administrator>_
```

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Routing and Remote Access

File Action View Help

← → 📁 📄 📄 📄 📄 📄

Routing and Remote Access

- Server Status
- SERVER (local)
 - Network Interfaces
 - IP Routing
 - General
 - Static Routes
 - Remote Access F...
 - Remote Access L...

| Network Interfaces | | | | | |
|----------------------------------|-----------|---------|------------------|-----|--|
| LAN and Demand Dial Interfaces ▾ | Type | Status | Connection State | De | |
| WAN 2 | Dedicated | Enabled | Connected | Int | |
| Loopback | Loopback | Enabled | Connected | | |
| LAN 1 | Dedicated | Enabled | Connected | Int | |
| Internal | Internal | Enabled | Connected | | |

New Static Route...

Show IP Routing Table...

Refresh

Help

Create New Static Route

R 1

| LAN and Demand Dial Interfaces | Type | Status | Connection State | De |
|--------------------------------|-----------|---------|------------------|-----|
| WAN 2 | Dedicated | Enabled | Connected | Int |
| Loopback | Loopback | Enabled | Connected | |
| LAN 1 | Dedicated | Enabled | Connected | Int |
| Internal | Internal | Enabled | Connected | |

| Static Route | |
|--|-----------------|
| Interface: | LAN 1 |
| Destination: | 10 . 0 . 0 . 0 |
| Network mask: | 255 . 0 . 0 . 0 |
| Gateway: | 60 . 1 . 1 . 2 |
| Metric: | 1 |
| <input checked="" type="checkbox"/> Use this route to initiate demand-dial connections | |
| OK Cancel | |

3 اطلع من الإنترنت ده

1 لو حد سألك يا راوتر ا على الشبكة دي

2 بالماسك ده

4 ارمى على الجيت وای ده

ال hop يعنى حتوصل

بعد كام راوتر ، او نقطة

R 2

The screenshot shows the Routing and Remote Access console with the 'Static Routes' configuration dialog box open. The dialog box contains the following fields:

- Interface: LAN 2
- Destination: 192.168.1.0
- Network mask: 255.255.255.0
- Gateway: 61.1.1.1
- Metric: 1

There is a red arrow pointing to the Metric field with the text "بعد راوتر واحد" (After one router).

The background console shows a tree view with 'SECONDRARY (local)' expanded to 'Network Interfaces' > 'Static Routes'. A table titled 'Network Interfaces' is also visible:

| LAN and Demand Dial Interfaces | Type | Status |
|--------------------------------|-----------|--------|
| WAN 1 | Dedicated | Enable |
| Loopback | Loopback | Enable |
| LAN 2 | Dedicated | Enable |
| Internal | Internal | Enable |

2 اطلع من هنا

1 لو عاوز توصل للشبكة دي

3 ارمي على هنا



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The screenshot shows the Windows Routing and Remote Access console. The left pane displays a tree view with the following structure:

- Routing and Remote Access
 - Server Status
 - SERVER (local)
 - Network Interfaces
 - IP Routing
 - General
 - Static
 - Remote Access
 - Remote Access

The right pane shows the 'Static Routes' view, which is currently empty with the message: "There are no items to show in this view." A context menu is open over the 'Static' folder in the left pane, with the following options:

- New Interface...
- New Routing Protocol...
- Show TCP/IP Information...
- Show Multicast Forwarding Table...
- Show Multicast Statistics...
- Refresh
- Properties
- Help

At the bottom of the console, there is a button labeled "Add a new routing protocol".



Routing and Remote Access

File Action View Help

← → [Home] [Back] [Forward] [Print] [Refresh] [Stop] [Help]

Routing and Remote Access

- Server Status
- SERVER (local)
 - Network Interfaces
 - IP Routing
 - General
 - Static Routes
 - RIP**
 - Remote
 - Remote

New Interface...

- Show Neighbors...
- View
- Delete
- Refresh
- Export List...
- Properties
- Help

RIP

| Interface | Update mode | Responses sent | Responses received |
|--|-------------|----------------|--------------------|
| There are no items to show in this view. | | | |

رابطات اللى يعرفها كل راوتر ده البروتوكول اللى جيعرف

رابطات ايه الشبكات اللى يعرفها كل راوتر

Add a new RIP Interface

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Routing and Remote Access

File Action View Help

Routing and Remote Access

- SERVER (local)
 - Network Interfaces
 - IP Routing
 - General
 - Static Routes
 - RIP
 - Remote Access Policies
 - Remote Access Logging

New Interface for RIP Version 2 for Internet Protocol

This routing protocol runs on the interface that you select below.

Interfaces:

- LAN 1
- WAN 2

حدد له الإنترنت التي حبيبت
ويستقبل من عليه الأبدية
وعلى الراوتر الثاني نفس الكلام بالظبط

OK Cancel

My Documents

My Computer

My Network Places

```
Command Prompt
Pinging 192.168.1.100 with 32 bytes of data:
Request timed out.
Request timed out.
Request timed out.
Request timed out.
Ping statistics for 192.168.1.100:
    Packets: Sent = 4, Received = 0, Lost = 4 (100% loss),
C:\Documents and Settings\Tamer>ping 192.168.1.100
Pinging 192.168.1.100 with 32 bytes of data:
Reply from 192.168.1.100: bytes=32 time=3ms TTL=126
Reply from 192.168.1.100: bytes=32 time=2ms TTL=126
Reply from 192.168.1.100: bytes=32 time=1ms TTL=126
Reply from 192.168.1.100: bytes=32 time=2ms TTL=126
Ping statistics for 192.168.1.100:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 1ms, Maximum = 3ms, Average = 2ms
C:\Documents and Settings\Tamer>
```

البيج بين الكلايت تمام
ولاحظ عدى راوترين

Local Area Connection Status

General Support

Connection status

| | |
|------------------|---------------------|
| Address Type: | Manually Configured |
| IP Address: | 10.0.0.100 |
| Subnet Mask: | 255.0.0.0 |
| Default Gateway: | 10.0.0.20 |

Details...

Windows did not detect problems with this connection. If you cannot connect, click Repair.

Repair

Close

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بعض خصائص الـ rip v2

Routing and Remote Access

File Action View Help

Routing and Remote Access

WAN 2 Properties

General Security Neighbors Advanced

Routing Information Protocol (RIP) Interface

Operation mode:
Periodic update mode

Outgoing packet protocol:
RIP version 2 multicast

Incoming packet protocol:
RIP version 2 only

Added cost for routes: 1

Tag for announced routes: 0

Activate authentication

Password: *****

| Responses sent | Responses received |
|----------------|--------------------|
| 0 | 0 |

OK Cancel Apply

الديفلولت بتاع rip v2 مالني

كانت

وطبعاً المالنني احسن من البرود

البايكت الخارجة

البايكت الداخلة

الفرق بين v1 و v2 في الـ rip

موضوع الـ Auth ، فعليشان

الراوتر التاني يستقبل مني لازم يعرف

الباسورد بتاعني دي



Routing and Remote Access

File Action View Help

Routing and Remote Access

- Server Status
- SERVER (local)
- Network Interfaces
- IP Routing
 - General
 - Static Routes
 - RIP
- Remote Access Policies
- Remote Access Logging

| Interface | Update mode | Responses sent |
|-----------|-------------|----------------|
| WAN 2 | Periodic | 0 |

اقبل كل الـ updates التي جايلى من راوترات ثانية

WAN 2 Properties

General Security Neighbors Advanced

Action:

For incoming routes

- Accept all routes
- Accept all routes in the ranges listed
- Ignore all routes in the ranges listed

From: To: Add

| From | To |
|------|----|
|------|----|

Edit Remove

OK Cancel Apply

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Routing and Remote Access

File Action View Help

Routing and Remote Access

- Server Status
- SERVER (local)
- Network Interfaces
- IP Routing
 - General
 - Static Routes
 - RIP
- Remote Access Policies
- Remote Access Logging

| Interface | Update mode | Responses sent |
|-----------|-------------|----------------|
| WAN 2 | Periodic | 0 |

اقبل بس الـ **updates** اللى جاية من الـ **range** ده
لا تقبل الـ **update** اللى جاية من الـ **ريبنج** ده

WAN 2 Properties

General Security Neighbors Advanced

Action:
For incoming routes

Accept all routes

Accept all routes in the ranges listed

Ignore all routes in the ranges listed

From: [] To: [] [Add]

| From | To |
|------|----|
|------|----|

[Edit] [Remove]

[OK] [Cancel] [Apply]



Routing and Remote Access

File Action View Help

Routing and Remote Access

- Server Status
- SERVER (local)
- Network Interfaces
- IP Routing
 - General
 - Static Routes
 - RIP
- Remote Access Policies
- Remote Access Logging

| Interface | Update mode | Responses sent |
|-----------|-------------|----------------|
| WAN 2 | Periodic | 0 |

نفس الموضوع في اللي خارج من عندي ، اعلن عن كل شئ

اعلن عن اللي في الريبج فقط

لا تعلن عن اللي في الريبج

WAN 2 Properties

General Security Neighbors Advanced

Action:
For outgoing routes

Announce all routes

Announce all routes in the ranges listed

Do not announce all routes in the ranges listed

From: To: Add

| From | To |
|------|----|
|------|----|

Edit Remove

OK Cancel Apply

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Routing and Remote Access

File Action View Help

Routing and Remote Access

- Server Status
- SERVER (local)
 - Network Interfaces
 - IP Routing
 - General
 - Static Routes
 - RIP
 - Remote Access Policies
 - Remote Access Logging

| Interface | Update mode | Responses sent |
|-----------|-------------|----------------|
| WAN 2 | Periodic | 0 |

جيران الراوتر ، وتحدد له مين جيرانه اللى حبيت لهم او يستقبل منهم

WAN 2 Properties

General Security Neighbors Advanced

Specify how this router interacts with listed neighboring RIP routers.

- Use broadcast or multicast only
- Use neighbors in addition to broadcast or multicast
- Use neighbors instead of broadcast or multicast

IP address:

Add

Edit

Remove

OK Cancel Apply



Routing and Remote Access

File Action View Help

Routing and Remote Access

- Server Status
- SERVER (local)
- Network Interfaces
- IP Routing
 - General
 - Static Routes
 - RIP
- Remote Access Policies
- Remote Access Logging

| Interface | Update mode | Responses sent |
|-----------|-------------|----------------|
| WAN 2 | Periodic | 0 |

خصائص البروتوكول المفترض بتدرس في CCNA
للعلم فقط البروتوكول ده **standard** عام مش ملك
لسيسكو او مايكروسوفت

WAN 2 Properties

General Security Neighbors Advanced

Periodic announcement interval (seconds): 30

Time before routes expire (seconds): 180

Time before route is removed (seconds): 120

- Enable split-horizon processing
 - Enable poison-reverse processing
- Enable triggered updates
- Send clean-up updates when stopping
- Process host routes in received announcements
- Include host routes in sent announcements
- Process default routes in received announcements
- Include default routes in sent announcements
- Disable subnet summarization

OK Cancel Apply

يمكن على اى راوتر تعمل فلتره للبيانات اللي داخلة او اللي خارجة اسمها **Packet filter** وفي سيسكو **ACL** طبعا معروفة فقط حدد الإنترنت اللي عايز تعمل عليه فلتر

The screenshot shows the 'Routing and Remote Access' console window. The left pane shows a tree view with 'IP Routing' expanded to 'General'. The right pane shows a table of interfaces with a context menu open over 'LAN 2'. The table has columns for Interface, Type, IP Address, and Administrative Status. The context menu includes options like 'Update Routes', 'Show TCP/IP Information...', 'Delete', 'Refresh', 'Properties', and 'Help'. A status bar at the bottom of the window reads 'Opens the properties dialog box for the current selection.'

| Interface | Type | IP Address | Administrative Status |
|-----------|-----------|------------|-----------------------|
| WAN 1 | Dedicated | 60.1.1.1 | Up |
| Loopback | Loopback | 127.0.0.1 | Up |
| LAN 2 | Dedicated | 10.0.0.20 | Up |
| Internal | | | Unknown |

Server 2003

Tamer.zein@hotmail.com

- My Documents
- My Computer
- My Network Places
- Recycle Bin
- Internet Explorer
- Security Configurati...

Routing and Remote Access

File Action View Help

Routing and Remote Access Server Status

SECONDARY (local)

Network Interface

IP Routing

General

Static Routes

RIP

Remote Access Policies

Remote Access Connections

LAN 2 Properties

General Configuration Multicast Boundaries Multicast Heartbeat

IP Interface

Enable IP router manager

Enable router discovery advertisements

Advertisement lifetime (minutes): 30

Level of preference: 0

Send out advertisement within this interval:

Minimum time (minutes): 7

Maximum time (minutes): 10

Inbound Filters... Outbound Filters...

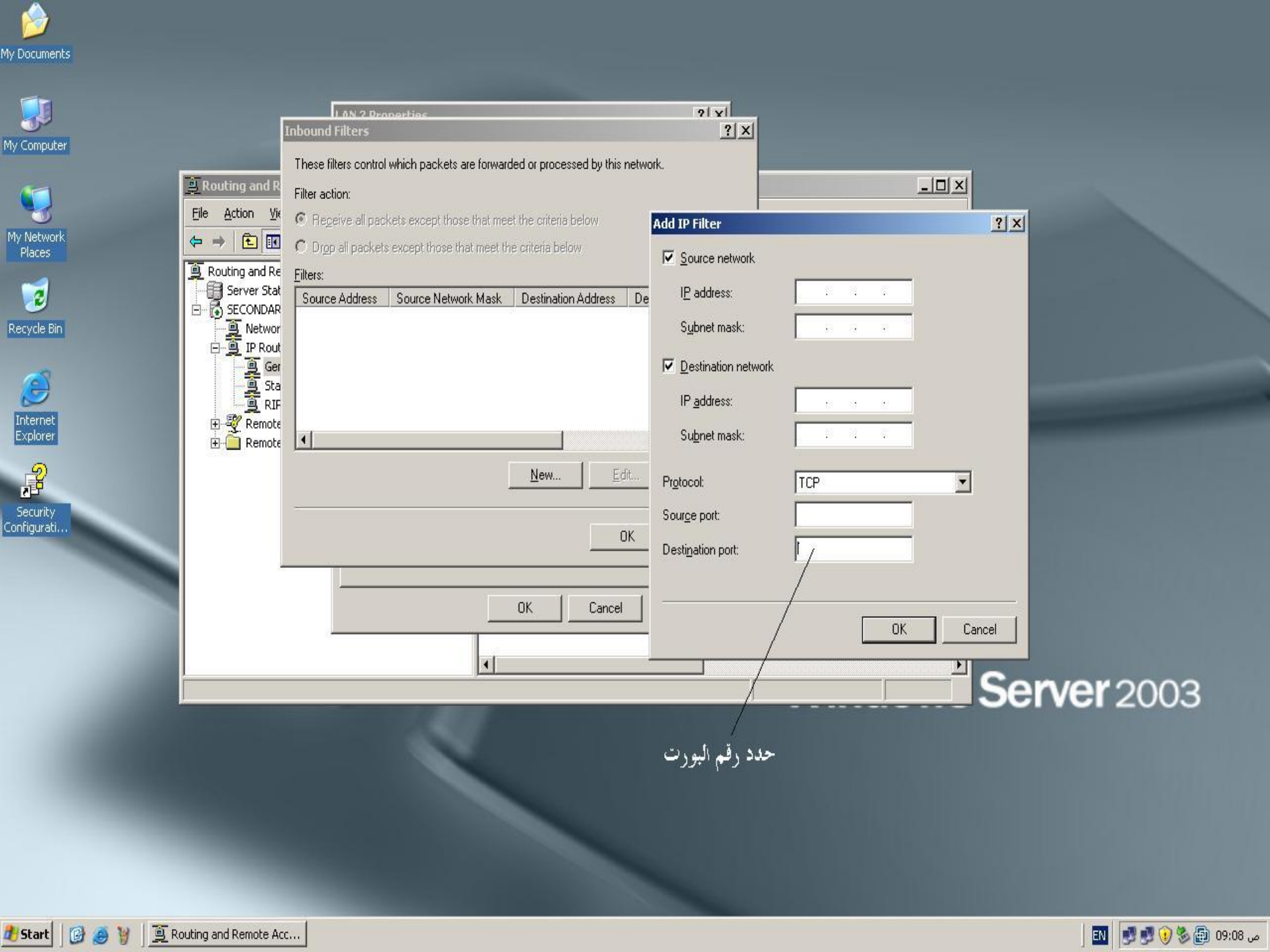
Enable fragmentation checking

داخِل ولا خارج

OK Cancel Apply

| IP Address | Administrative Status |
|---------------|-----------------------|
| 60.1.1.1 | Up |
| 127.0.0.1 | Up |
| 10.0.0.20 | Up |
| Not available | Unknown |

Server 2003



LAN 2 Properties

Inbound Filters

Add IP Filter

These filters control which packets are forwarded or processed by this network.

Filter action:

- Receive all packets except those that meet the criteria below
- Drop all packets except those that meet the criteria below

Filters:

| Source Address | Source Network Mask | Destination Address | Destination Network Mask |
|----------------|---------------------|---------------------|--------------------------|
|----------------|---------------------|---------------------|--------------------------|

New... Edit...

OK

OK Cancel

Protocol: TCP

Source port:

Destination port:

OK Cancel

Server 2003

حدد رقم البورت

استقبل كل ما عدا اللى عملناه

او ارفض كل ما عدا اللى عملناه

Inbound Filters

These filters control which packets are forwarded or processed by this network.

Filter action:

Receive all packets except those that meet the criteria below

Drop all packets except those that meet the criteria below

Filters:

| Source Address | Source Network Mask | Destination Address | Destination Mask | P |
|----------------|---------------------|---------------------|------------------|---|
| 0.1.1.1 | | | | |
| 27.0.0.1 | | | | |
| 0.0.0.20 | | | | |
| not available | | | | |

New... Edit... Delete

OK Cancel

Server 2003



لا تنسونا من دعوة صالحة بظهر الغيب
بالتوفيق فى الدنيا والآخرة

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