配置WLCs &微软视窗2003 IAS的RADIUS IPSec安全服务器

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Introduction

此指南文件如何配置WCS和这些WLAN控制器支持的RADIUS IPSec功能：

- 4400 系列
- WiSM
- 3750G

控制器RADIUS IPSec功能位于在**安全>AAA > RADIUS验证服务器**部分下的控制器GUI。功能为您提供一个方法加密控制器和RADIUS服务器(IAS)之间的所有RADIUS通信与IPSec。

Prerequisites

Requirements

Cisco 建议您了解以下主题：

- 在LWAPP的知识
- 在RADIUS认证和IPSec的知识
- 关于怎样的知识配置在操作系统Windows 2003的服务器的服务

Components Used

这些必须安装和配置网络和软件组件为了设置控制器RADIUS IPSec功能：

- WLC4400、WiSM或者3750G控制器。运行软件版本5.2.178.0的此示例使用WLC4400
- 轻量级接入点(膝部)。此示例使用1231系列LAP。
- 交换与DHCP
- 作为域控制器被配置的Microsoft 2003服务器安装用微软认证授权和用Microsoft互联网认证服务(IAS)。
- Microsoft域安全
- Cisco 802.11 a/b/g无线客户端适配器用用WPA2/的ADU版本3.6配置PEAP

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

Conventions

Refer to Cisco Technical Tips Conventions for more information on document conventions.

IPSec RADIUS配置

此配置指南不说明Microsoft WinServer、认证机关、激活目录或者WLAN 802.1x客户端的安装或配置。必须在控制器IPSec RADIUS功能的配置之前安装和配置这些组件。此指南文件剩下的事如何配置在这些组件的IPSec RADIUS ：

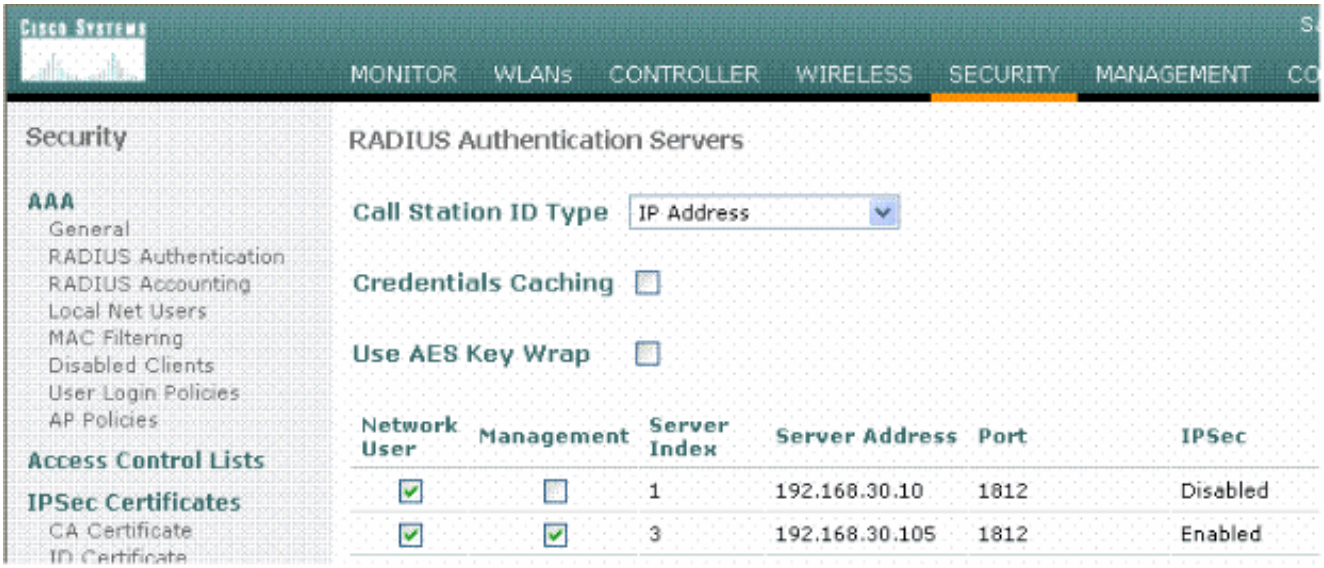
1. Cisco WLAN控制器
2. Windows 2003 IAS
3. 微软视窗域安全设置

配置 WLC

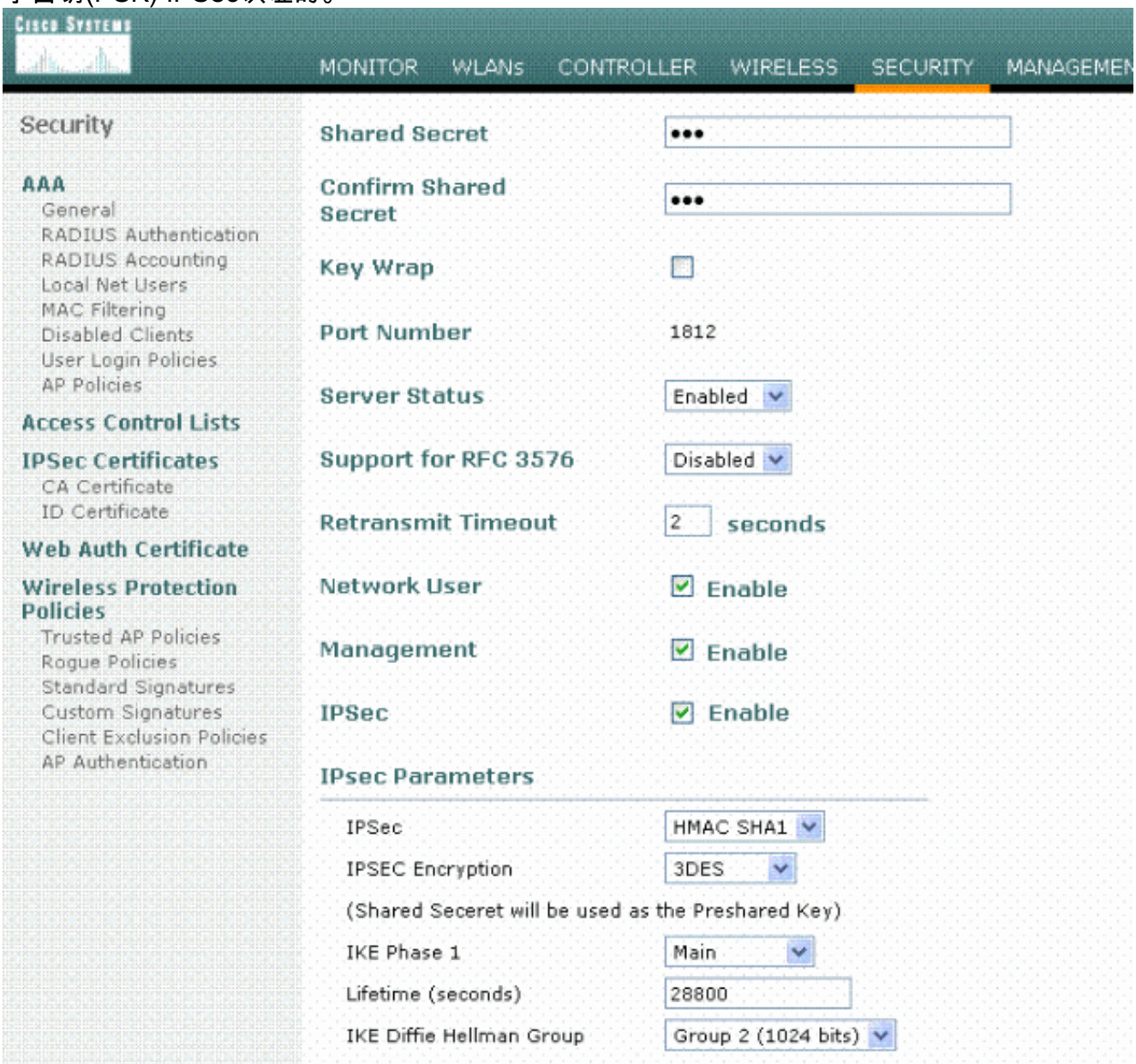
此部分说明如何通过GUI配置在WLC的IPSec。

从控制器GUI，请完成这些步骤。

1. 连接对在控制器GUI的**安全>AAA > RADIUS Authentication选项**，并且添加一个新的RADIUS服务器。



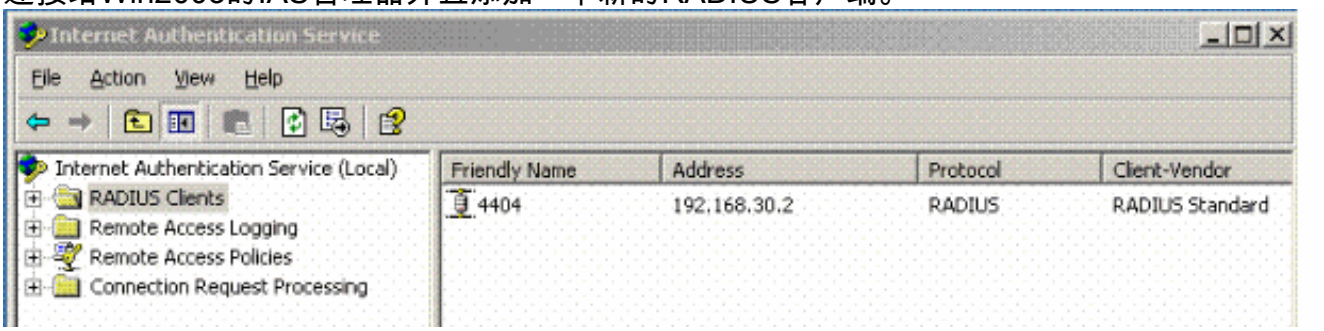
2. 配置IP地址、端口1812和新的RADIUS服务器的一个共有的秘密。检查**IPSec Enable复选框**，配置这些IPSec参数和然后点击**适用**。**Note:** 共有的秘密用于验证RADIUS服务器和作为预共享密钥(PSK) IPSec认证的。



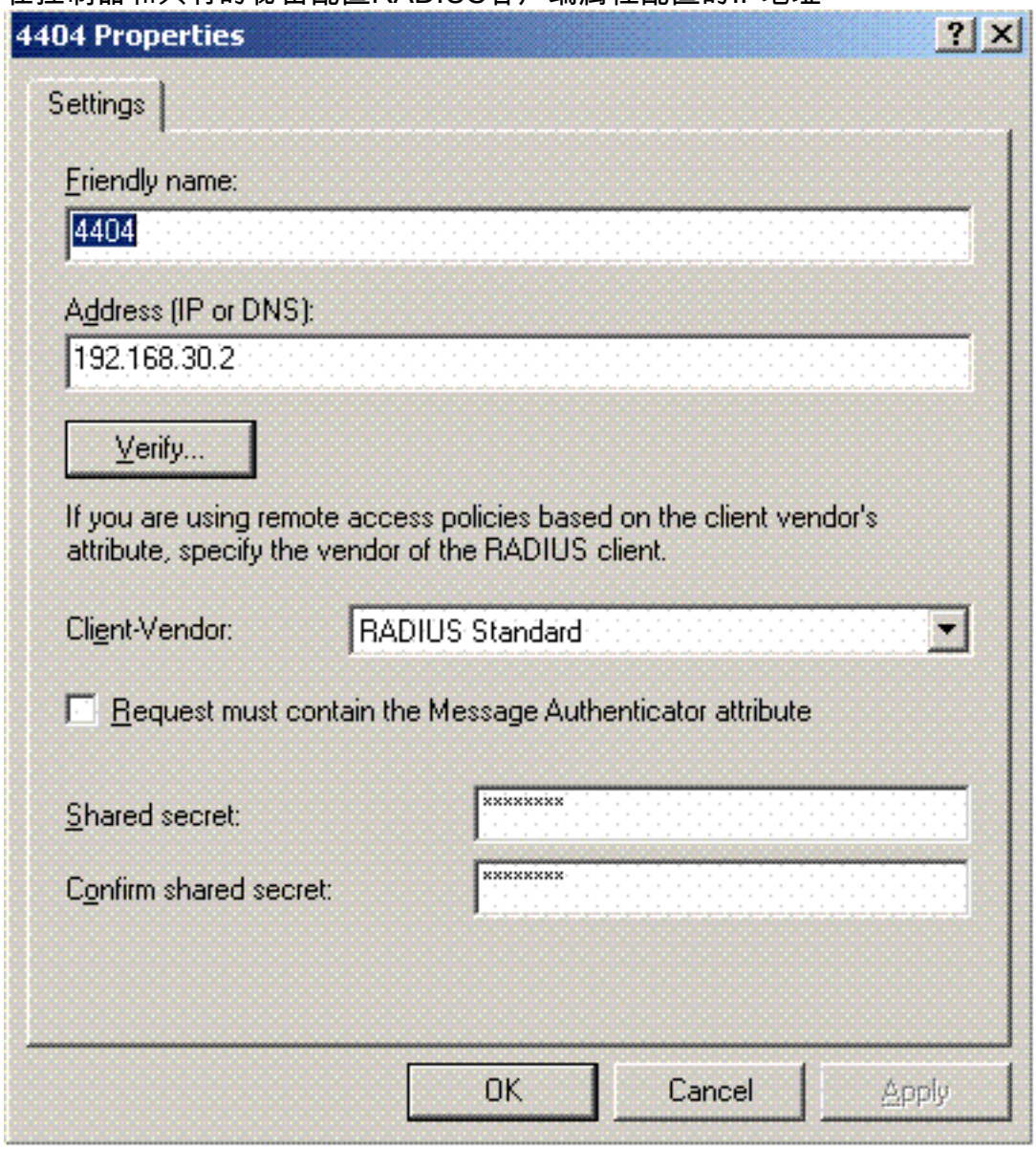
[配置IAS]

完成在IAS的这些步骤：

1. 连接给Win2003的IAS管理器并且添加一个新的RADIUS客户端。



2. 用在控制器和共有的秘密配置RADIUS客户端属性配置的IP地址



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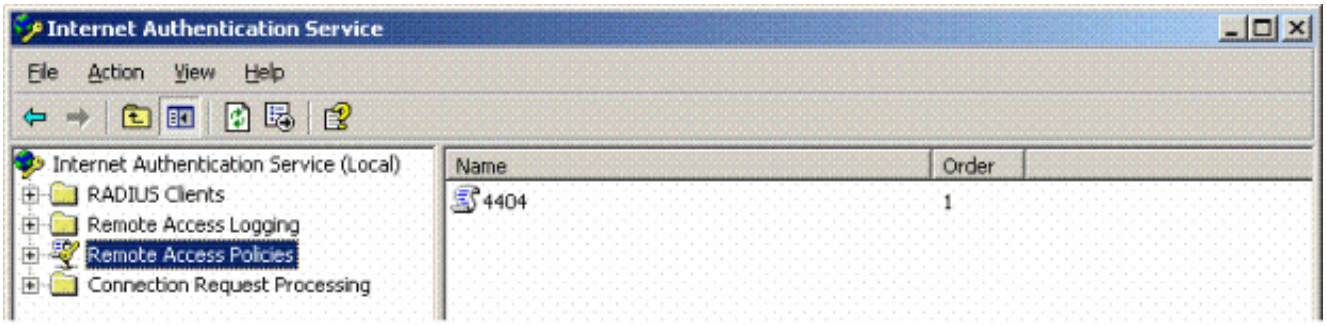
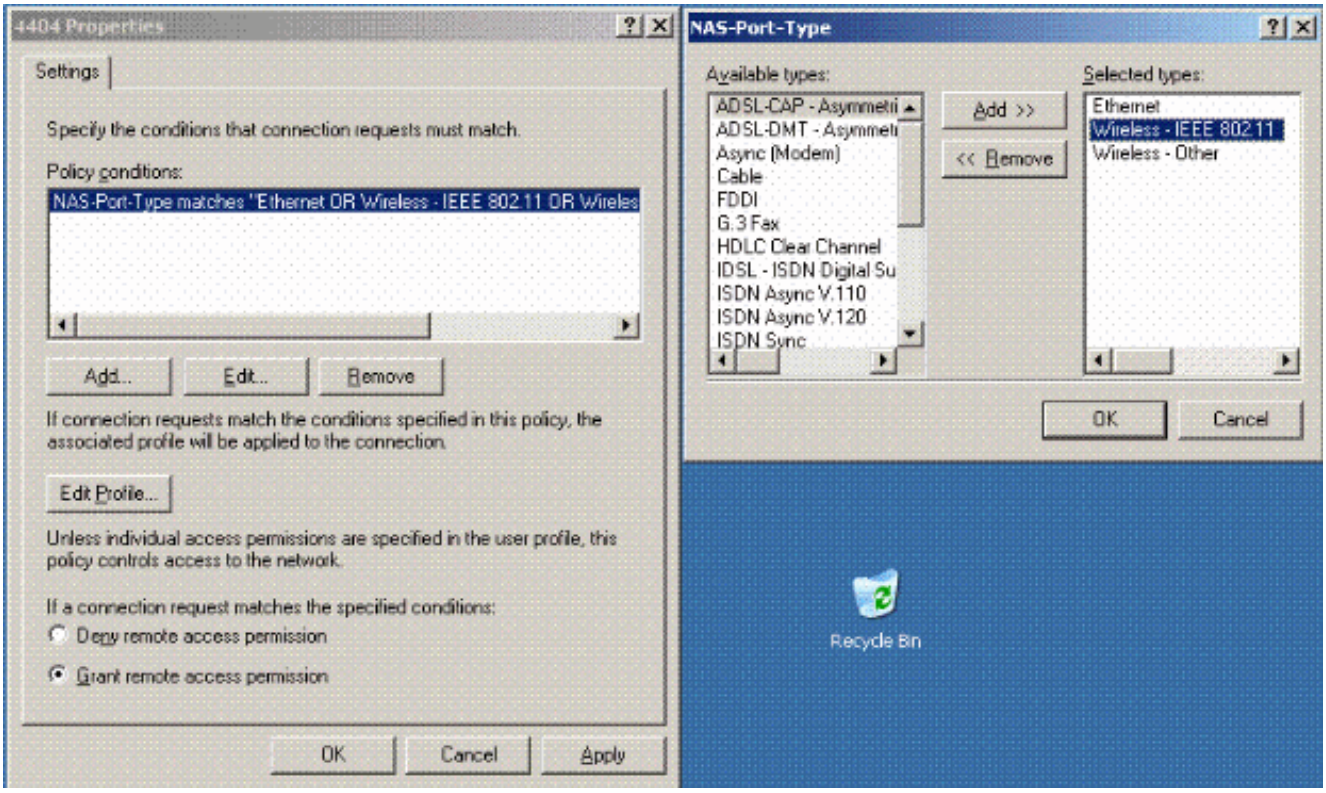
3. 配置控制器的一新的Remote access Policy

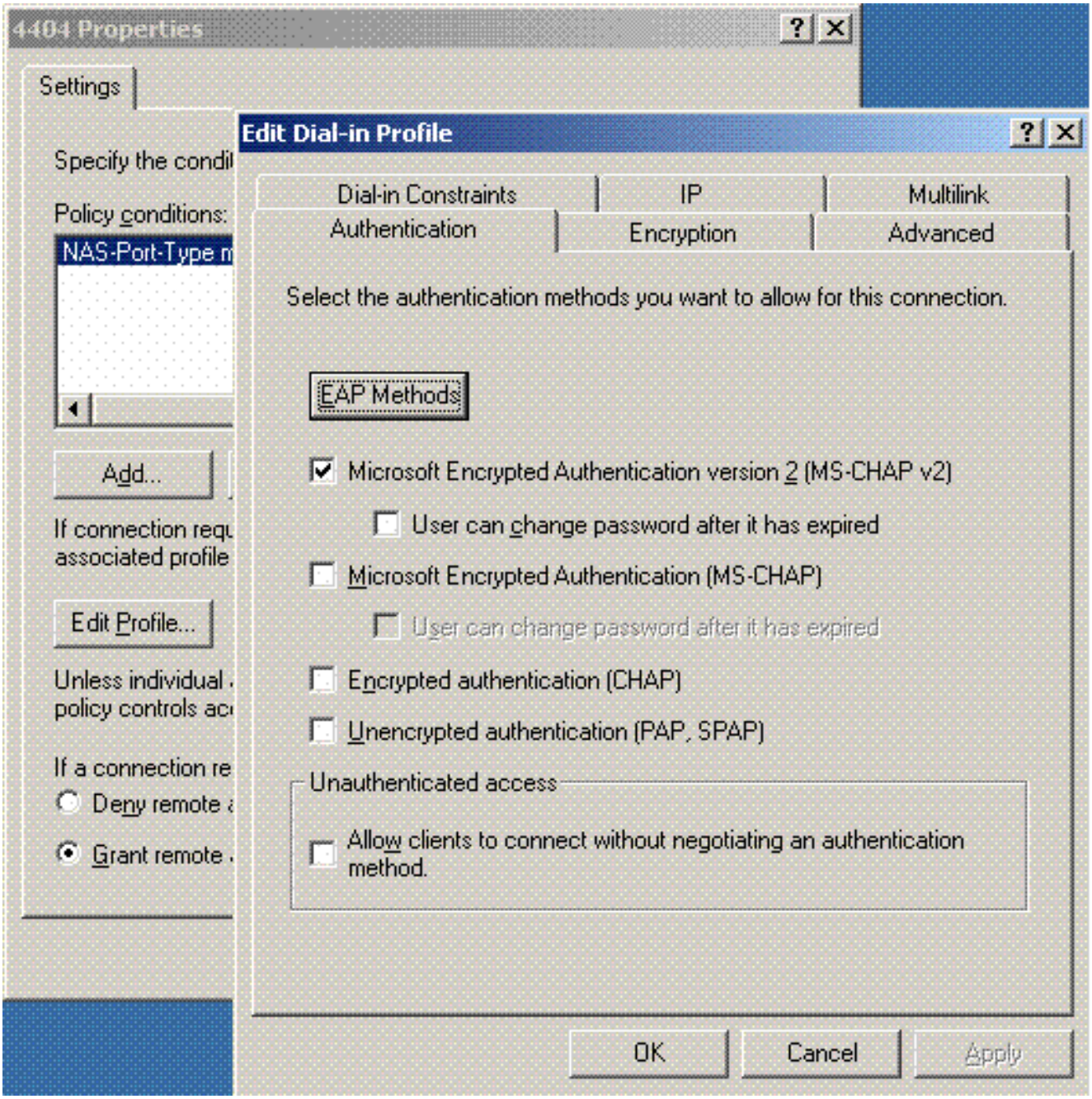
:



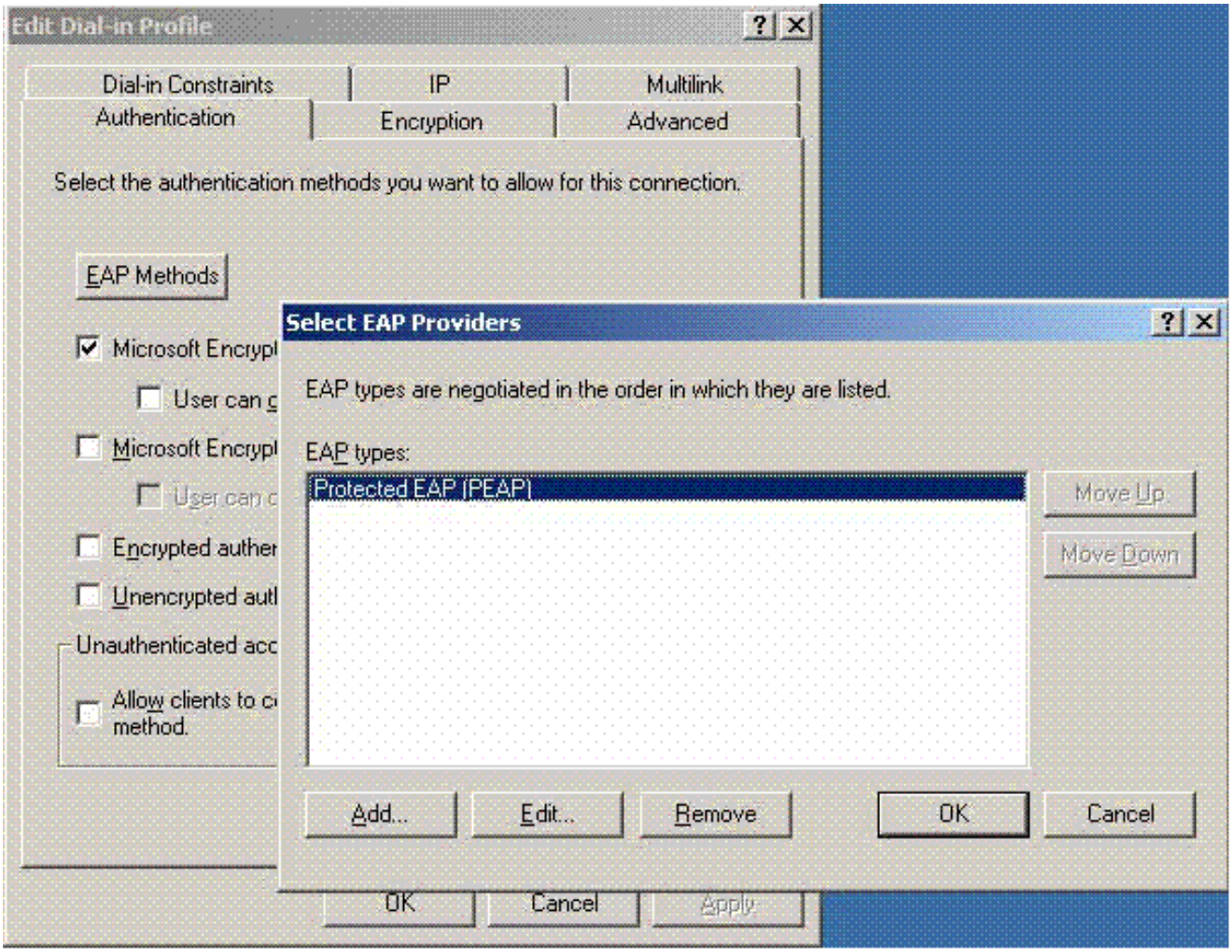
4. 编辑控制器Remote access Policy的属性。保证添加Nas-port类型-无线– IEEE 802.11
   :



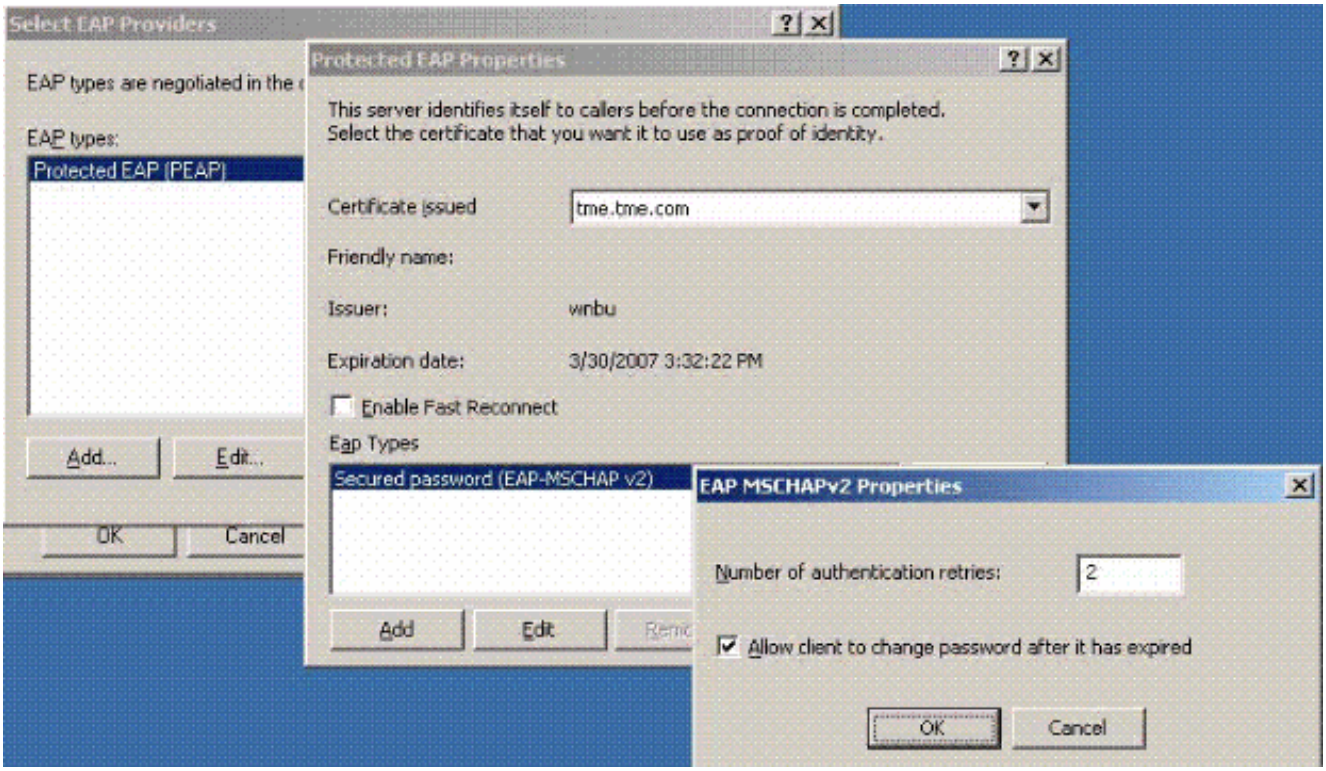
5. 点击**编辑配置文件**，点击**Authentication选项**，并且检查MS-CHAP v2认证
   :



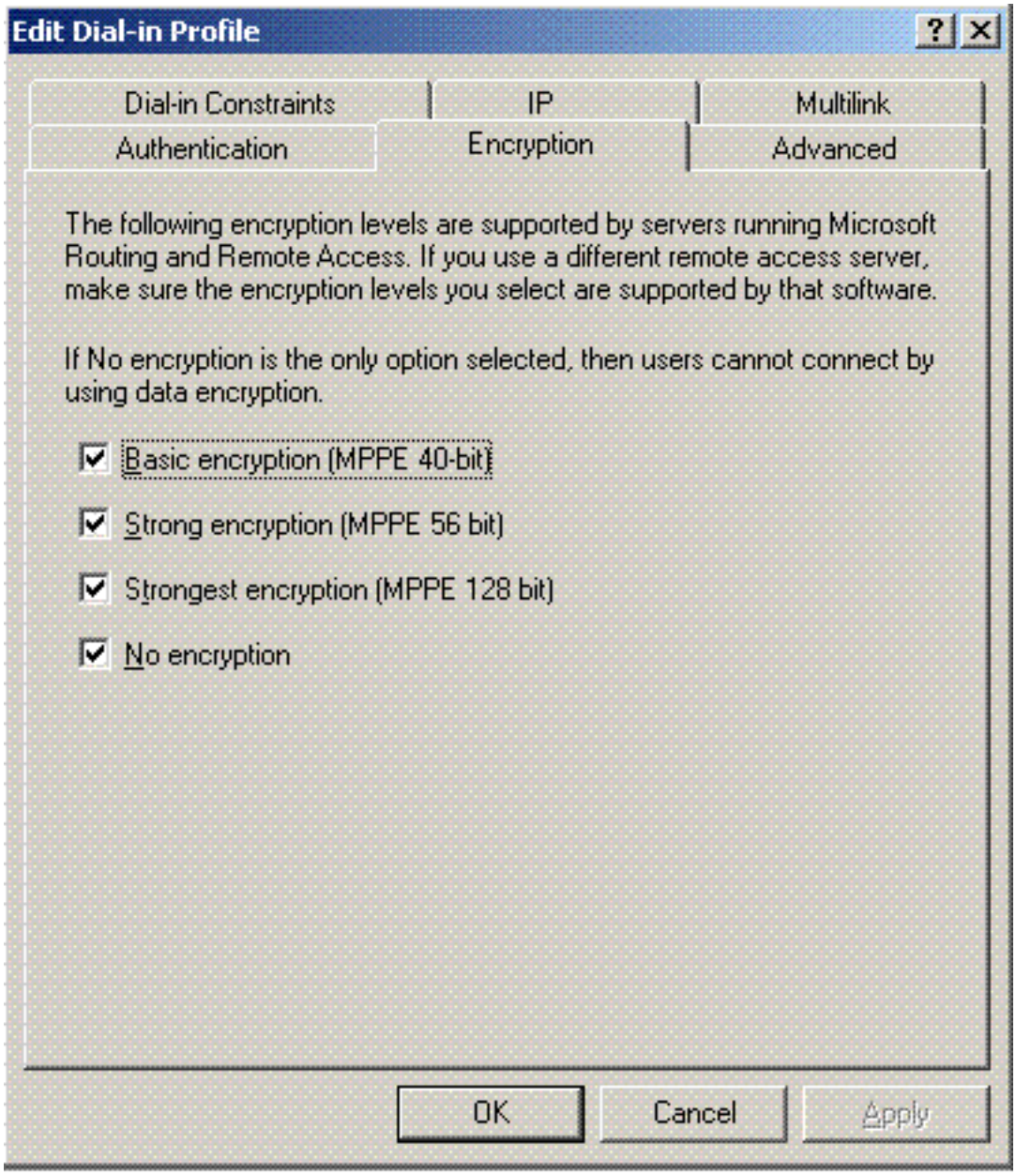
6. 点击**EAP方法**，选择EAP供应商，并且添加PEAP作为EAP类型
：



7. 点击**编辑**在Select EAP供应商并且从即服务器与您的激活目录用户帐户和CA的下拉菜单选择(tme.tme.com)产生关联。添加EAP类型MSCHAP v2
:



8. 点击**Encryption选项**，并且检查所有加密类型远程访问



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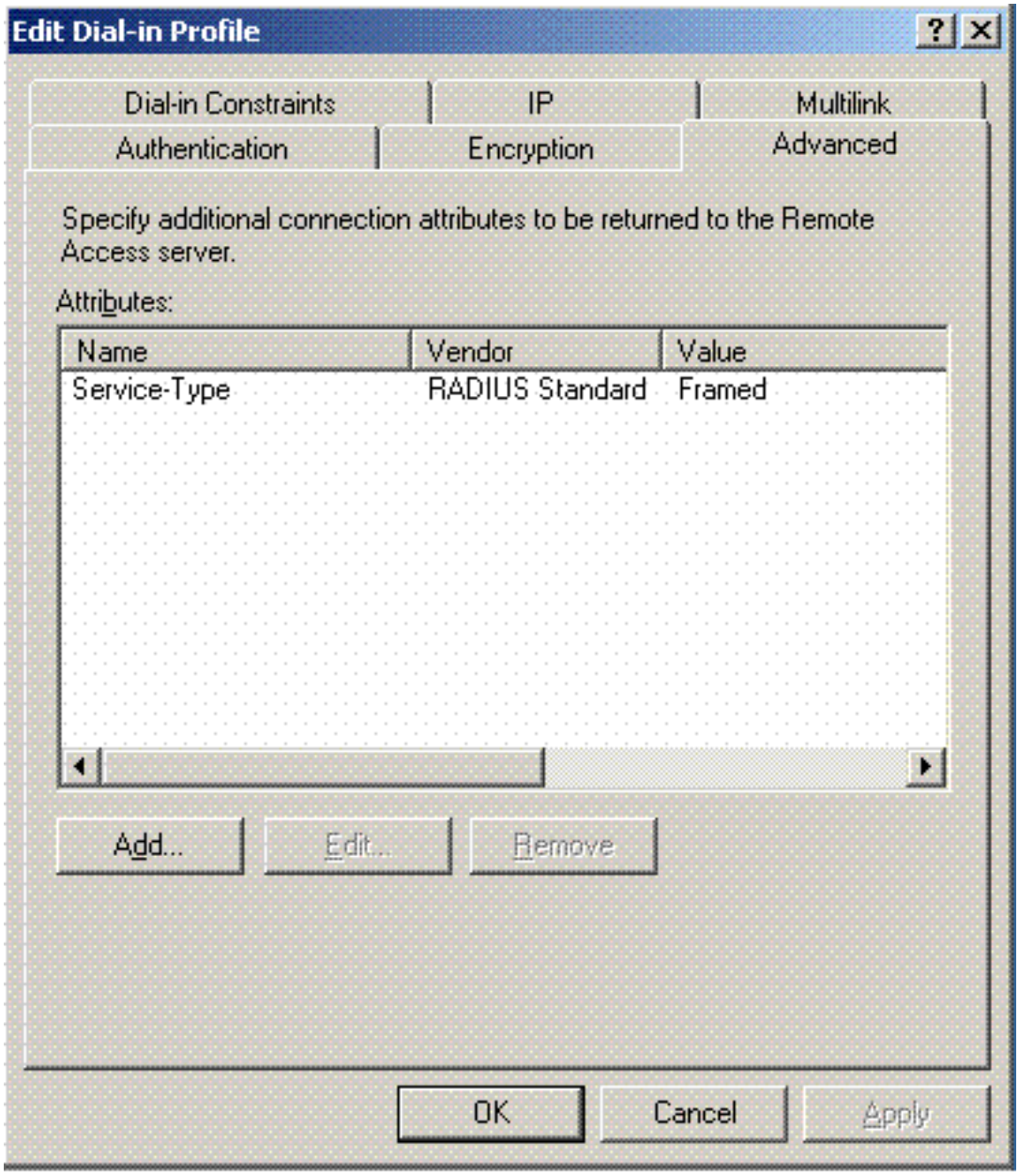
9. 点击**高级选项卡。**，并且添加RADIUS标准/构筑作为服务类型



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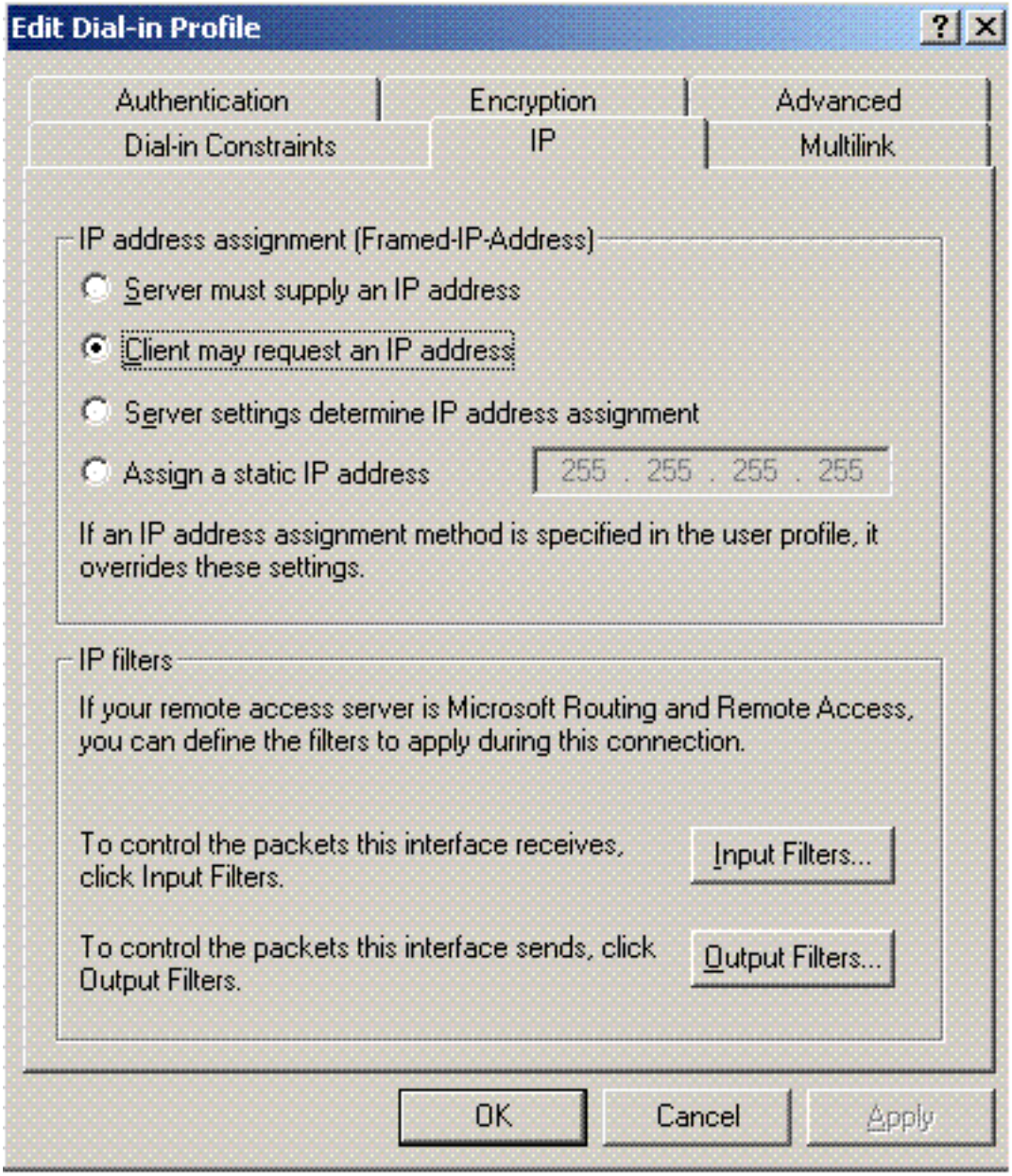
10. 点击**IP**选项，并且检查**客户端可能要求IP地址**。这假设您有在交换机或WinServer的启用

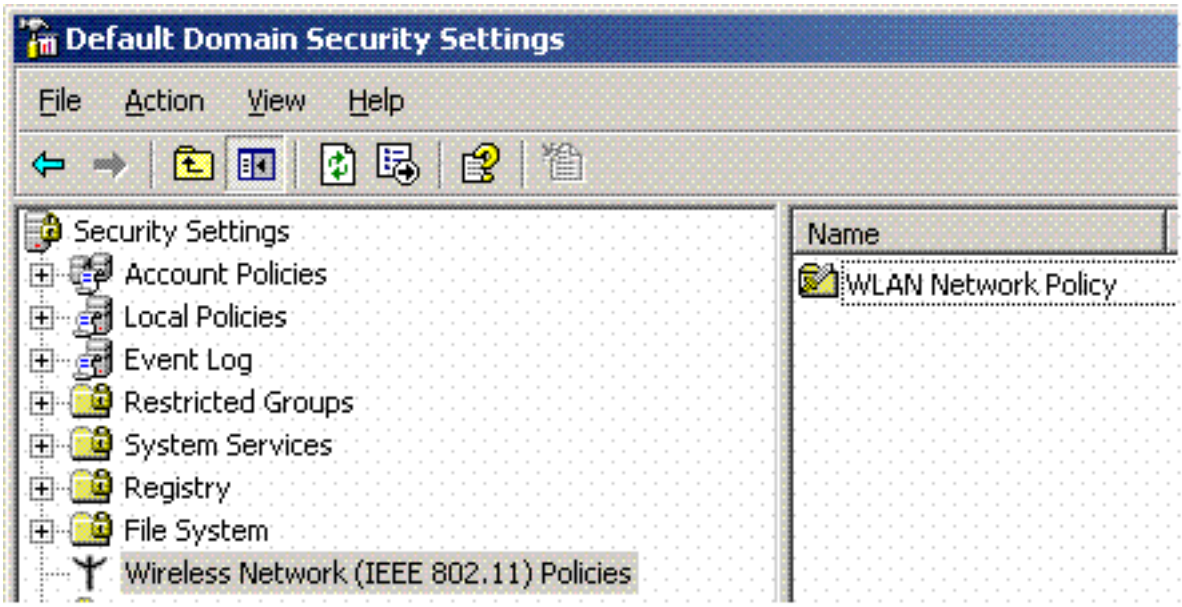


DHCP。

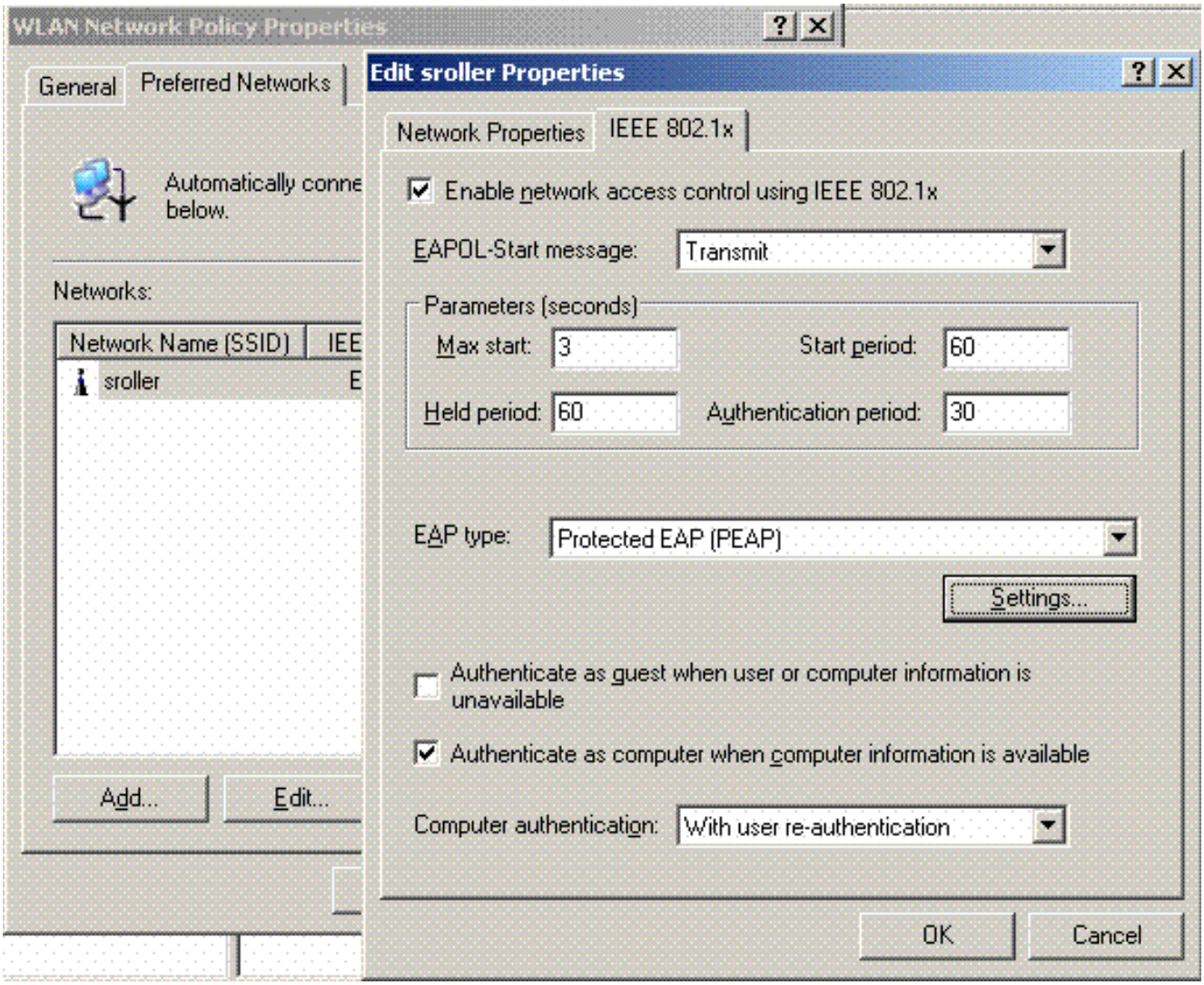
微软视窗2003域安全设置

完成这些步骤为了配置Windows 2003域安全设置：

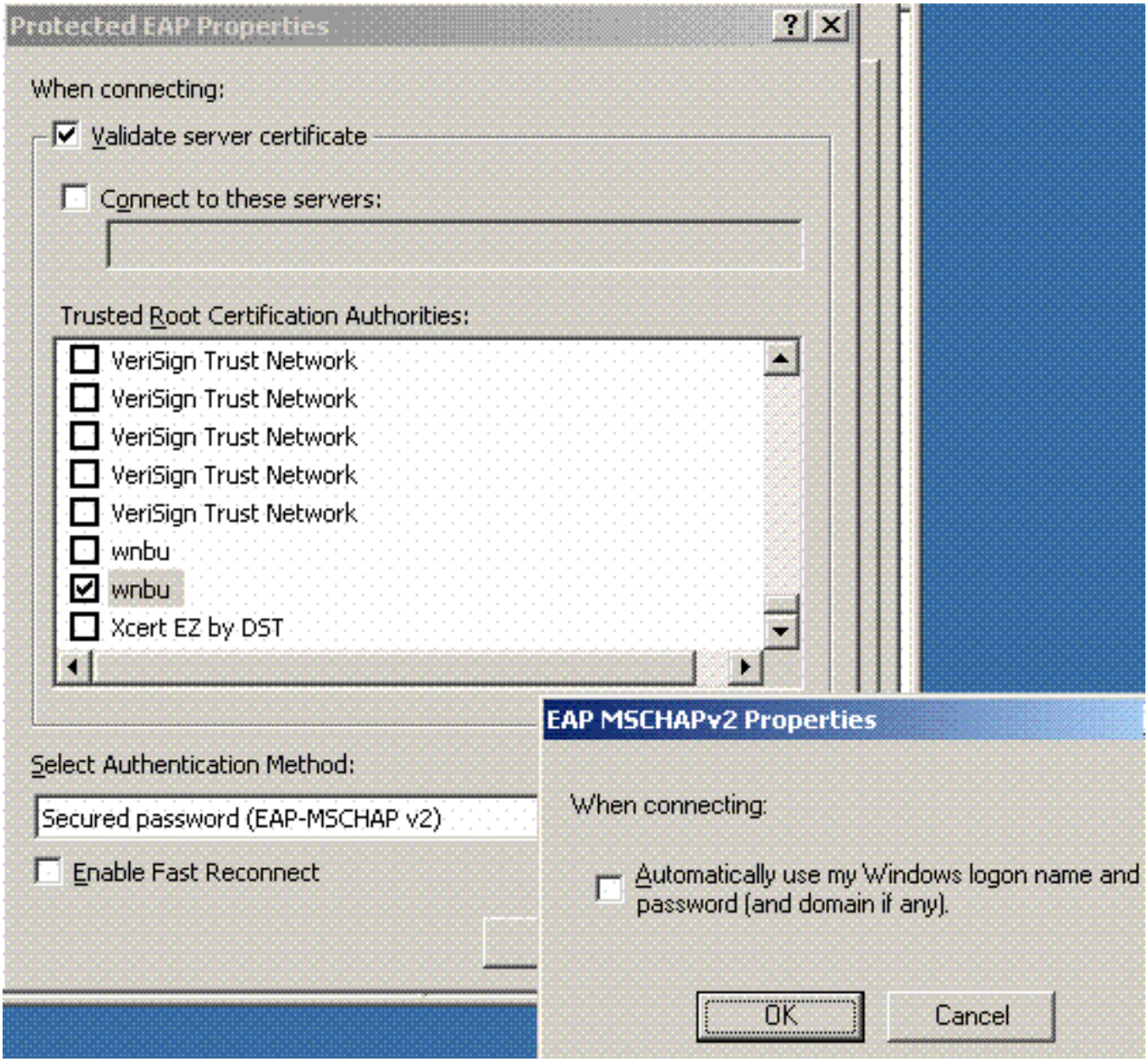
1. 启动默认域安全设置管理器，并且创建无线网络(IEEE 802.11)策略的一个新的安全策略。



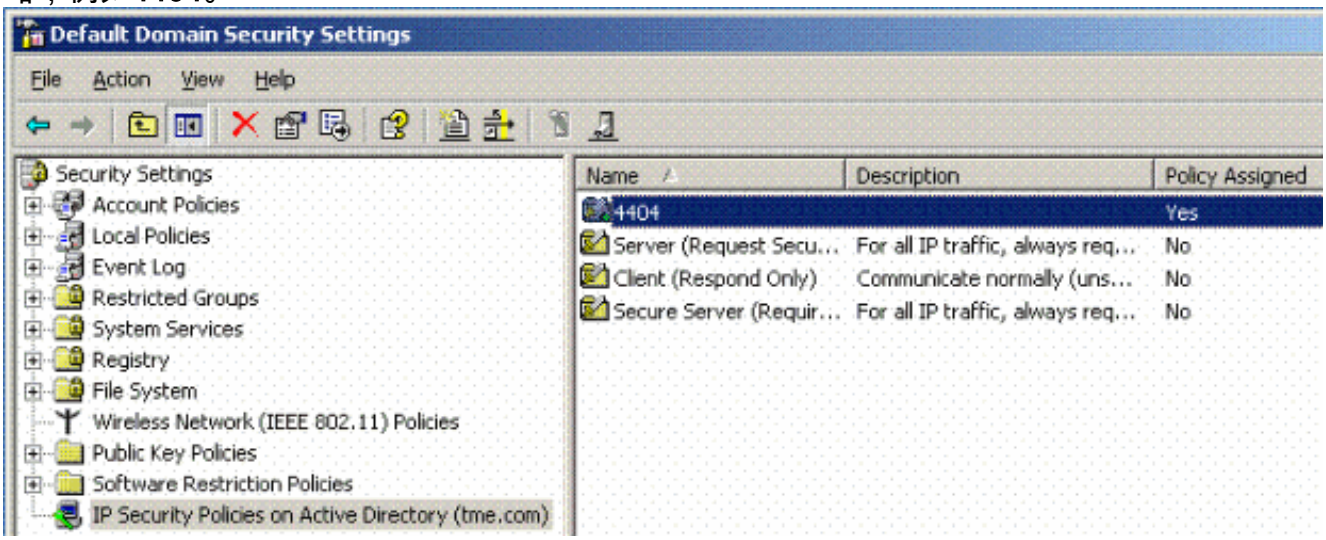
2. 打开WLAN网络策略属性，并且点击**首选网络**。添加一新的首选WLAN并且键入您的WLAN SSID的名字，例如。双击该新的首选网络，并且点击**IEEE 802.1x**选项。选择PEAP作为EAP类型
：



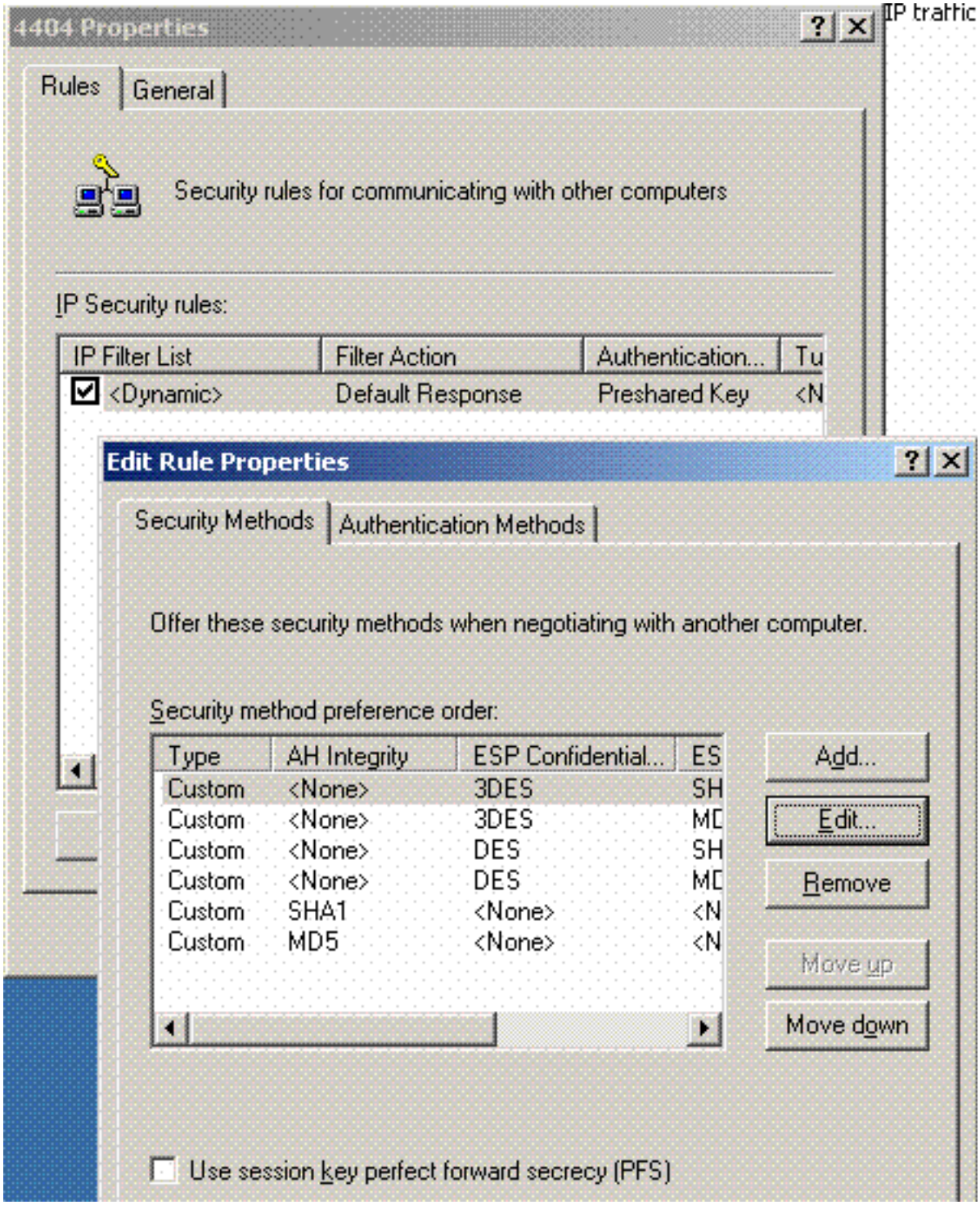
3. 点击**PEAP设置**，检查**验证服务器证明**，并且选择可信的根Cert安装在认证机关上。为了便于测试，请非选定自动地的MS CHAP v2机箱使用我的Windows登录和密码。



4. 在Windows 2003默认域安全设置管理器窗口，请创建在激活目录策略的另一个新的IP安全策略，例如**4404**。



5. 编辑新的4404个策略属性，并且点击**规则**选项。增加一个新的过滤规则- IP去骨切片列表(动态);过滤器操作(默认回应);认证(PSK);隧道(无)。双击新建立的过滤规则并且选择安全方法



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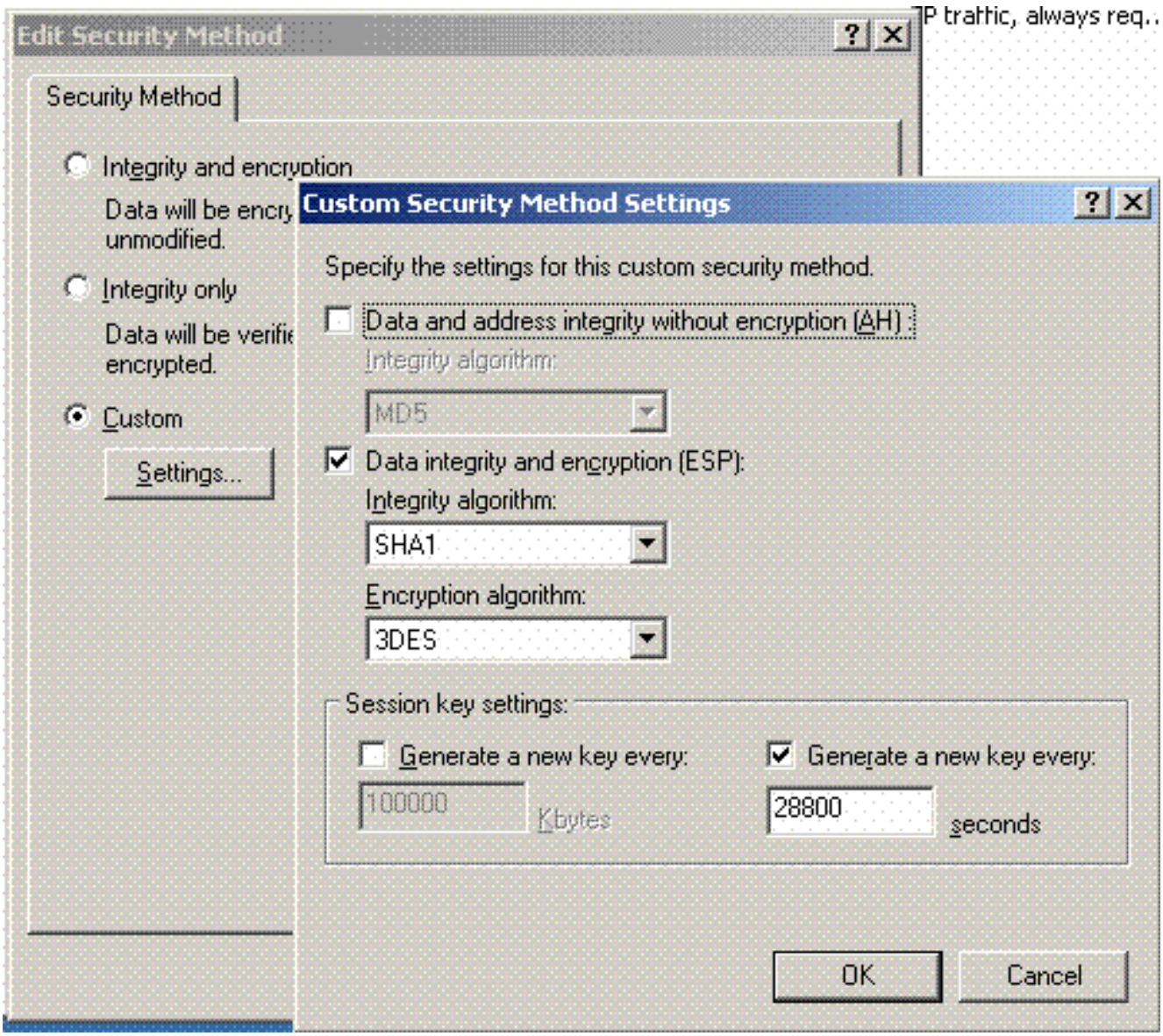
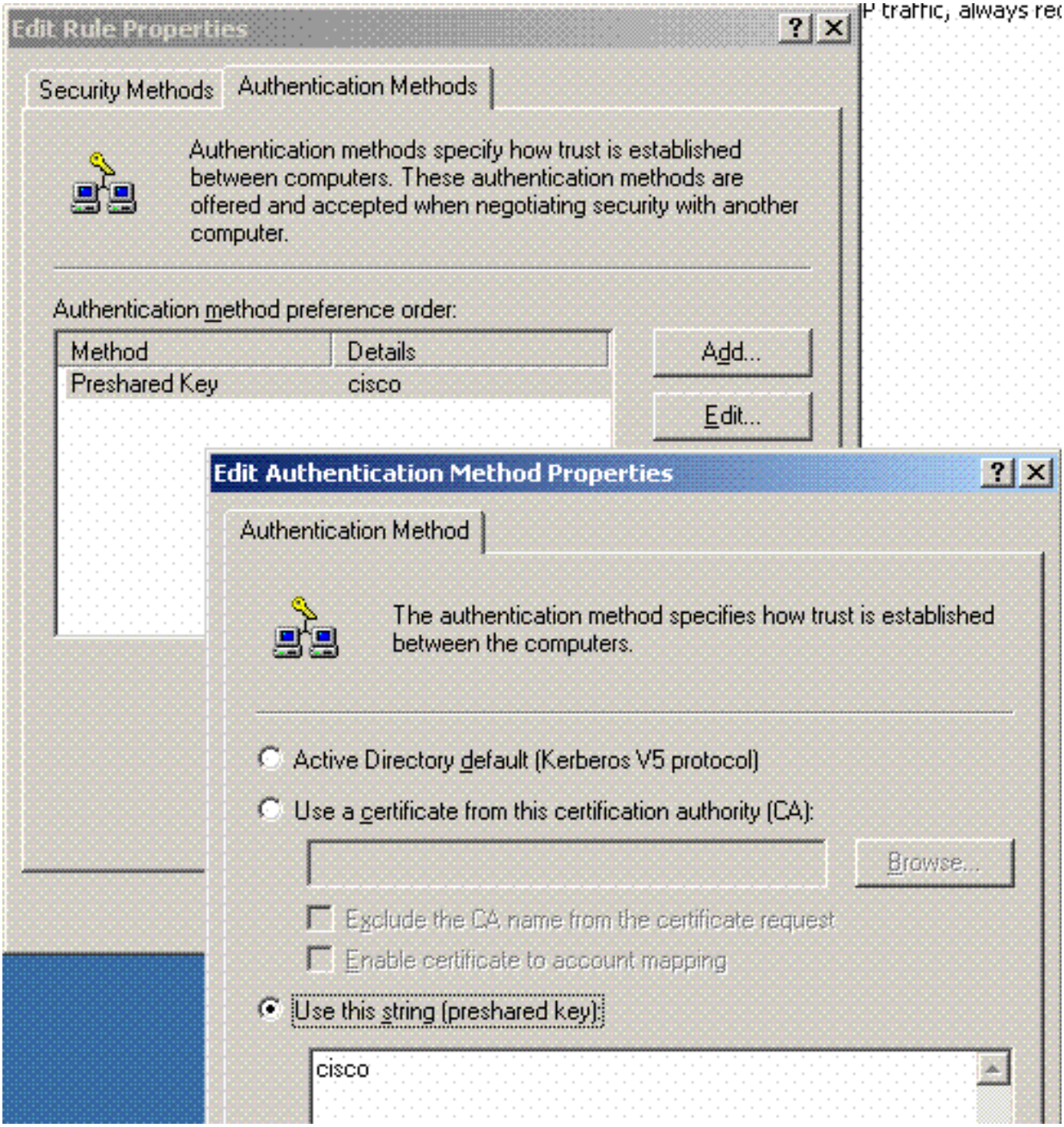
6. 点击**编辑安全方法**，并且点击**自定义**Settings单选按钮。选择这些设置。**Note:** 这些设置必须匹配控制器RADIUS IPSec安全设置。



7. 点击**认证方法**选项在编辑规则属性下。输入您在控制器RADIUS配置以前输入的同一个共有的秘密。



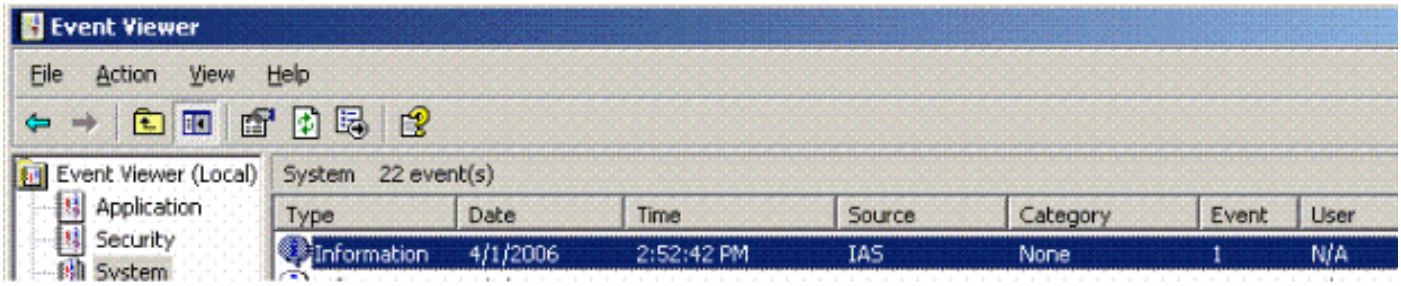
这时，控制器的所有配置， IAS和域安全设置完成。保存所有配置在控制器和WinServer并且重新启动所有机器。在使用测试的WLAN客户端，请安装根cert并且为WPA2/PEAP配置。在根cert在客户端上后安装，请重新启动客户端机器。在所有机器重新启动后，请联络客户端到WLAN并且捕获这些日志事件。

Note: 要求客户端连接为了设置控制器和WinServer RADIUS之间的IPSec连接。

Windows 2003个系统日志事件

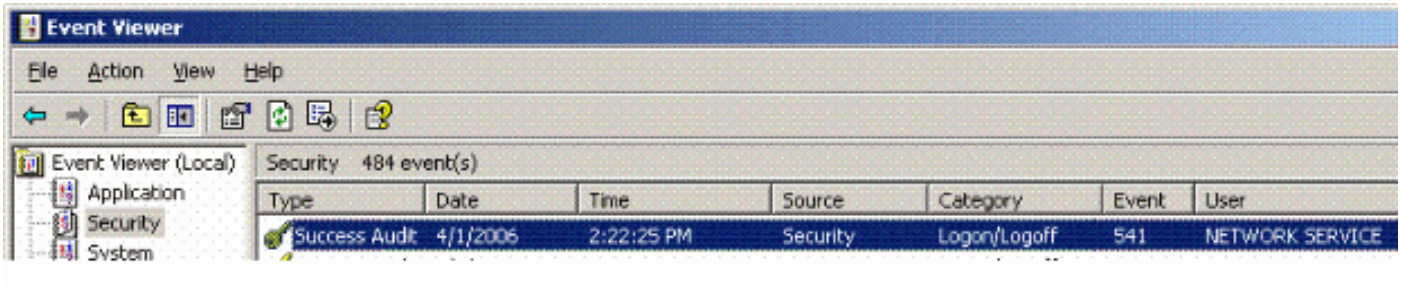
为WPA2/PEAP配置的成功的WLAN客户端连接有IPSec RADIUS功能在WinServer生成此系统事件：

```
192.168.30.105 = WinServer
192.168.30.2 = WLAN Controller
```




```
User TME0\Administrator was granted access.
Fully-Qualified-User-Name = tme.com/Users/Administrator
NAS-IP-Address = 192.168.30.2
NAS-Identifier = Cisco_40:5f:23
Client-Friendly-Name = 4404
Client-IP-Address = 192.168.30.2
Calling-Station-Identifier = 00-40-96-A6-D4-6D
NAS-Port-Type = Wireless - IEEE 802.11
NAS-Port = 1
Proxy-Policy-Name = Use Windows authentication for all users
Authentication-Provider = Windows
Authentication-Server = <undetermined>
Policy-Name = 4404
Authentication-Type = PEAP
EAP-Type = Secured password (EAP-MSCHAP v2)
```

一个成功的控制器<> RADIUS IPSec连接在WinServer日志生成此安全事件：




```
IKE security association established.
Mode: Data Protection Mode (Quick Mode)
Peer Identity: Preshared key ID.
Peer IP Address: 192.168.30.2
Filter:
Source IP Address 192.168.30.105
Source IP Address Mask 255.255.255.255
Destination IP Address 192.168.30.2
Destination IP Address Mask 255.255.255.255
Protocol 17
Source Port 1812
Destination Port 0
IKE Local Addr 192.168.30.105
IKE Peer Addr 192.168.30.2
IKE Source Port 500
IKE Destination Port 500
Peer Private Addr
Parameters:
ESP Algorithm Triple DES CBC
HMAC Algorithm SHA
AH Algorithm None
Encapsulation Transport Mode
InboundSpi 3531784413 (0xd282c0dd)
```

```
OutBoundSpi 4047139137 (0xf13a7141)
Lifetime (sec) 28800
Lifetime (kb) 100000
QM delta time (sec) 0
Total delta time (sec) 0
```

无线局域网控制器RADIUS IPSec成功调试示例

您能使用在控制器的debug命令**调试pm ikemsg enable (event)**为了验证此配置。下面是一个示例。

```
(Cisco Controller) >debug pm ikemsg enable
(Cisco Controller) >****** ERR: Connection timed out or error, calling callback
TX MM: 192.168.30.2 (Initiator) <-> 192.168.30.105 Icookie=0xaac8841687148dda Rc
ookie=0x0000000000000000
SA: doi=1 situation=0x1
Proposal 0, proto=ISAKMP, # transforms=1, SPI[0]
Transform#=0 TransformId=1, # SA Attributes = 6
EncrAlgo = 3DES-CBC
HashAlgo = SHA
AuthMethod = Pre-shared Key
GroupDescr =2
LifeType = secs
LifeDuration =28800
VID: vendor id[16] = 0x8f9cc94e 01248ecd f147594c 284b213b
VID: vendor id[16] = 0x27bab5dc 01ea0760 ea4e3190 ac27c0d0
VID: vendor id[16] = 0x6105c422 e76847e4 3f968480 1292aecd
VID: vendor id[16] = 0x4485152d 18b6bbcd 0be8a846 9579ddcc
VID: vendor id[16] = 0xcd604643 35df21f8 7cfdb2fc 68b6a448
VID: vendor id[16] = 0x90cb8091 3ebb696e 086381b5 ec427b1f
VID: vendor id[16] = 0x7d9419a6 5310ca6f 2c179d92 15529d56
VID: vendor id[16] = 0x12f5f28c 457168a9 702d9fe2 74cc0100
RX MM: 192.168.30.2 (Initiator) <-> 192.168.30.105 Icookie=0xaac8841687148dda Rc
ookie=0x064bdcaf50d5f555
SA: doi=1 situation=0x1
Proposal 1, proto=ISAKMP, # transforms=1 SPI[0]
Transform payload: transf#=1 transfId=1, # SA Attributes = 6
EncrAlgo= 3DES-CBC
HashAlgo= SHA
GroupDescr=2
AuthMethod= Pre-shared Key
LifeType= secs
LifeDuration=28800
VENDOR ID: data[20] = 0x1e2b5169 05991c7d 7c96fcbf b587e461 00000004
VENDOR ID: data[16] = 0x4048b7d5 6ebce885 25e7de7f 00d6c2d3
VENDOR ID: data[16] = 0x90cb8091 3ebb696e 086381b5 ec427b1f
TX MM: 192.168.30.2 (Initiator) <-> 192.168.30.105 Icookie=0xaac8841687148dda Rc
ookie=0x064bdcaf50d5f555
KE: ke[128] = 0x9644af13 b4275866 478d294f d5408dc5 e243fc58...
NONCE: nonce [16] = 0xede8dc12 c11be7a7 aa0640dd 4cd24657
PRV[payloadId=130]: data[20] = 0x1628f4af 61333b10 13390df8 85a0c0c2 93db6
c67
PRV[payloadId=130]: data[20] = 0xcf0bbd1c 55076966 94bccf4f e05e1533 191b1
378
RX MM: 192.168.30.2 (Initiator) <-> 192.168.30.105 Icookie=0xaac8841687148dda Rc
ookie=0x064bdcaf50d5f555
KE: ke[128] = 0x9f0420e5 b13adb04 a481e91c 8d1c4267 91c8b486...
NONCE: nonce[20] = 0x011a4520 04e31ba1 6089d2d6 347549c3 260ad104
PRV payloadId=130: data[20] = 0xcf0bbd1c 55076966 94bccf4f e05e1533 191b13
78
PRV payloadId=130: data[20] = 0x1628f4af 61333b10 13390df8 85a0c0c2 93db6c
67
TX MM: 192.168.30.2 (Initiator) <-> 192.168.30.105 Icookie=0xaac8841687148dda Rc
```

```
ookie=0x064bdcaf50d5f555
ID: packet[8] = 0x01000000 c0a81e69
HASH: hash[20] = 0x04814190 5d87caa1 221928de 820d9f6e ac2ef809
NOTIFY: doi=1 proto=ISAKMP type=INITIAL_CONTACT, spi[0]
NOTIFY: data[0]
RX MM: 192.168.30.2 (Initiator) <-> 192.168.30.105 Icookie=0xaac8841687148dda Rc
ookie=0x064bdcaf50d5f555
ID: packet[8] = 0x01000000 c0a81e69
HASH: hash[20] = 0x3b26e590 66651f13 2a86f62d 1b1d1e71 064b43f6
TX QM: 192.168.30.2 (Initiator) <-> 192.168.30.105 Icookie=0xaac8841687148dda Rc
ookie=0x064bdcaf50d5f555 msgid=0x73915967
HASH: hash[20] = 0x00000000 00000000 00000000 00000000 00000000
SA: doi=1 situation=0x1
Proposal 1, proto=ESP, # transforms=1, SPI[4] = 0xbb243261
Transform#=1 TransformId=3, # SA Attributes = 4
AuthAlgo = HMAC-SHA
LifeType = secs
LifeDuration =28800
EncapMode = Transport
NONCE: nonce [16] = 0x48a874dd 02d91720 29463981 209959bd
ID: packet[8] = 0x01110000 c0a81e02
ID: packet[8] = 0x01110714 c0a81e69
RX QM: 192.168.30.2 (Initiator) <-> 192.168.30.105 Icookie=0xaac8841687148dda Rc
ookie=0x064bdcaf50d5f555 msgid=0x73915967
HASH: hash[20] = 0x2228d010 84c6014e dd04ee05 4d15239a 32a9e2ba
SA: doi=1 situation=0x1
Proposal 1, proto=ESP, # transforms=1 SPI[4] = 0x7d117296
Transform payload: transf#=1 transfId=3, # SA Attributes = 4
LifeType= secs
LifeDuration=28800
EncapMode= Transport
AuthAlgo= HMAC-SHA
NONCE: nonce[20] = 0x5c4600e4 5938cbb0 760d47f4 024a59dd 63d7ddce
ID: packet[8] = 0x01110000 c0a81e02
ID: packet[8] = 0x01110714 c0a81e69
TX QM: 192.168.30.2 (Initiator) <-> 192.168.30.105 Icookie=0xaac8841687148dda Rc
ookie=0x064bdcaf50d5f555 msgid=0x73915967
HASH: hash[20] = 0x0e81093e bc26ebf3 d367297c d9f7c000 28a3662d
RX QM: 192.168.30.2 (Initiator) <-> 192.168.30.105 Icookie=0xaac8841687148dda Rc
ookie=0x064bdcaf50d5f555 msgid=0x73915967
HASH: hash[20] = 0xcb862635 2b30202f 83fc5d7a 2264619d b09faed2
NOTIFY: doi=1 proto=ESP type=CONNECTED, spi[4] = 0xbb243261
data[8] = 0x434f4e4e 45435431
```

Ethreal捕获

这是示例Ethreal捕获。

```
192.168.30.105 = WinServer
192.168.30.2 = WLAN Controller
192.168.30.107 = Authenticated WLAN client
No. Time Source Destination Protocol Info
1 0.000000 Cisco_42:d3:03 Spanning-tree-(for-bridges)_00 STP Conf.
   Root = 32769/00:14:a9:76:d7:c0 Cost = 4 Port = 0x8003
2 1.564706 192.168.30.2 192.168.30.105 ESP ESP (SPI=0x7d117296)
3 1.591426 192.168.30.105 192.168.30.2 ESP ESP (SPI=0xbb243261)
4 1.615600 192.168.30.2 192.168.30.105 ESP ESP (SPI=0x7d117296)
5 1.617243 192.168.30.105 192.168.30.2 ESP ESP (SPI=0xbb243261)
6 1.625168 192.168.30.2 192.168.30.105 ESP ESP (SPI=0x7d117296)
7 1.627006 192.168.30.105 192.168.30.2 ESP ESP (SPI=0xbb243261)
8 1.638414 192.168.30.2 192.168.30.105 ESP ESP (SPI=0x7d117296)
```

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9 1.639673 192.168.30.105 192.168.30.2 ESP ESP (SPI=0xbb243261)
10 1.658440 192.168.30.2 192.168.30.105 ESP ESP (SPI=0x7d117296)
11 1.662462 192.168.30.105 192.168.30.2 ESP ESP (SPI=0xbb243261)
12 1.673782 192.168.30.2 192.168.30.105 ESP ESP (SPI=0x7d117296)
13 1.674631 192.168.30.105 192.168.30.2 ESP ESP (SPI=0xbb243261)
14 1.687892 192.168.30.2 192.168.30.105 ESP ESP (SPI=0x7d117296)
15 1.708082 192.168.30.105 192.168.30.2 ESP ESP (SPI=0xbb243261)
16 1.743648 192.168.30.107 Broadcast LLC U, func=XID;
   DSAP NULL LSAP Individual, SSAP NULL LSAP Command
17 2.000073 Cisco_42:d3:03 Spanning-tree-(for-bridges)_00 STP Conf.
   Root = 32769/00:14:a9:76:d7:c0 Cost = 4 Port = 0x8003
18 4.000266 Cisco_42:d3:03 Spanning-tree-(for-bridges)_00 STP Conf.
   Root = 32769/00:14:a9:76:d7:c0 Cost = 4 Port = 0x8003
19 5.062531 Cisco_42:d3:03 Cisco_42:d3:03 LOOP Reply
20 5.192104 192.168.30.101 192.168.30.255 NBNS Name query NB PRINT.CISCO.COM<00>
21 5.942171 192.168.30.101 192.168.30.255 NBNS Name query NB PRINT.CISCO.COM<00>
22 6.000242 Cisco_42:d3:03 Spanning-tree-(for-bridges)_00 STP Conf.
   Root = 32769/00:14:a9:76:d7:c0 Cost = 4 Port = 0x8003
23 6.562944 192.168.30.2 192.168.30.105 ARP Who has 192.168.30.105? Tell 192.168.30.2
24 6.562982 192.168.30.105 192.168.30.2 ARP 192.168.30.105 is at 00:40:63:e3:19:c9
25 6.596937 192.168.30.107 Broadcast ARP 192.168.30.107 is at 00:13:ce:67:ae:d2
```

Related Information

- Cisco 无线局域网控制器配置指南 5.2 版
- Technical Support & Documentation - Cisco Systems