ASA Anyconnect VPN和与自定义模式和证书配置示例的OpenLDAP授权

目录

简介

本文描述如何配置OpenLDAP以自定义模式支持连接到思科可适应安全工具的Cisco AnyConnect安全移动客户端的每个用户的属性(ASA)。因为所有用户属性从OpenLDAP服务器，获取ASA配置相当基本。并且在本文描述在LDAP认证和授权的差异，当使用与证书一起。

先决条件

要求

Cisco 建议您了解以下主题：

- 关于Linux配置的基础知识
- 关于ASA CLI配置的基础知识

使用的组件

本文档中的信息基于以下软件版本：

- Cisco ASA版本8.4和以上
- OpenLDAP版本2.4.30

配置

基本OpenLDAP配置

步骤1.配置服务器。

此示例使用test-cisco.com ldap树。

ldap.conf文件用于设置能由本地ldap客户端使用的系统层默认。

注意：虽然您没有要求设置系统层默认，他们可帮助测试和排除故障servier，当您运行一个本地ldap客户端时。

/etc/openldap/ldap.conf ：

```
BASE   dc=test-cisco,dc=com
```

slapd.conf文件使用OpenLDAP服务器配置。默认模式文件包括用途广泛的LDAP定义。例如，在core.schema文件定义的对象类名称personis。此配置用途普通的模式和定义了其CISCO专用的属性的自己的模式。

/etc/openldap/slapd.conf ：

```
include         /etc/openldap/schema/core.schema
include /etc/openldap/schema/cosine.schema
include /etc/openldap/schema/inetorgperson.schema
include /etc/openldap/schema/openldap.schema
include /etc/openldap/schema/nis.schema

# Defines backend database type and redirects all # queries with specified suffix to that
database
database hdb
suffix "dc=test-cisco,dc=com"
checkpoint 32 30

# Rootdn will be used to perform all administrative tasks.
rootdn          "cn=Manager,dc=test-cisco,dc=com"

# Cleartext passwords, especially for the rootdn, should be avoid.
rootpw          secret

directory /var/lib/openldap-data
index objectClass eq
```

步骤2.验证IDAP配置。

为了验证基本OpenLDAP工作，请运行此配置：

```
include         /etc/openldap/schema/core.schema
include /etc/openldap/schema/cosine.schema
include /etc/openldap/schema/inetorgperson.schema
include /etc/openldap/schema/openldap.schema
include /etc/openldap/schema/nis.schema

# Defines backend database type and redirects all # queries with specified suffix to that
database
database hdb
suffix "dc=test-cisco,dc=com"
checkpoint 32 30
```

```
# Rootdn will be used to perform all administrative tasks.
rootdn          "cn=Manager,dc=test-cisco,dc=com"

# Cleartext passwords, especially for the rootdn, should be avoid.
rootpw          secret

directory /var/lib/openldap-data
index objectClass eq
```

步骤3.添加记录到数据库。

一旦hve测试的和配置的适当everthing，添加记录到数据库。 为了添加用户和组的基本容器，请运行此配置：

```
include         /etc/openldap/schema/core.schema
include /etc/openldap/schema/cosine.schema
include /etc/openldap/schema/inetorgperson.schema
include /etc/openldap/schema/openldap.schema
include /etc/openldap/schema/nis.schema

# Defines backend database type and redirects all # queries with specified suffix to that
database
database hdb
suffix "dc=test-cisco,dc=com"
checkpoint 32 30

# Rootdn will be used to perform all administrative tasks.
rootdn          "cn=Manager,dc=test-cisco,dc=com"

# Cleartext passwords, especially for the rootdn, should be avoid.
rootpw          secret

directory /var/lib/openldap-data
index objectClass eq
```

自定义Openldap模式

即然基本配置工作，您能添加自定义模式。在本例中配置示例，对象类名为*CiscoPerson*新类型创建，并且这些属性创建并且用于此对象类：

- CiscoBanner
- CiscoACLin
- CiscoDomain
- CiscoDNS
- CiscoIPAddress
- CiscoIPNetmask
- CiscoSplitACL
- CiscoSplitTunnelPolicy
- CiscoGroupPolicy

步骤1.创建在cisco.schema的新的模式。

```
include         /etc/openldap/schema/core.schema
include /etc/openldap/schema/cosine.schema
include /etc/openldap/schema/inetorgperson.schema
include /etc/openldap/schema/openldap.schema
include /etc/openldap/schema/nis.schema

# Defines backend database type and redirects all # queries with specified suffix to that
```

```
database
database hdb
suffix "dc=test-cisco,dc=com"
checkpoint 32 30

# Rootdn will be used to perform all administrative tasks.
rootdn          "cn=Manager,dc=test-cisco,dc=com"

# Cleartext passwords, especially for the rootdn, should be avoid.
rootpw          secret

directory /var/lib/openldap-data
index objectClass eq
```

重要说明

- 请使用私营企业OIDs您的公司。所有OIDs wor，但是最佳实践是使用IANA分配的OIDs。在本例中配置的那个从(由思科保留的1.3.6.1.4.1.9开始：http://www.iana.org/assignments/enterprise-numbers)。
- OID (500.1.1-500.1.9)的以下部分直接地在思科OID ("1.3.6.1.4.1.9")的主要树用于不干涉。
- 此数据库在模式/core.ldif使用定义的人对象类。对象是顶部类型和记录只能包括是的一个这样属性(CiscoPersonobject类为什么是辅助类型)。
- 名为*CiscoPerson的*对象类必须包括SN或CN，并且能包括定义的其中任一个自定义思科属性前。注意它在其他模式能也包括定义的所有其他属性(例如*userPassword*或*telephoneNumber*)。
- 切记每个对象应该有一个不同的OID编号。
- 自定义属性是案件不区分和与编码的UTF-8的*体串的类型*和最大数量128字符(定义由语法)。

步骤2.包括模式在sldap.conf。

```
pluton openldap # cat slapd.conf | grep include
include         /etc/openldap/schema/core.schema
include         /etc/openldap/schema/cosine.schema
include         /etc/openldap/schema/inetorgperson.schema
include         /etc/openldap/schema/openldap.schema
include         /etc/openldap/schema/nis.schema
include         /etc/openldap/schema/cisco.schema
```

步骤3.重新启动服务。

```
pluton openldap # cat slapd.conf | grep include
include         /etc/openldap/schema/core.schema
include         /etc/openldap/schema/cosine.schema
include         /etc/openldap/schema/inetorgperson.schema
include         /etc/openldap/schema/openldap.schema
include         /etc/openldap/schema/nis.schema
include         /etc/openldap/schema/cisco.schema
```

步骤4.添加有所有自定义属性的一个新用户。

在本例中，用户属于多个objectClass对象，并且继承从所有的属性。没有对现有的数据库数据库纪录的更改使用此进程它是容易添加另外的模式或属性。

```
pluton # cat users.ldiff
# User account
dn: uid=cisco,ou=people,dc=test-cisco,dc=com
cn: John Smith
givenName: John
sn: cisco
uid: cisco
uidNumber: 10000
gidNumber: 10000
homeDirectory: /home/cisco
```

```
mail: jsmith@dev.local
objectClass: top
objectClass: posixAccount
objectClass: shadowAccount
objectClass: inetOrgPerson
objectClass: organizationalPerson
objectClass: person
objectClass: CiscoPerson
loginShell: /bin/bash
userPassword: {CRYPT}*
CiscoBanner: This is banner 1
CiscoIPAddress: 10.1.1.1
CiscoIPNetmask: 255.255.255.128
CiscoDomain: domain1.com
CiscoDNS: 10.6.6.6
CiscoACLin: ip:inacl#1=permit ip 10.1.1.0 255.255.255.128 10.11.11.0 255.255.255.0
CiscoSplitACL: ACL1
CiscoSplitTunnelPolicy: 1
CiscoGroupPolicy: POLICY1

pluton # ldapadd -h 192.168.10.1 -D "CN=Manager,DC=test-cisco,DC=com"
-w secret -x -f users.ldiff
adding new entry "uid=cisco,ou=people,dc=test-cisco,dc=com"
```

步骤5.设置用户的密码。

```
pluton # cat users.ldiff
# User account
dn: uid=cisco,ou=people,dc=test-cisco,dc=com
cn: John Smith
givenName: John
sn: cisco
uid: cisco
uidNumber: 10000
gidNumber: 10000
homeDirectory: /home/cisco
mail: jsmith@dev.local
objectClass: top
objectClass: posixAccount
objectClass: shadowAccount
objectClass: inetOrgPerson
objectClass: organizationalPerson
objectClass: person
objectClass: CiscoPerson
loginShell: /bin/bash
userPassword: {CRYPT}*
CiscoBanner: This is banner 1
CiscoIPAddress: 10.1.1.1
CiscoIPNetmask: 255.255.255.128
CiscoDomain: domain1.com
CiscoDNS: 10.6.6.6
CiscoACLin: ip:inacl#1=permit ip 10.1.1.0 255.255.255.128 10.11.11.0 255.255.255.0
CiscoSplitACL: ACL1
CiscoSplitTunnelPolicy: 1
CiscoGroupPolicy: POLICY1

pluton # ldapadd -h 192.168.10.1 -D "CN=Manager,DC=test-cisco,DC=com"
-w secret -x -f users.ldiff
adding new entry "uid=cisco,ou=people,dc=test-cisco,dc=com"
```

步骤6.验证配置。

```
pluton # cat users.ldiff
# User account
dn: uid=cisco,ou=people,dc=test-cisco,dc=com
```

```
cn: John Smith
givenName: John
sn: cisco
uid: cisco
uidNumber: 10000
gidNumber: 10000
homeDirectory: /home/cisco
mail: jsmith@dev.local
objectClass: top
objectClass: posixAccount
objectClass: shadowAccount
objectClass: inetOrgPerson
objectClass: organizationalPerson
objectClass: person
objectClass: CiscoPerson
loginShell: /bin/bash
userPassword: {CRYPT}*
CiscoBanner: This is banner 1
CiscoIPAddress: 10.1.1.1
CiscoIPNetmask: 255.255.255.128
CiscoDomain: domain1.com
CiscoDNS: 10.6.6.6
CiscoACLin: ip:inacl#1=permit ip 10.1.1.0 255.255.255.128 10.11.11.0 255.255.255.0
CiscoSplitACL: ACL1
CiscoSplitTunnelPolicy: 1
CiscoGroupPolicy: POLICY1

pluton # ldapadd -h 192.168.10.1 -D "CN=Manager,DC=test-cisco,DC=com"
-w secret -x -f users.ldiff
adding new entry "uid=cisco,ou=people,dc=test-cisco,dc=com"
```

ASA 配置

步骤1.配置接口和证书。

```
pluton # cat users.ldiff
# User account
dn: uid=cisco,ou=people,dc=test-cisco,dc=com
cn: John Smith
givenName: John
sn: cisco
uid: cisco
uidNumber: 10000
gidNumber: 10000
homeDirectory: /home/cisco
mail: jsmith@dev.local
objectClass: top
objectClass: posixAccount
objectClass: shadowAccount
objectClass: inetOrgPerson
objectClass: organizationalPerson
objectClass: person
objectClass: CiscoPerson
loginShell: /bin/bash
userPassword: {CRYPT}*
CiscoBanner: This is banner 1
CiscoIPAddress: 10.1.1.1
CiscoIPNetmask: 255.255.255.128
CiscoDomain: domain1.com
CiscoDNS: 10.6.6.6
CiscoACLin: ip:inacl#1=permit ip 10.1.1.0 255.255.255.128 10.11.11.0 255.255.255.0
CiscoSplitACL: ACL1
CiscoSplitTunnelPolicy: 1
```

```
CiscoGroupPolicy: POLICY1

pluton # ldapadd -h 192.168.10.1 -D "CN=Manager,DC=test-cisco,DC=com"
-w secret -x -f users.ldiff
adding new entry "uid=cisco,ou=people,dc=test-cisco,dc=com"
```

步骤2.生成自签名证书。

```
pluton # cat users.ldiff
# User account
dn: uid=cisco,ou=people,dc=test-cisco,dc=com
cn: John Smith
givenName: John
sn: cisco
uid: cisco
uidNumber: 10000
gidNumber: 10000
homeDirectory: /home/cisco
mail: jsmith@dev.local
objectClass: top
objectClass: posixAccount
objectClass: shadowAccount
objectClass: inetOrgPerson
objectClass: organizationalPerson
objectClass: person
objectClass: CiscoPerson
loginShell: /bin/bash
userPassword: {CRYPT}*
CiscoBanner: This is banner 1
CiscoIPAddress: 10.1.1.1
CiscoIPNetmask: 255.255.255.128
CiscoDomain: domain1.com
CiscoDNS: 10.6.6.6
CiscoACLin: ip:inacl#1=permit ip 10.1.1.0 255.255.255.128 10.11.11.0 255.255.255.0
CiscoSplitACL: ACL1
CiscoSplitTunnelPolicy: 1
CiscoGroupPolicy: POLICY1

pluton # ldapadd -h 192.168.10.1 -D "CN=Manager,DC=test-cisco,DC=com"
-w secret -x -f users.ldiff
adding new entry "uid=cisco,ou=people,dc=test-cisco,dc=com"
```

步骤3.在外部接口的Enable (event) WebVPN。

```
pluton # cat users.ldiff
# User account
dn: uid=cisco,ou=people,dc=test-cisco,dc=com
cn: John Smith
givenName: John
sn: cisco
uid: cisco
uidNumber: 10000
gidNumber: 10000
homeDirectory: /home/cisco
mail: jsmith@dev.local
objectClass: top
objectClass: posixAccount
objectClass: shadowAccount
objectClass: inetOrgPerson
objectClass: organizationalPerson
objectClass: person
objectClass: CiscoPerson
loginShell: /bin/bash
userPassword: {CRYPT}*
CiscoBanner: This is banner 1
```

```
CiscoIPAddress: 10.1.1.1
CiscoIPNetmask: 255.255.255.128
CiscoDomain: domain1.com
CiscoDNS: 10.6.6.6
CiscoACLin: ip:inacl#1=permit ip 10.1.1.0 255.255.255.128 10.11.11.0 255.255.255.0
CiscoSplitACL: ACL1
CiscoSplitTunnelPolicy: 1
CiscoGroupPolicy: POLICY1

pluton # ldapadd -h 192.168.10.1 -D "CN=Manager,DC=test-cisco,DC=com"
-w secret -x -f users.ldiff
adding new entry "uid=cisco,ou=people,dc=test-cisco,dc=com"
```

步骤4.拆分ACL配置。

ACL名称由OpenLDAP返回：

```
pluton # cat users.ldiff
# User account
dn: uid=cisco,ou=people,dc=test-cisco,dc=com
cn: John Smith
givenName: John
sn: cisco
uid: cisco
uidNumber: 10000
gidNumber: 10000
homeDirectory: /home/cisco
mail: jsmith@dev.local
objectClass: top
objectClass: posixAccount
objectClass: shadowAccount
objectClass: inetOrgPerson
objectClass: organizationalPerson
objectClass: person
objectClass: CiscoPerson
loginShell: /bin/bash
userPassword: {CRYPT}*
CiscoBanner: This is banner 1
CiscoIPAddress: 10.1.1.1
CiscoIPNetmask: 255.255.255.128
CiscoDomain: domain1.com
CiscoDNS: 10.6.6.6
CiscoACLin: ip:inacl#1=permit ip 10.1.1.0 255.255.255.128 10.11.11.0 255.255.255.0
CiscoSplitACL: ACL1
CiscoSplitTunnelPolicy: 1
CiscoGroupPolicy: POLICY1

pluton # ldapadd -h 192.168.10.1 -D "CN=Manager,DC=test-cisco,DC=com"
-w secret -x -f users.ldiff
adding new entry "uid=cisco,ou=people,dc=test-cisco,dc=com"
```

步骤5.创建使用默认组政策的组名(DfltAccessPolicy)。

有特定LDAP属性的(*CiscoGroupPolicy*)用户被映射对另一项策略：POLICY1

```
pluton # cat users.ldiff
# User account
dn: uid=cisco,ou=people,dc=test-cisco,dc=com
cn: John Smith
givenName: John
sn: cisco
uid: cisco
uidNumber: 10000
gidNumber: 10000
```

```
homeDirectory: /home/cisco
mail: jsmith@dev.local
objectClass: top
objectClass: posixAccount
objectClass: shadowAccount
objectClass: inetOrgPerson
objectClass: organizationalPerson
objectClass: person
objectClass: CiscoPerson
loginShell: /bin/bash
userPassword: {CRYPT}*
CiscoBanner: This is banner 1
CiscoIPAddress: 10.1.1.1
CiscoIPNetmask: 255.255.255.128
CiscoDomain: domain1.com
CiscoDNS: 10.6.6.6
CiscoACLin: ip:inacl#1=permit ip 10.1.1.0 255.255.255.128 10.11.11.0 255.255.255.0
CiscoSplitACL: ACL1
CiscoSplitTunnelPolicy: 1
CiscoGroupPolicy: POLICY1

pluton # ldapadd -h 192.168.10.1 -D "CN=Manager,DC=test-cisco,DC=com"
-w secret -x -f users.ldiff
adding new entry "uid=cisco,ou=people,dc=test-cisco,dc=com"
```

ASA AAA服务器配置用途映射的ldap属性映射从OpenLDAP返回的属性对可以由Anyconnect用户的ASA解释的属性。

```
pluton # cat users.ldiff
# User account
dn: uid=cisco,ou=people,dc=test-cisco,dc=com
cn: John Smith
givenName: John
sn: cisco
uid: cisco
uidNumber: 10000
gidNumber: 10000
homeDirectory: /home/cisco
mail: jsmith@dev.local
objectClass: top
objectClass: posixAccount
objectClass: shadowAccount
objectClass: inetOrgPerson
objectClass: organizationalPerson
objectClass: person
objectClass: CiscoPerson
loginShell: /bin/bash
userPassword: {CRYPT}*
CiscoBanner: This is banner 1
CiscoIPAddress: 10.1.1.1
CiscoIPNetmask: 255.255.255.128
CiscoDomain: domain1.com
CiscoDNS: 10.6.6.6
CiscoACLin: ip:inacl#1=permit ip 10.1.1.0 255.255.255.128 10.11.11.0 255.255.255.0
CiscoSplitACL: ACL1
CiscoSplitTunnelPolicy: 1
CiscoGroupPolicy: POLICY1

pluton # ldapadd -h 192.168.10.1 -D "CN=Manager,DC=test-cisco,DC=com"
-w secret -x -f users.ldiff
adding new entry "uid=cisco,ou=people,dc=test-cisco,dc=com"
```

步骤6.启用验证的LDAP服务器指定的隧道群的。

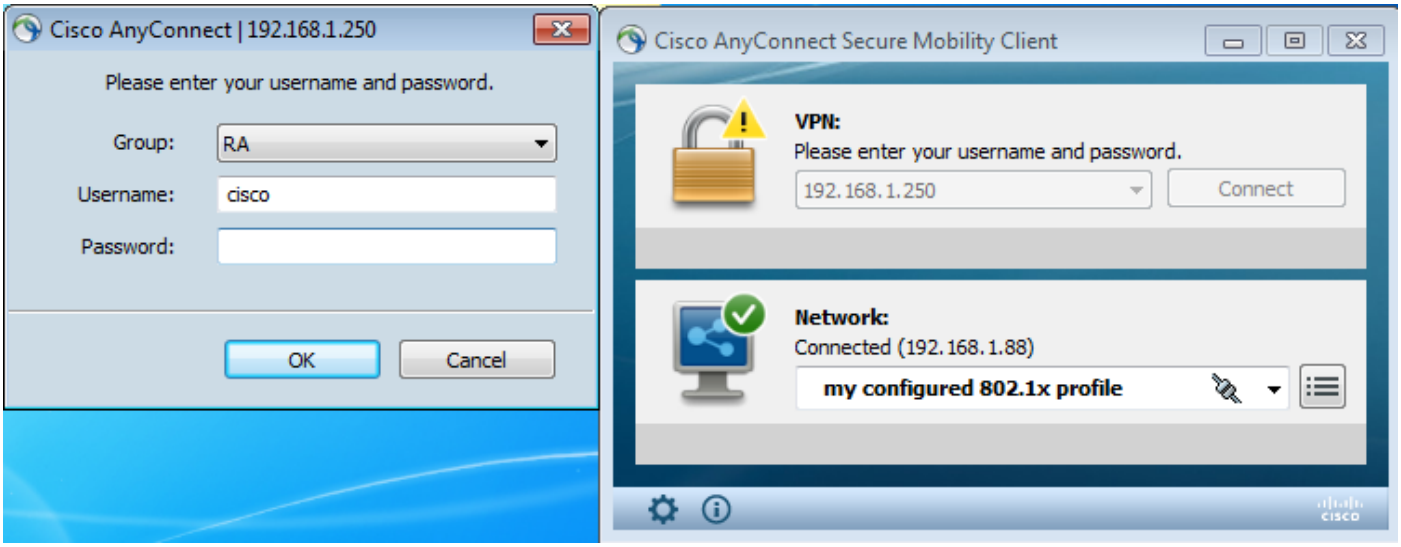
```
pluton # cat users.ldiff
# User account
dn: uid=cisco,ou=people,dc=test-cisco,dc=com
cn: John Smith
givenName: John
sn: cisco
uid: cisco
uidNumber: 10000
gidNumber: 10000
homeDirectory: /home/cisco
mail: jsmith@dev.local
objectClass: top
objectClass: posixAccount
objectClass: shadowAccount
objectClass: inetOrgPerson
objectClass: organizationalPerson
objectClass: person
objectClass: CiscoPerson
loginShell: /bin/bash
userPassword: {CRYPT}*
CiscoBanner: This is banner 1
CiscoIPAddress: 10.1.1.1
CiscoIPNetmask: 255.255.255.128
CiscoDomain: domain1.com
CiscoDNS: 10.6.6.6
CiscoACLin: ip:inacl#1=permit ip 10.1.1.0 255.255.255.128 10.11.11.0 255.255.255.0
CiscoSplitACL: ACL1
CiscoSplitTunnelPolicy: 1
CiscoGroupPolicy: POLICY1

pluton # ldapadd -h 192.168.10.1 -D "CN=Manager,DC=test-cisco,DC=com"
-w secret -x -f users.ldiff
adding new entry "uid=cisco,ou=people,dc=test-cisco,dc=com"
```

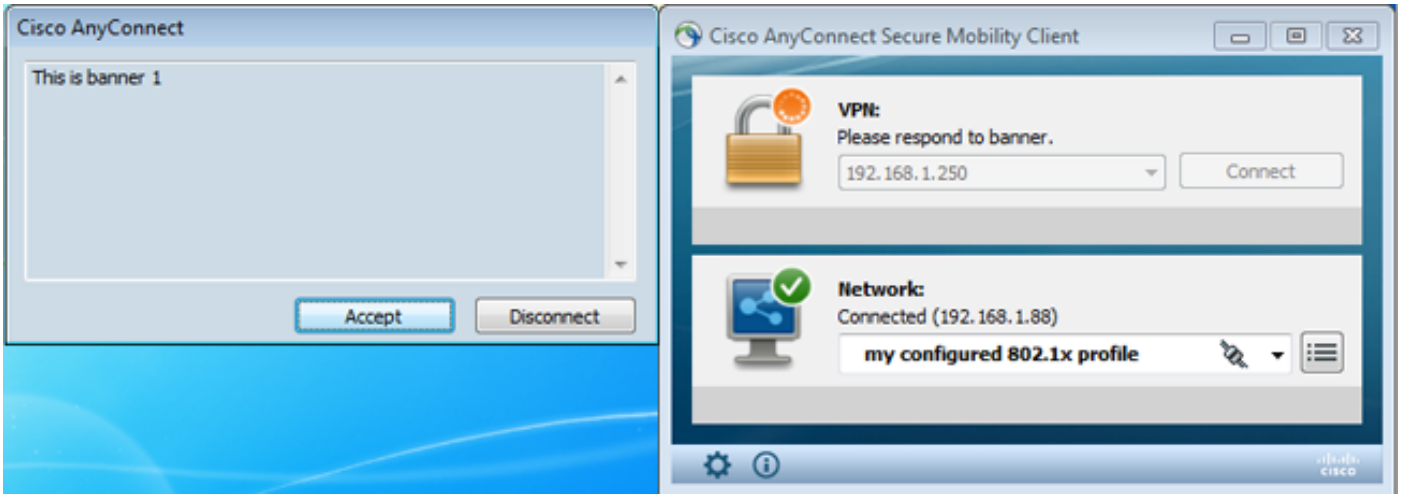
验证

测试VPN访问

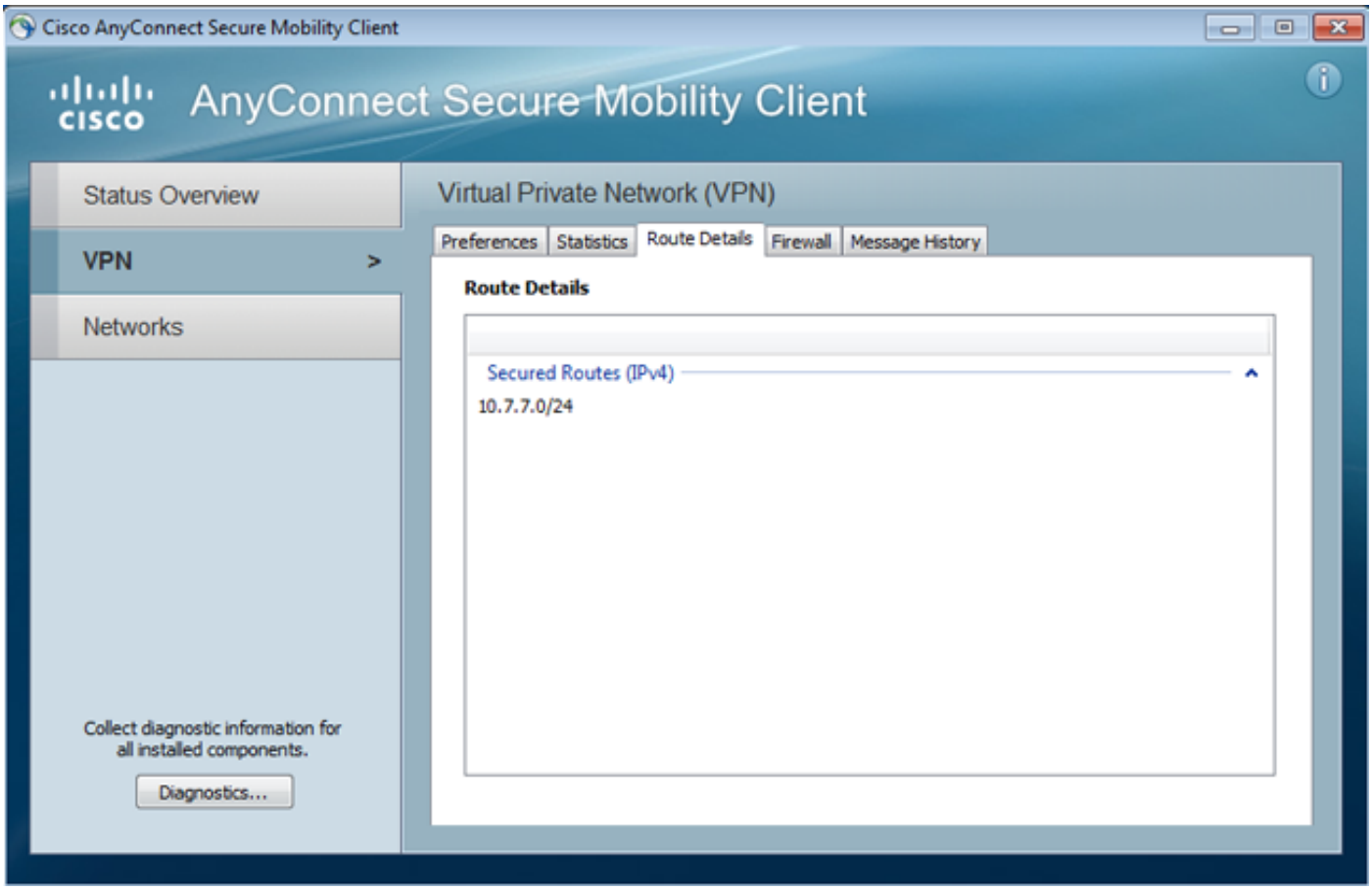
Anyconnect配置连接到192.168.1.250。洛金是用户名*cisco*和密码*pass1*。



在验证以后使用正确标语。



正确已分解ACL发送(在ASA定义的ACL1)。



Anyconnect接口配置与IP:10.1.1.1和网络屏蔽255.255.255.128。域是domain1.com，并且DNS服务器是10.6.6.6。

```
Ethernet adapter Połączenie lokalne 2:

   Connection-specific DNS Suffix  . : domain1.com
   Description . . . . . . . . . . . : Cisco AnyConnect Secure Mobility Client V
irtual Miniport Adapter for Windows x64
   Physical Address. . . . . . . . . : 00-05-9A-3C-7A-00
   DHCP Enabled. . . . . . . . . . . : No
   Autoconfiguration Enabled . . . . : Yes
   Link-local IPv6 Address . . . . . : fe80::2015:d34b:e3a8:1787%14(Preferred)
   Link-local IPv6 Address . . . . . : fe80::3a02:5a4a:4b9b:ddf2%14(Preferred)
   Link-local IPv6 Address . . . . . : fe80::4fd8:3523:c111:ad1d%14(Preferred)
   IPv4 Address. . . . . . . . . . . : 10.1.1.1(Preferred)
   Subnet Mask . . . . . . . . . . . : 255.255.255.128
   Default Gateway . . . . . . . . . :
   DNS Servers . . . . . . . . . . . : 10.6.6.6
   NetBIOS over Tcpip. . . . . . . . : Enabled
```

在ASA，用户*cisco*接收IP:10.1.1.1和分配分组策略*POLICY1*。

```
ASA# show vpn-sessiondb detail anyconnect

Session Type: AnyConnect Detailed

Username     : cisco                  Index        : 29
Assigned IP  : 10.1.1.1               Public IP    : 192.168.1.88
Protocol     : AnyConnect-Parent SSL-Tunnel
License      : AnyConnect Premium
Encryption   : RC4                    Hashing      : none SHA1
Bytes Tx     : 10212                  Bytes Rx     : 856
Pkts Tx      : 8                      Pkts Rx      : 2
Pkts Tx Drop : 0                      Pkts Rx Drop : 0
Group Policy : POLICY1                Tunnel Group : RA
Login Time   : 10:18:25 UTC Thu Apr 4 2013
Duration     : 0h:00m:17s
Inactivity   : 0h:00m:00s
NAC Result   : Unknown
VLAN Mapping : N/A                    VLAN         : none

AnyConnect-Parent Tunnels: 1
SSL-Tunnel Tunnels: 1

AnyConnect-Parent:
 Tunnel ID    : 29.1
 Public IP    : 192.168.1.88
 Encryption   : none                   TCP Src Port : 49262
 TCP Dst Port : 443                    Auth Mode    : userPassword
 Idle Time Out: 30 Minutes             Idle TO Left : 29 Minutes
 Client Type  : AnyConnect
 Client Ver   : 3.1.01065
 Bytes Tx     : 5106                   Bytes Rx     : 788
 Pkts Tx      : 4                      Pkts Rx      : 1
 Pkts Tx Drop : 0                      Pkts Rx Drop : 0

SSL-Tunnel:
 Tunnel ID    : 29.2
 Assigned IP  : 10.1.1.1               Public IP    : 192.168.1.88
 Encryption   : RC4                    Hashing      : SHA1
 Encapsulation: TLSv1.0                TCP Src Port : 49265
 TCP Dst Port : 443                    Auth Mode    : userPassword
 Idle Time Out: 30 Minutes             Idle TO Left : 29 Minutes
 Client Type  : SSL VPN Client
 Client Ver   : Cisco AnyConnect VPN Agent for Windows 3.1.01065
 Bytes Tx     : 5106                   Bytes Rx     : 68
 Pkts Tx      : 4                      Pkts Rx      : 1
 Pkts Tx Drop : 0                      Pkts Rx Drop : 0
 Filter Name  : AAA-user-cisco-E0CF3C05

NAC:
 Reval Int (T): 0 Seconds              Reval Left(T): 0 Seconds
 SQ Int (T)   : 0 Seconds              EoU Age(T)   : 17 Seconds
 Hold Left (T): 0 Seconds              Posture Token:
```

并且，动态访问列表为该用户安装：

```
ASA# show access-list AAA-user-cisco-E0CF3C05
access-list AAA-user-cisco-E0CF3C05; 1 elements; name hash: 0xf9b6b75c (dynamic)
access-list AAA-user-cisco-E0CF3C05 line 1 extended permit
ip 10.1.1.0 255.255.255.128 10.11.11.0 255.255.255.0
(hitcnt=0) 0xf8010475
```

调试

在您关闭调试，您能跟踪WebVPN会话的每个步骤后。

此示例与属性检索一起显示LDAP认证：

```
ASA# show debug
debug ldap  enabled at level 255
debug webvpn anyconnect enabled at level 254
ASA#
[63] Session Start
[63] New request Session, context 0xbbe10120, reqType = Authentication
[63] Fiber started
[63] Creating LDAP context with uri=ldap://192.168.11.10:389
[63] Connect to LDAP server: ldap://192.168.11.10:389, status = Successful
[63] supportedLDAPVersion: value = 3
[63] Binding as Manager
[63] Performing Simple authentication for Manager to 192.168.11.10
[63] LDAP Search:
       Base DN = [DC=test-cisco,DC=com]
       Filter  = [uid=cisco]
       Scope   = [SUBTREE]
[63] User DN = [uid=cisco,ou=People,dc=test-cisco,dc=com]
[63] Server type for 192.168.11.10 unknown - no password policy
[63] Binding as cisco
[63] Performing Simple authentication for cisco to 192.168.11.10
[63] Processing LDAP response for user cisco
[63] Authentication successful for cisco to 192.168.11.10
[63] Retrieved User Attributes:
[63]    cn: value = John Smith
[63]    givenName: value = John
[63]    sn: value = cisco
[63]    uid: value = cisco
[63]    uidNumber: value = 10000
[63]    gidNumber: value = 10000
[63]    homeDirectory: value = /home/cisco
[63]    mail: value = jsmith@dev.local
[63]    objectClass: value = top
[63]    objectClass: value = posixAccount
[63]    objectClass: value = shadowAccount
[63]    objectClass: value = inetOrgPerson
[63]    objectClass: value = organizationalPerson
[63]    objectClass: value = person
[63]    objectClass: value = CiscoPerson
[63]    loginShell: value = /bin/bash
```

重要!自定义LDAP属性被映射对ASA属性如对ldap属性映射定义：

```
[63]    CiscoBanner: value = This is banner 1
[63]            mapped to Banner1: value = This is banner 1
[63]    CiscoIPAddress: value = 10.1.1.1
[63]            mapped to IETF-Radius-Framed-IP-Address: value = 10.1.1.1
[63]    CiscoIPNetmask: value = 255.255.255.128
[63]            mapped to IETF-Radius-Framed-IP-Netmask: value = 255.255.255.128
[63]    CiscoDomain: value = domain1.com
[63]            mapped to IPSec-Default-Domain: value = domain1.com
[63]    CiscoDNS: value = 10.6.6.6
[63]            mapped to Primary-DNS: value = 10.6.6.6
[63]    CiscoACLin: value = ip:inacl#1=permit
ip 10.1.1.0 255.255.255.128 10.11.11.0 255.255.255.0
[63]            mapped to Cisco-AV-Pair: value = ip:inacl#1=permit
ip 10.1.1.0 255.255.255.128 10.11.11.0 255.255.255.0
[63]    CiscoSplitACL: value = ACL1
[63]            mapped to IPSec-Split-Tunnel-List: value = ACL1
[63]    CiscoSplitTunnelPolicy: value = 1
[63]            mapped to IPSec-Split-Tunneling-Policy: value = 1
[63]    CiscoGroupPolicy: value = POLICY1
[63]            mapped to IETF-Radius-Class: value = POLICY1
```

```
[63]            mapped to LDAP-Class: value = POLICY1
[63]    userPassword: value = {SSHA}5s81Fmi/9aG/WfPSy3lGmw1ORI4lywWC
[63] ATTR_CISCO_AV_PAIR attribute contains 68 bytes
[63] Fiber exit Tx=315 bytes Rx=907 bytes, status=1
[63] Session End
```

LDAP会话完成。现在，ASA处理并且适用那些属性。

动态ACL创建(基于ACE条目cisco-av-pair)：

```
webvpn_svc_parse_acl: processing ACL: name: 'AAA-user-cisco-E0CF3C05',
list: YES, id -1
webvpn_svc_parse_acl: before add: acl_id: -1, acl_name: AAA-user-cisco-E0CF3C05
webvpn_svc_parse_acl: after add: acl_id: 5, acl_name: AAA-user-cisco-E0CF3C05,
refcnt: 1
```

WebVPN会话收益：

```
webvpn_rx_data_tunnel_connect
CSTP state = HEADER_PROCESSING
http_parse_cstp_method()
...input: 'CONNECT /CSCOSSLC/tunnel HTTP/1.1'
webvpn_cstp_parse_request_field()
...input: 'Host: 192.168.1.250'
Processing CSTP header line: 'Host: 192.168.1.250'
webvpn_cstp_parse_request_field()
...input: 'User-Agent: Cisco AnyConnect VPN Agent for Windows 3.1.01065'
Processing CSTP header line: 'User-Agent: Cisco AnyConnect VPN Agent
for Windows 3.1.01065'
Setting user-agent to: 'Cisco AnyConnect VPN Agent for Windows 3.1.01065'
webvpn_cstp_parse_request_field()
...input: 'Cookie: webvpn=1476503744@122880@
1365070898@908F356D1C1F4CDF1138088854AF0E480FDCB1BD'
Processing CSTP header line: 'Cookie: webvpn=1476503744@122880@
1365070898@908F356D1C1F4CDF1138088854AF0E480FDCB1BD'
Found WebVPN cookie: 'webvpn=1476503744@122880@
1365070898@908F356D1C1F4CDF1138088854AF0E480FDCB1BD'
WebVPN Cookie: 'webvpn=1476503744@122880@1365070898@
908F356D1C1F4CDF1138088854AF0E480FDCB1BD'
IPADDR: '1476503744', INDEX: '122880', LOGIN: '1365070898'
webvpn_cstp_parse_request_field()
...input: 'X-CSTP-Version: 1'
Processing CSTP header line: 'X-CSTP-Version: 1'
Setting version to '1'
webvpn_cstp_parse_request_field()
...input: 'X-CSTP-Hostname: admin-Komputer'
Processing CSTP header line: 'X-CSTP-Hostname: admin-Komputer'
Setting hostname to: 'admin-Komputer'
webvpn_cstp_parse_request_field()
...input: 'X-CSTP-MTU: 1367'
Processing CSTP header line: 'X-CSTP-MTU: 1367'
webvpn_cstp_parse_request_field()
...input: 'X-CSTP-Address-Type: IPv6,IPv4'
Processing CSTP header line: 'X-CSTP-Address-Type: IPv6,IPv4'
webvpn_cstp_parse_request_field()
...input: 'X-CSTP-Local-Address-IP4: 192.168.1.88'
webvpn_cstp_parse_request_field()
...input: 'X-CSTP-Base-MTU: 1468'
webvpn_cstp_parse_request_field()
...input: 'X-CSTP-Remote-Address-IP4: 192.168.1.250'
webvpn_cstp_parse_request_field()
...input: 'X-CSTP-Full-IPv6-Capability: true'
webvpn_cstp_parse_request_field()
...input: 'X-DTLS-Master-Secret: F5ADDD0151261404504FC3B165C3B68A90E51
```

```
A1C8EB7EA9B2FE70F1EB8E10929FFD79650B07E218EC8774678CDE1FB5E'
Processing CSTP header line: 'X-DTLS-Master-Secret: F5ADDD015126140450
4FC3B165C3B68A90E51A1C8EB7EA9B2FE70F1EB8E10929FFD79650B07E2
18EC8774678CDE1FB5E'
webvpn_cstp_parse_request_field()
...input: 'X-DTLS-CipherSuite: AES256-SHA:AES128-SHA:DES-CBC3-SHA:DES-CBC-SHA'
Processing CSTP header line: 'X-DTLS-CipherSuite: AES256-SHA:AES128-SHA:
DES-CBC3-SHA:DES-CBC-SHA'
webvpn_cstp_parse_request_field()
...input: 'X-DTLS-Accept-Encoding: lzs'
Processing CSTL header line: 'X-DTLS-Accept-Encoding: lzs'
webvpn_cstp_parse_request_field()
...input: 'X-DTLS-Header-Pad-Length: 0'
webvpn_cstp_parse_request_field()
...input: 'X-CSTP-Accept-Encoding: lzs,deflate'
Processing CSTP header line: 'X-CSTP-Accept-Encoding: lzs,deflate'
webvpn_cstp_parse_request_field()
...input: 'X-CSTP-Protocol: Copyright (c) 2004 Cisco Systems, Inc.'
Processing CSTP header line: 'X-CSTP-Protocol:
Copyright (c) 2004 Cisco Systems, Inc.'
```

其次，地址分配发生。那里公告是在ASA定义的没有IP池。如果LDAP不返回是被映射的IETF RADIUS成帧IP*地址*和使用IP地址分配)的*CiscoIPAddress*属性(配置在此阶段将发生故障。

```
Validating address: 10.1.1.1
CSTP state = WAIT_FOR_ADDRESS
webvpn_cstp_accept_address: 10.1.1.1/255.255.255.128
webvpn_cstp_accept_ipv6_address: No IPv6 Address
CSTP state = HAVE_ADDRESS
```

WebVPN会话完成：

```
SVC: NP setup
np_svc_create_session(0x1E000, 0xb5eafa80, TRUE)
webvpn_svc_np_setup
SVC ACL Name: AAA-user-cisco-E0CF3C05
SVC ACL ID: 5
SVC ACL ID: 5
vpn_put_uauth success!
SVC IPv6 ACL Name: NULL
SVC IPv6 ACL ID: -1
SVC: adding to sessmgmt
SVC: Sending response
Sending X-CSTP-FW-RULE msgs: Start
Sending X-CSTP-FW-RULE msgs: Done
Sending X-CSTP-Quarantine: false
Sending X-CSTP-Disable-Always-On-VPN: false
Unable to initiate NAC, NAC might not be enabled or invalid policy
CSTP state = CONNECTED
```

ASA分开的认证和授权

有时分离认证和授权进程最好的。例如，请使用密码验证本地定义的用户;然后，在成功的本地认证以后，请从LDAP服务器获取所有用户属性：

```
SVC: NP setup
np_svc_create_session(0x1E000, 0xb5eafa80, TRUE)
webvpn_svc_np_setup
SVC ACL Name: AAA-user-cisco-E0CF3C05
SVC ACL ID: 5
SVC ACL ID: 5
vpn_put_uauth success!
SVC IPv6 ACL Name: NULL
```

```
SVC IPv6 ACL ID: -1
SVC: adding to sessmgmt
SVC: Sending response
Sending X-CSTP-FW-RULE msgs: Start
Sending X-CSTP-FW-RULE msgs: Done
Sending X-CSTP-Quarantine: false
Sending X-CSTP-Disable-Always-On-VPN: false
Unable to initiate NAC, NAC might not be enabled or invalid policy
CSTP state = CONNECTED
```

差异在LDAP会话上。在前一个示例中， ASA ：

- 对OpenLDAP的已绑定的与管理器凭证，
- 用户的*cisco*被执行的搜索，和
- 已绑定的(简单验证)对与思科凭证的OpenLDAP。

目前，因为用户通过本地数据库，已经验证与LDAP授权，第三步不再是必要的。

更多常见情况介入RSA令牌使用情况认证过程和LDAP/AD属性的授权的。

从LDAP和本地组的ASA属性

了解在LDAP属性和RADIUS属性之间的区别是重要的。

当您使用LDAP时， ASA不允许映射对任何*RADIUS属性*。例如，当您使用RADIUS时，是可能的返回*cisco-av-pair*属性217 (地址池)。该属性定义了是被使用的分配IP地址IP地址的一个本地配置池。

使用LDAP映射，使用特定*cisco-av-pair*属性无法的。与LDAP映射的*cisco-av-pair*属性可以用于只指定不同种类的ACL。

在LDAP的这些限制防止它是一样灵活象Radius。对workaroud此本地定义的组策略在与不可能从ldap被映射的属性的ASA可以创建(类似地址池)。一旦LDAP用户验证，他们分配到该组策略(在我们的示例POLICY1)，并且非使用物精确归因于从组政策reretrieved的。

LDAP映射支持的全双工属性列表可以在本文找到：Cisco ASA 5500系列配置指南使用CLI， 8.4和8.6

您能比较到RADIUS ASA支持的VPN3000属性详尽列表;参考本文：Cisco ASA 5500系列配置指南使用CLI， 8.4和8.6

参考RADIUS ASA支持的IETF属性详尽列表的本文：Cisco ASA 5500系列配置指南使用CLI， 8.4和8.6

ASA和LDAP与证书验证

ASA不支持LDAP证书属性检索和二进制比较跟Anyconnect提供的证书。该功能为Cisco ACS或ISE保留(和仅为802.1x恳求者)，因为VPN验证在网络接入设备(纳季)终止。

有另一soluction。当用户认证使用证书时， ASA执行证书确认，并且能从证书获取根据特定字段的LDAP属性(例如， CN) ：

```
SVC: NP setup
np_svc_create_session(0x1E000, 0xb5eafa80, TRUE)
webvpn_svc_np_setup
```

```
SVC ACL Name: AAA-user-cisco-E0CF3C05
SVC ACL ID: 5
SVC ACL ID: 5
vpn_put_uauth success!
SVC IPv6 ACL Name: NULL
SVC IPv6 ACL ID: -1
SVC: adding to sessmgmt
SVC: Sending response
Sending X-CSTP-FW-RULE msgs: Start
Sending X-CSTP-FW-RULE msgs: Done
Sending X-CSTP-Quarantine: false
Sending X-CSTP-Disable-Always-On-VPN: false
Unable to initiate NAC, NAC might not be enabled or invalid policy
CSTP state = CONNECTED
```

在用户证书由ASA后验证， LDAP授权被执行，并且用户属性(从CN字段)获取并且应用。

调试

使用了用户证书：cn=test1,ou=Security,o=Cisco,l=Krakow,st=PL,c=PL

证书映射配置映射该证书对RA隧道群：

```
SVC: NP setup
np_svc_create_session(0x1E000, 0xb5eafa80, TRUE)
webvpn_svc_np_setup
SVC ACL Name: AAA-user-cisco-E0CF3C05
SVC ACL ID: 5
SVC ACL ID: 5
vpn_put_uauth success!
SVC IPv6 ACL Name: NULL
SVC IPv6 ACL ID: -1
SVC: adding to sessmgmt
SVC: Sending response
Sending X-CSTP-FW-RULE msgs: Start
Sending X-CSTP-FW-RULE msgs: Done
Sending X-CSTP-Quarantine: false
Sending X-CSTP-Disable-Always-On-VPN: false
Unable to initiate NAC, NAC might not be enabled or invalid policy
CSTP state = CONNECTED
```

证书确认和映射：

```
ASA# show debug
debug ldap  enabled at level 255
debug webvpn anyconnect enabled at level 254
debug crypto ca enabled at level 3
debug crypto ca messages enabled at level 3
debug crypto ca transactions enabled at level 3Apr 09 2013 17:31:32: %ASA-7-717025: Validating
certificate chain containing 1 certificate(s).Apr 09 2013 17:31:32: %ASA-7-717029: Identified
client certificate within certificate chain. serial number: 00FE9C3D61E131CDB1, subject name:
cn=test1,ou=Security,o=Cisco,l=Krakow,st=PL,c=PL.Apr 09 2013 17:31:32: %ASA-6-717022:
Certificate was successfully validated. Certificate is resident and trusted, serial number:
00FE9C3D61E131CDB1, subject name: cn=test1,ou=Security,o=Cisco,l=Krakow,st=PL,c=PL.Apr 09 2013
17:31:32: %ASA-6-717028: Certificate chain was successfully validated with revocation status
check.Apr 09 2013 17:31:32: %ASA-6-717028: Certificate chain was successfully validated with
revocation status check.Apr 09 2013 17:31:32: %ASA-7-717036: Looking for a tunnel group match
based on certificate maps for peer certificate with serial number: 00FE9C3D61E131CDB1, subject
name: cn=test1,ou=Security,o=Cisco,l=Krakow,st=PL,c=PL, issuer_name:
cn=TAC,ou=RAC,o=TAC,l=Warsaw,st=Maz,c=PL.Apr 09 2013 17:31:32: %ASA-7-717038: Tunnel group match
found. Tunnel Group: RA, Peer certificate: serial number: 00FE9C3D61E131CDB1, subject name:
cn=test1,ou=Security,o=Cisco,l=Krakow,st=PL,c=PL, issuer_name:
cn=TAC,ou=RAC,o=TAC,l=Warsaw,st=Maz,c=PL.
```

用户名和授权的提取从证书的使用LDAP ：

Apr 09 2013 17:31:32: %ASA-7-113028: **Extraction of username from VPN client certificate has been requested**. [Request 53]Apr 09 2013 17:31:32: %ASA-7-113028: **Extraction of username from VPN client certificate has been requested**. [Request 53]Apr 09 2013 17:31:32: %ASA-7-113028: **Extraction of username from VPN client certificate has been requested**. [Request 53]Apr 09 2013 17:31:32: %ASA-7-113028: **Extraction of username from VPN client certificate has been requested**. [Request 53]Apr 09 2013 17:31:32: %ASA-7-113028: **Extraction of username from VPN client certificate has been requested**. [Request 53]Apr 09 2013 17:31:32: %ASA-6-113004: **AAA user authorization Successful : server = 192.168.11.10 : user = test1**Apr 09 2013 17:31:32: %ASA-6-113004: **AAA user authorization Successful : server = 192.168.11.10 : user = test1**Apr 09 2013 17:31:32: %ASA-6-113004: **AAA user authorization Successful : server = 192.168.11.10 : user = test1**Apr 09 2013 17:31:32: %ASA-6-113004: **AAA user authorization Successful : server = 192.168.11.10 : user = test1**Apr 09 2013 17:31:32: %ASA-6-113004: **AAA user authorization Successful : server = 192.168.11.10 : user = test1**

归因于从LDAP的检索：

Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**cn = John Smith**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**givenName = John**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**sn = test1**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**uid = test1**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**uidNumber = 10000**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**gidNumber = 10000**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**homeDirectory = /home/cisco**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**mail = jsmith@dev.local**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**objectClass.1 = top**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**objectClass.2 = posixAccount**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**objectClass.3 = shadowAccount**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**objectClass.4 = inetOrgPerson**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**objectClass.5 = organizationalPerson**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**objectClass.6 = person**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**objectClass.7 = CiscoPerson**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**loginShell = /bin/bash**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**userPassword = {CRYPT}***Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**CiscoBanner = This is banner 1**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**CiscoIPAddress = 10.1.1.1**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**CiscoIPNetmask = 255.255.255.128**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**CiscoDomain = domain1.com**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**CiscoDNS = 10.6.6.6**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**CiscoACLin = ip:inacl#1=permit ip 10.1.1.0 255.255.255.128 10.11.11.0 255.255.255.0**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**CiscoSplitACL = ACL1**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**CiscoSplitTunnelPolicy = 1**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.ldap.**CiscoGroupPolicy = POLICY1**

思科映射attibutes ：

Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.**cisco.grouppolicy = POLICY1**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.**cisco.ipaddress = 10.1.1.1**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.**cisco.username = test1**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.**cisco.username1 = test1**Apr 09 2013 17:31:32: %ASA-7-734003: DAP: User test1, Addr 192.168.1.88: Session Attribute aaa.**cisco.username2 =** Apr 09 2013 17:31:32: %ASA-7-734003: DAP:

User test1, Addr 192.168.1.88: Session Attribute aaa.**cisco.tunnelgroup = RA**Apr 09 2013 17:31:32: %ASA-6-734001: DAP: User test1, Addr 192.168.1.88, Connection AnyConnect: The following **DAP records** were selected for this connection: **DfltAccessPolicy**Apr 09 2013 17:31:32: %ASA-6-113039: **Group <POLICY1> User <test1> IP <192.168.1.88> AnyConnect parent session started**.Apr 09 2013 17:31:32: %ASA-6-113039: **Group <POLICY1> User <test1> IP <192.168.1.88> AnyConnect parent session started**.

附属验证

如果二要素验证要求，与LDAP认证和授权一起使用令牌的密码是可能的：

Apr 09 2013 17:31:32: %ASA-6-113039: **Group <POLICY1> User <test1> IP <192.168.1.88> AnyConnect parent session started**.

然后，用户必须与LDAP用户名/密码(用户知道)的事一起提供从RSA的一个用户名和密码(某事用户有—一标记)。使用从证书的一用户名附属验证也是可能的。使用CLI，8.4和8.6，关于双重身份验证的更多信息，参考Cisco ASA 5500系列配置指南。

相关信息

- Cisco ASA 5500系列配置指南使用CLI，8.4和8.6
- OpenLDAP软件2.4管理员指南
- 私营企业编号
- 技术支持和文档 - Cisco Systems