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Windows 计算机名超过 15 个字符时的机器认证

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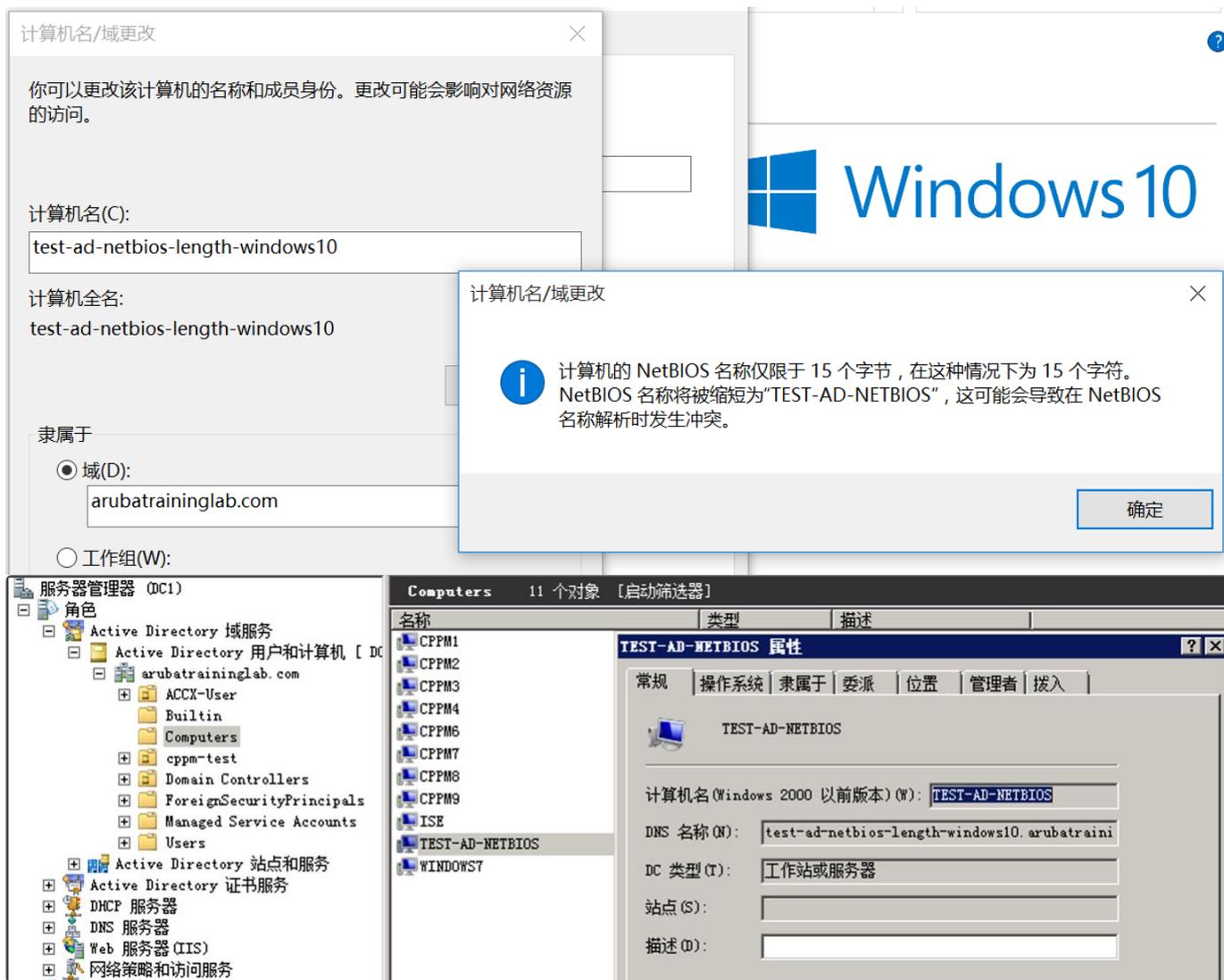
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1 背景描述

客户采用 Aruba 无线+NPS (AD) 做 802.1x 机器认证，用户反映当计算机名超过 15 个字符时，机器认证失败，计算机名未超过 15 个字符时，可以成功机器认证。

2 原因

1. Microsoft 对于计算机 NetBIOS 名称仅限 15 个字节（即 15 个字符），当计算机名超过 15 个字符时会自动截取前 15 个字符作为 NetBIOS 名称存储到 AD，即 AD 中的计算机名不超过 15 个字符，但是计算机本地的名称是实际的长度，可以超过 15 个字符，同时 AD 中会存储 DNS 名称，为完整计算机名+Domain；



计算机名、域和工作组设置

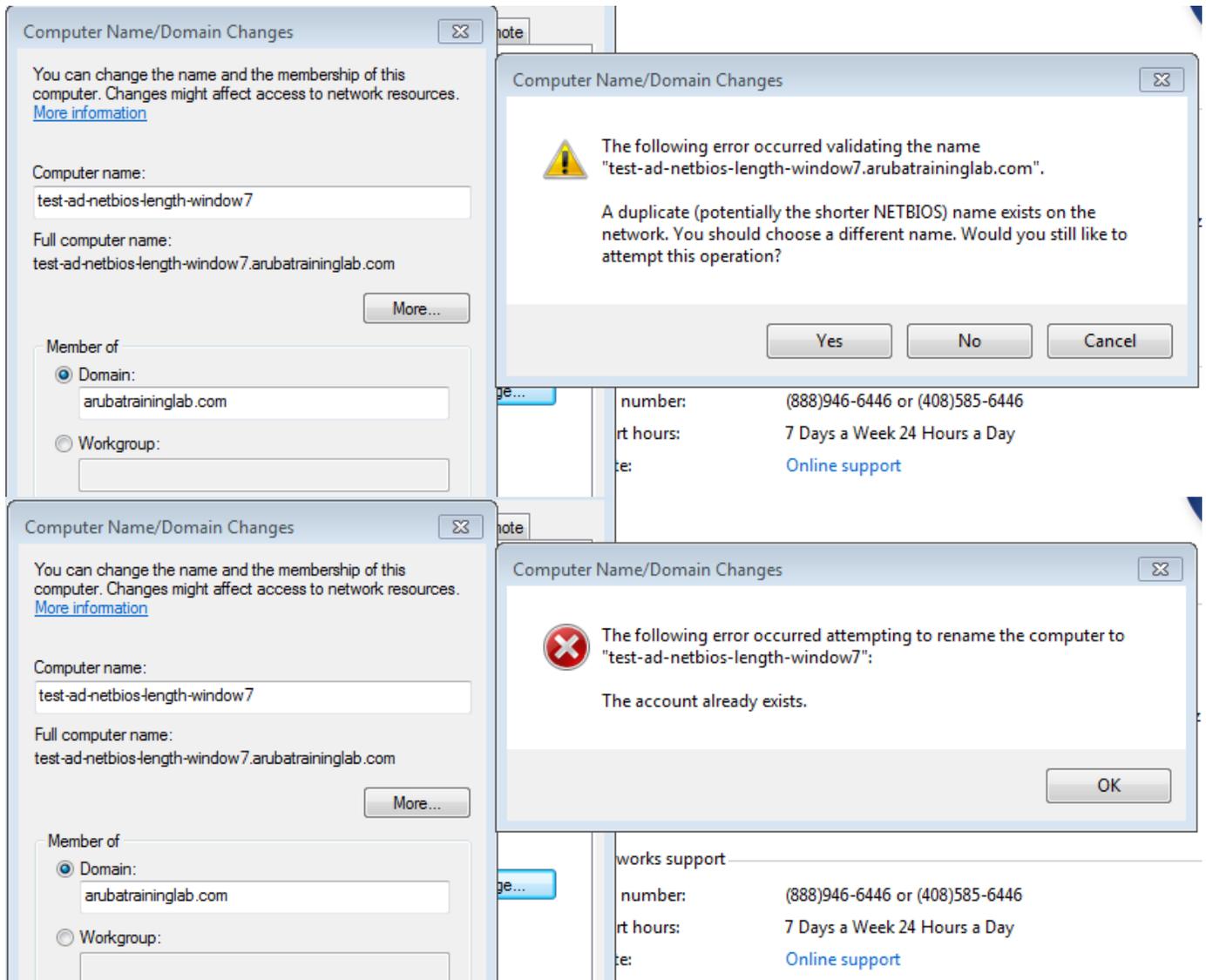
计算机名: test-ad-netbios-length-windows10 [更改设置](#)

计算机全名: test-ad-netbios-length-windows10.arubatrai

计算机描述:

域: arubatraininglab.com

2. 如果前 15 个字符跟 AD 中已有的 Computer 名称重复, 将无法成功加入域。



3 解决方案

采用 Aruba 无线+ClearPass+AD 做 802.1x 机器认证，即使计算机名超过 15 个字符，也可以成功进行机器认证。

```
(MC3) *[mynode] #show user
This operation can take a while depending on number of users. Please be patient ...
```

Users

IP	MAC	Name	Role	Age(d:h:m)	Auth	VPN Link	AP name	Roaming	Essid/Bssid/Phy	Profile
Forward mode	Type	Host Name	User Type							
10.1.31.250	94:e6:f7:a4:01:d7	host/test-ad-netbios-length-windows10.arubatraininglab.com	authenticated	00:00:00	802.1x		AP1	Wireless	Aruba-Dot1x/40:e3:d6:bf:91:50/a-VHT	Aruba-Dot1x_aaa_pr
of tunnel	Win 10	WIRELESS								

```
User Entries: 1/1
Curr/Cum Alloc:1/179 Free:3/178 Dyn:4 AllocErr:0 FreeErr:0
```

Filter: [Request ID] contains [] [Go] [Clear Filter] Show [20] res

#	Server	Source	Username	Service	Login Status	Request Timestamp
1.	10.254.5.108	RADIUS	host/test-ad-netbios-length-windows10.arubatraininglab.com	Dot1x	ACCEPT	2021/08/15 19:51:43

测试采用 window server 2008 R2 创建 AD，测试发现即使 ClearPass 发送 `%{Host:Name}$`（即 `test-ad-netbios-length-windows10$`）跟 AD 中的 `sAMAccountName`（`TEST-AD-NETBIOS$`）比较，AD 也能成功匹配，说明 AD 具有处理超过 15 个字符的计算机名的能力，而用户反映 NPS 针对超过 15 个字符的计算机名机器认证失败，只能说明是 NPS 的问题。

Configure Filter

Configuration Attributes Browse Filter

Filter Name:

Filter Query:

Name	Alias Name	Data type	Enabled As
1. dNSHostName	HostName	String	-
2. operatingSystem	OperatingSystem	String	-
3. operatingSystemServicePack	OSServicePack	String	-
4. Click to add...			

Configure Filter

Configuration | Attributes | **Browse** | Filter

Find Node:

dc=arubatraininglab,dc=com	operatingSystem	Windows 10 企业版
OU=ACCX-User	operatingSystemVersion	10.0 (10240)
CN=Builtin	primaryGroupID	515
CN=Computers	pwdLastSet	132734942423749960
CN=CPPM1	sAMAccountName	TEST-AD-NETBIOS\$
CN=CPPM2	sAMAccountType	805306369
CN=CPPM3	servicePrincipalName	TERMSRV/test-ad-netbios-length-windows10
CN=CPPM4	servicePrincipalName	RestrictedKrbHost/test-ad-netbios-length-window
CN=CPPM6	servicePrincipalName	HOST/test-ad-netbios-length-windows10
CN=CPPM7	servicePrincipalName	TERMSRV/TEST-AD-NETBIOS
CN=CPPM8	servicePrincipalName	RestrictedKrbHost/TEST-AD-NETBIOS
CN=CPPM9	servicePrincipalName	HOST/TEST-AD-NETBIOS
CN=ISE	uSNChanged	561669
CN=TEST-AD-NETBIOS	uSNCreated	561629
CN=WINDOWS7	userAccountControl	4096
OU=cppm-test		

Request Details ✕

Summary	Input	Output
Connection:Client-Mac-Address-Hyphen	94-e6-f7-a4-01-d7	
Connection:Client-Mac-Address-NoDelim	94e6f7a401d7	
Connection:Client-Mac-Address-Upper-Hyphen	94-E6-F7-A4-01-D7	
Connection:Client-Mac-Vendor	Intel Corporate	
Connection:Dest-IP-Address	10.254.5.108	
Connection:Dest-Port	1812	
Connection:NAD-IP-Address	10.1.30.102	
Connection:Protocol	RADIUS	
Connection:Src-IP-Address	10.1.30.102	
Connection:Src-Port	33081	
Connection:SSID	Aruba-Dot1x	
Date:Date-Time	2021-08-15 19:51:43	
Host:FQDN	test-ad-netbios-length-windows10.arubatraininglab.com	
Host:Name	test-ad-netbios-length-windows10	

Endpoint Attributes ⌵

◀ ◀ Showing 1 of 1-20 records ▶ ▶
Change Status
Show Configuration
Export
Show Logs
Close

Request log details for session: R0000076-01-6118ffcf

Time	Message
2021-08-15 19:51:43,320 [Th 17 Req 936 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_service: Starting Service Categorization - 157:279:94E6F7A401D7
2021-08-15 19:51:43,325 [Th 17 Req 936 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - Service Categorization time = 5 ms
2021-08-15 19:51:43,325 [Request-Handler-1-0x7fce39fef700 r=psauto-1628992849-292 h=127 r=R00000076-01-6118ffcf]	INFO Core.ServiceReq-Handler - Service classification result = Dot1x
2021-08-15 19:51:43,325 [Th 17 Req 936 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_service: The request has been categorized into service "Dot1x"
2021-08-15 19:51:43,326 [Request-Handler-1-0x7fce39fef700 r=psauto-1628992849-292 h=127 r=R00000076-01-6118ffcf]	INFO Core.ServiceReq-Handler - Service classification result = Dot1x
2021-08-15 19:51:43,326 [Th 17 Req 936 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_eap_peap: Initiate
2021-08-15 19:51:43,326 [Th 17 Req 936 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - reqst_update_state: Access-Challenge 157:88:94E6F7A401D7:ALKAZQDFAGmoAwAAxhkRtJLsVcBGIXov6SmKjw==
2021-08-15 19:51:43,329 [Th 11 Req 937 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_service: The request was categorized into service "Dot1x" - 158:380:94E6F7A401D7
2021-08-15 19:51:43,331 [Th 11 Req 937 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - TLS_accept:error in SSLv3 read client key exchange A
2021-08-15 19:51:43,331 [Th 11 Req 937 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - TLS_accept:error in SSLv3 read client key exchange A
2021-08-15 19:51:43,332 [Th 11 Req 937 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - reqst_update_state: Access-Challenge 158:1124:94E6F7A401D7:AAQA9QAwABkPAAwAA3hwx0E0BkrMyyEqwFggNclw==
2021-08-15 19:51:43,336 [Th 19 Req 938 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_service: The request was categorized into service "Dot1x" - 159:264:94E6F7A401D7
2021-08-15 19:51:43,337 [Th 19 Req 938 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - reqst_update_state: Access-Challenge 159:1120:94E6F7A401D7:ABEAYQACACKAwwAAxHqVGS5o8x1bZGt7UhEVA==
2021-08-15 19:51:43,342 [Th 12 Req 939 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_service: The request was categorized into service "Dot1x" - 160:264:94E6F7A401D7
2021-08-15 19:51:43,342 [Th 12 Req 939 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - reqst_update_state: Access-Challenge 160:831:94E6F7A401D7:ABMA5QD6APerAA98yW5wZRARwYlwwVty2g==
2021-08-15 19:51:43,348 [Th 20 Req 940 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_service: The request was categorized into service "Dot1x" - 161:402:94E6F7A401D7
2021-08-15 19:51:43,350 [Th 20 Req 940 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - reqst_update_state: Access-Challenge 161:147:94E6F7A401D7:ADBAIgcGAG+sAwAAZxjwulmmQXINE5iwlYJWJg==
2021-08-15 19:51:43,355 [Th 13 Req 941 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_service: The request was categorized into service "Dot1x" - 162:264:94E6F7A401D7
2021-08-15 19:51:43,355 [Th 13 Req 941 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_eap_peap: Session established.
2021-08-15 19:51:43,355 [Th 13 Req 941 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - reqst_update_state: Access-Challenge 162:125:94E6F7A401D7:ACsApgAWAO+tAwAA0tRvuFhfbzSKHUEW9tDfA==
2021-08-15 19:51:43,359 [Th 14 Req 942 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_service: The request was categorized into service "Dot1x" - 163:349:94E6F7A401D7
2021-08-15 19:51:43,359 [Th 14 Req 942 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_idap: searching for user host/test-ad-netbios-length-windows10.arubatrainiglab.com in AD:dc1.arubatrainiglab.com
2021-08-15 19:51:43,360 [Th 14 Req 942 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_idap: found user host/test-ad-netbios-length-windows10.arubatrainiglab.com in AD:dc1.arubatrainiglab.com
2021-08-15 19:51:43,360 [Th 14 Req 942 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - LDAP/AD User lookup time = 1 ms
2021-08-15 19:51:43,361 [Th 14 Req 942 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_eap_mschapv2: Issuing Challenge
2021-08-15 19:51:43,361 [Th 14 Req 942 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - reqst_update_state: Access-Challenge 163:205:94E6F7A401D7:ADkAvgCBAIquAA1AcNBIVrU8GUHNLWMS2Wjg==
2021-08-15 19:51:43,367 [Th 18 Req 943 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_service: The request was categorized into service "Dot1x" - 164:413:94E6F7A401D7
2021-08-15 19:51:43,367 [Th 18 Req 943 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_service: The request was categorized into service "Dot1x" - 175:0:94E6F7A401D7
2021-08-15 19:51:43,367 [Th 18 Req 943 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_eap_mschapv2: Received MSCHAPv2 Response from client
2021-08-15 19:51:43,367 [Th 18 Req 943 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_mschap: MSCHAPv2 username used for challenge computation host/test-ad-netbios-length-windows10.arubatrainiglab.com
2021-08-15 19:51:43,367 [Th 18 Req 943 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_mschap: Using domain arubatrainiglab.com from User-Name attribute
2021-08-15 19:51:43,367 [Th 18 Req 943 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_mschap: Domain arubatrainiglab.com from User-Name does not match domain ARUBATRainingLA from Object SID
2021-08-15 19:51:43,367 [Th 18 Req 943 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_mschap: authenticating user TEST-AD-NETBIOS, domain arubatrainiglab.com
2021-08-15 19:51:43,370 [Th 18 Req 943 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_mschap: user TEST-AD-NETBIOS\$ authenticated successfully
2021-08-15 19:51:43,370 [Th 18 Req 943 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - MS-Chap User Authentication time = 3 ms
2021-08-15 19:51:43,370 [Th 18 Req 943 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_eap_mschapv2: Sending MSCHAPv2 Success reply
2021-08-15 19:51:43,370 [Th 18 Req 943 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - reqst_update_state: Access-Challenge 164:173:94E6F7A401D7:AFIAZgDTAMmvAAwAAkerCEpEks6dtmXPfnofUg==
2021-08-15 19:51:43,374 [Th 16 Req 944 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_service: The request was categorized into service "Dot1x" - 165:301:94E6F7A401D7
2021-08-15 19:51:43,374 [Th 16 Req 944 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_service: The request was categorized into service "Dot1x" - 176:0:94E6F7A401D7
2021-08-15 19:51:43,374 [Th 16 Req 944 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_eap_mschapv2: Received MSCHAPv2 Success from client
2021-08-15 19:51:43,374 [Th 16 Req 944 SessId R00000076-01-6118ffcf]	INFO RadiusServer.Radius - rlm_policy: Starting Policy Evaluation.