Exemplo de Configuração de Âncora de Convidado de Controladores LAN Sem Fio de Acesso Unificado com Acesso Convergido

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Introduction

Este documento descreve como configurar as Controladoras Wireless LAN (WLCs) 5508/5760 Series e o Switch Catalyst 3850 Series para a Âncora de Convidado do cliente sem fio na nova configuração de implantação de mobilidade, onde a WLC 5508 Series atua como Âncora de Mobilidade e o Switch Catalyst 3850 Series atua como um Controlador Externo de Mobilidade para os clientes. Além disso, o Switch da série Catalyst 3850 atua como um Agente de Mobilidade para uma WLC da série 5760 que atua como um Controlador de Mobilidade de onde o Switch da série Catalyst 3850 adquire a licença de Ponto de Acesso (AP).

Prerequisites

Requirements

A Cisco recomenda que você tenha conhecimento destes tópicos antes de tentar esta configuração:

- GUI ou CLI do Cisco IOS[®] com WLCs de acesso convergente 5760 e 3650 Series e o switch Catalyst 3850 Series
- Acesso via GUI e CLI com a WLC 5508 Series
- Configuração do Service Set Identifier (SSID)
- Autenticação da Web

Componentes Utilizados

As informações neste documento são baseadas nestas versões de software e hardware:

- Cisco 5760 versão 3.3.3 (Next Generation Wiring Closet [NGWC])
- Catalyst 3850 Series Switch
- Cisco 5508 Series WLC versão 7.6.120
- APs Lightweight Cisco 3602 Series
- Cisco Catalyst 3560 Series Switches

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.

Configurar

Nota:Use a Command Lookup Tool (somente clientes registrados) para obter mais informações sobre os comandos usados nesta seção.

Diagrama de Rede

A WLC 5508 Series atua como um controlador de âncora, e o switch Catalyst 3850 Series atua como um controlador externo e o agente de mobilidade que obtém a licença do controlador de mobilidade 5760.



Observação: no diagrama de rede, o 5508 Series WLC atua como o controlador de âncora, o 5760 Series WLC atua como o controlador de mobilidade e o Catalyst 3850 Series Switch atua como o agente de mobilidade e o Foreign WLC. A qualquer momento, o Controlador de âncora para o Catalyst 3850 Series Switch é o 5760 Series WLC ou o 5508 Series WLC. Ambos não podem ser Âncoras ao mesmo tempo, pois a âncora dupla não funciona.

Configurações

A configuração inclui três partes:

Parte 1 - Configuração na WLC Âncora 5508

Parte 2 - Configuração de mobilidade de acesso convergente entre o 5508/5760 Series WLC e o Catalyst 3850 Series Switch

Parte 3 - Configuração no Switch Catalyst 3850 Series Externo

Parte 1 - Configuração na WLC Âncora 5508

1. Na WLC 5508 Series, passe o mouse sobre WLAN > New para criar uma nova Wireless LAN (WLAN).

cisco	MONITOR WLANS COL	NTROLLER WIRELESS SECURITY MANAGEMENT COMMANDS HELP
WLANs	WLANs > Edit 'CUWN	4'
WLANS	General Security	QoS Policy-Mapping Advanced
Advanced	Profile Name	CUWN
	Туре	WLAN
	SSID	CUWN
	Status	Enabled
	Security Policies	WEB POLICY, Web-Auth (Modifications done under security tab will appear after applying the changes.)
	Radio Policy	All 👻
	Interface/Interface Group(G)	vlan60 👻
	Multicast Vlan Feature	Enabled
	Broadcast SSID	Enabled
	NAS-ID	5508

2. Passe o mouse sobre WLAN > WLAN Edit > Security > Layer 3 enabled Web-authentication para configurar a segurança da camada 3.

cisco	MONITOR WLANS CONTROLLER WIRELESS SECURITY MANAGEMENT COMMANDS HELP FEEDB
WLANs	WLANs > Edit 'CUWN'
WLANs WLANs Advanced	General Security QoS Policy-Mapping Advanced Layer 2 Layer 3 AAA Servers
P Auvanceu	Layer 3 Security ¹ Web Policy • Authentication Passthrough Conditional Web Redirect Splash Page Web Redirect On MAC Filter failure ¹¹ Preauthentication ACL IPv4 None • IPv6 None • WebAuth FlexAcl None • Sleeping Client Enable Over-ride Global Config Enable

3. Torne o endereço de âncora **local** na janela de configuração Âncora de mobilidade da WLAN para adicionar a WLC 5508 Series como Âncora.

										Sa <u>v</u> e Configural
MONITOR	<u>W</u> LANS	CONTROLLER	WIRELESS	SECURITY	MANAGEMENT	COMMANDS	HELP	EEEDBACK		
Mobility A	Inchors									
WLAN SSI	D CUN	m.								
Switch IP	Address (Anchor)							Data Path	Control Path
local									up	up
an - Lubra										

4. Passe o mouse sobre **Security > Webauth > Webauth page** para configurar a página Webauth a ser usada para a autenticação do cliente.

Neste exemplo, a página Webauth interna da WLC é selecionada:

ululu cisco		WLANs		WIRELESS	SECURITY	MANAGEMENT	COMMANDS	HELP	EEEDBACK
Security General General RADIUS Authentication Accounting Fallback DNS TACACS+ LDAP Local Net Users MAC Filtering Disabled Clients User Login Policies AD Pisicies	Web Logi Web Auth Redirect U This page all page. The Lo WLAN if 'Wel Cisco Log Headline Message	in Page entication JRL after lo lows you to ogin page is b Authentic o	Type ogin o customize the co s presented to wel ation" is turned on @ Sho	Inter Intert and appe b users the first (under WLAN W	mal (Default) arance of the I : time they acc Security Policie	Login tess the es).	•		

5. Crie um usuário de rede local. Esse par nome de usuário/senha é usado pelo usuário quando solicitado na página Webauth.

cisco	MONITOR WLANS		WIRELESS	SECURITY	MANAGEMENT	с <u>о</u>
Security	Local Net Users >	Edit				
AAA General RADIUS	User Name Password	surbg				
Authentication Accounting Fallback	Confirm Password Creation Time	••• Mon N	lay 19 12:00:4	1 2014		
DNS TACACS+	Remaining Time WLAN Profile	N/A	VLAN -			
Local Net Users MAC Filtering	Description	surbg				

Parte 2 - Configuração de mobilidade de acesso convergente entre o 5508/5760 Series WLC e o Catalyst 3850 Series Switch

1. Na WLC 5508 Series, adicione a WLC 5760 Series como o Peer de mobilidade.

cisco	MONITOR WLANS CO	NTROLLER WIRELESS	SECURITY	MANAGEMENT	COMMANDS	HELP	EEEOBACK	_	_	s
Controller	Static Mobility Group	Members								
General Inventory	Local Mobility Group	Mobile-1								
Interfaces	NAC Address	IP Address		Public	IP Address	Group	Name	Nulticast IP		Status
Interface Groups	58:8d:09:cd:ac:60	10.105.135.151		10.105	135.151	Mobile	1	0.0.0.0		qL
Multicast Network Routes	00:00:00:00:00:00	10.105.135.178 10.105.135.244		10.105	.135.178	surbg surbg		0.0.0.0 0.0.0.0		ip p
Internal DHCP Server										
 Mobility Management Mobility Configuration Mobility Groupe 										

2. Na WLC 5760 Series, atuando como um controlador de mobilidade, adicione a WLC 5508 Series como o peer de mobilidade.

cisco Wireless Controller	A Home	Monitor + Configuration	nil • Administration •	Help		
Controller	Mobility Peer					
* 🧰 System	New Remove					
General	IP Address	Public IP Address	Group Name	Multicast IP	Control Link Status	Data Link Status
Multicast	10.105.135.244	-	subg	0.0.0.0	-	-
Interfaces	10.105.135.151	10.105.135.151	Mobile-1		UP	UP
VLAN	10.105.135.178	10.105.135.178	gdfue	0.0.0.0	UP	UP
Internal DHCP Server						
Management						
* 😂 Mobility Management						
Mobility Global Config Mobility Peer Switch Peer Group						

3. Este passo é muito importante! Adicione o Catalyst 3850 Series Switch como o agente de mobilidade no 5760 Series WLC na guia Switch Peer Group em Mobility Management.

cisco Wireless Controller	A Home Monitor	 Configuration Administra 	ation I 🔻 Help	
Controller	Switch Peer Group > SURBG-SPG Switch Peer Group > SURBG-SPG			
* 🚔 System	New Demons			
General	New Remove			
Multicast	IP Address	Public IP Address	Control Link Status	Data Link Status
Interfaces	10.105.135.226	10.105.135.226	UP.	UP
VLAN				
Internal DHCP Server				
🕨 🧰 Management				
🕶 🧰 Mobility Management				
Mobility Global Config				
Mobility Peer				
Switch Peer Group				

4. No Catalyst 3850 Series Switch, adicione o 5760 Series WLC como o controlador de mobilidade. Depois de fazer isso, o switch Catalyst 3850 Series obtém a licença de APs do controlador de mobilidade 5760.

🟡 Home	Monitor 🔻	Configuration 🔻	Administration
Mobility Agent Configurat	tion		
Mobility Role	-	Mobility Agent 💌	
Mobility Controller IP Address	•	10.105.135.244	
Control Link Status		UP	
Data Link Status		UP	
Mobility Protocol Port		16666	
Mobility Switch Peer Group Na	ame <mark>.</mark>	SURBG-SPG	
DTLS Mode		Enabled	
Mobility Domain ID for 802.11	r	0xe699	
Mobility Keepalive Interval (1-3	30)sec	10	
	Mobility Agent Configurat Mobility Role Mobility Controller IP Address Control Link Status Data Link Status Mobility Protocol Port Mobility Switch Peer Group Na DTLS Mode Mobility Domain ID for 802.111 Mobility Keepalve Interval (1-1)	Image: None Monitor Mobility Agent Configuration Mobility Role Mobility Controller IP Address Mobility Controller IP Address Control Link Status Data Link Status Mobility Protocol Port Mobility Switch Peer Group Name DTLS Mode Mobility Domain ID for 802.11r Mobility Keepalive Interval (1-30)sec	Mobility Agent Configuration Mobility Agent Configuration Mobility Role Mobility Controller IP Address Mobility Controller IP Address Control Link Status Control Link Status UP Data Link Status Mobility Protocol Port Mobility Switch Peer Group Name DTLS Mode Mobility Domain ID for 802.11r Mobility Keepalive Interval (1-30)sec 10

Parte 3: Configuração no Switch Catalyst 3850 Series Externo

1. Passe o mouse sobre **GUI > Configuration > Wireless > WLAN > New** para configurar o SSID/WLAN exato no switch Catalyst 3850 Series.

սիսիս		
CISCO Wireless Controller	<u> </u> Home	Monitor Configuration Administration Help
Wireless		
VLAN	General Security	QOS AVC Policy Mapping Advanced
Access Points	Profile Name	CUWN
802.11a/n/ac	Туре	WLAN
802.11b/g/n	SSID	CUWN
Media Stream	Status	Enabled
> 🔤 QOS	Security Policies	Web-Auth (Modifications done under security tab will appear after applying the changes.)
	Radio Policy	Al 💌
	Interface/Interface Group(G	3) VLANDOGO 😥
	Broadcast SSID	
	Multicast VLAN Feature	

2. Passe o mouse sobre WLAN > WLAN Edit > Security > Layer 3 enabled Web-authentication para configurar a segurança da camada 3.

սիսիս		
cisco Wireless Controller	Administration I▼ Configuration I▼ Administration I▼ Help	
Wireless VLAN	WLAN WLAN > Edit General Security QOS AVC Policy Mapping Advanced	
 Access Points B02.11a/n/ac B02.11b/g/n Media Stream QOS 	Web Policy Image: Conditional Web Redirect Webauth Authentication List Disabled Webauth Parameter Map Image: Conditional Web Webauth On-mac-filter Failure Image: Conditional Web Preauthentication IPv4 ACL Unconfigured Preauthentication IPv6 ACL Inone	

3. Adicione o endereço IP da WLC 5508 Series como Âncora na configuração da âncora de mobilidade da WLAN

Wireless Mobility Anchors	
* WLAN	
WLANS WLAN Profile QUWN Access Points Switch IP Address Create Mob Create Mob	blity Anchor

Verificar

Use esta seção para confirmar se a sua configuração funciona corretamente.

Conecte o cliente à WLAN do Cisco Unified Wireless Network (CUWN). Este é o fluxo de trabalho:

- 1. O cliente recebe um endereço IP.
- 2. O cliente abre um navegador e acessa qualquer site.
- 3. O primeiro pacote TCP enviado pelo cliente é sequestrado pelo WLC, e o WLC intercepta e envia a página Webauth.
- 4. Se o DNS estiver configurado corretamente, o cliente obterá a página Webauth.
- 5. O cliente deve fornecer o nome de usuário/senha para ser autenticado.
- 6. Após a autenticação bem-sucedida, o cliente é redirecionado para a página de acesso original.

Login Welcome to the Cisco wireless network Cisco is pleased to provide the Wireless LAN infrastructure for your network. Please login and put your unified wireless solution to work. User Name	n ×
Welcome to the Cisco wireless network Cisco is pleased to provide the Wireless LAN infrastructure for your network. Please login and put your unified wireless solution to work. User Name	
Cisco is pleased to provide the Wireless LAN infrastructure for your network. Please login and put your unified wireless solution to work.	
User Name	
Password	
Submit	

7. Depois que o cliente fornecer as credenciais corretas, ele passará a autenticação.

æ		🤗 Internet Explorer cannot dis 🗙
Ś	Cogout - Windows Internet Explorer	🗴 vebpage
	Web Authentication Login Successful ! You can now use all regular network services over the wireless network. Please retain this small logout window in order to logoff when done. Note that you can always use the following URL to retrieve this page: <u>https://192.168.200.1/logout.html</u>	
	€ 100% •	

Troubleshoot

Para solucionar problemas de configuração, insira estas depurações no 5508 Series WLC, que atua como uma âncora de convidado:

Debug Client

Debug web-auth redirect enable mac

Aqui está um exemplo:

Debug Client 00:17:7C:2F:B6:9A Debug web-auth redirect enable mac 00:17:7C:2F:B6:9A

show debug

MAC Addr 1..... 00:17:7C:2F:B6:9A

Debug Flags Enabled: dhcp packet enabled. dot11 mobile enabled. dot11 state enabled dot1x events enabled. dot1x states enabled. FlexConnect ft enabled. pem events enabled. pem state enabled. CCKM client debug enabled. webauth redirect enabled.

*mmMaListen: May 19 13:36:34.276: 00:17:7c:2f:b6:9a Adding mobile on Remote AP 00:00:00:00:00:00(0)

*mmMaListen: May 19 13:36:34.277: 00:17:7c:2f:b6:9a override for default ap group, marking intgrp NULL *mmMaListen: May 19 13:36:34.277: 00:17:7c:2f:b6:9a Applying Interface policy on Mobile, role Unassociated. Ms NAC State 2 Quarantine Vlan 0 Access Vlan 0

*mmMaListen: May 19 13:36:34.277: 00:17:7c:2f:b6:9a Re-applying interface policy for client

*mmMaListen: May 19 13:36:34.277: 00:17:7c:2f:b6:9a 0.0.0.0 START (0) Changing IPv4 ACL 'none' (ACL ID 255) ===> 'none' (ACL ID 255) --- (caller apf_policy.c:2219) *mmMaListen: May 19 13:36:34.277: 00:17:7c:2f:b6:9a 0.0.0.0 START (0) Changing IPv6 ACL 'none' (ACL ID 255) ===> 'none' (ACL ID 255) --- (caller apf_policy.c:2240) *mmMaListen: May 19 13:36:34.277: 00:17:7c:2f:b6:9a apfApplyWlanPolicy: Apply WLAN Policy over PMIPv6 Client Mobility Type *mmMaListen: May 19 13:36:34.277: 00:17:7c:2f:b6:9a override from intf group to an intf for roamed client - removing intf group from mscb

*mmMaListen: May 19 13:36:34.277: 00:17:7c:2f:b6:9a 0.0.0.0 AUTHCHECK (2) Change state to L2AUTHCOMPLETE (4) last state AUTHCHECK (2)

Change state to DHCP_REQD (7) last state L2AUTHCOMPLETE (4)

```
*mmMaListen: May 19 13:36:34.277: 00:17:7c:2f:b6:9a Resetting web IPv4 acl from
255 to 255
*mmMaListen: May 19 13:36:34.277: 00:17:7c:2f:b6:9a Resetting web IPv4 Flex acl
from 65535 to 65535
*mmMaListen: May 19 13:36:34.277: 00:17:7c:2f:b6:9a Stopping deletion of Mobile
Station: (callerId: 53)
*mmMaListen: May 19 13:36:34.277: 00:17:7c:2f:b6:9a 0.0.0.0 DHCP_REQD (7) Adding
Fast Path rule type = Airespace AP - Learn IP address
on AP 00:00:00:00:00, slot 0, interface = 1, QOS = 0
IPv4 ACL ID = 255, IPv
*mmMaListen: May 19 13:36:34.277: 00:17:7c:2f:b6:9a 0.0.0.0 DHCP_REQD (7) Fast Path
rule (contd...) 802.1P = 0, DSCP = 0, TokenID = 15206 Local Bridging Vlan = 60,
Local Bridging intf id = 13
*mmMaListen: May 19 13:36:34.277: 00:17:7c:2f:b6:9a 0.0.0.0 DHCP_REQD (7)
Successfully plumbed mobile rule (IPv4 ACL ID 255, IPv6 ACL ID 255, L2 ACL ID 255)
*mmMaListen: May 19 13:36:34.278: 00:17:7c:2f:b6:9a 0.0.0.0 DHCP_REQD (7) State
Update from Mobility-Incomplete to Mobility-Complete, mobility role=ExpAnchor,
client state=APF_MS_STATE_ASSOCIATED
*mmMaListen: May 19 13:36:34.278: 00:17:7c:2f:b6:9a 0.0.0.0 DHCP_REQD (7)
Change state to DHCP_REQD (7) last state DHCP_REQD (7)
*mmMaListen: May 19 13:36:34.278: 00:17:7c:2f:b6:9a 0.0.0.0 DHCP_REQD (7)
pemAdvanceState2 5807, Adding TMP rule
*mmMaListen: May 19 13:36:34.278: 00:17:7c:2f:b6:9a 0.0.0.0 DHCP_REQD (7)
Replacing Fast Path rule
type = Airespace AP - Learn IP address
on AP 00:00:00:00:00:00, slot 0, interface = 1, QOS = 0
IPv4 ACL ID = 255,
*mmMaListen: May 19 13:36:34.278: 00:17:7c:2f:b6:9a 0.0.0.0 DHCP_REQD (7)
Fast Path rule (contd...) 802.1P = 0, DSCP = 0, TokenID = 15206 Local
Bridging Vlan = 60, Local Bridging intf id = 13
*mmMaListen: May 19 13:36:34.278: 00:17:7c:2f:b6:9a 0.0.0.0 DHCP_REQD (7)
Successfully plumbed mobile rule (IPv4 ACL ID 255, IPv6 ACL ID 255, L2 ACL ID 255)
*pemReceiveTask: May 19 13:36:34.278: 00:17:7c:2f:b6:9a Set bi-dir guest tunnel
for 00:17:7c:2f:b6:9a as in Export Anchor role
*pemReceiveTask: May 19 13:36:34.278: 00:17:7c:2f:b6:9a 0.0.0.0 Added NPU entry
of type 9, dtlFlags 0x4
*pemReceiveTask: May 19 13:36:34.278: 00:17:7c:2f:b6:9a Sent an XID frame
*pemReceiveTask: May 19 13:36:34.278: 00:17:7c:2f:b6:9a Set bi-dir guest tunnel
for 00:17:7c:2f:b6:9a as in Export Anchor role
*pemReceiveTask: May 19 13:36:34.278: 00:17:7c:2f:b6:9a 0.0.0.0 Added NPU entry
of type 9, dtlFlags 0x4
*IPv6_Msg_Task: May 19 13:36:34.281: 00:17:7c:2f:b6:9a Pushing IPv6 Vlan Intf
ID 13: fe80:0000:0000:6c1a:b253:d711:0c7f , and MAC: 00:17:7C:2F:B6:9A ,
Binding to Data Plane. SUCCESS !! dhcpv6bitmap 0
*IPv6_Msg_Task: May 19 13:36:34.281: 00:17:7c:2f:b6:9a Calling mmSendIpv6AddrUpdate
for addition of IPv6: fe80:0000:0000:0000:6cla:b253:d711:0c7f , for MAC:
00:17:7C:2F:B6:9A
*IPv6_Msg_Task: May 19 13:36:34.281: 00:17:7c:2f:b6:9a mmSendIpv6AddrUpdate:4800
Assigning an IPv6 Addr fe80:0000:0000:0000:6c1a:b253:d711:0c7f to the client in
Anchor state update the foreign switch 10.105.135.226
*IPv6_Msg_Task: May 19 13:36:34.281: 00:17:7c:2f:b6:9a Link Local address fe80::
6cla:b253:d7ll:c7f updated to mscb. Not Advancing pem state.Current state: mscb
in apfMsMmInitial mobility state and client state APF_MS_STATE_AS
*mmMaListen: May 19 13:36:34.298: 00:17:7c:2f:b6:9a 0.0.0.0 DHCP_REQD (7)
Replacing Fast Path rule
type = Airespace AP - Learn IP address
on AP 00:00:00:00:00:00, slot 0, interface = 1, QOS = 0
IPv4 ACL ID = 255,
*mmMaListen: May 19 13:36:34.298: 00:17:7c:2f:b6:9a 0.0.0.0 DHCP_REQD (7)
```

Fast Path rule (contd...) 802.1P = 0, DSCP = 0, TokenID = 15206 Local Bridging Vlan = 60, Local Bridging intf id = 13 *mmMaListen: May 19 13:36:34.298: 00:17:7c:2f:b6:9a 0.0.0.0 DHCP_REQD (7) Successfully plumbed mobile rule (IPv4 ACL ID 255, IPv6 ACL ID 255, L2 ACL ID 255) *pemReceiveTask: May 19 13:36:34.298: 00:17:7c:2f:b6:9a Set bi-dir guest tunnel for 00:17:7c:2f:b6:9a as in Export Anchor role *pemReceiveTask: May 19 13:36:34.298: 00:17:7c:2f:b6:9a 0.0.0.0 Added NPU entry of type 9, dtlFlags 0x4 *dtlArpTask: May 19 13:36:34.564: 00:17:7c:2f:b6:9a Static IP client associated to interface vlan60 which can support client subnet. *dtlArpTask: May 19 13:36:34.564: 00:17:7c:2f:b6:9a 60.60.60.11 DHCP_REQD (7) Change state to WEBAUTH_REQD (8) last state DHCP_REQD (7) *dtlArpTask: May 19 13:36:34.564: 00:17:7c:2f:b6:9a 60.60.60.11 WEBAUTH_REQD (8) pemAdvanceState2 6717, Adding TMP rule *dtlArpTask: May 19 13:36:34.564: 00:17:7c:2f:b6:9a 60.60.60.11 WEBAUTH_REQD (8) Replacing Fast Path rule type = Airespace AP Client - ACL passthru on AP 00:00:00:00:00:00, slot 0, interface = 1, QOS = 0 TPv4 ACL *dtlArpTask: May 19 13:36:34.564: 00:17:7c:2f:b6:9a 60.60.60.11 WEBAUTH_REQD (8) Fast Path rule (contd...) 802.1P = 0, DSCP = 0, TokenID = 15206 Local Bridging Vlan = 60, Local Bridging intf id = 13 *dtlArpTask: May 19 13:36:34.564: 00:17:7c:2f:b6:9a 60.60.60.11 WEBAUTH_REQD (8) Successfully plumbed mobile rule (IPv4 ACL ID 255, IPv6 ACL ID 255, L2 ACL ID 255) *dtlArpTask: May 19 13:36:34.564: 00:17:7c:2f:b6:9a Plumbing web-auth redirect rule due to user logout *dtlArpTask: May 19 13:36:34.564: 00:17:7c:2f:b6:9a apfAssignMscbIpAddr:1148 Assigning an Ip Addr 60.60.60.11 to the client in Anchor state update the foreign switch 10.105.135.226 *dtlArpTask: May 19 13:36:34.565: 00:17:7c:2f:b6:9a Assigning Address 60.60.60.11 to mobile *pemReceiveTask: May 19 13:36:34.565: 00:17:7c:2f:b6:9a Set bi-dir guest tunnel for 00:17:7c:2f:b6:9a as in Export Anchor role *pemReceiveTask: May 19 13:36:34.565: 00:17:7c:2f:b6:9a 60.60.60.11 Added NPU entry of type 2, dtlFlags 0x4 *pemReceiveTask: May 19 13:36:34.565: 00:17:7c:2f:b6:9a Pushing IPv6: fe80:0000:0000:0000:6cla:b253:d711:0c7f , and MAC: 00:17:7C:2F:B6:9A , Binding to Data Plane. SUCCESS !! *pemReceiveTask: May 19 13:36:34.565: 00:17:7c:2f:b6:9a Sent an XID frame (5508-MC) > (5508-MC) > (5508-MC) >*DHCP Socket Task: May 19 13:36:44.259: 00:17:7c:2f:b6:9a DHCP received op BOOTREQUEST (1) (len 314, vlan 0, port 1, encap 0xec07) *DHCP Socket Task: May 19 13:36:44.259: 00:17:7c:2f:b6:9a DHCP (encap type 0xec07) mstype 3ff:ff:ff:ff:ff *DHCP Socket Task: May 19 13:36:44.259: 00:17:7c:2f:b6:9a DHCP selecting relay 1 control block settings: dhcpServer: 0.0.0.0, dhcpNetmask: 0.0.0.0, dhcpGateway: 0.0.0.0, dhcpRelay: 0.0.0.0 VLAN: 0 *DHCP Socket Task: May 19 13:36:44.259: 00:17:7c:2f:b6:9a DHCP selected relay 1 -60.60.60.251 (local address 60.60.2, gateway 60.60.60.251, VLAN 60, port 1) *DHCP Socket Task: May 19 13:36:44.260: 00:17:7c:2f:b6:9a DHCP transmitting DHCP REQUEST (3) *DHCP Socket Task: May 19 13:36:44.260: 00:17:7c:2f:b6:9a DHCP op: BOOTREQUEST, htype: Ethernet, hlen: 6, hops: 1 *DHCP Socket Task: May 19 13:36:44.260: 00:17:7c:2f:b6:9a DHCP xid: 0xad00ada3 (2902502819), secs: 3072, flags: 0 *DHCP Socket Task: May 19 13:36:44.260: 00:17:7c:2f:b6:9a DHCP chaddr: 00:17:7c:2f:b6:9a *DHCP Socket Task: May 19 13:36:44.260: 00:17:7c:2f:b6:9a DHCP ciaddr: 0.0.0.0, yiaddr: 0.0.0.0 *DHCP Socket Task: May 19 13:36:44.260: 00:17:7c:2f:b6:9a DHCP siaddr: 0.0.0.0,

giaddr: 60.60.60.2 *DHCP Socket Task: May 19 13:36:44.260: 00:17:7c:2f:b6:9a DHCP requested ip: 60.60.60.11 *DHCP Socket Task: May 19 13:36:44.260: 00:17:7c:2f:b6:9a DHCP sending REQUEST to 60.60.60.251 (len 358, port 1, vlan 60) *DHCP Socket Task: May 19 13:36:44.260: 00:17:7c:2f:b6:9a DHCP selecting relay 2 control block settings: dhcpServer: 0.0.0.0, dhcpNetmask: 0.0.0.0, dhcpGateway: 0.0.0.0, dhcpRelay: 60.60.60.2 VLAN: 60 *DHCP Socket Task: May 19 13:36:44.260: 00:17:7c:2f:b6:9a DHCP selected relay 2 -NONE (server address 0.0.0.0,local address 0.0.0.0, gateway 60.60.60.251, VLAN 60, port 1) *DHCP Socket Task: May 19 13:36:44.260: 00:17:7c:2f:b6:9a DHCP received op BOOTREPLY (2) (len 308, vlan 60, port 1, encap 0xec00) *DHCP Socket Task: May 19 13:36:44.261: 00:17:7c:2f:b6:9a DHCP setting server from ACK (server 60.60.60.251, yiaddr 60.60.60.11) *DHCP Socket Task: May 19 13:36:44.261: 00:17:7c:2f:b6:9a DHCP transmitting DHCP ACK (5) *DHCP Socket Task: May 19 13:36:44.261: 00:17:7c:2f:b6:9a DHCP op: BOOTREPLY, htype: Ethernet, hlen: 6, hops: 0 *DHCP Socket Task: May 19 13:36:44.261: 00:17:7c:2f:b6:9a DHCP xid: 0xad00ada3 (2902502819), secs: 0, flags: 0 *DHCP Socket Task: May 19 13:36:44.261: 00:17:7c:2f:b6:9a DHCP chaddr: 00:17:7c:2f:b6:9a *DHCP Socket Task: May 19 13:36:44.261: 00:17:7c:2f:b6:9a DHCP ciaddr: 0.0.0.0, viaddr: 60.60.60.11 *DHCP Socket Task: May 19 13:36:44.261: 00:17:7c:2f:b6:9a DHCP siaddr: 0.0.0.0, giaddr: 0.0.0.0 *DHCP Socket Task: May 19 13:36:44.261: 00:17:7c:2f:b6:9a DHCP server id: 192.168.200.1 rcvd server id: 60.60.60.251 *webauthRedirect: May 19 13:36:47.678: 0:17:7c:2f:b6:9a- received connection *webauthRedirect: May 19 13:36:47.680: captive-bypass detection disabled, Not checking for wispr in HTTP GET, client mac=0:17:7c:2f:b6:9a *webauthRedirect: May 19 13:36:47.680: 0:17:7c:2f:b6:9a- Preparing redirect URL according to configured Web-Auth type *webauthRedirect: May 19 13:36:47.680: 0:17:7c:2f:b6:9a- Checking custom-web config for WLAN ID:4 *webauthRedirect: May 19 13:36:47.680: 0:17:7c:2f:b6:9a- unable to get the hostName for virtual IP, using virtual IP =192.168.200.1 *webauthRedirect: May 19 13:36:47.680: 0:17:7c:2f:b6:9a- Global status is enabled, checking on web-auth type *webauthRedirect: May 19 13:36:47.680: 0:17:7c:2f:b6:9a- Web-auth type Internal, no further redirection needed. Presenting defualt login page to user *webauthRedirect: May 19 13:36:47.680: 0:17:7c:2f:b6:9a- http_response_msg_body1 is <HTML><HEAD><TITLE> Web Authentication Redirect</TITLE><META http-equiv= "Cache-control" content="no-cache"><META http-equiv="Pragma" content="n *webauthRedirect: May 19 13:36:47.680: 0:17:7c:2f:b6:9a- http_response_msg_body2 is "></HEAD></HTML> *webauthRedirect: May 19 13:36:47.680: 0:17:7c:2f:b6:9a- parser host is www.facebook.com *webauthRedirect: May 19 13:36:47.680: 0:17:7c:2f:b6:9a- parser path is / *webauthRedirect: May 19 13:36:47.680: 0:17:7c:2f:b6:9a- added redirect=, URL is now https://192.168.200.1/login.html? *webauthRedirect: May 19 13:36:47.680: 0:17:7c:2f:b6:9a- str1 is now

https://192.168.200.1/login.html?redirect=www.facebook.com/

*webauthRedirect: May 19 13:36:47.680: 0:17:7c:2f:b6:9a- clen string is Content-Length: 312

*webauthRedirect: May 19 13:36:47.680: 0:17:7c:2f:b6:9a- Message to be sent is HTTP/1.1 200 OK Location: https://192.168.200.1/login.html?redirect=www.facebook.com/ Content-Type: text/html Content-Length: 312

<HTML><HEAD *webauthRedirect: May 19 13:36:47.680: 0:17:7c:2f:b6:9a- send data length=448 *webauthRedirect: May 19 13:36:47.680: 0:17:7c:2f:b6:9a- Web-auth type External, but unable to get URL *webauthRedirect: May 19 13:36:47.681: 0:17:7c:2f:b6:9a- received connection *emWeb: May 19 13:36:48.731: SSL Connection created for MAC:0:17:7c:2f:b6:9a *webauthRedirect: May 19 13:36:51.795: 0:17:7c:2f:b6:9a- received connection *webauthRedirect: May 19 13:36:51.795: captive-bypass detection disabled, Not checking for wispr in HTTP GET, client mac=0:17:7c:2f:b6:9a *webauthRedirect: May 19 13:36:51.795: 0:17:7c:2f:b6:9a- Preparing redirect URL according to configured Web-Auth type *webauthRedirect: May 19 13:36:51.796: 0:17:7c:2f:b6:9a- Checking custom-web config for WLAN ID:4 *webauthRedirect: May 19 13:36:51.796: 0:17:7c:2f:b6:9a- unable to get the hostName for virtual IP, using virtual IP =192.168.200.1 *webauthRedirect: May 19 13:36:51.796: 0:17:7c:2f:b6:9a- Global status is enabled, checking on web-auth type *webauthRedirect: May 19 13:36:51.796: 0:17:7c:2f:b6:9a- Web-auth type Internal, no further redirection needed. Presenting defualt login page to user *webauthRedirect: May 19 13:36:51.796: 0:17:7c:2f:b6:9a- http_response_msg_body1 is <HTML><HEAD><TITLE> Web Authentication Redirect</TITLE><META http-equiv= "Cache-control" content="no-cache"><META http-equiv="Pragma" content="n *webauthRedirect: May 19 13:36:51.796: 0:17:7c:2f:b6:9a- http_response_msg_body2 is "></HEAD></HTML> *webauthRedirect: May 19 13:36:51.796: 0:17:7c:2f:b6:9a- parser host is www.facebook.com *webauthRedirect: May 19 13:36:51.796: 0:17:7c:2f:b6:9a- parser path is /favicon.ico *webauthRedirect: May 19 13:36:51.796: 0:17:7c:2f:b6:9a- added redirect=, URL is now https://192.168.200.1/login.html? *webauthRedirect: May 19 13:36:51.796: 0:17:7c:2f:b6:9a- strl is now https://192.168.200.1/login.html?redirect=www.facebook.com/favicon.ico *webauthRedirect: May 19 13:36:51.796: 0:17:7c:2f:b6:9a- clen string is Content-Length: 323 *webauthRedirect: May 19 13:36:51.796: 0:17:7c:2f:b6:9a- Message to be sent is HTTP/1.1 200 OK Location: https://192.168.200.1/login.html?redirect=www.facebook.com/favicon.ico Content-Type: text/html Content-Length: 323 *webauthRedirect: May 19 13:36:51.796: 0:17:7c:2f:b6:9a- send data length=470 *webauthRedirect: May 19 13:36:51.796: 0:17:7c:2f:b6:9a- Web-auth type External, but unable to get URL *DHCP Socket Task: May 19 13:37:03.905: 00:17:7c:2f:b6:9a DHCP received op BOOTREQUEST (1) (len 308, vlan 0, port 1, encap 0xec07) *DHCP Socket Task: May 19 13:37:03.905: 00:17:7c:2f:b6:9a DHCP (encap type 0xec07) mstype 3ff:ff:ff:ff:ff *DHCP Socket Task: May 19 13:37:03.905: 00:17:7c:2f:b6:9a DHCP selecting relay 1 control block settings: dhcpServer: 60.60.60.251, dhcpNetmask: 255.255.255.0,

dhcpGateway: 60.60.60.251, dhcpRelay: 60.60.60.2 VLAN: 60

```
ewaURLHook: Entering:url=/login.html, virtIp = 192.168.200.1, ssl_connection=1,
secureweb=1
```

```
*emWeb: May 19 13:38:35.199: WLC received client 0:17:7c:2f:b6:9a request for
Web-Auth page /login.html
*emWeb: May 19 13:38:35.199: WLC received client 0:17:7c:2f:b6:9a request for
Web-Auth page /login.html
*emWeb: May 19 13:38:47.215:
ewaURLHook: Entering:url=/login.html, virtIp = 192.168.200.1, ssl_connection=1,
secureweb=1
*ewmwebWebauth1: May 19 13:38:47.216: 00:17:7c:2f:b6:9a Username entry (surbg)
created for mobile, length = 5
*ewmwebWebauth1: May 19 13:38:47.216: 00:17:7c:2f:b6:9a Username entry (surbg)
created in mscb for mobile, length = 5
*ewmwebWebauth1: May 19 13:38:47.216: 00:17:7c:2f:b6:9a 60.60.60.11 WEBAUTH_REQD
(8) Change state to WEBAUTH_NOL3SEC (14) last state WEBAUTH_REQD (8)
*ewmwebWebauth1: May 19 13:38:47.216: 00:17:7c:2f:b6:9a apfMsRunStateInc
*ewmwebWebauth1: May 19 13:38:47.216: 00:17:7c:2f:b6:9a 60.60.60.11 WEBAUTH_NOL3SEC
(14) Change state to RUN (20) last state WEBAUTH_NOL3SEC (14)
*ewmwebWebauth1: May 19 13:38:47.216: 00:17:7c:2f:b6:9a Session Timeout is 0 -
not starting session timer for the mobile
*ewmwebWebauth1: May 19 13:38:47.216: 00:17:7c:2f:b6:9a 60.60.60.11 RUN (20)
```

Reached PLUMBFASTPATH: from line 6605

*ewmwebWebauth1: May 19 13:38:47.216: 00:17:7c:2f:b6:9a 60.60.60.11 RUN (20)
Replacing Fast Path rule
type = Airespace AP Client

on AP 00:00:00:00:00, slot 0, interface = 1, QOS = 0 IPv4 ACL ID = 255, IPv6 ACL ID =

Aqui está a captura de pacotes do lado do cliente.

O cliente obtém o endereço IP.

Smartlin_2f:b6:9a	Broadcast	ARP	42 who has 60.60.60.11? Tell 0.0.0.0
Smartlin_2f:b6:9a	Broadcast	ARP	42 who has 60.60.60.251? Tell 60.60.60.11
Smartlin_2f:b6:9a	Broadcast	ARP	42 Gratuitous ARP for 60.60.60.11 (Request)
0.0.0.0	255.255.255.255	DHCP	348 DHCP Request - Transaction ID 0xd73b645b
192.168.200.1	60.60.60.11	DHCP	346 DHCP ACK - Transaction ID 0xd73b645b
Contractor and the second second		and the second sec	an in Jud

O cliente abre um navegador e digita www.facebook.com.

60.60.60.11	50.50.50.251	DNS	76 Standard query 0x18bc A www.facebook.com	
50.50.50.251	60.60.60.11	DNS	92 Standard query response 0x18bc A 56.56.56.56	
60.60.60.11	50.50.50.251	DNS	76 Standard query Oxab1b AAAA www.facebook.com	
60.60.60.11	50.50.50.251	DNS	76 Standard query Oxab1b AAAA www.facebook.com	
60.60.60.11	50, 50, 50, 251	DNS	76 Standard query Oxab1b _ AAAA_www.facebook.com	
*				
Frame 508: 76	bytes on wire (608 bi	ts), 76 bytes captured (608	8 bits) on interface 0	
🕀 Ethernet II, S	rc: Smartlin_2f:b6:9a	(00:17:7c:2f:b6:9a), Dst:	Cisco_fc:96:a8 (f0:f7:55:fc:96:a8)	
Internet Proto	col version 4, Src: 6	0.60.60.11 (60.60.60.11), [ost: 50.50.50.251 (50.50.50.251)	
B User Datagram Protocol, Src Port: 62672 (62672), Dst Port: domain (53)				
□ Domain Name System (query)				
Transaction ID: Oxablb				
🗄 Flags: 0x0100 Standard query				
Questions: 1				
Answer RRs: 0				
Authority RRs: 0				
Additional RRs: 0				
🖶 Queries				
🖩 www.facebook.com: type AAAA, class IN				

A WLC intercepta o primeiro pacote TCP do cliente e envia seu endereço IP virtual e a página Webauth interna.

56.	56.56.56	60.60.60.11	TCP	54 http > 49720 [ACK] seq=1 Ack=207 win=6656 Len=0		
56.	56.56.56	60.60.60.11	HTTP	524 HTTP/1.1 200 OK (text/html)		
56	56 56 56	60 60 60 11	TCP	54 http://doi.org/10.1011/001100000000000000000000000000		
4				II		
€ F	rame 550: 52	4 bytes on wire (419)	2 bits), 524 bytes captured ((4192 bits) on interface 0		
ÐE	thernet II,	Src: Cisco_fc:96:a8	(f0:f7:55:fc:96:a8), Dst: Sma	artlin_2f:b6:9a (00:17:7c:2f:b6:9a)		
• 1	nternet Prot	cocol Version 4, Src:	56.56.56.56 (56.56.56.56), [Dst: 60.60.60.11 (60.60.60.11)		
• T	B Transmission Control Protocol, Src Port: http (80), Dst Port: 49720 (49720), Seq: 1, Ack: 207, Len: 470					
🖃 H	B Hypertext Transfer Protocol					
Œ	HTTP/1.1 200 ok\r\n					
	Location: https://192.168.200.1/login.html?redirect=www.facebook.com/favicon.ico\r\n					
	Content-Type: text/html\r\n					
E Content-Length: 323\r\n						
\r\n						
[HTTP response 1/1]						

Após a autenticação bem-sucedida da Web, o restante do fluxo de trabalho é concluído.

60.60.60.11	50.50.50.251	DNS	86 Standard query 0x64dd A 1e9cvlist.ie.microsoft.com
60.60.60.11	192.168.200.1	TCP	66 49724 > https [SYN] seq=0 win=8192 Len=0 MSS=1460 wS=4 SACK_PERM=1
192.168.200.1	60.60.60.11	TCP	66 https > 49724 [SYN, ACK] seq=0 Ack=1 win=5560 Len=0 MSS=1390 SACK_PERM=1 WS=64
60.60.60.11	192.168.200.1	TCP	54 49724 > https [ACK] Seq=1 Ack=1 w1n=16680 Len=0
60.60.60.11	192,168,200,1	TLSV1	190 Client Hello
192.168.200.1	60.60.60.11	TCP	54 https > 49724 [ACK] Seq=1 Ack=137 win=6656 Len=0
192.168.200.1	60.60.60.11	TLSV1	192 Server Hello, Change Cipher Spec, Encrypted Handshake Message
60.60.60.11	192.168.200.1	TLSV1	113 Change Cipher Spec, Encrypted Handshake Message
60.60.60.11	50.50.50.251	DNS	83 Standard query 0xb814 A ctldl.windowsupdate.com
192.168.200.1	60.60.60.11	TCP	54 https > 49724 [ACK] seg=139 Ack=196 win=6656 Len=0
60 60 60 11	40 40 40 315	ALC: NOT	63 News August ND TOTTLD -00-

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