Esempio di configurazione dell'ancoraggio guest dei controller LAN wireless ad accesso unificato con accesso convergente

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Introduzione

In questo documento viene descritto come configurare i Wireless LAN Controller (WLC) serie 5508/5760 e lo switch Catalyst serie 3850 per il client wireless Guest Anchor nella nuova configurazione di implementazione della mobilità in cui il WLC serie 5508 funziona come Mobility Anchor e lo switch Catalyst serie 3850 come Mobility Foreign Controller per i client. Inoltre, lo switch Catalyst serie 3850 opera come agente di mobilità su un WLC serie 5760 che funziona come controller di mobilità da cui lo switch Catalyst serie 3850 acquisisce la licenza Access Point (AP).

Prerequisiti

Requisiti

Cisco raccomanda la conoscenza dei seguenti argomenti prima di provare la configurazione:

• GUI o CLI di Cisco IOS[®] con i WLC serie 5760 e 3650 Converged Access e gli switch

Catalyst serie 3850

- Accesso tramite GUI e CLI con il WLC serie 5508
- Configurazione SSID (Service Set Identifier)
- Autenticazione Web

Componenti usati

Le informazioni fornite in questo documento si basano sulle seguenti versioni software e hardware:

- Cisco 5760 release 3.3.3 (Next-Generation Wiring Closet [NGWC])
- Catalyst serie 3850 Switch
- Cisco serie 5508 WLC release 7.6.120
- Cisco serie 3602 Lightweight Access Point
- Switch Cisco Catalyst serie 3560

Le informazioni discusse in questo documento fanno riferimento a dispositivi usati in uno specifico ambiente di emulazione. Su tutti i dispositivi menzionati nel documento la configurazione è stata ripristinata ai valori predefiniti. Se la rete è operativa, valutare attentamente eventuali conseguenze derivanti dall'uso dei comandi.

Configurazione

Nota: per ulteriori informazioni sui comandi menzionati in questa sezione, usare lo <u>strumento</u> <u>di ricerca</u> dei comandi (solo utenti <u>registrati</u>).

Esempio di rete

Il WLC serie 5508 funziona come controller di ancoraggio e lo switch Catalyst serie 3850 come controller esterno e l'agente di mobilità che ottiene la licenza dal controller di mobilità 5760.



Nota: nel diagramma di rete, il WLC serie 5508 funziona come controller di ancoraggio, il WLC serie 5760 come controller di mobilità e lo switch Catalyst serie 3850 come agente di mobilità e WLC esterno. In qualsiasi momento, il controller di ancoraggio per gli switch Catalyst serie 3850 è un WLC serie 5760 o un WLC serie 5508. Entrambi non possono essere ancoraggi contemporaneamente, perché il doppio ancoraggio non funziona.

Configurazioni

La configurazione è composta da tre parti:

Parte 1 - Configurazione sul WLC da 5508 ancoraggi

Parte 2 - Configurazione della mobilità ad accesso convergente tra il WLC serie 5508/5760 e lo switch Catalyst serie 3850

Parte 3 - Configurazione sullo switch Catalyst serie 3850

Parte 1 - Configurazione sul WLC da 5508 ancoraggi

1. Sul WLC serie 5508, passare il mouse su WLAN > Nuovo per creare una nuova LAN wireless (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. Passare il mouse su WLAN > WLAN Edit > Security > Layer 3 enabled Web-authentication per configurare la sicurezza di Layer 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
	Layer 3 Security ¹ Web Policy • • Authentication • Passthrough • Conditional Web Redirect • Splash Page Web Redirect • On MAC Filter failure ¹⁰ Preauthentication ACL IPv4 None • IPv6 None • WebAuth FlexAcl None • Sleeping Client • Enable Over-ride Global Config • Enable

3. Per aggiungere il WLC serie 5508 come dispositivo di ancoraggio, impostare l'indirizzo di ancoraggio come **locale** nella finestra di configurazione dell'ancoraggio della mobilità WLAN.

										Sa <u>v</u> e Configural
MONITOR	<u>₩</u> LANs	CONTROLLER	WIRELESS	SECURITY	MANAGEMENT	COMMANDS	HELP	EEEDBACK		_
Mobility A	Anchors									
WLAN SSI	D CUM	m .								
Switch IP	Address (Anchor)							Data Path	Control Path
local									up	up
Mobility	Anchor Cr	eate								

4. Passare il mouse sulla **pagina Sicurezza > Webauth > Webauth** per configurare la pagina Webauth da utilizzare per l'autenticazione del client.

Nell'esempio viene selezionata la pagina WebAuth interna WLC:

)) cisco		WLANs		WIRELESS	SECURITY	MANAGEMENT	COMMANDS	HELP	EEEDBACK
Security AAA General RADIUS	Web Logi Web Auth Redirect U	in Page entication 1 JRL after lo	Гуре Igin	Inter	mal (Default)		•		
Authentication Accounting Fallback DNS ▶ TACACS+	This page all page. The Lo WLAN if 'Wel Cisco Log	lows you to ogin page is b Authentic o	customize the co presented to wel ation' is turned on @ Sho	ntent and appe b users the first (under WLAN 3 w	arance of the I time they acc Security Policie	Login cess the es).			
LDAP Local Net Users MAC Filtering Disabled Clients User Login Policies AP Policies	Headline Message								

5. Creare un utente di rete locale. Questa coppia nome utente/password viene utilizzata dall'utente quando richiesto nella pagina WebAuth.

uluilu cisco	MONITOR WLANS		WIRELESS	SECURITY	MANAGEMENT	с <u>о</u>	
Security	Local Net Users >	Edit					
General	User Name Password	surbg					
Authentication Accounting Fallback	Confirm Password Creation Time	••• Mon M	••• Mon May 19 12:00:41 2014				
DNS TACACS+ LDAP	Remaining Time WLAN Profile	N/A Any V	VLAN 👻				
Local Net Users MAC Filtering Dischlod Clients	Description	surbg					

Parte 2 - Configurazione della mobilità ad accesso convergente tra il WLC serie 5508/5760 e lo switch Catalyst serie 3850

1. Sul WLC serie 5508, aggiungere il WLC serie 5760 come Mobility Peer.

cisco	MONITOR WLANS CO	NTROLLER WIRELESS	SECURITY	MANAGEMENT	COMMANDS	нецр	EEEOBACK	_		\$
Controller	Static Mobility Group	Members								
General Inventory	Local Nobility Group	Mobile-1								
Interfaces	NAC Address	IP Address		Public	IP Address	Group	Name	Multicast IP	Ste	atus
Interface Groups	58:8d:09:cd:ac:60	10.105.135.151		10.105	135.151	Mobile	1	0.0.0.0	Up	
Multicast Network Routes	00:00:00:00:00:00	10.105.135.170		10.105	.135.178	surbo		0.0.0.0	Up Up	
Redundancy									-	
Internal DHCP Server										
 Mobility Management Mobility Configuration Mobility Groups 										

2. Sul WLC serie 5760, in qualità di controller di mobilità, aggiungere il WLC serie 5508 come Mobility Peer.

cisco Wireless Controller	🛆 Home	Monitor • Configurati	an • Administration •	ныр		
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	-	gaveg	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. Questo passo è molto importante! Aggiungere lo switch Catalyst serie 3850 come agente di mobilità sul WLC serie 5760 nella scheda Switch Peer Group in Mobility Management.

cisco Wireless Controller		Configuration Administr	ation 🔻 Help	
Controller	Switch Peer Group > SURBG-SPG Switch Peer Group > SURBG-SPG			
🕶 🚍 System				
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. Sugli switch Catalyst serie 3850, aggiungere il WLC serie 5760 come controller di mobilità. Dopo aver eseguito questa operazione, lo switch Catalyst serie 3850 ottiene la licenza dell'access point dal controller di mobilità 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: Configurazione sullo switch Catalyst serie 3850

1. Passare il mouse **su GUI > Configurazione > Wireless > WLAN > Novità** per configurare esattamente SSID/WLAN sullo switch Catalyst serie 3850.

սիսիս		
CISCO Wireless Controller	🏠 Home	Monitor Configuration Administration Help
Wireless	WLAN > Edit	
	General Security	QOS AVC Policy Mapping Advanced
Access Points	Profile Name	CUWN
B02.11a/n/ac	Туре	WLAN
B02.11b/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	AI V
	Interface/Interface Group(G	;) VLAN0060 🔎
	Broadcast SSID	
	Multicast VLAN Feature	

2. Passare il mouse su WLAN > WLAN Edit > Security > Layer 3 enabled Web-authentication per configurare la sicurezza di Layer 3.

սիսիս	
cisco Wireless Controller	🏡 Home Monitor I ▼ Configuration I ▼ Administration I ▼ Help
Vireless	WLAN > Edit General Security QOS AVC Policy Mapping Advanced
WLANs Access Points	Layer2 Layer3 AAA Server
 802.11a/n/ac 802.11b/g/n Media Stream 	Web Policy Image: Conditional Web Redirect Webauth Authentication List Disabled
 QOS 	Webauth Parameter Map Webauth On-mac-filter Failure
	Preauthentication IPv6 ACL Unconfigured 12 Preauthentication IPv6 ACL none 12

3. Aggiungere l'indirizzo IP del WLC serie 5508 come ancoraggio nella configurazione WLAN Mobility Anchor

Int none Monton (* Consignation (* Automatication (*	Help
Wireless Mobility Anchors VILAN WILAN WILANS WILAN Profile WILAN Profile QUWN Access Points Switch IP Address 802.11a/n/ac Create Mobility Anchor 802.11b/g/n Remove Anchor Media Stream IP Address QOS 10.105.135.151	

Verifica

Fare riferimento a questa sezione per verificare che la configurazione funzioni correttamente.

Collegare il client alla rete WLAN Cisco Unified Wireless Network (CUWN). Di seguito è riportato il flusso di lavoro:

- 1. Il client riceve un indirizzo IP.
- 2. Il client apre un browser e accede a qualsiasi sito Web.
- 3. Il primo pacchetto TCP inviato dal client viene dirottato dal WLC, che intercetta e invia la pagina WebAuth.
- 4. Se il DNS è configurato correttamente, il client ottiene la pagina Webauth.
- 5. Il client deve fornire il nome utente/password per essere autenticato.
- 6. Una volta completata l'autenticazione, il client viene reindirizzato alla pagina di accesso originale.

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. Dopo che il client ha fornito le credenziali corrette, passa l'autenticazione.

æ	→ Mathematical Action → Mathematical Ac	🧟 Internet Explorer cannot dis 🗙
	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> Logout	
	a 100%	

Risoluzione dei problemi

Per risolvere i problemi relativi alla configurazione, immettere i seguenti debug sul WLC serie 5508, che funziona da ancoraggio guest:

Debug Client

Debug web-auth redirect enable mac

Di seguito è riportato un esempio:

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, 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: fe80:0000:0000:0000:6c1a: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::
6c1a:b253:d711: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, 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, 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: fe80:0000:0000:0000:6c1a: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 60.60.60.2, 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, yiaddr: 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- str1 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 00:00:00:00:00:00, slot 0, interface = 1, QOS = 0 IPv4 ACL ID = 255, IPv6 ACL ID =

Ecco l'acquisizione dei pacchetti sul lato client.

Il client ottiene l'indirizzo 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
Construction of the second second	6600	and the second sec	and standard and a distance in a set the second and

Il client apre un browser e digita www.facebook.com.

			an instant a strate from and man that the part of the part of		
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 0xab1b AAAA www.facebook.com		
60.60.60.11	50.50.50.251	DNS	76 Standard query 0xablb AAAA www.facebook.com		
60.60.60.11	50, 50, 50, 251	DNS	76 Standard query Oxabib _ AAAA_www.facebook.com		
•			m		
Frame 508: 76	bytes on wire (608 bi	ts), 76 bytes captured (608 b	its) on interface O		
🕀 Ethernet II, S	rc: Smartlin_2f:b6:9a	(00:17:7c:2f:b6:9a), Dst: Ci	sco_fc:96:a8 (f0:f7:55:fc:96:a8)		
B Internet Protocol Version 4, Src: 60.60.60.11 (60.60.60.11), Dst: 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 RR	Authority RRs: 0				
Additional RRs: 0					
Queries					
🖩 www.facebook.com: type AAAA, class IN					

Il WLC intercetta il primo pacchetto TCP del client ed esegue il push del relativo indirizzo IP virtuale e della pagina WebAuth interna.

56.56.56.56	60.60.60.11	TCP	54 http > 49720 [ACK] seq=1 Ad	k=207 win=6656 Len=0	
56.56.56.56	60.60.60.11	HTTP	524 HTTP/1.1 200 OK (text/htm]		
56 56 56 56	60 60 60 11	TCP	54 http://doi/of/fets/ack1.Sen	=471_Ack=207_Win=6656_LAn=0	
4					
E Frame 550:	524 bytes on wire (4192	oits), 524 bytes captured ((192 bits) on interface O		
Ethernet I	I, Src: Cisco_fc:96:a8 (fr	0:f7:55:fc:96:a8), Dst: Sma	rtlin_2f:b6:9a (00:17:7c:2f:b6:9	a)	
Internet P	E Internet Protocol Version 4, Src: 56.56.56.56.56.56.56.56.56.56), Dst: 60.60.60.11 (60.60.60.11)				
B Transmission Control Protocol, Src Port: http (80), Dst Port: 49720 (49720), Seq: 1, Ack: 207, Len: 470					
B Hypertext Transfer Protocol					
■ 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					
[HTTP response 1/1]					

Una volta completata l'autenticazione Web, il resto del flusso di lavoro viene completato.

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 win=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 W1n=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] Seq=139 Ack=196 win=6656 Len=0
40 40 40 11	40 40 40 315	ALC: NOT	DI NAME AND TO TOTAL OF

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