

# CWA CPPM

vendredi 2 mai 2014  
18:12

Lessons learned.

Every endpoint is updated with Roles that are valid during 5 minutes. These roles can be used to make posterior decisions.

On each service we need to:

Match the service, define which roles are to be mapped to the endpoint, enforce (return) auth privileges to the endpoint.

Flow is:

Endpoint associates, tries MAC Auth and generates RADIUS request to CPPM - 1st pass on mac auth service (allow all mac)

On CPPM endpoint is unknown - gets returned an access-accept plus an URL redirect

Person using endpoint goes to web browser and gets redirected to CPPM portal and authenticates

This authentication is processed in CPPM via a webauth service that will:

- Map a role to the endpoint

- Generate a coa for the controller to reauthenticate the user (new mac auth - 2nd pass)

This 2nd pass will then be caught by the same mac auth service, but this time (during 5 minutes after accounting start) the endpoint will have roles in its policy cache. These roles will be matched and the appropriate RADIUS attributes will be returned (specific dacl's for instance)

When user disconnects:

- Controller will need to time out the endpoint, then send accounting stop to CPPM. CPPM will keep endpoint policy cache in during 5 minutes and then purge it. Next time user associates ---> start all over again.

IN the case of CWA: --

On the mac auth service we need to be able to distinguish between 1st pass (no roles on endpoint) from 2nd pass (already roles assigned to the endpoint) --- we need obviously to enable "use cached results".

## Services - S-MACAuth

Summary	Service	Authentication	Roles	Enforcement
Status:	Enabled			
Monitor Mode:	Disabled			
More Options:	-			
<b>Service Rule</b>				
Match ALL of the following conditions:				
Type	Name	Operator	Value	
1. Radius:IETF	NAS-Port-Type	BELONGS_TO	Ethernet (15), Wireless-802.11 (19)	
2. Radius:IETF	Service-Type	BELONGS_TO	Login-User (1), Call-Check (10)	
3. Connection	Client-Mac-Address	EQUALS	% {Radius:IETF:User-Name}	
<b>Authentication:</b>				
Authentication Methods:	[Allow All MAC AUTH]			
Authentication Sources:	[Endpoints Repository]			
Strip Username Rules:	-			
<b>Roles:</b>				
Role Mapping Policy:	-			
<b>Enforcement:</b>				
Use Cached Results:	Enabled			
Enforcement Policy:	EPo-MACEnforcement			

for this we use an enforcement policy that contains rules to allow us to distinguish between when we need to send a URL redirect versus approve a MAC address through. We are obviously using the values from previous authentications.

## Enforcement Policies - EPo-MACEnforcement

Summary	Enforcement	Rules
<b>Enforcement:</b>		
Name:	EPo-MACEnforcement	
Description:		
Enforcement Type:	RADIUS	
Default Profile:	[Deny Access Profile]	
<b>Rules:</b>		
Rules Evaluation Algorithm:	First applicable	
Conditions	Actions	
1. (Tips:Role EQUALS R_PREGuest)	[Allow Access Profile]	
2. (Tips:Role EQUALS [Other])	[Deny Access Profile]	
3. (Authentication:MacAuth EQUALS UnknownClient)	EPr-URLRedir-WLCACL	

The URL redirect needs to be crafted this way - note the usage of variables in the url redirect value  
(%{Connection:Client-Mac-Address-Colon}):

Configuration » Enforcement » Profiles » Edit Enforcement Profile - EPr-URLRedir-WLCACL

## Enforcement Profiles - EPr-URLRedir-WLCACL

Summary	Profile	Attributes
<b>Profile:</b>		
Name:	EPr-URLRedir-WLCACL	
Description:	Send URL redirect + filter ID to WLC	
Type:	RADIUS	
Action:	Accept	
Device Group List:	-	
<b>Attributes:</b>		
Type	Name	Value
1. Radius: Cisco	Cisco-AVPair	= url-redirect=https://10.1.156.142/guest/ciscoguest.php?&mac=%{Connection:Client-Mac-Address-Colon}
2. Radius: Cisco	Cisco-AVPair	= url-redirect-acl=ACL-WEBAUTH-REDIRECT

On the guest auth service we will have:

Configuration » Services » Edit - S\_GuestAuth

## Services - S\_GuestAuth

Summary	Service	Authentication	Roles	Enforcement
<b>Service:</b>				
Name:	S_GuestAuth			
Description:				
Type:	Web-based Authentication			
Status:	Enabled			
Monitor Mode:	Disabled			
More Options:	-			
<b>Service Rule</b>				
Match ANY of the following conditions:				
Type	Name	Operator	Value	
1. Host	CheckType	MATCHES_ANY	Authentication	
<b>Authentication:</b>				
Authentication Sources:	[Guest User Repository]			
Strip Username Rules:	-			
<b>Roles:</b>				
Role Mapping Policy:	RMap_2_PREGUEST			
<b>Enforcement:</b>				
Use Cached Results:	Disabled			
Enforcement Policy:	EPo-CaptivePortalEnforcement			

So basically we're treating every guest authentication on this service and applying the enforcement

policy that will both set the appropriate role to the endpoint as well as trigger a CoA to generate the 2nd pass mac authentication  
 This part is still a bit shady.... Who populates the guestUser:Role ID variable as well as the TIPS server role...

Configuration » Services » Edit - S\_GuestAuth

## Services - S\_GuestAuth

SummaryServiceAuthenticationRolesEnforcement

Role Mapping Policy:

RMap\_2\_PREGUEST

Modify

Add

Role Mapping Policy Details

Description:

Default Role:

[Other]

Rules Evaluation Algorithm:

first-applicable

Conditions	Role
1. (GuestUser:Role ID EQUALS 2)	R_PREGuest

Configuration » Services » Edit - S\_GuestAuth

## Services - S\_GuestAuth

SummaryServiceAuthenticationRolesEnforcement

Use Cached Results:

☐ Use cached Roles and Posture attributes from previous session

Enforcement Policy:

EPo-CaptivePortalEnforcement

Modify

A

Enforcement Policy Details

Description:

Default Profile:

[Update Endpoint Known]

Rules Evaluation Algorithm:

first-applicable

Conditions	Enforcement Profiles
1. (Tips:Role EQUALS [Guest])	EPr-CoAforGuest

Regarding the way to send the CoA to the WLC. Remember that the web authentication is NOT a radius authentication (so no calling-station-id exists ) and in order to trigger a CoA request we need to send the mac-address of the endpoint we want to reauthenticate, so for this we need to tweak the RADIUS CoA Cisco default template:

## Enforcement Profiles - EPr-CoAforGuest

Summary	Profile	Attributes
<b>Profile:</b>		
Name:	EPr-CoAforGuest	
Description:		
Type:	RADIUS_CoA	
Action:	CoA	
Device Group List:	-	
<b>Attributes:</b>		
Type	Name	Value
1. Radius:IETF	Calling-Station-Id	= %{Connection:Client-Mac-Address-Hyphen}
2. Radius:Cisco	Cisco-AVPair	= subscriber:command=reauthenticate

Beware of setting the right CoA port on the WLC NAD - when using the port 3799 towards WLC we were having a lot of "Received CoA request with invalid attributes" -- as soon as we switched the NAD CoA port to 1700 - everything was magically ok.

Device	SNMP Read Settings	SNMP Write Settings	CLI Settings
Name:	vwlc		
IP or Subnet Address:	10.1.156.134 (e.g., 192.168.1.10 or 192.168.1.1/24)		
Description:			
RADIUS Shared Secret:	.....	Verify:	.....
TACACS+ Shared Secret:		Verify:	
Vendor Name:	Cisco		
Enable RADIUS CoA:	<input checked="" type="checkbox"/>	RADIUS CoA Port:	1700
<b>Attributes</b>			
Attribute	Value		
1. Click to add...			

Regarding the web page configuration we need to go to configuration -> weblogins and make sure we're using Cisco Systems vendor settings as well as server-initiated - CoA sent to Controller

* Vendor Settings:	<div>Cisco Systems ▼</div> <p>Select a predefined group of settings suitable for standard network configurations.</p>
Login Method:	<div>Server-initiated — Change of authorization (RFC 3576) sent to controller ▼</div> <p>Select how the user's network login will be handled. Server-initiated logins require the user's MAC address to be available, usually from the captive portal redirection process.</p>
<b>Login Form</b> Options for specifying the behaviour and content of the login form.	
Authentication:	<div>Credentials – Require a username and password ▼</div> <p>Select the authentication requirement. Access Code requires a single code (username) to be entered. Anonymous allows a blank form requiring just the terms or a Log In button. A pre-existing account is required. Access Code and Anonymous require the account to have the Username Authentication field set.</p>
Prevent CNA:	<input type="checkbox"/> Enable bypassing the Apple Captive Network Assistant The Apple Captive Network Assistant (CNA) is the pop-up browser shown when joining a network that has a captive portal. Note that this option may not work with all vendors, depending on how the captive portal is implemented.
Custom Form:	<input type="checkbox"/> Provide a custom login form If selected, you must supply your own HTML login form in the Header or Footer HTML areas.
Custom Labels:	<input type="checkbox"/> Override the default labels and error messages If selected, you will be able to alter labels and error messages for the current login form.
Username Suffix:	<div></div> <p>The suffix is automatically appended to the username before submitting the login form to the NAS.</p>
* Pre-Auth Check:	<div>None — no extra checks will be made ▼</div> <p>Select how the username and password should be checked before proceeding to the NAS authentication.</p>