Identity Services Engine Guest Portal Local Web Authentication Configuration Example

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Introduction

This document describes how to configure Local Web Authentication (LWA) with the Cisco Identity Services Engine (ISE) guest portal.

Prerequisites

Requirements

Cisco recommends that you have knowledge of these topics:

- ISE
- Cisco Wireless LAN Controller (WLC)

Components Used

The information in this document is based on these software and hardware versions:

- ISE Version 1.1

- WLC Version 7.4

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.

Background Information

This document describes the configuration of LWA. However, Cisco recommends that you use Centralized Web Authentication (CWA) with the ISE whenever possible. There are a few scenarios where LWA is preferred or the only option, so this is a configuration example for those scenarios.

Configure

LWA requires certain prerequirements and a major configuration on the WLC as well as a few changes needed on the ISE.

Before those are covered, here is an outline of the LWA process with the ISE.

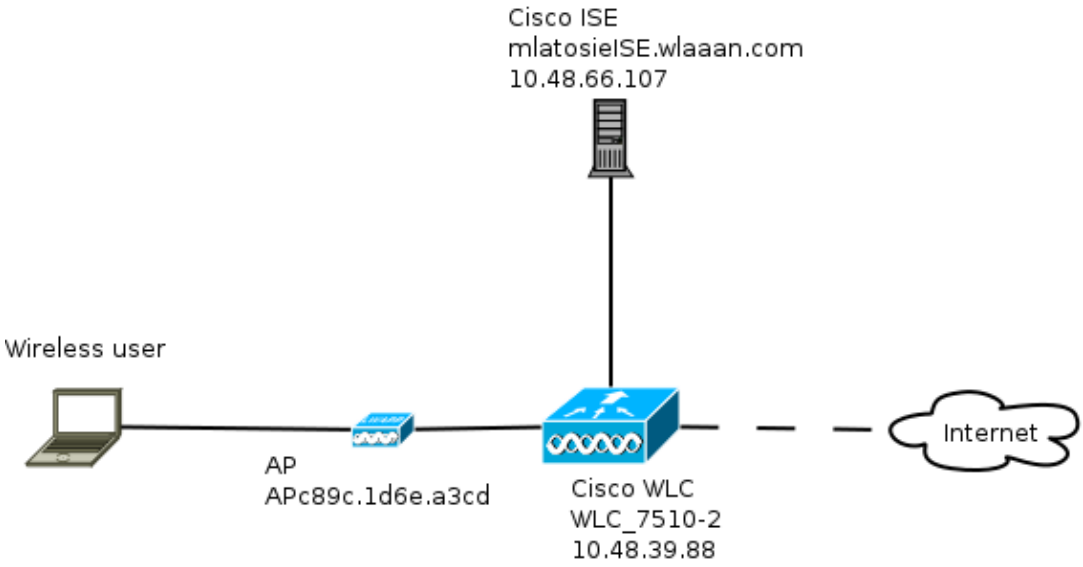
LWA Process with the ISE Guest Portal

1. The browser tries to fetch a web page.
2. The WLC intercepts the HTTP request and redirects it to the ISE.
   Several key pieces of information are stored in that HTTP redirect header. Here is an example of the redirect URL:
   https://mlatosieise.wlaaan.com:8443/guestportal/Login.action?switch_url=https://1.1.1.1/login.html&ap_mac=
   From the example URL, you can see that the user tried to reach "yahoo.com." The URL also contains information about the Wireless Local Area Network (WLAN) name (mlatosie_LWA), and the client and access point (AP) MAC addresses. In the example URL, ***1.1.1.1*** is the WLC, and ***mlatosieise.wlaaan.com*** is the ISE server.
3. The user is presented with the ISE guest login page and enters the username and password.
4. The ISE performs authentication against its configured identity sequence.
5. The browser redirects again. This time, it submits credentials to the WLC. The browser provides the username and password that the user entered in the ISE without any additional interaction from the user. Here is an example GET request to the WLC.
   GET
   /login.html?redirect_url=http://yahoo.com/&username=mlatosie%40cisco.com&password=ityh&buttonClicke
   Again, the original URL (***yahoo.com***), the username (***mlatosie@cisco.com***), and the password (***ityh***) are all included.

   Note: Although the URL is visible here, the actual request is submitted over Secure Sockets Layer (SSL), which is indicated by HTTPS, and is hard to intercept.
6. The WLC uses RADIUS in order to authenticate that username and password against the ISE and allows access.
7. The user is redirected to the specified portal. Refer to the "***Configure external ISE as the webauth URL"*** section of this document for more information.

Network Diagram

This figure describes the logical topology of devices used in this example.



Configuration Prerequisites

For the LWA process to work properly, a client needs to be able to obtain the:

- IP address and netmask configuration
- Default route
- Domain Name System (DNS) server

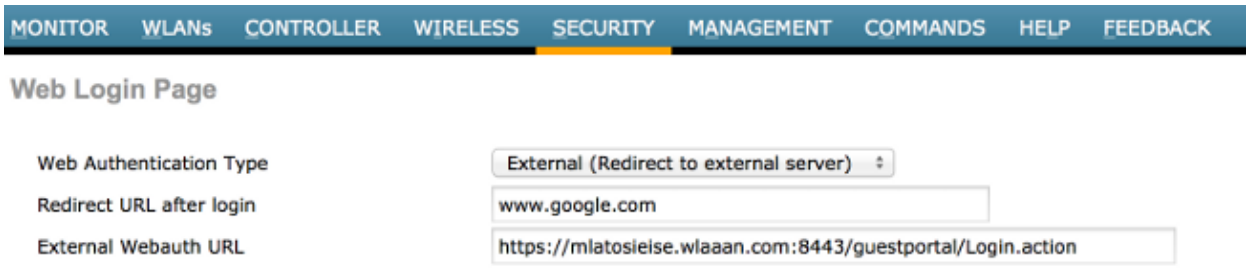
All of these can be provided with DHCP or the local configuration.

The DNS resolution needs to work properly in order for the LWA to work.

Configure the WLC

Configure the External ISE as the Webauth URL

Under ***Security*** > ***Web Auth*** > ***Web Login Page***, you can access this information.



Note: This example uses an External Webauth URL and was taken from ISE Version 1.1. If you have a different version, consult the configuration guide in order to understand what should be configured.

Configure the Access Control Lists (ACLs)

For web authentication to work, the allowed traffic should be defined.

Determine whether FlexConnect ACLs or normal ACLs should be used.

FlexConnect APs use FlexConnect ACLs, while APs that use centralized switching use normal ACLs.

In order to understand in what mode a particular AP operates, navigate to ***Wireless > Access points*** and choose the ***AP name > AP Mode*** drop−down box. A typical deployment is either ***local*** or ***FlexConnect***.

Under ***Security > Access Control Lists,*** choose either ***FlexConnect ACLs*** or ***ACLs***.

In this example, all UDP traffic was permitted in order to specifically allow DNS exchange and traffic to the ISE (10.48.66.107).

General

Access List Name	FLEX_GUEST
Deny Counters	634752

Seq	Action	Source IP/Mask	Destination IP/Mask	Protocol	Source Port	Dest Port	DSCP	Direction	Number of Hits
1	Permit	0.0.0.0 / 0.0.0.0	0.0.0.0 / 0.0.0.0	UDP	Any	Any	Any	Any	208398
2	Permit	10.48.66.107 / 255.255.255.255	0.0.0.0 / 0.0.0.0	TCP	Any	Any	Any	Any	32155
3	Permit	0.0.0.0 / 0.0.0.0	10.48.66.107 / 255.255.255.255	TCP	Any	Any	Any	Any	24532

This example uses FlexConnent, so ***both*** FlexConnect and standard ACLs are defined.

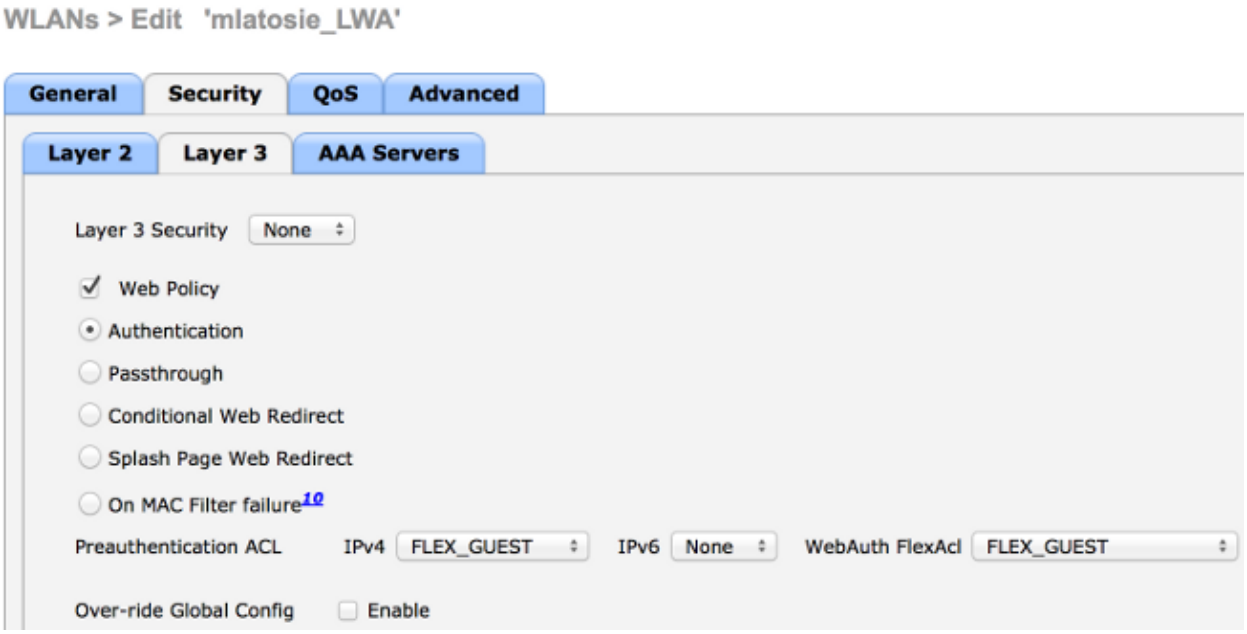
This behavior is documented in Cisco Bug ID CSCue68065 with regard to WLC 7.4 controllers.

Configure the Service Set Identifier (SSID) for LWA

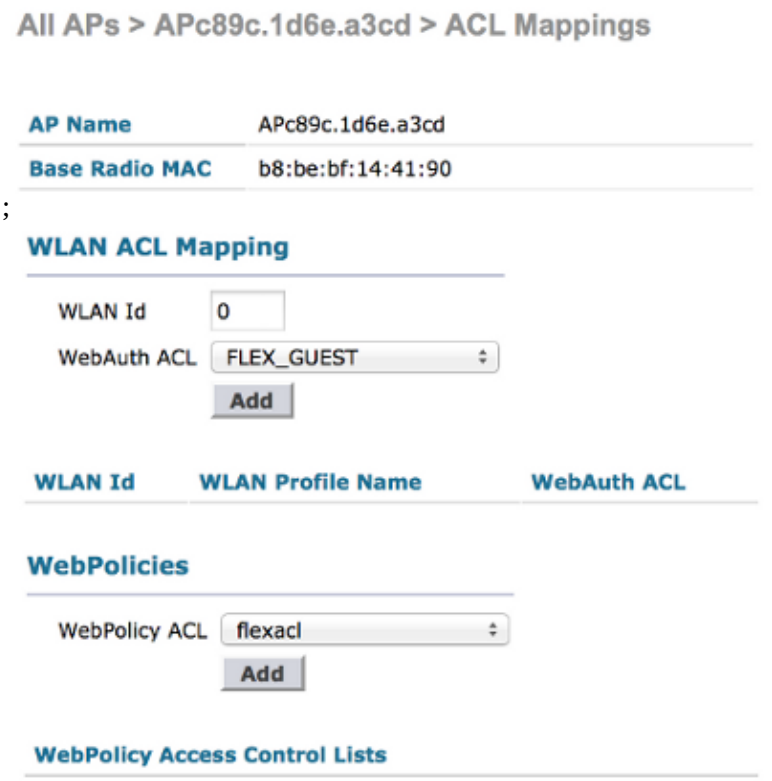
Under ***WLANs,*** choose the ***WLAN ID*** to edit.

Web Auth Configuration

Apply the same ACLs which were defined in the previous step and enable web authentication.



Note: If FlexConnect's local switching feature is used, ACL mapping needs to be added on the AP level. This can be found under ***Wireless > Access Points.*** Choose the appropriate ***AP Name > FlexConnect > External WebAuthentication ACLs***.



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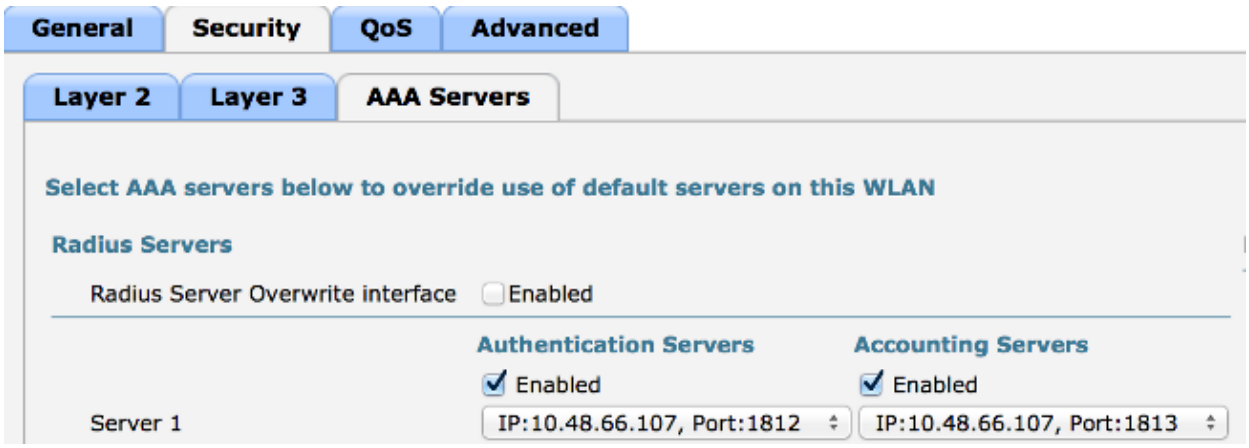
Authentication, Authorization, and Accounting (AAA) Server Configuration

In this example, both the authentication and accounting servers point to the previously−defined ISE server.



Note: The defaults under the ***Advanced*** tab do not need to be appended.

Configure the ISE

The ISE configuration consists of several steps.

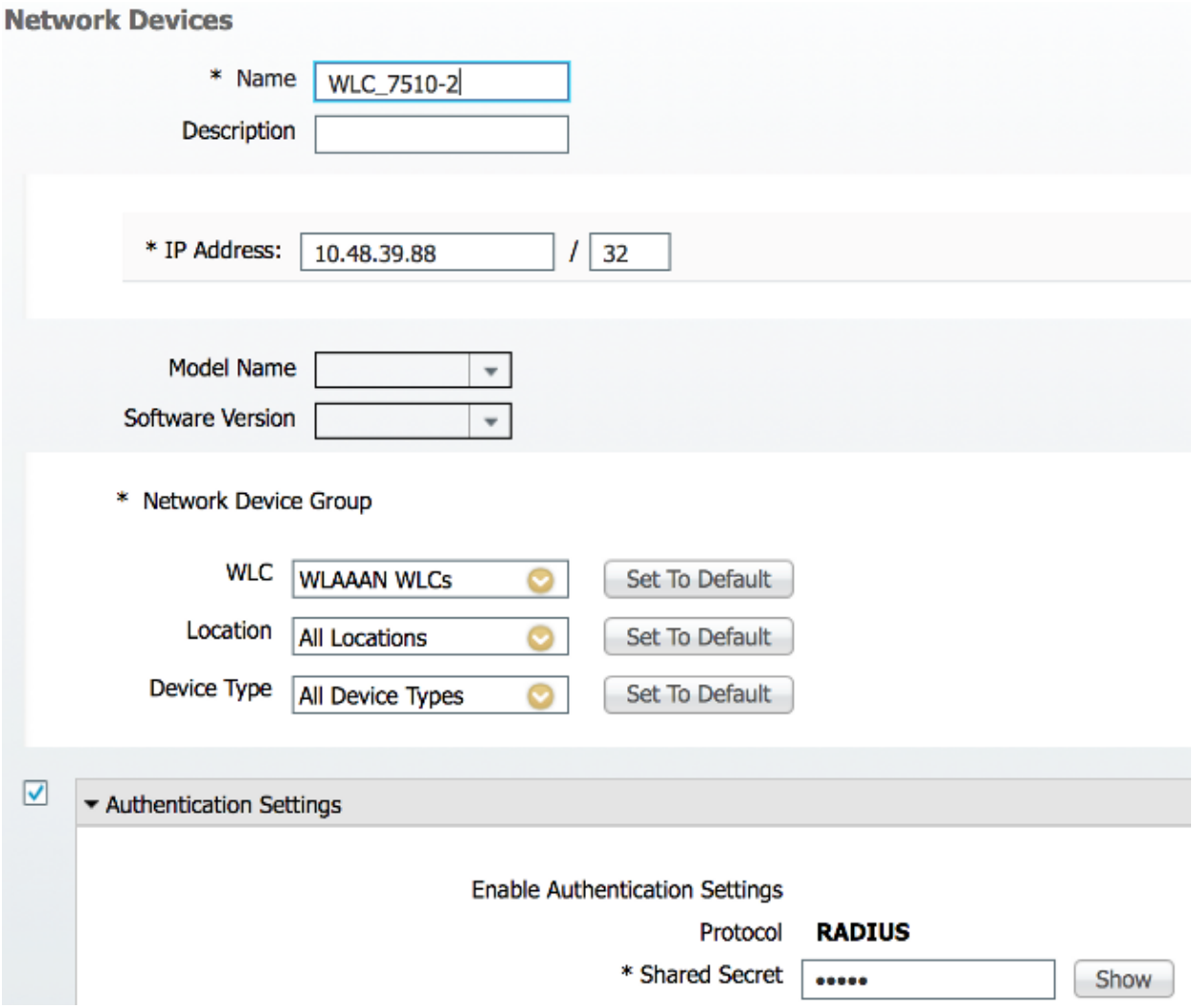
First, define the device as a network device.

Then, ensure that the authentication and authorization rules that accommodate this exchange exist.

Define the Network Device

Under ***Administration*** **−>** ***Network Resources*** **−>** ***Network Devices***, populate these fields:

- Device name
- Device IP address
- ***Authentication Settings*** **>** ***Shared Secret***

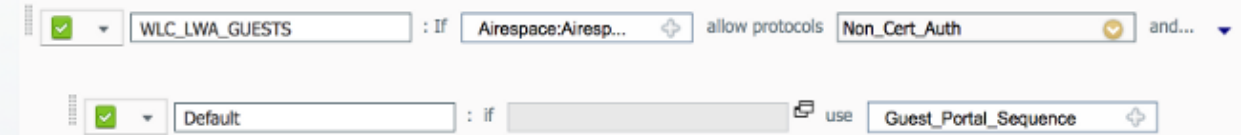


Configure the Authentication Policy

Under ***Policy*** **>** ***Authentication***, add a new authentication policy.

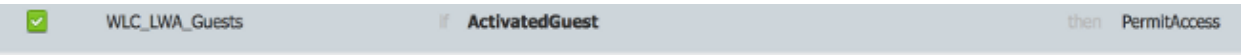
This example uses these parameters:

- Name: ***WLC_LWA_Guests***
- Condition:***Airespace:Airespace−Wlan−Id.*** This condition matches the WLAN ID of 3, which is the ID of the WLAN ***mlatosie_LWA*** that was previously defined on the WLC.
- {optional} It allows authentication protocols that do not require the certificate ***Non_Cert_Auth***, but the defaults can be used.
- Guest_Portal_Sequence, which defines that users are locally−defined guests users.



Configure the Authorization Policy and Result

Under ***Policy*** > ***Authorization,*** define a new policy. It can be a very basic policy, such as:

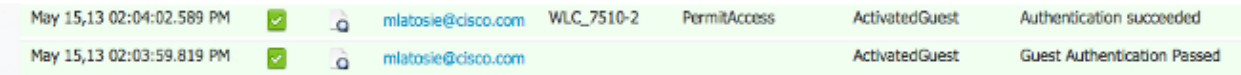


This configuration depends on the overall configuration of the ISE. This example is purposefully simplified.

Verify

On the ISE, administrators can monitor and troubleshoot live sessions under ***Operations*** > ***Authentications***.

Two authentications should be seen. The first authentication is from the guest portal on the ISE. The second authentication comes as an access request from the WLC to the ISE.



You can click the ***Authentication Detail Report*** icon to verify which authorization policies and authentication policies were chosen.

On the WLC, an administrator can monitor clients under ***Monitor*** > ***Client***.

Here is an example of a client that authenticated properly:

Troubleshoot

Cisco recommends that you run debugs by means of the client whenever possible.

Through the CLI, these debugs provide useful information:

```
debug client MA:CA:DD:RE:SS

debug web-auth redirect enable macMA:CA:DD:RE:SS

debug aaa all enable
```

Related Information

- ***Cisco ISE 1.x configuration guide***
- ***Cisco WLC 7.x configuration guide***
- ***Technical Support & Documentation − Cisco Systems***

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