# **Configurar a autenticação 802.1X com PEAP, ISE 2.1 e WLC 8.3**

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# Introduction

Este documento descreve como configurar uma rede local sem fio (WLAN) com segurança 802.1x e substituição de rede local virtual (VLAN).

# Prerequisites

# Requirements

A Cisco recomenda que você tenha conhecimento destes tópicos:

- 802.1x
- Protocolo PEAP protegido
- Autoridade de Certificação (CA)
- Certificados

## **Componentes Utilizados**

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

• WLC v8.3.102.0

- Identity Service Engine (ISE) v2.1
- Notebook Windows 10

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. Se a rede estiver ativa, certifique-se de que você entenda o impacto potencial de qualquer comando.

# Informações de Apoio

Ao configurar uma WLAN com segurança 802.1x e VLAN, você pode substituir o Protected Extensible Authentication Protocol como Extensible Authentication Protocol (EAP).

# Configurar

# Diagrama de Rede



# Configuração

As etapas gerais são:

- 1. Declare o servidor RADIUS na WLC e vice-versa para permitir a comunicação entre si.
- 2. Crie o Service Set Identifier (SSID) no WLC.
- 3. Crie a regra de autenticação no ISE.
- 4. Crie o perfil de autorização no ISE.

- 5. Crie a regra de autorização no ISE.
- 6. Configure o ponto final.

#### **Declarar servidor RADIUS no WLC**

Para permitir a comunicação entre o servidor RADIUS e a WLC, você precisa registrar o servidor RADIUS na WLC e vice-versa.

GUI:

Etapa 1. Abra a GUI do WLC e navegue para **SECURITY** > **RADIUS** > **Authentication** > **New** conforme mostrado na imagem.



Etapa 2. Insira as informações do servidor RADIUS conforme mostrado na imagem.

RADIUS Authentication Serv	ers > New	
Server Index (Priority)	2 ~	_
Server IP Address(Ipv4/Ipv6)	a.b.c.d	
Shared Secret Format	ASCII 🗸	-
Shared Secret	•••••	
Confirm Shared Secret	•••••	
Key Wrap	(Designed fo	r FIPS customers and requires a key wrap compliant RADIUS server)
Port Number	1812	
Server Status	Enabled $\sim$	
Support for CoA	Disabled $\!$	
Server Timeout	10 second	5
Network User	🗹 Enable	
Management	🗹 Enable	
Management Retransmit Timeout	2 seconds	
IPSec	🗌 Enable	

## CLI:

> config radius auth add <index> <a.b.c.d> 1812 ascii <shared-key>
> config radius auth disable <index>
> config radius auth retransmit-timeout <index> <timeout-seconds>

> config radius auth enable <index>

<a.b.c.d> corresponde ao servidor RADIUS.

#### **Criar SSID**

GUI:

Etapa 1. Abra a GUI da WLC e navegue para WLANs > Create New > Go conforme mostrado na imagem.

،، ،،، ،، cısco	<u>M</u> ONITOR	<u>W</u> LANs	<u>C</u> ONTROLLER	WIRELESS	<u>s</u> ecurity	M <u>A</u> NAGEMENT	C <u>O</u> MMANDS	HE
WLANs	WLANs							
<ul> <li>WLANS</li> <li>WLANS</li> <li>Advanced</li> </ul>	Current Filt	ær: No	ne [ <u>Cha</u>	nge Filter] [C	lear Filter]		[	Crea

Etapa 2. Escolha um nome para o SSID e o perfil e clique em Aplicar, conforme mostrado na imagem.

WLANs > New		< Back	Apply
Туре	WLAN V		
Profile Name	profile-name		
SSID	SSID-name		
ID	2 ~		

CLI:

> config wlan create <id> <profile-name> <ssid-name>

Etapa 3. Atribua o servidor RADIUS à WLAN.

CLI:

> config wlan radius\_server auth add <wlan-id> <radius-index>

GUI:

Navegue para **Security** > **AAA Servers** e escolha o servidor RADIUS desejado, depois pressione **Apply** como mostrado na imagem.

WLANs > Edit 'ise-prof'	< Back	Apply
General Security QoS Policy-Mapping Advanced		
Layer 2 Layer 3 AAA Servers		
		^
Select AAA servers below to override use of default servers on this WLAN		
RADIUS Servers		
RADIUS Server Overwrite interface Enabled		
Authentication Servers Accounting Servers EAP Parameters		
Enabled Enable		
Server 1 IP:172.16.15.8, Port:1812 V None V		
Server 2 None V None V		
Server 3 None V None V		
Server 4 None V None V		
Server 5 None V None V		
Server 6 None V None V		
RADIUS Server Accounting		
Interim Update 🔽 Interim Interval 🛛 Seconds		× 1
		/

Etapa 4. Habilite Allow AAA Override e, opcionalmente, aumente o timeout da sessão

CLI:

```
> config wlan aaa-override enable <wlan-id>
```

> config wlan session-timeout <wlan-id> <session-timeout-seconds>

GUI:

Navegue até WLANs > WLAN ID > Advanced e habilite Allow AAA Override. Opcionalmente, especifique o Tempo Limite da Sessão conforme mostrado na imagem.

WLANs > Edit 'ise-pr	of		< Back	A
General Security	QoS Policy-Mapping	Advanced		
Allow AAA Override	✓ Enabled	DHCP		î
Coverage Hole Detection	🗹 Enabled	DHCP Server	Override	
Enable Session Timeout	Session Timeou (secs)	DHCP Addr. Assignment	Required	
Aironet IE	Enabled	OEAP		
Diagnostic Channel <u>18</u>	Enabled	Split Tunnel	Enabled	
Override Interface ACL	IPv4 None V	9v6 None 💙 Management Frame P	rotection (MFP)	
Layer2 Ad	None V			
URL ACL	None 🗸	MFP Client Protection	on 🛃 Optional 🖂	
P2P Blocking Action	Disabled $\lor$	DTIM Period (in beaco	n intervals)	
Client Exclusion 🛂	Enabled 60 Timeout Value (secs)	802.11a/n (1 - 255	) 1	
Maximum Allowed Clients 🗳	0	802.11b/g/n (1 - 2)	55) 1	
Static IP Tunneling	□	NAC State None	V	>

Etapa 5. Ativar a WLAN.

CLI:

> config wlan enable <wlan-id>

GUI:

Navegue até WLANs > WLAN ID > General e habilite o SSID como mostrado na imagem.

WLANs > E	dit 'ise-pro	f		< Back	Apply		
General	Security	QoS	Policy-Mapping	Advanced			
Profile N Type SSID Status	ame is W is	e-prof 'LAN e-ssid Enabled	]				
Security	Policies [1 (M	VPA2][Au odification	<b>rth(802.1X)]</b> is done under security	tab will appear a	fter applying the chang	jes.)	
Radio Po	licy A	I	~				
Interface Group(G)	/Interface m	anageme	nt 🗸				
Multicast Feature	Vlan 🗌	Enabled					
Broadcas	t SSID 🖂	Enabled					
NAS-ID	no	ne					

### **Declarar WLC no ISE**

Etapa 1. Abra o console do ISE e navegue até Administração > Recursos de rede > Dispositivos de rede > Adicionar conforme mostrado na imagem.

elado Identity Services Engine		Home	▶ Context \	/isibility	▶ Operatio	ns ▶P	olicy	▼Adminis	tration	Þ
► System → Identity	/ Management	✓Networ	k Resources	Device	Portal Manag	gement p	pxGrid S	ervices 🕨	Feed Se	rvice
✓ Network Devices	Network Device G	roups	Network Devic	e Profiles	External R	ADIUS Sen	vers F	RADIUS Sen	ver Seque	ence
	9									
Network devices		Netw	vork Devices	6						
Default Device										
		/ Ed	lit 🕂 Add 🖻	Duplicate	🕞 Import	💽 Export 🕞	<b>O</b> Ge	enerate PAC	XDelet	;e 🔻

Etapa 2. Insira os valores.

Opcionalmente, pode ser um nome de Modelo, versão de software, descrição e atribuir grupos de Dispositivos de Rede com base em tipos de dispositivo, localização ou WLCs.

a.b.c.d corresponde à interface da WLC que envia a autenticação solicitada. Por padrão, é a interface de gerenciamento, como mostrado na imagem.

Network Devices List > New Network Device Network Devices
* Name WLC-name
Description optional description
IP Address: a.b.c.d / 32
* Device Profile 🗰 Cisco 💌 🕀
Model Name wic-model 🛫 Software Version wic-software 🍸
* Network Device Group
Device Type       WLCs-2504       Set To Default         Location       All Locations       Set To Default         WLCs       WLCs       Set To Default
✓ RADIUS Authentication Settings
Enable Authentication Settings Protocol <b>RADIUS</b>
* Shared Secret Show
Enable KeyWrap 🗌 🕧
* Key Encryption Key Show
* Message Authenticator Code Key Show
Key Input Format 💿 ASCII 🔵 HEXADECIMAL
CoA Port 1700 Set To Default

Para obter mais informações sobre Grupos de dispositivos de rede:

ISE – Grupos de dispositivos de rede

## Criar novo usuário no ISE

 $Etapa \ 1. \ Navegue \ até \ Administração > Gerenciamento \ de \ identidade > Identidade > Usuários > Adicionar \ , \ conforme \ mostrado \ na \ imagem.$ 

dialo Identi	ty Services Engine	Home	Context Visibility	Operations	Policy	<ul> <li>Administration</li> </ul>
▶ System	◄ Identity Management	▶ Network F	Resources 🔹 🕨 Device	e Portal Managemer	nt pxGrid 8	System
▼Identities	Groups External Ider	ntity Sources	Identity Source Sequ	uences 🕨 Setting	IS	Deployment Licensina
Users	¢	Networ	k Access Users			Certificates Logging Maintenance
Latest Manual	Network Scan Res	🥖 Edit	🕂 Add 🔢 🔝 Change St	atus 👻 🅵 Import	Export 🗸	Upgrade Backup & Restor
		Stat	us Name	-	Description	Admin Access
		🎲 Loa	ading			Settings
						Identity Managem Identities

Etapa 2. Inserir informações.

Neste exemplo, este usuário pertence a um grupo chamado ALL\_ACCOUNTS, mas pode ser ajustado conforme necessário, como mostrado na imagem.

Network Access Users List > New Network Access User	
Network Access User	
* Name user1	
Status 🛃 Enabled 👻	
Email	
▼ Passwords	
Password Type: Internal Users 🔹	
Password	Re-Enter Passw
* Login Password	•••••
Enable Password	
User Information	
First Name	
Last Name	
<ul> <li>Account Options</li> </ul>	
Description	
Change password on next login	
✓ Account Disable Policy	
Disable account if date exceeds 2017-01-21	
▼ User Groups	
ALL_ACCOUNTS (default) 📀 🔶	
Submit Cancel	

## Criar Regra de Autenticação

As regras de autenticação são usadas para verificar se as credenciais dos usuários estão corretas (verificar se o usuário realmente é quem diz ser) e limitar os métodos de autenticação que podem ser usados por ele.

Etapa 1. Navegue para **Política > Autenticação** como mostrado na imagem.



Etapa 2. Insira uma nova regra de autenticação, conforme mostrado na imagem.

ultarlu cisco	Identity	Services Engine	e Home	e 🕨 Conte	ext Visibility	Operations	→Policy	Administration	×
Auth	entication	Authorization	Profiling	Posture CI	ient Provisionin	ig 🔹 🕨 Policy El	ements		
ting the p System > ed	rotocols tř Backup &	nat ISE should use Restore > Policy E	to communic xport Page	ate with the ne	etwork devices,	and the identity	sources that it	t should use for authe	enticat
_Protocol	: If Wi s and :us	red_MAB <b>OR</b> e Internal Endpoir	nts						
IC_Proto	: If Wi cols an	red_802.1X <b>OR</b> d							

Etapa 3. Insira os valores.

Esta regra de autenticação permite todos os protocolos listados na lista Acesso de rede padrão. Isso se aplica à solicitação de autenticação para clientes Wireless 802.1x e com ID de estação chamada, e termina com isessid, como mostrado na imagem.

elisco Identity S	ervices Engine	e Home	▶ Context	Visibility (	Operations	▼Policy	▶ Administr	ation 🕨 \
Authentication	Authorization	Profiling Po	osture Clier	nt Provisioning	Policy Ele	ments		
Authentication Define the Authen For Policy Export g	<b>Policy</b> tication Policy by to Administrati	selecting the pro on > System > B	otocols that IS Jackup & Rest	E should use to	o communicate port Page	with the netv	vork devices, ar	nd the identit
Policy Type 🔿 S	Simple 💿 Rul	e-Based	_					
	Rule name		: If Wirela	ess_802.1X AN	ID Select Attribu		llow Protocols :	Default Net
				Condition Nar	ne [	Description		
<b>~</b> [	Default		: Us 🖗 🗸	Vireless_802.1)	X 📀 A co	ondition to m	atch 802.1X ba	ased authent
			♦ [			Radius:Call	led-Sta 📀	Ends With

Além disso, escolha a fonte de identidade para os clientes que correspondem a esta regra de autenticação. Este exemplo usa a lista de origem de identidade de usuários internos como mostrado na imagem.

Rule name : If Wireless_	02.1X AND Radius:Call 🔶 Allow Protocols : Default Network Access
✓ ■ Default : Use International Internat	Users  Identity Source Internal Users
	If authentication failed Reject  If user not found Reject  If process failed Drop
Note: it is no lf con	or authentications using PEAP, LEAP, EAP-FAST, EAP-TLS or possible to continue processing when authentication fails on hue option is selected in these cases, requests will be reject Certificate_Request_
	Guest Users Guest_Portal_Seque
	<ul> <li>Internal Endpoints</li> <li>Internal Users</li> </ul>

Quando terminar, clique em Concluído e em Salvar como mostrado na imagem.

Rule name	: If Wretess_002.1XAND Radius Cal	Done
🛛 🖌 Default	: Use Internal Users 🔷	Actions +
		_
Saw Resot.		

Para obter mais informações sobre fontes de identidade, consulte este link:

Criar um grupo de identidade de usuário

#### Criar perfil de autorização

O perfil de autorização determina se você tem ou não acesso à rede. Listas de Controle de Acesso (ACLs - Access Control Lists), substituição de VLAN ou qualquer outro parâmetro. O perfil de autorização mostrado neste exemplo envia uma aceitação de acesso para você e atribui a VLAN 2404.

Etapa 1. Navegue para **Política > Elementos de política > Resultados** como mostrado na imagem.



Etapa 2. Adicione um novo perfil de autorização. Navegue até **Authorization > Authorization Profiles > Add** conforme mostrado na imagem.

ditol) Identity Services	Engine H	Home 🔸	Context Visibility	Operations
Authentication Authoriz	ation Profiling	Posture	Client Provisioning	
Dictionaries + Condition	s <b>≁</b> Results			
	G			
Authentication		Standa For Policy	rd Authorization Export go to Adminis	n <b>Profiles</b> tration > System > Ba
<ul> <li>Authorization</li> </ul>				
Authorization Profiles		/ Edit	+Add Duplicate	e XDelete
Downloadable ACLs		🗌 Nam	ne	

Etapa 3. Insira os valores conforme mostrado na imagem.

Authorization Profiles > New Authorization Profile	ation Profile
* Name PermitAcc	ressVLAN2404
* Access Type ACCESS	ACCEPT
Network Device Profile	• ⊕
Service Templete	
Passive Identity Tracking 🛛 👔	
Common Tasks	
L ACL (Filter-ID)	
VLAN	Tag ID 0 Edit Tag ID/Name 2404
	Tag ID 0 Edit Tag ID/Name 2404
VLAN	Tag ID 0 Edit Tag ID/Name 2404
VLAN Voice Domain Permission Neb Redirection (CA/A_MDM_N	Tag ID 0 Edit Tag ID/Name 2404
VLAN Voice Domain Permission Voice Redirection (CARA_MDM_N	Tag ID 0 Edit Tag ID/Name 2404
VLAN Voice Domain Permission Voice Redirection (CARA MDM N	Tag ID 0 Edit Tag ID/Name 2404
VLAN Voice Domain Permission VMeb Redirection (CMA_MDM_N Advanced Attributes Settin	Tag ID 0 Edit Tag ID/Name 2404
VLAN Voice Domain Permission VMeb Redirection (CMA_MDM_N  Advanced Attributes Settin Select an item	Tag ID 0 Edit Tag ID/Name 2404
VLAN Voice Domain Permission VMeb Redirection (CMA_MDM_N Advanced Attributes Settin Select an item	Tag ID 0 Edit Tag ID/Name 2404
VLAN Voice Domain Permission VMeb Redirection (CMA_MDM_N Advanced Attributes Settin Select an item	Tag ID 0 Edit Tag ID/Name 2404
VLAN  Voice Domain Permission  VAleb Redirection (CAVA_MDM_N  Advanced Attributes Settin  Select an item  Attributes Details	Tag ID 0 Edit Tag ID/Name 2404
VLAN   Voice Domain Permission   Valeb Redirection (CAAA_MDM_N   Advanced Attributes Settin   Select an item   Attributes Details   Access Type = ACCESS_ACCEPT   Tunnel-Private-Group-ID = NaN:240   Tunnel-Type = NaN:13   Tunnel-Medium-Type = NaN:6	Tag ID       0       Edit Tag       ID.Name       2404         ucco       CDD       In         ngs       Image: Im

## Criar Regra de Autorização

A regra de autorização é a responsável por determinar quais permissões (qual perfil de autorização) o resultado será aplicado a você.

Etapa 1. Navegue para **Política > Autorização** como mostrado na imagem.

es Engine	e Home 🕨	Context Visibility 💦 🕨	Operations	▼Policy	Administration	Work Centers
norization	Profiling Posture	Client Provisioning	Policy Ele	Authentica	tion	Authorization
				Profiling		Posture
Y				<b>Client Prov</b>	isioning	Policy Elements
Policy by c	onfiguring rules based	d on identity groups and	l/or other condi			Dictionaries
dministrati	on > System > Backup	& Restore > Policy Exp	ort Page			Conditions
olies	*					Results

## Etapa 2. Inserir uma nova regra conforme mostrado na imagem.

ditaju cisco	Identity	Services Engi	ne H	lome	<ul> <li>Context Visibility</li> </ul>	♦ Operations	→ Policy	Administration	• Work Centers
Auther	ntication	Authorization	Profiling	Posture	Client Provisioning	) • Policy Eleme	ents		
ificurina rul	es based	on identity aroun:	s and/or oth	ner conditio	ons. Drag and drop ru	les to change the	order		
> System >	<ul> <li>Backup (</li> </ul>	& Restore > Policy	/ Export Pag	ge	no. Drag and arop to	ico to chango the	ordor.		
*									
		Conditions	s (identity g	roups and	other conditions)			Permissions	

Etapa 3. Insira os valores.

Primeiro, selecione um nome para a regra e o grupo de identidade onde o usuário está armazenado (ALL\_ACCOUNTS), como mostrado na imagem.

	Status	Rule Name		Conditions (identity groups and other conditions)	Permis
1		NameAuthZrule		if Any Pland Condition(s)	then
	2	That .	if	<u></u>	
	<b>~</b>	Minetes Stuck as License	if	C'ac Any	
		Profile 2 Cisco s - Louis	if	C :	
	<u>~</u>	Franks Pro Creo & Pixtrax	if	Non	<u>نې</u>
	0	Compliant_Devices_Auchtin	if	GuestType_Daily (default)	
	0	Employee, FAP THE	if	GuestType_Weekly (default) GuestType_Contractor (default)	ult)
	0	Shipleyes Ophoenline	if	MARCHARY AND EAR-MSCHARY2 )	-9
	-				

Depois disso, selecione outras condições que façam com que o processo de autorização se encaixe nessa regra. Neste exemplo, o processo de autorização atingirá essa regra se usar 802.1x Wireless e sua ID de estação chamada terminar com ise-ssid, como mostrado na imagem.

	Status	Rule Name	Conditions (identity group	s and other conditions) Permiss	sions
1	-	NameAuthZrule	if AL 💠 and	Wireless_802.1X AND Radius:Call	AuthZ P
1				IS Add All Conditions Below to Library	
				Condition Name Description	
1				Wireless 802.1X ONOrmalised Radius:RadiusFlov	VType E
1	<b>~</b>			e:	

Por fim, selecione o perfil de Autorização atribuído a você que atinge essa regra. Clique em **Done** e **Save** como mostrado na imagem.

	Status	Rule Name	Conditions (identi	ty groups and other conditions)	Penn	issions
8	1 🗹 🔹	NameAuthZrule	if AL	and Vireless_802.1X AND Rad	lius:Call 💠 then	AuthZ Pr
1	2					
1						Select an item
1						
-						
-						
-	0					
1	0					
1	0					
	0					
	0					
	<b>~</b>					
	<b>~</b>	Default	if no matches, then	DenyAccess		
_	_					
Sa	we Res	set				

#### Configuração do dispositivo final

Configure uma máquina Windows 10 laptop para se conectar a um SSID com Autenticação 802.1x e PEAP/MS-CHAPv2 (versão da Microsoft do Challenge-Handshake Authentication Protocol) Versão 2.

Neste exemplo de configuração, o ISE usa seu certificado autoassinado para executar a autenticação.

Para criar o perfil WLAN na máquina com Windows, há duas opções:

- 1. Instale o certificado autoassinado no computador para validar e confie no servidor ISE para concluir a autenticação.
- 2. Ignore a validação do servidor RADIUS e confie em qualquer servidor RADIUS usado para executar a autenticação (não recomendado, pois pode se tornar um problema de segurança).

A configuração dessas opções é explicada em Configuração do dispositivo final - Criar o perfil de WLAN -

Etapa 7.

## Configuração do dispositivo final - Instalar certificado autoassinado ISE

Etapa 1. Exportar certificado autoassinado.

Faça login no ISE e navegue até Administration > System > Certificates > System Certificates.

Em seguida, escolha o certificado usado para a **Autenticação EAP** e clique em **Exportar** como mostrado na imagem.

atop Identity Services Engine	Home	Operations     Po	olicy - Administration	VVork
-System + Identity Management +	Network Resources + Device	Portal Management px	Grid Services + Feed Servic	e ⊧F
Deployment Licensing -Certificates	s + Logging → Maintenance	Upgrade Backup &	Restore + Admin Access	<ul> <li>Settir</li> </ul>
0				
✓ Certificate Management	System Certificates 💧	For disaster recovery it i	s recommended to export certi	ficate ar
Overview	📝 Edit 🛛 🕂 Generate Self	Signed Certificate 🛛 🕂	Import 💽 Export 🛛 🗙 De	elete
System Certificates	Friendly Name	Used By	Portal group tag	1
Endpoint Certificates	▼ <1212E		_	
Trusted Certificates	EAP-SelfSignedCertific AP-SelfSignedCertifice	cate#E ate#00 EAP Authenticatio	n	EAI

Salve o certificado no local necessário. Esse certificado deve ser instalado na máquina com Windows, como mostrado na imagem.

Export Certificate 'EAP-SelfSignedCertificate#EAP-SelfSignedCertificate#00001'				
	• Export Certificate Only			
	Export Certificate and Private Key			
*Private Key Password				
*Confirm Password				
Warning: Exporting a private key is not a	secure operation. It could lead to possible exposure of the private key.			
	Export Cancel			

Etapa 2. Instale o certificado na máquina Windows.

Copie o certificado exportado do ISE para a máquina Windows, altere a extensão do arquivo de .pem para .crt e, depois disso, clique duas vezes para instalá-lo como mostrado na imagem.

🐱 Certificate	×
General Details Certification Path	
Certificate Information This CA Root certificate is not trusted. To enable trust, install this certificate in the Trusted Root Certification Authorities store.	
Issued to: EAP-SelfSignedCertificate	
Issued by: EAP-SelfSignedCertificate	
Valid from 23/11/2016 to 23/11/2018	
Install Certificate	
OK	ב

Etapa 3. Selecione instalá-lo na máquina local e clique em Avançar como mostrado na imagem.

Etapa 4. Selecione **Place all certificates in this store**, depois procure e selecione **Trusted Root Certification Authorities.** Depois disso, clique em **Avançar** conforme mostrado na imagem.

re cercincaces are kepc.	
ficate store, or you can spe	ecify a location for
store based on the type o	f certificate
g store	
	_
rities	Browse
	ficate store, or you can spr i store based on the type o g store rities

Etapa 5. Em seguida, clique em Finish conforme mostrado na imagem.

← 🧬 Certificate Import Wizard	×							
Completing the Certificate Import Wizard								
The certificate will be imported after you click Finish.								
You have specified the following settings:								
Centificate Scienced by User Trusted Root Certificate Centernt Certificate	ion Authorities							
	Finish Cancel							

Etapa 6. Confirme a instalação do certificado. Clique em Sim como mostrado na imagem.



Passo 7. Finalmente, clique em OK conforme mostrado na imagem.



## Configuração do dispositivo final - Criar o perfil da WLAN

Etapa 1. Clique com o botão direito do mouse no ícone **Iniciar** e selecione **Painel de Controle** como mostrado na imagem.

	Programs and Features
	Mobility Center
	Power Options
	Event Viewer
	System
	Device Manager
	Network Connections
	Disk Management
	Computer Management
	Command Prompt
	Command Prompt (Admin)
	Task Manager
	Control Panel
	File Explorer
	Search
	Run
	Shut down or sign out >
	Desitop
ľ	👔 א 👔 🗎 DownL 🦉 Networ 👽 א

Etapa 2. Navegue até **Rede e Internet** e depois navegue até **Central de Rede e Compartilhamento** e clique em **Configurar uma nova conexão ou rede** como mostrado na imagem.



Etapa 3. Selecione **Conectar manualmente a uma rede sem fio** e clique em **Avançar** conforme mostrado na imagem.

	-		×
<ul> <li>Set Up a Connection or Network</li> </ul>			
Choose a connection option			
Connect to the internet			
Set up a broadband or dial-up connection to the Internet.			
Set up a new network			
Set up a new router or access point.			
Manually connect to a wireless network			
Connect to a hidden network or create a new wireless profile.			
Connect to a workplace			
Set up a dial-up or VPN connection to your workplace.			
-	New		
L	Next	Can	cei

Etapa 4. Insira as informações com o nome do SSID e o tipo de segurança WPA2-Enterprise e clique em **Avançar**, como mostrado na imagem.

			-		×					
÷	🐓 Manually connect to a	wireless network								
	Enter information for the wireless network you want to add									
	Network name:	ise-ssid								
	Security type:	WPA2-Enterprise ~								
	Encryption type:	AES								
	Security Key:	Hide characters								
	Start this connectio	n automatically								
	Connect even if the	network is not broadcasting								
	Warning: If you sel	ect this option, your computer's privacy might be at risk.								
		Ne	ĸt	Can	cel					

Etapa 5. Selecione **Change connection settings** para personalizar a configuração do perfil de WLAN conforme mostrado na imagem.



Etapa 6. Navegue até a guia **Segurança** e clique em **Configurações** conforme mostrado na imagem.

ise-ssid Wireless Network Properties						
Connection Security						
Security type:	WPA2-Enterprise		~			
Encryption type:	AES		$\sim$			
Choose a network au	thentication metho	d:				
Microsoft: Protected	EAP (PEAP)	✓ Settin	gs			
Remember my cro time I'm logged o	edentials for this co n	nnection each				
Advanced settings	;					
		ОК	Cance	el l		

Passo 7. Selecione se o servidor RADIUS está validado ou não.

Em caso afirmativo, habilite **Verificar a identidade do servidor validando o certificado** e na lista **Autoridades de certificação raiz confiáveis:** selecione o certificado autoassinado do ISE.

Depois disso, selecione **Configurar** e desabilitar **Usar automaticamente meu nome e senha de login do Windows...** e clique em **OK** conforme mostrado nas imagens.

Protected EAP Properties	×
When connecting:	
✓ Verify the server's identity by validating the certificate	
Connect to these servers (examples:srv1;srv2;.*\.srv3\.com):	
Trusted Root Certification Authorities:	
Digitize & Olehol Linou and	•
E Constantino de la constant	
EAD-SelfSignedCertificate	
Create Dopt Continueter in Man	
It is a definite intermediate to the Contract Contract of Contr	
	1
Notifications before connecting:	_
Tell user if the server name or root certificate isn't specified	~
Select Authentication Method:	
Secured password (EAP-MSCHAP v2) Configure	·
C Enable Fast Reconnect	
Disconnect if server does not present cryptobinding TLV	
Enable Identity Privacy	
OK Cancel	
OK	
EAP MSCHAPv2 Properties	
When connecting:	
Automatically use my Windows logon name and password (and domain if any).	

Etapa 8. Configure as credenciais do usuário.

Cancel

ОK

Voltando à guia **Security**, selecione **Advanced settings**, especifique o modo de autenticação como User authentication e **save** as credenciais que foram configuradas no ISE para autenticar o usuário como mostrado nas imagens.

ise-ssid Wireless Ne	twork Properties		×
Connection Security			
Security type:	WPA2-Enterprise		~
Encryption type:	AES		$\sim$
Choose a network au	thentication method:		
Microsoft: Protected	EAP (PEAP) 🗸 🗸	Setting	ps
Remember my cro time I'm logged o	edentials for this connect n	ion each	
Advanced settings	•		
		ОК	Cancel

dvanced settings			×
802.1X settings 802.11 settings			
Specify authentication mode:			l.
User authentication	Save cr	redentials	l
Delete credentials for all users			1
Enable single sign on for this network			
Perform immediately before user	logon		
O Perform immediately after user lo	gon		
Maximum delay (seconds):	10	-	
Allow additional dialogs to be disp sign on	alayed during	single	
This network uses separate virtua	I LANs for ma	chine	

Windows Secur	ity	×
Save creder Saving your cre when you're no	tials dentials allows your computer to connect to the networ t logged on (for example, to download updates).	k
ahaha cisco	user1	
	OK Cancel	

# Verificar

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

O fluxo de autenticação pode ser verificado da WLC ou da perspectiva do ISE.

#### Processo de autenticação no WLC

Execute os próximos comandos para monitorar o processo de autenticação para um usuário específico:

```
> debug client <mac-add-client>
> debug dot1x event enable
> debug dot1x aaa enable
```

Exemplo de uma autenticação bem-sucedida (parte da saída foi omitida):

<#root>

\*apfMsConnTask\_1: Nov 24 04:30:44.317:

e4:b3:18:7c:30:58 Processing assoc-req station:e4:b3:18:7c:30:58 AP:00:c8:8b:26:2c:d0-00

```
thread:1a5cc288
apfMsConnTask 1: Nov
```

\*apfMsConnTask\_1: Nov 24 04:30:44.317: e4:b3:18:7c:30:58 Reassociation received from mobile on BSSID 00: \*apfMsConnTask\_1: Nov 24 04:30:44.318: e4:b3:18:7c:30:58 Applying Interface(management) policy on Mobile \*apfMsConnTask\_1: Nov 24 04:30:44.318: e4:b3:18:7c:30:58 Applying site-specific Local Bridging override \*apfMsConnTask\_1: Nov 24 04:30:44.318: e4:b3:18:7c:30:58 Applying Local Bridging Interface Policy for st \*apfMsConnTask\_1: Nov 24 04:30:44.318: e4:b3:18:7c:30:58 RSN Capabilities: 60 \*apfMsConnTask 1: Nov 24 04:30:44.318: e4:b3:18:7c:30:58 Marking Mobile as non-

e4:b3:18:7c:30:58 Received 802.11i 802.1X key management suite, enabling dot1x Authentication

11w Capable

```
*apfMsConnTask_1: Nov 24 04:30:44.318: e4:b3:18:7c:30:58 Received RSN IE with 1 PMKIDs from mobile e4:b3
*apfMsConnTask_1: Nov 24 04:30:44.319: Received PMKID: (16)
*apfMsConnTask_1: Nov 24 04:30:44.319: e4:b3:18:7c:30:58 Searching for PMKID in MSCB PMKID cache for mot
*apfMsConnTask_1: Nov 24 04:30:44.319: e4:b3:18:7c:30:58 No valid PMKID found in the MSCB PMKID cache for
*apfMsConnTask_1: Nov 24 04:30:44.319: e4:b3:18:7c:30:58 0.0.0.0 START (0) Initializing policy
*apfMsConnTask_1: Nov 24 04:30:44.319:
```

e4:b3:18:7c:30:58 0.0.0.0 START (0) Change state to AUTHCHECK (2) last state START (0)

\*apfMsConnTask\_1: Nov 24 04:30:44.319:

e4:b3:18:7c:30:58 0.0.0.0 AUTHCHECK (2) Change state to 8021X\_REQD (3) last state AUTHCHECK (2)

\*apfMsConnTask\_1: Nov 24 04:30:44.319: e4:b3:18:7c:30:58 0.0.0.0 8021X\_REQD (3) Plumbed mobile LWAPP rul \*apfMsConnTask\_1: Nov 24 04:30:44.319: e4:b3:18:7c:30:58 apfMsAssoStateInc \*apfMsConnTask\_1: Nov 24 04:30:44.319: e4:b3:18:7c:30:58 apfPemAddUser2 (apf\_policy.c:437) Changing stat \*apfMsConnTask\_1: Nov 24 04:30:44.319: e4:b3:18:7c:30:58 apfPemAddUser2:session timeout forstation e4:b3 \*apfMsConnTask\_1: Nov 24 04:30:44.319: e4:b3:18:7c:30:58 Stopping deletion of Mobile Station: (callerId: \*apfMsConnTask\_1: Nov 24 04:30:44.319: e4:b3:18:7c:30:58 Func: apfPemAddUser2, Ms Timeout = 0, Session T \*apfMsConnTask\_1: Nov 24 04:30:44.320: e4:b3:18:7c:30:58 Sending Assoc Response to station on BSSID 00:c \*spamApTask2: Nov 24 04:30:44.323: e4:b3:18:7c:30:58 Received ADD\_MOBILE ack - Initiating 1x to STA e4:b \*spamApTask2: Nov 24 04:30:44.325: e4:b3:18:7c:30:58

Sent dot1x auth initiate message for mobile e4:b3:18:7c:30:58

\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.326: e4:b3:18:7c:30:58 reauth\_sm state transition 0 ---> 1 for mob

\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.326: e4:b3:18:7c:30:58 EAP-PARAM Debug - eap-params for Wlan-Id :2
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.326: e4:b3:18:7c:30:58 Disable re-auth, use PMK lifetime.
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.326: e4:b3:18:7c:30:58 Station e4:b3:18:7c:30:58 setting dot1x reau
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.326: e4:b3:18:7c:30:58 Stopping reauth timeout for e4:b3:18:7c:30:58
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.326: e4:b3:18:7c:30:58 dot1x - moving mobile e4:b3:18:7c:30:58 into
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.326: e4:b3:18:7c:30:58 dot1x - moving mobile e4:b3:18:7c:30:58 into
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.326:

e4:b3:18:7c:30:58 Sending EAP-Request/Identity to mobile e4:b3:18:7c:30:58 (EAP Id 1)

\*Dot1x\_NW\_MsqTask\_0: Nov 24 04:30:44.380: e4:b3:18:7c:30:58 Received EAPOL EAPPKT from mobile e4:b3:18:7 \*Dot1x\_NW\_MsqTask\_0: Nov 24 04:30:44.380: e4:b3:18:7c:30:58 Received Identity Response (count=1) from mo \*Dot1x\_NW\_MsqTask\_0: Nov 24 04:30:44.380: e4:b3:18:7c:30:58 Resetting reauth count 1 to 0 for mobile e4 \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.380: e4:b3:18:7c:30:58 EAP State update from Connecting to Authent: \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.380: e4:b3:18:7c:30:58 dot1x - moving mobile e4:b3:18:7c:30:58 into \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.380: e4:b3:18:7c:30:58 Entering Backend Auth Response state for mol \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.380: e4:b3:18:7c:30:58 Created Acct-Session-ID (58366cf4/e4:b3:18:7 \*Dot1x\_NW\_MsqTask\_0: Nov 24 04:30:44.386: e4:b3:18:7c:30:58 Processing Access-Challenge for mobile e4:b3 \*Dot1x NW MsgTask 0: Nov 24 04:30:44.387: e4:b3:18:7c:30:58 Entering Backend Auth Reg state (id=215) for \*Dot1x NW MsgTask 0: Nov 24 04:30:44.387: e4:b3:18:7c:30:58 WARNING: updated EAP-Identifier 1 ===> 215 \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.387: e4:b3:18:7c:30:58 Sending EAP Request from AAA to mobile e4:b3 \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.387: e4:b3:18:7c:30:58 Allocating EAP Pkt for retransmission to mol \*Dot1x\_NW\_MsqTask\_0: Nov 24 04:30:44.390: e4:b3:18:7c:30:58 Received EAPOL EAPPKT from mobile e4:b3:18:7 \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.390: e4:b3:18:7c:30:58 Received EAP Response from mobile e4:b3:18:7 \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.390: e4:b3:18:7c:30:58 Resetting reauth count 0 to 0 for mobile e4 \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.390: e4:b3:18:7c:30:58 Entering Backend Auth Response state for mol \*Dot1x NW MsgTask 0: Nov 24 04:30:44.393: e4:b3:18:7c:30:58 Processing Access-Challenge for mobile e4:b3 \*Dot1x\_NW\_MsqTask\_0: Nov 24 04:30:44.393: e4:b3:18:7c:30:58 Entering Backend Auth Req state (id=216) for \*Dot1x NW MsgTask 0: Nov 24 04:30:44.393: e4:b3:18:7c:30:58 Sending EAP Request from AAA to mobile e4:b3 \*Dot1x NW MsgTask 0: Nov 24 04:30:44.393: e4:b3:18:7c:30:58 Reusing allocated memory for EAP Pkt for re

•

\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.530:

e4:b3:18:7c:30:58 Processing Access-Accept for mobile e4:b3:18:7c:30:58

\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.530: e4:b3:18:7c:30:58 Resetting web IPv4 acl from 255 to 255 \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.530: e4:b3:18:7c:30:58 Resetting web IPv4 Flex acl from 65535 to 65 \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.530:

e4:b3:18:7c:30:58 Username entry (user1) created for mobile, length = 253

\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.530:

e4:b3:18:7c:30:58 Found an interface name: 'vlan2404' corresponds to interface name received: vlan2404

\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.530: e4:b3:18:7c:30:58 override for default ap group, marking intg \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.530: e4:b3:18:7c:30:58 Applying Interface(management) policy on Mok \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.530: e4:b3:18:7c:30:58 Re-applying interface policy for client \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.531: e4:b3:18:7c:30:58 apfApplyWlanPolicy: Apply WLAN Policy over F \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.531:

#### e4:b3:18:7c:30:58 Inserting AAA Override struct for mobile

MAC: e4:b3:18:7c:30:58, source 4 \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.531: e4:b3:18:7c:30:58 Applying override policy from source Overric \*Dot1x\_NW\_MsgTask\_0: Nov 24

04:30:44.531: e4:b3:18:7c:30:58 Found an interface name: 'vlan2404' corresponds to interface name receive

\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.531: e4:b3:18:7c:30:58 Applying Interface(vlan2404) policy on Mobil \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.531: e4:b3:18:7c:30:58 Re-applying interface policy for client \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.531: e4:b3:18:7c:30:58 Setting re-auth timeout to 0 seconds, got fr \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.531: e4:b3:18:7c:30:58 Station e4:b3:18:7c:30:58 setting dot1x reau \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.531: e4:b3:18:7c:30:58 Station e4:b3:18:7c:30:58 setting dot1x reau

\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.531: e4:b3:18:7c:30:58 Creating a PKC PMKID Cache entry for station \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.531: e4:b3:18:7c:30:58 Resetting MSCB PMK Cache Entry 0 for station \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.531: e4:b3:18:7c:30:58 Adding BSSID 00:c8:8b:26:2c:d1 to PMKID cach \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.531: New PMKID: (16) \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.531: [0000] cc 3a 3d 26 80 17 8b f1 2d c5 cd fd a0 8a c4 39 \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.531: e4:b3:18:7c:30:58 unsetting PmkIdValidatedByAp \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.531: e4:b3:18:7c:30:58 Updating AAA Overrides from local for static \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.531: e4:b3:18:7c:30:58 Adding Audit session ID payload in Mobility \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.531: e4:b3:18:7c:30:58 0 PMK-update groupcast messages sent \*Dot1x\_NW\_MsqTask\_0: Nov 24 04:30:44.531: e4:b3:18:7c:30:58 PMK sent to mobility group \*Dot1x NW MsgTask 0: Nov 24 04:30:44.531: e4:b3:18:7c:30:58 Disabling re-auth since PMK lifetime can tal \*Dot1x\_NW\_MsqTask\_0: Nov 24 04:30:44.531: e4:b3:18:7c:30:58 Sending EAP-Success to mobile e4:b3:18:7c:30 \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.532: e4:b3:18:7c:30:58 Freeing AAACB from Dot1xCB as AAA auth is do \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.532: e4:b3:18:7c:30:58 key Desc Version FT - 0 \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.532: e4:b3:18:7c:30:58 Found an cache entry for BSSID 00:c8:8b:26:2 \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.532: Including PMKID in M1 (16) \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.532: [0000] cc 3a 3d 26 80 17 8b f1 2d c5 cd fd a0 8a c4 39 \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.532: M1 - Key Data: (22) \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.532: [0000] dd 14 00 0f ac 04 cc 3a 3d 26 80 17 8b f1 2d c5 \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.532: [0016] cd fd a0 8a c4 39 \*Dot1x NW MsgTask 0: Nov 24 04:30:44.532:

e4:b3:18:7c:30:58 Starting key exchange to mobile e4:b3:18:7c:30:58, data packets will be dropped

\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.532:

e4:b3:18:7c:30:58 Sending EAPOL-Key Message to mobile e4:b3:18:7c:30:58

state INITPMK (message 1), replay counter 00.00.00.00.00.00.00.00 \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.532: e4:b3:18:7c:30:58 Reusing allocated memory for EAP Pkt for re \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.532: e4:b3:18:7c:30:58 Entering Backend Auth Success state (id=223) \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.532: e4:b3:18:7c:30:58 Received Auth Success while in Authenticatin \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.532: e4:b3:18:7c:30:58 Received Auth Success while in Authenticatin \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.532: e4:b3:18:7c:30:58 dot1x - moving mobile e4:b3:18:7c:30:58 into \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.547: e4:b3:18:7c:30:58 Received EAPOL-Key from mobile e4:b3:18:7c:30 \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.547: e4:b3:18:7c:30:58 Ignoring invalid EAPOL version (1) in EAPOL \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.547: e4:b3:18:7c:30:58 key Desc Version FT - 0 \*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.547:

e4:b3:18:7c:30:58 Received EAPOL-key in PTK\_START state (message 2) from mobile

e4:b3:18:7c:30:58

\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.548: e4:b3:18:7c:30:58 Successfully computed PTK from PMK!!!
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.548: e4:b3:18:7c:30:58 Received valid MIC in EAPOL Key Message M2!!
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.548: e4:b3:18:7c:30:58 Not Flex client. Do not distribute PMK Key of
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.548: e4:b3:18:7c:30:58 Stopping retransmission timer for mobile e4:
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.548: e4:b3:18:7c:30:58 Key Desc Version FT - 0
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.548: e4:b3:18:7c:30:58 Sending EAPOL-Key Message to mobile e4:b3:18:
state PTKINITNEGOTIATING (message 3), replay counter 00.00.00.00.00.00.00.00
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.548: e4:b3:18:7c:30:58 Reusing allocated memory for EAP Pkt for re
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.555: e4:b3:18:7c:30:58 Ignoring invalid EAPOL version (1) in EAPOL\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.555: e4:b3:18:7c:30:58 Key Desc Version FT - 0
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.555: e4:b3:18:7c:30:58 Received EAPOL-Key from mobile e4:b3:18:7c:30:58 Received EAPOL-Key from mobile e4:b3:18:7c:30:58 Received EAPOL-Key from mobile e4:b3:18:7c:30:58 Foot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.555: e4:b3:18:7c:30:58 Received EAPOL-Key from mobile e4:b3:18:7c:30:58 Foot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.555: e4:b3:18:7c:30:58 Received EAPOL-Key from mobile e4:b3:18:7c:30:58 Foot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.555: e4:b3:18:7c:30:58 Received EAPOL-Key from mobile e4:b3:18:7c:30:58 Foot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.555: e4:b3:18:7c:30:58 Received EAPOL-Key from mobile e4:b3:18:7c:30:58 Key Desc Version FT - 0
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.555: e4:b3:18:7c:30:58 Key Desc Version FT - 0
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.555: e4:b3:18:7c:30:58 Key Desc Version FT - 0
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.555:

e4:b3:18:7c:30:58 Received EAPOL-key in PTKINITNEGOTIATING state (message 4)

from mobile e4:b3:18:7c:30:58
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.555: e4:b3:18:7c:30:58 Stopping retransmission timer for mobile e4
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.555: e4:b3:18:7c:30:58 Freeing EAP Retransmit Bufer for mobile e4:k
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.555: e4:b3:18:7c:30:58 apfMs1xStateInc
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.555: e4:b3:18:7c:30:58 apfMsPeapSimReqCntInc
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.555: e4:b3:18:7c:30:58 apfMsPeapSimReqSuccessCntInc
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.555: e4:b3:18:7c:30:58 apfMsPeapSimReqSuccessCntInc
\*Dot1x\_NW\_MsgTask\_0: Nov 24 04:30:44.555: e4:b3:18:7c:30:58 apfMsPeapSimReqSuccessCntInc

e4:b3:18:7c:30:58 0.0.0.0 8021X\_REQD (3) Change state to L2AUTHCOMPLETE (4) last state 8021X\_REQD (3)

```
*Dot1x_NW_MsgTask_0: Nov 24 04:30:44.555: e4:b3:18:7c:30:58 Mobility query, PEM State: L2AUTHCOMPLETE
*Dot1x_NW_MsgTask_0: Nov 24 04:30:44.555: e4:b3:18:7c:30:58 Building Mobile Announce :
*Dot1x_NW_MsgTask_0: Nov 24 04:30:44.556: e4:b3:18:7c:30:58
                                                                                                   Building Client Payload:
*Dot1x_NW_MsgTask_0: Nov 24 04:30:44.556: e4:b3:18:7c:30:58
                                                                                                       Client Ip: 0.0.0.0
*Dot1x_NW_MsgTask_0: Nov 24 04:30:44.556: e4:b3:18:7c:30:58
                                                                                                      Client Vlan Ip: 172.16.0.134, Vlan mask
*Dot1x_NW_MsgTask_0: Nov 24 04:30:44.556: e4:b3:18:7c:30:58
                                                                                                      Client Vap Security: 16384
*Dot1x_NW_MsgTask_0: Nov 24 04:30:44.556: e4:b3:18:7c:30:58
                                                                                                      Virtual Ip: 10.10.10.10
*Dot1x_NW_MsgTask_0: Nov 24 04:30:44.556: e4:b3:18:7c:30:58
                                                                                                      ssid: ise-ssid
*Dot1x_NW_MsgTask_0: Nov 24 04:30:44.556: e4:b3:18:7c:30:58
                                                                                                   Building VlanIpPayload.
*Dot1x_NW_MsqTask_0: Nov 24 04:30:44.556: e4:b3:18:7c:30:58 Not Using WMM Compliance code gosCap 00
*Dot1x_NW_MsgTask_0: Nov 24 04:30:44.556: e4:b3:18:7c:30:58 0.0.0.0 L2AUTHCOMPLETE (4) Plumbed mobile LN
*Dot1x_NW_MsgTask_0: Nov 24 04:30:44.556:
e4:b3:18:7c:30:58 0.0.0.0 L2AUTHCOMPLETE (4) Change state to DHCP_REQD (7) last state L2AUTHCOMPLETE (4)
*Dot1x_NW_MsgTask_0: Nov 24 04:30:44.556: e4:b3:18:7c:30:58 0.0.0.0 DHCP_REQD (7) pemAdvanceState2 6677
*Dot1x_NW_MsgTask_0: Nov 24 04:30:44.556: e4:b3:18:7c:30:58 0.0.0.0 DHCP_REQD (7) Adding Fast Path rule
   type = Airespace AP - Learn IP address
   on AP 00:c8:8b:26:2c:d0, slot 0, interface = 1, QOS = 0
   IPv4 ACL ID = 255, IPv
*Dot1x_NW_MsgTask_0: Nov 24 04:30:44.556: e4:b3:18:7c:30:58 0.0.0.0 DHCP_REQD (7) Fast Path rule (contd
*Dot1x_NW_MsgTask_0: Nov 24 04:30:44.556: e4:b3:18:7c:30:58 0.0.0.0 DHCP_REQD (7) Fast Path rule (contd
*Dot1x_NW_MsgTask_0: Nov 24 04:30:44.556: e4:b3:18:7c:30:58 0.0.0.0 DHCP_REQD (7) Successfully plumbed r
*Dot1x_NW_MsgTask_0: Nov 24 04:30:44.556: e4:b3:18:7c:30:58 Successfully Plumbed PTK session Keysfor mol
*spamApTask2: Nov 24 04:30:44.556: e4:b3:18:7c:30:58 Successful transmission of LWAPP Add-Mobile to AP (
*pemReceiveTask: Nov 24 04:30:44.557: e4:b3:18:7c:30:58 0.0.0.0 Added NPU entry of type 9, dtlFlags 0x0
*apfReceiveTask: Nov 24 04:30:44.557: e4:b3:18:7c:30:58 0.0.0.0 DHCP_REQD (7) mobility role update reque
   Peer = 0.0.0.0, Old Anchor = 0.0.0.0, New Anchor = 172.16.0.3
*apfReceiveTask: Nov 24 04:30:44.557: e4:b3:18:7c:30:58 0.0.0.0 DHCP_REQD (7) State Update from Mobility
*apfReceiveTask: Nov 24 04:30:44.557: e4:b3:18:7c:30:58 0.0.0.0 DHCP_REQD (7) pemAdvanceState2 6315, Adv
*apfReceiveTask: Nov 24 04:30:44.557: e4:b3:18:7c:30:58 0.0.0.0 DHCP_REQD (7) Replacing Fast Path rule
   IPv4 ACL ID = 255,
*apfReceiveTask: Nov 24 04:30:44.557: e4:b3:18:7c:30:58 0.0.0.0 DHCP REQD (7) Fast Path rule (contd...)
*apfReceiveTask: Nov 24 04:30:44.557: e4:b3:18:7c:30:58 0.0.0.0 DHCP_REQD (7) Fast Path rule (contd...)
*apfReceiveTask: Nov 24 04:30:44.557: e4:b3:18:7c:30:58 0.0.0.0 DHCP_REQD (7) Successfully plumbed mobil
*pemReceiveTask: Nov 24 04:30:44.557: e4:b3:18:7c:30:58 Sent an XID frame
*dtlArpTask: Nov 24 04:30:47.932: e4:b3:18:7c:30:58 Static IP client associated to interface vlan2404 whether the state of the state of
*dtlArpTask: Nov 24 04:30:47.933: e4:b3:18:7c:30:58 apfMsRunStateInc
*dtlArpTask: Nov 24 04:30:47.933:
e4:b3:18:7c:30:58 172.16.0.151 DHCP_REQD (7) Change state to RUN (20)
 last state DHCP_REQD (7)
```

Para obter uma maneira fácil de ler as saídas do cliente de depuração, use a ferramenta de análise de depuração sem fio:

Wireless Debug Analyzer

#### Processo de autenticação no ISE

Navegue para **Operations** > **RADIUS** > **Live Logs** para ver qual política de autenticação, política de autorização e perfil de autorização foi atribuído ao usuário.

Para obter mais informações, clique em **Details** para ver um processo de autenticação mais detalhado, como mostrado na imagem.

- 1	tata Ident	ity Service	s Engine	e Home	<ul> <li>Context Visibili</li> </ul>	ty -Operation	s Policy +	Administration	• Work Centers
	▼RADIUS	TC-NAC Li	ve Logs	♦ TACACS	Reports + Troubl	eshoot 🕨 Adapt	ive Network Control		
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	Time	e Sta	Details	Ide	Endpoint ID	Endpoint	Authentication Po	olicy	Authorization Policy
	No	1	à	user1	08:74:02:77:13:45	Apple-Device	Default >> Rule name	e ≻> Default	Default ≻> NameAuthZr

# Troubleshoot

No momento, não há informações específicas disponíveis para solucionar esse problema de configuração.

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