Configurar o 802.1x - PEAP com FreeRadius e WLC 8.3

Índice

Introdução

Isto documenta explica como estabelecer um WLAN (Wireless Local Area Network) com Segurança do 802.1x e PEAP (protocolo extensible authentication protegido) como EAP (protocolo extensible authentication). FreeRADIUS é usado como o server externo do Remote Authentication Dial-In User Service (RADIUS).

Pré-requisitos

Cisco recomenda que você tem o conhecimento básico do editor de Linux, do Vim e dos controladores do Wireless LAN de AireOS (WLC).

> Nota: Este documento é pretendido dar aos leitores um exemplo na configuração exigida em um server do freeRADIUS para a autenticação PEAP-MS-CHAPv2. A configuração do servidor do freeRADIUS apresentada neste documento foi testada no laboratório e encontrada para trabalhar como esperado. O centro de assistência técnica da Cisco (TAC) não apoia a configuração do servidor do freeRADIUS.

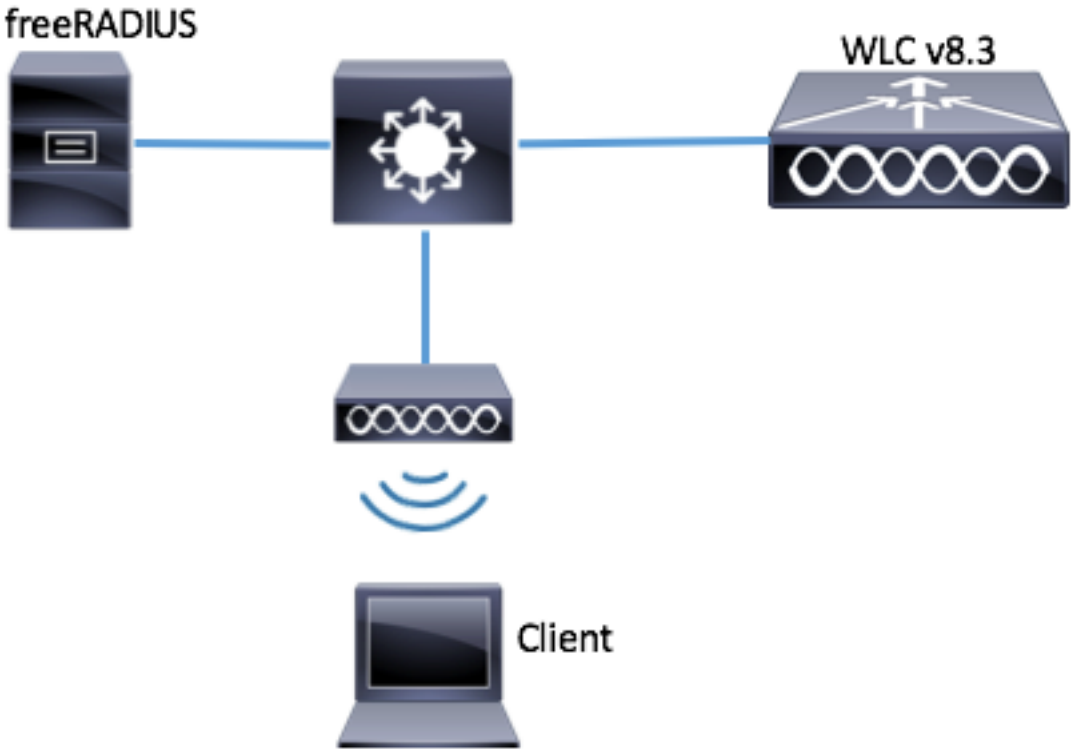
Componentes Utilizados

- CentOS7 ou Red Hat Enterprise Linux 7 (RHEL7) (recomendado 1 GB RAM e pelo menos 20 GB HDD)
- WLC 5508 v8.3
- MariaDB (MySQL)
- FreeRADIUS

- PHP 7

As informações neste documento foram criadas a partir de dispositivos em um ambiente de laboratório específico. Todos os dispositivos utilizados neste documento foram iniciados com uma configuração (padrão) inicial. Se a sua rede estiver ativa, certifique-se de que entende o impacto potencial de qualquer comando.

Diagrama de Rede



Configuração

Instale o server e o MariaDB httpd

Etapa 1. Execute estes comandos instalar o server e o MariaDB httpd.

```
[root@tac-mxwireless ~]# yum -y update
[root@tac-mxwireless ~]# yum -y groupinstall "Development Tools"
[root@tac-mxwireless ~]# yum -y install httpd httpd-devel mariadb-server mariadb
```

Etapa 2. Ligue e permita httpd (Apache) e server de MariaDB.

```
[root@tac-mxwireless ~]# systemctl enable httpd
[root@tac-mxwireless ~]# systemctl start httpd
[root@tac-mxwireless ~]# systemctl start mariadb
[root@tac-mxwireless ~]# systemctl enable mariadb
```

Etapa 3. Configurar ajustes iniciais de MariaDB para fixá-la.

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE!
PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the
current password for the root user. If you've just installed MariaDB, and you haven't set the
root password yet, the password will be blank, so you should just press enter here. Enter
current password for root (enter for none): OK, successfully used password, moving on... Setting
```

the root password ensures that nobody can log into the MariaDB root user without the proper authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has an anonymous user, allowing anyone to log into MariaDB without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a production environment. Remove anonymous users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network. Disallow root login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment. Remove test database and access to it? [Y/n] y - Dropping test database... ... Success! - Removing privileges on test database... ... Success! Reloading the privilege tables will ensure that all changes made so far will take effect immediately. Reload privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!

Etapa 4. Configurar o base de dados para o freeRADIUS (use a mesma senha configurada em etapa 3).

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the current password for the root user. If you've just installed MariaDB, and you haven't set the root password yet, the password will be blank, so you should just press enter here. Enter current password for root (enter for none): OK, successfully used password, moving on... Setting the root password ensures that nobody can log into the MariaDB root user without the proper authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has an anonymous user, allowing anyone to log into MariaDB without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a production environment. Remove anonymous users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network. Disallow root login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment. Remove test database and access to it? [Y/n] y - Dropping test database... ... Success! - Removing privileges on test database... ... Success! Reloading the privilege tables will ensure that all changes made so far will take effect immediately. Reload privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!
```

Instale PHP 7 em CentOS 7

Etapa 1. Execute estes comandos instalar PHP 7 em CentOS7.

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the current password for the root user. If you've just installed MariaDB, and you haven't set the root password yet, the password will be blank, so you should just press enter here. Enter current password for root (enter for none): OK, successfully used password, moving on... Setting the root password ensures that nobody can log into the MariaDB root user without the proper authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has an anonymous user, allowing anyone to log into MariaDB without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a production environment. Remove anonymous users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network. Disallow root login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving
```

```
into a production environment. Remove test database and access to it? [Y/n] y - Dropping test database... ... Success! - Removing privileges on test database... ... Success! Reloading the privilege tables will ensure that all changes made so far will take effect immediately. Reload privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!
```

Instale FreeRADIUS

Etapa 1. Execute este comando instalar FreeRADIUS.

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the current password for the root user. If you've just installed MariaDB, and you haven't set the root password yet, the password will be blank, so you should just press enter here. Enter current password for root (enter for none): OK, successfully used password, moving on... Setting the root password ensures that nobody can log into the MariaDB root user without the proper authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has an anonymous user, allowing anyone to log into MariaDB without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a production environment. Remove anonymous users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network. Disallow root login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment. Remove test database and access to it? [Y/n] y - Dropping test database... ... Success! - Removing privileges on test database... ... Success! Reloading the privilege tables will ensure that all changes made so far will take effect immediately. Reload privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!
```

Etapa 2. Faça *radius.servicestart* após mariadb.service.

Execute este comando:

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the current password for the root user. If you've just installed MariaDB, and you haven't set the root password yet, the password will be blank, so you should just press enter here. Enter current password for root (enter for none): OK, successfully used password, moving on... Setting the root password ensures that nobody can log into the MariaDB root user without the proper authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has an anonymous user, allowing anyone to log into MariaDB without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a production environment. Remove anonymous users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network. Disallow root login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment. Remove test database and access to it? [Y/n] y - Dropping test database... ... Success! - Removing privileges on test database... ... Success! Reloading the privilege tables will ensure that all changes made so far will take effect immediately. Reload privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!
```

Adicionar uma linha na seção do **`[Unit]`**:

```
[root@tac-mxwireless ~]#mysql_secure_installation
```

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the current password for the root user. If you've just installed MariaDB, and you haven't set the root password yet, the password will be blank, so you should just press enter here. Enter current password for root (enter for none): OK, successfully used password, moving on... Setting the root password ensures that nobody can log into the MariaDB root user without the proper authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has an anonymous user, allowing anyone to log into MariaDB without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a production environment. Remove anonymous users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network. Disallow root login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment. Remove test database and access to it? [Y/n] y - Dropping test database... ... Success! - Removing privileges on test database... ... Success! Reloading the privilege tables will ensure that all changes made so far will take effect immediately. Reload privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!

a seção do [Unit] deve olhar como esta:

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the current password for the root user. If you've just installed MariaDB, and you haven't set the root password yet, the password will be blank, so you should just press enter here. Enter current password for root (enter for none): OK, successfully used password, moving on... Setting the root password ensures that nobody can log into the MariaDB root user without the proper authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has an anonymous user, allowing anyone to log into MariaDB without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a production environment. Remove anonymous users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network. Disallow root login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment. Remove test database and access to it? [Y/n] y - Dropping test database... ... Success! - Removing privileges on test database... ... Success! Reloading the privilege tables will ensure that all changes made so far will take effect immediately. Reload privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!
```

Etapa 3. Comece e permita o freeradius começar acima na bota.

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the current password for the root user. If you've just installed MariaDB, and you haven't set the root password yet, the password will be blank, so you should just press enter here. Enter current password for root (enter for none): OK, successfully used password, moving on... Setting the root password ensures that nobody can log into the MariaDB root user without the proper authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has an anonymous user, allowing anyone to log into MariaDB without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a production environment. Remove anonymous users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network. Disallow root login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving
```

into a production environment. Remove test database and access to it? [Y/n] y - Dropping test database... ... Success! - Removing privileges on test database... ... Success! Reloading the privilege tables will ensure that all changes made so far will take effect immediately. Reload privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!

Etapa 4. Permita o firewalld para a Segurança.

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the current password for the root user. If you've just installed MariaDB, and you haven't set the root password yet, the password will be blank, so you should just press enter here. Enter current password for root (enter for none): OK, successfully used password, moving on... Setting the root password ensures that nobody can log into the MariaDB root user without the proper authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has an anonymous user, allowing anyone to log into MariaDB without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a production environment. Remove anonymous users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network. Disallow root login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment. Remove test database and access to it? [Y/n] y - Dropping test database... ... Success! - Removing privileges on test database... ... Success! Reloading the privilege tables will ensure that all changes made so far will take effect immediately. Reload privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!
```

Etapa 5. Adicionar regras permanentes à zona padrão para permitir o HTTP, os https e os serviços de raio.

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the current password for the root user. If you've just installed MariaDB, and you haven't set the root password yet, the password will be blank, so you should just press enter here. Enter current password for root (enter for none): OK, successfully used password, moving on... Setting the root password ensures that nobody can log into the MariaDB root user without the proper authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has an anonymous user, allowing anyone to log into MariaDB without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a production environment. Remove anonymous users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network. Disallow root login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment. Remove test database and access to it? [Y/n] y - Dropping test database... ... Success! - Removing privileges on test database... ... Success! Reloading the privilege tables will ensure that all changes made so far will take effect immediately. Reload privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!
```

Etapa 6. Firewalld do Reload para que as mudanças tomem o efeito.

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the current password for the root user. If you've just installed MariaDB, and you haven't set the root password yet, the password will be blank, so you should just press enter here. Enter
```

current password for root (enter for none): OK, successfully used password, moving on... Setting the root password ensures that nobody can log into the MariaDB root user without the proper authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has an anonymous user, allowing anyone to log into MariaDB without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a production environment. Remove anonymous users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network. Disallow root login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment. Remove test database and access to it? [Y/n] y - Dropping test database... ... Success! - Removing privileges on test database... ... Success! Reloading the privilege tables will ensure that all changes made so far will take effect immediately. Reload privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!

Configurar FreeRADIUS

A fim configurar FreeRADIUS para usar MariaDB, siga estas etapas.

Etapa 1. Importe o esquema de RADIUSdatabase para povoar o base de dados RADIUS.

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the current password for the root user. If you've just installed MariaDB, and you haven't set the root password yet, the password will be blank, so you should just press enter here. Enter current password for root (enter for none): OK, successfully used password, moving on... Setting the root password ensures that nobody can log into the MariaDB root user without the proper authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has an anonymous user, allowing anyone to log into MariaDB without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a production environment. Remove anonymous users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network. Disallow root login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment. Remove test database and access to it? [Y/n] y - Dropping test database... ... Success! - Removing privileges on test database... ... Success! Reloading the privilege tables will ensure that all changes made so far will take effect immediately. Reload privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!
```

Etapa 2. Crie um link macio para o SQL sob */etc/raddb/mods-enabled*

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the current password for the root user. If you've just installed MariaDB, and you haven't set the root password yet, the password will be blank, so you should just press enter here. Enter current password for root (enter for none): OK, successfully used password, moving on... Setting the root password ensures that nobody can log into the MariaDB root user without the proper authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has an anonymous user, allowing anyone to log into MariaDB without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a production environment. Remove anonymous users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network. Disallow root
```

login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment. Remove test database and access to it? [Y/n] y - Dropping test database... ... Success! - Removing privileges on test database... ... Success! Reloading the privilege tables will ensure that all changes made so far will take effect immediately. Reload privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!

Etapa 3. Configurar o módulo */raddb/mods-available/sql* SQL e mude os parâmetros da Conexão ao base de dados à série seu ambiente.

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE!
PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the
current password for the root user. If you've just installed MariaDB, and you haven't set the
root password yet, the password will be blank, so you should just press enter here. Enter
current password for root (enter for none): OK, successfully used password, moving on... Setting
the root password ensures that nobody can log into the MariaDB root user without the proper
authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated
successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has
an anonymous user, allowing anyone to log into MariaDB without having to have a user account
created for them. This is intended only for testing, and to make the installation go a bit
smoother. You should remove them before moving into a production environment. Remove anonymous
users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'.
This ensures that someone cannot guess at the root password from the network. Disallow root
login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that
anyone can access. This is also intended only for testing, and should be removed before moving
into a production environment. Remove test database and access to it? [Y/n] y - Dropping test
database... ... Success! - Removing privileges on test database... ... Success! Reloading the
privilege tables will ensure that all changes made so far will take effect immediately. Reload
privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of
the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!
```

A seção SQL deve olhar similar a abaixo.

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE!
PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the
current password for the root user. If you've just installed MariaDB, and you haven't set the
root password yet, the password will be blank, so you should just press enter here. Enter
current password for root (enter for none): OK, successfully used password, moving on... Setting
the root password ensures that nobody can log into the MariaDB root user without the proper
authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated
successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has
an anonymous user, allowing anyone to log into MariaDB without having to have a user account
created for them. This is intended only for testing, and to make the installation go a bit
smoother. You should remove them before moving into a production environment. Remove anonymous
users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'.
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login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that
anyone can access. This is also intended only for testing, and should be removed before moving
into a production environment. Remove test database and access to it? [Y/n] y - Dropping test
database... ... Success! - Removing privileges on test database... ... Success! Reloading the
privilege tables will ensure that all changes made so far will take effect immediately. Reload
privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of
the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!
```

Etapa 4. Mude o direito de grupo de */etc/raddb/mods-enabled/sql ao* radiusd.

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE!
PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the
```

current password for the root user. If you've just installed MariaDB, and you haven't set the root password yet, the password will be blank, so you should just press enter here. Enter current password for root (enter for none): OK, successfully used password, moving on... Setting the root password ensures that nobody can log into the MariaDB root user without the proper authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has an anonymous user, allowing anyone to log into MariaDB without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a production environment. Remove anonymous users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network. Disallow root login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment. Remove test database and access to it? [Y/n] y - Dropping test database... ... Success! - Removing privileges on test database... ... Success! Reloading the privilege tables will ensure that all changes made so far will take effect immediately. Reload privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!

Configurar o WLC como o cliente de AAA em FreeRADIUS

Etapa 1. Edite */etc/raddb/clients.conf* a fim ajustar a chave compartilhada para o WLC.

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE!
PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the
current password for the root user. If you've just installed MariaDB, and you haven't set the
root password yet, the password will be blank, so you should just press enter here. Enter
current password for root (enter for none): OK, successfully used password, moving on... Setting
the root password ensures that nobody can log into the MariaDB root user without the proper
authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated
successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has
an anonymous user, allowing anyone to log into MariaDB without having to have a user account
created for them. This is intended only for testing, and to make the installation go a bit
smoother. You should remove them before moving into a production environment. Remove anonymous
users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'.
This ensures that someone cannot guess at the root password from the network. Disallow root
login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that
anyone can access. This is also intended only for testing, and should be removed before moving
into a production environment. Remove test database and access to it? [Y/n] y - Dropping test
database... ... Success! - Removing privileges on test database... ... Success! Reloading the
privilege tables will ensure that all changes made so far will take effect immediately. Reload
privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of
the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!
```

Etapa 2. Na parte inferior adicionar seu endereço IP de Um ou Mais Servidores Cisco ICM NT do controlador e a chave compartilhada.

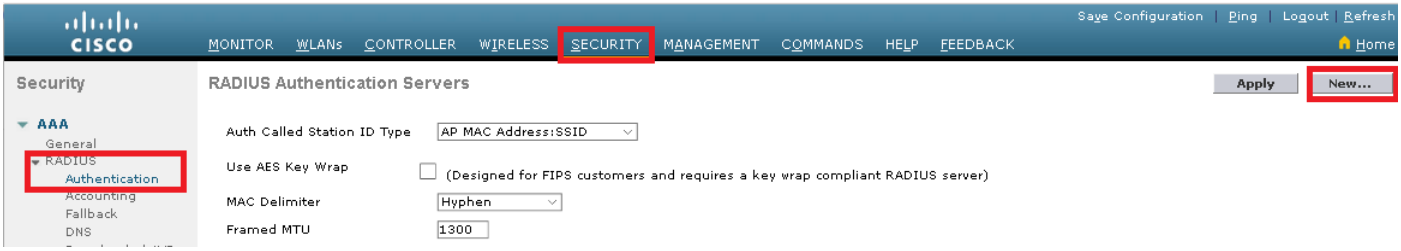

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE!
PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the
current password for the root user. If you've just installed MariaDB, and you haven't set the
root password yet, the password will be blank, so you should just press enter here. Enter
current password for root (enter for none): OK, successfully used password, moving on... Setting
the root password ensures that nobody can log into the MariaDB root user without the proper
authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated
successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has
an anonymous user, allowing anyone to log into MariaDB without having to have a user account
created for them. This is intended only for testing, and to make the installation go a bit
```

```
smoother. You should remove them before moving into a production environment. Remove anonymous
users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'.
This ensures that someone cannot guess at the root password from the network. Disallow root
login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that
anyone can access. This is also intended only for testing, and should be removed before moving
into a production environment. Remove test database and access to it? [Y/n] y - Dropping test
database... ... Success! - Removing privileges on test database... ... Success! Reloading the
privilege tables will ensure that all changes made so far will take effect immediately. Reload
privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of
the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!
```

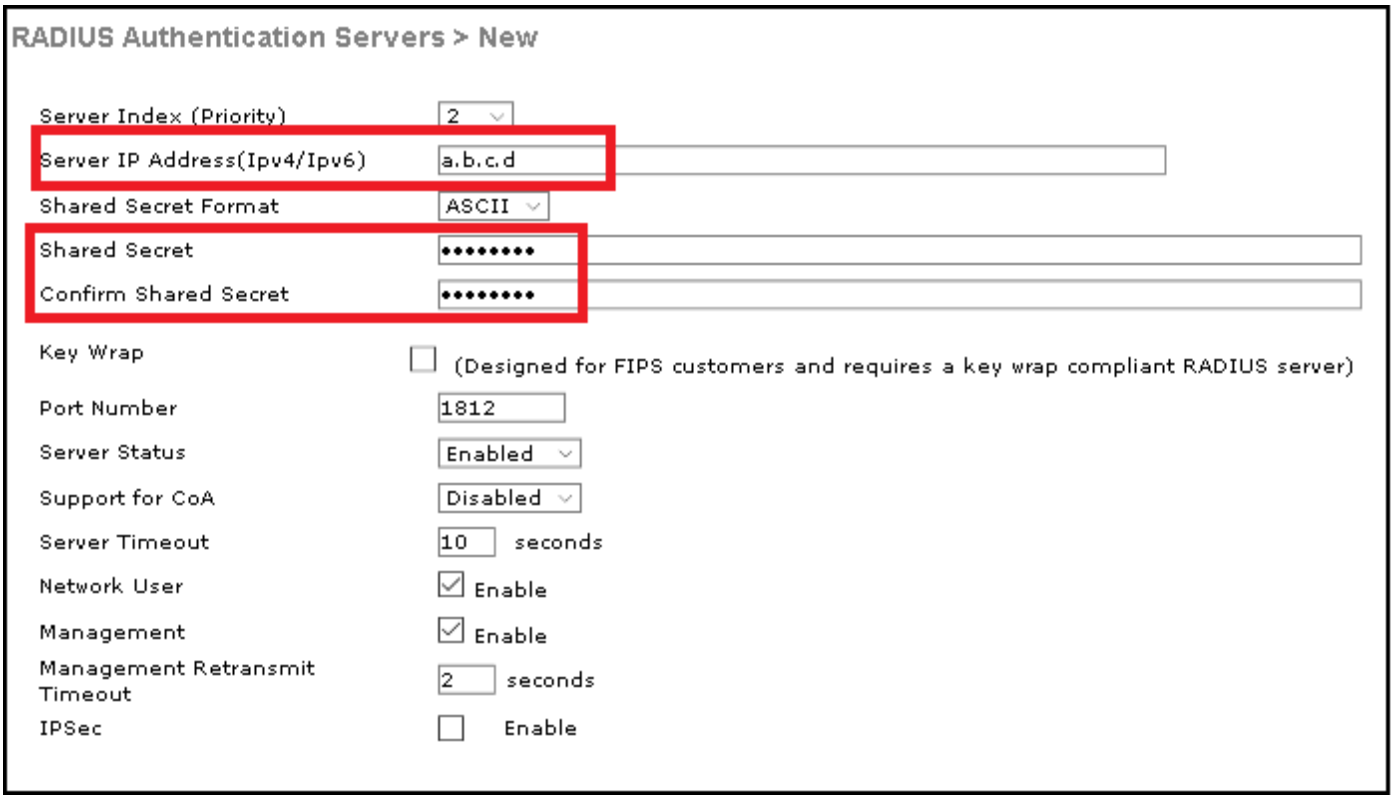
Configurar FreeRADIUS como o servidor Radius no WLC

GUI:

Etapa 1. Abra o GUI do WLC e navegue à **SEGURANÇA > ao RAIO > à autenticação > novo.**



Etapa 2. Encha a informação do servidor Radius.



CLI:

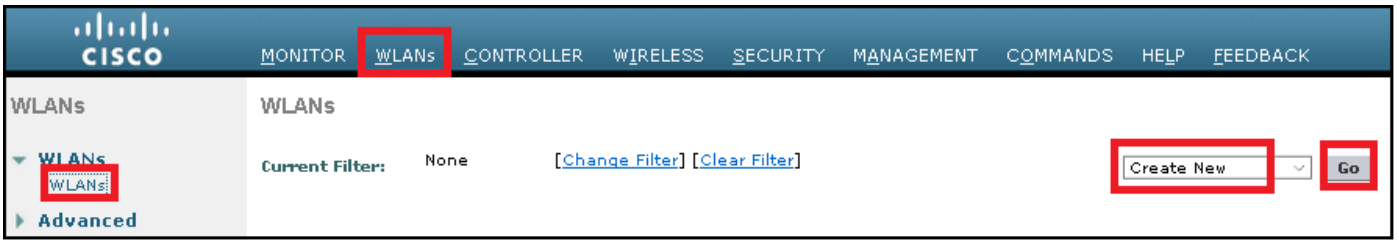
```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE!
PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the
current password for the root user. If you've just installed MariaDB, and you haven't set the
root password yet, the password will be blank, so you should just press enter here. Enter
current password for root (enter for none): OK, successfully used password, moving on... Setting
```

the root password ensures that nobody can log into the MariaDB root user without the proper authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has an anonymous user, allowing anyone to log into MariaDB without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a production environment. Remove anonymous users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network. Disallow root login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment. Remove test database and access to it? [Y/n] y - Dropping test database... ... Success! - Removing privileges on test database... ... Success! Reloading the privilege tables will ensure that all changes made so far will take effect immediately. Reload privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!

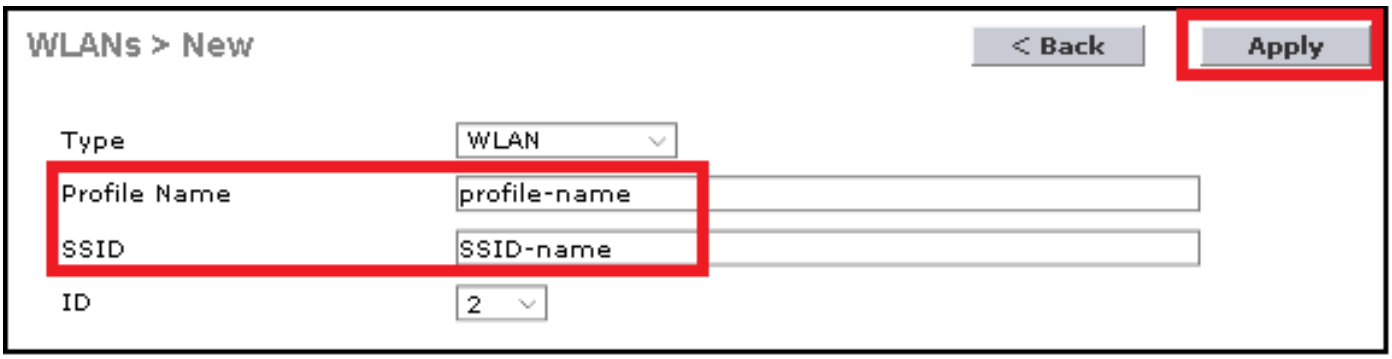
Configurar um WLAN

GUI:

Etapa 1. Abra o GUI do WLC e navegue a **WLAN > criam novo > vão.**



Etapa 2. Escolha um nome para o SSID e o perfil, a seguir clique-o **aplicam-se.**



CLI:

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE!
PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the
current password for the root user. If you've just installed MariaDB, and you haven't set the
root password yet, the password will be blank, so you should just press enter here. Enter
current password for root (enter for none): OK, successfully used password, moving on... Setting
the root password ensures that nobody can log into the MariaDB root user without the proper
authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated
successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has
an anonymous user, allowing anyone to log into MariaDB without having to have a user account
created for them. This is intended only for testing, and to make the installation go a bit
smoother. You should remove them before moving into a production environment. Remove anonymous
users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'.
This ensures that someone cannot guess at the root password from the network. Disallow root
login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that
```

anyone can access. This is also intended only for testing, and should be removed before moving into a production environment. Remove test database and access to it? [Y/n] y - Dropping test database... ... Success! - Removing privileges on test database... ... Success! Reloading the privilege tables will ensure that all changes made so far will take effect immediately. Reload privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!

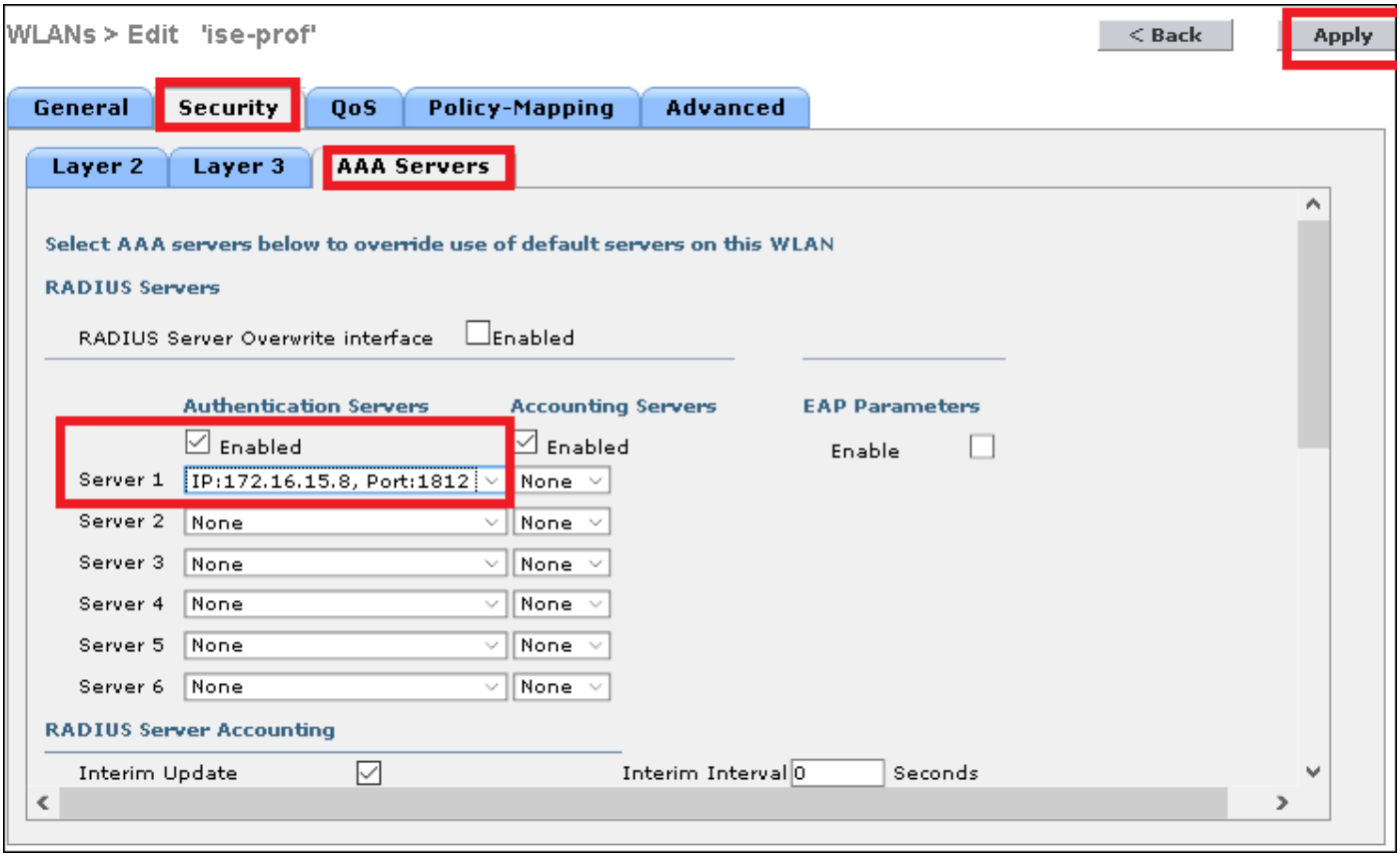
Etapa 3. Atribua o servidor Radius ao WLAN.

CLI:

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE! PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the current password for the root user. If you've just installed MariaDB, and you haven't set the root password yet, the password will be blank, so you should just press enter here. Enter current password for root (enter for none): OK, successfully used password, moving on... Setting the root password ensures that nobody can log into the MariaDB root user without the proper authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has an anonymous user, allowing anyone to log into MariaDB without having to have a user account created for them. This is intended only for testing, and to make the installation go a bit smoother. You should remove them before moving into a production environment. Remove anonymous users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'. This ensures that someone cannot guess at the root password from the network. Disallow root login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that anyone can access. This is also intended only for testing, and should be removed before moving into a production environment. Remove test database and access to it? [Y/n] y - Dropping test database... ... Success! - Removing privileges on test database... ... Success! Reloading the privilege tables will ensure that all changes made so far will take effect immediately. Reload privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!
```

GUI:

Navegue à **Segurança > aos servidores AAA** e escolha o servidor Radius desejado, a seguir a batida **aplica-se.**

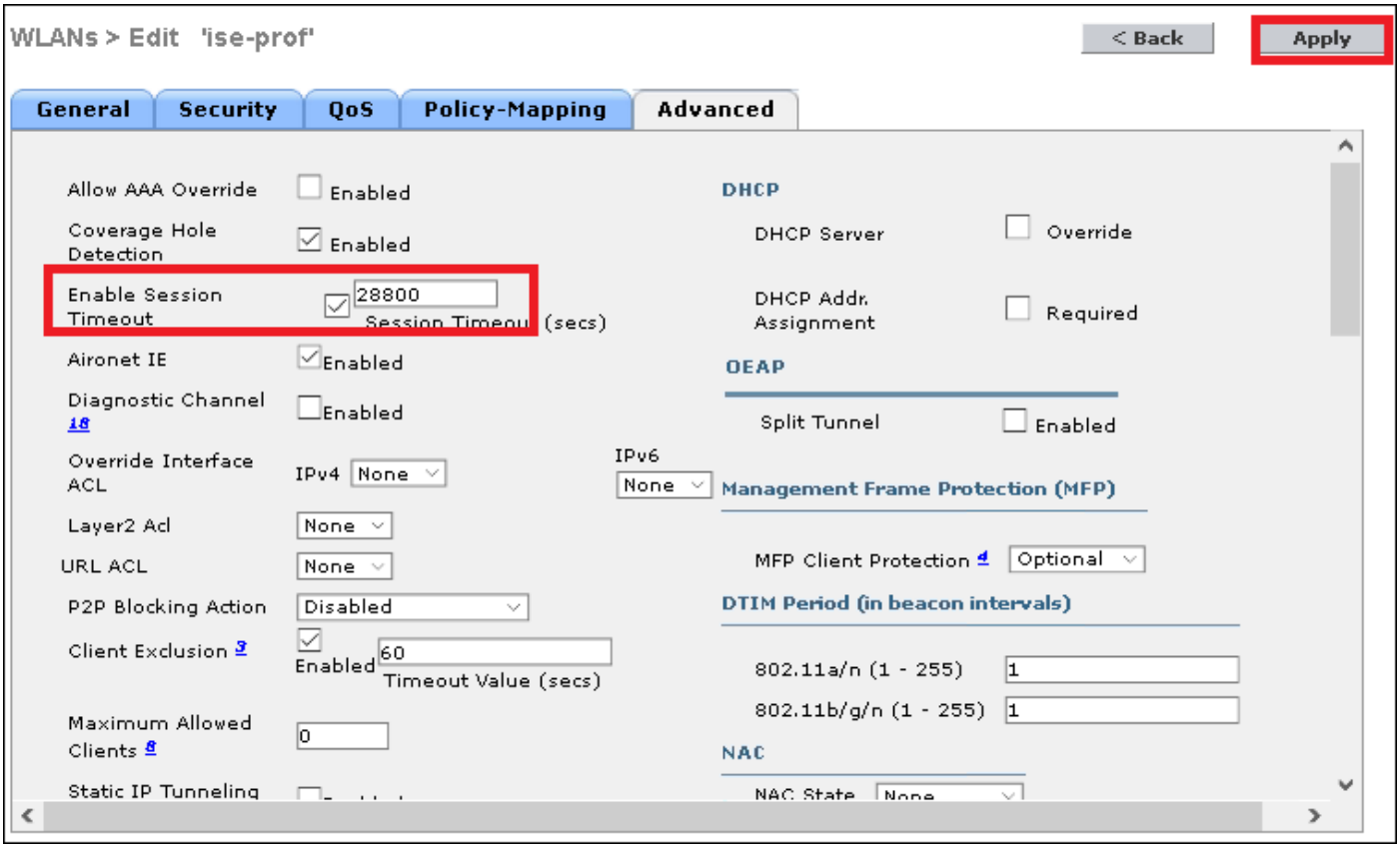


Etapa 4. Aumente opcionalmente o timeout de sessão

CLI:

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE!
PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the
current password for the root user. If you've just installed MariaDB, and you haven't set the
root password yet, the password will be blank, so you should just press enter here. Enter
current password for root (enter for none): OK, successfully used password, moving on... Setting
the root password ensures that nobody can log into the MariaDB root user without the proper
authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated
successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has
an anonymous user, allowing anyone to log into MariaDB without having to have a user account
created for them. This is intended only for testing, and to make the installation go a bit
smoother. You should remove them before moving into a production environment. Remove anonymous
users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'.
This ensures that someone cannot guess at the root password from the network. Disallow root
login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that
anyone can access. This is also intended only for testing, and should be removed before moving
into a production environment. Remove test database and access to it? [Y/n] y - Dropping test
database... ... Success! - Removing privileges on test database... ... Success! Reloading the
privilege tables will ensure that all changes made so far will take effect immediately. Reload
privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of
the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!
```

GUI:

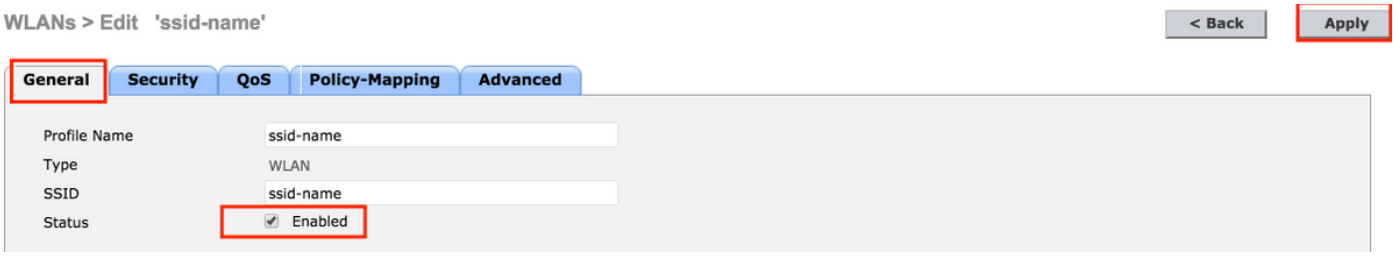


Etapa 5. Permita o WLAN

CLI:

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE!
PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the
current password for the root user. If you've just installed MariaDB, and you haven't set the
root password yet, the password will be blank, so you should just press enter here. Enter
current password for root (enter for none): OK, successfully used password, moving on... Setting
the root password ensures that nobody can log into the MariaDB root user without the proper
authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated
successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has
an anonymous user, allowing anyone to log into MariaDB without having to have a user account
created for them. This is intended only for testing, and to make the installation go a bit
smoother. You should remove them before moving into a production environment. Remove anonymous
users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'.
This ensures that someone cannot guess at the root password from the network. Disallow root
login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that
anyone can access. This is also intended only for testing, and should be removed before moving
into a production environment. Remove test database and access to it? [Y/n] y - Dropping test
database... ... Success! - Removing privileges on test database... ... Success! Reloading the
privilege tables will ensure that all changes made so far will take effect immediately. Reload
privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of
the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!
```

GUI:



Adicionar usuários ao base de dados do freeRADIUS

Àrevelia os clientes usam protocolos PEAP, porém apoio do freeRadius outros métodos (não cobertos neste guia).

Etapa 1. Edite o arquivo */etc/raddb/users*.

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE!
PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the
current password for the root user. If you've just installed MariaDB, and you haven't set the
root password yet, the password will be blank, so you should just press enter here. Enter
current password for root (enter for none): OK, successfully used password, moving on... Setting
the root password ensures that nobody can log into the MariaDB root user without the proper
authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated
successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has
an anonymous user, allowing anyone to log into MariaDB without having to have a user account
created for them. This is intended only for testing, and to make the installation go a bit
smoother. You should remove them before moving into a production environment. Remove anonymous
users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'.
This ensures that someone cannot guess at the root password from the network. Disallow root
login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that
anyone can access. This is also intended only for testing, and should be removed before moving
into a production environment. Remove test database and access to it? [Y/n] y - Dropping test
database... ... Success! - Removing privileges on test database... ... Success! Reloading the
privilege tables will ensure that all changes made so far will take effect immediately. Reload
privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of
the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!
```

Etapa 2. Na parte inferior do arquivo adicione a informação de usuários. Neste exemplo o *usuário1* é o username e *cisco123 a* senha.

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE!
PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the
current password for the root user. If you've just installed MariaDB, and you haven't set the
root password yet, the password will be blank, so you should just press enter here. Enter
current password for root (enter for none): OK, successfully used password, moving on... Setting
the root password ensures that nobody can log into the MariaDB root user without the proper
authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated
successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has
an anonymous user, allowing anyone to log into MariaDB without having to have a user account
created for them. This is intended only for testing, and to make the installation go a bit
smoother. You should remove them before moving into a production environment. Remove anonymous
users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'.
This ensures that someone cannot guess at the root password from the network. Disallow root
```

```
login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that
anyone can access. This is also intended only for testing, and should be removed before moving
into a production environment. Remove test database and access to it? [Y/n] y - Dropping test
database... ... Success! - Removing privileges on test database... ... Success! Reloading the
privilege tables will ensure that all changes made so far will take effect immediately. Reload
privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of
the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!
```

Etapa 3. Reinício FreeRadius.

```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE!
PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the
current password for the root user. If you've just installed MariaDB, and you haven't set the
root password yet, the password will be blank, so you should just press enter here. Enter
current password for root (enter for none): OK, successfully used password, moving on... Setting
the root password ensures that nobody can log into the MariaDB root user without the proper
authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated
successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has
an anonymous user, allowing anyone to log into MariaDB without having to have a user account
created for them. This is intended only for testing, and to make the installation go a bit
smoother. You should remove them before moving into a production environment. Remove anonymous
users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'.
This ensures that someone cannot guess at the root password from the network. Disallow root
login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that
anyone can access. This is also intended only for testing, and should be removed before moving
into a production environment. Remove test database and access to it? [Y/n] y - Dropping test
database... ... Success! - Removing privileges on test database... ... Success! Reloading the
privilege tables will ensure that all changes made so far will take effect immediately. Reload
privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of
the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!
```

Certificados no freeRADIUS

FreeRADIUS vem com um certificado de CA do padrão (certificação Authoritiy) e um certificado do dispositivo que sejam armazenados no trajeto */etc/raddb/certs.* O nome destes Certificados é *ca.pem e* server.pem *server.pemis o certificado* que os clientes receberão quando examinarem o processo de autenticação. Se você precisa de atribuir um certificado diferente para a autenticação de EAP você pode simplesmente suprimir d e salvar os novos no mesmo trajeto com esse exato o mesmo nome.

Configuração de dispositivo final

Configurar uma máquina de Windows do portátil para conectar a um SSID com a autenticação do 802.1x e a versão 2 PEAP/MS-CHAP (versão de Microsoft do protocolo challenge-handshake authentication).

Para criar o perfil WLAN na máquina dos indicadores lá seja duas opções:

1. Instale o certificado auto-assinado na máquina para validar e confiar o server do freeRADIUS a fim terminar a autenticação
2. Contorneie a validação do servidor Radius e confie todo o servidor Radius usado para executar a autenticação (não recomendada, como pode se transformar uma questão de segurança). A configuração para estas opções é explicada na configuração de dispositivo final - crie o perfil WLAN - etapa xx.

Configuração de dispositivo final - Certificado do freeRADIUS da importação

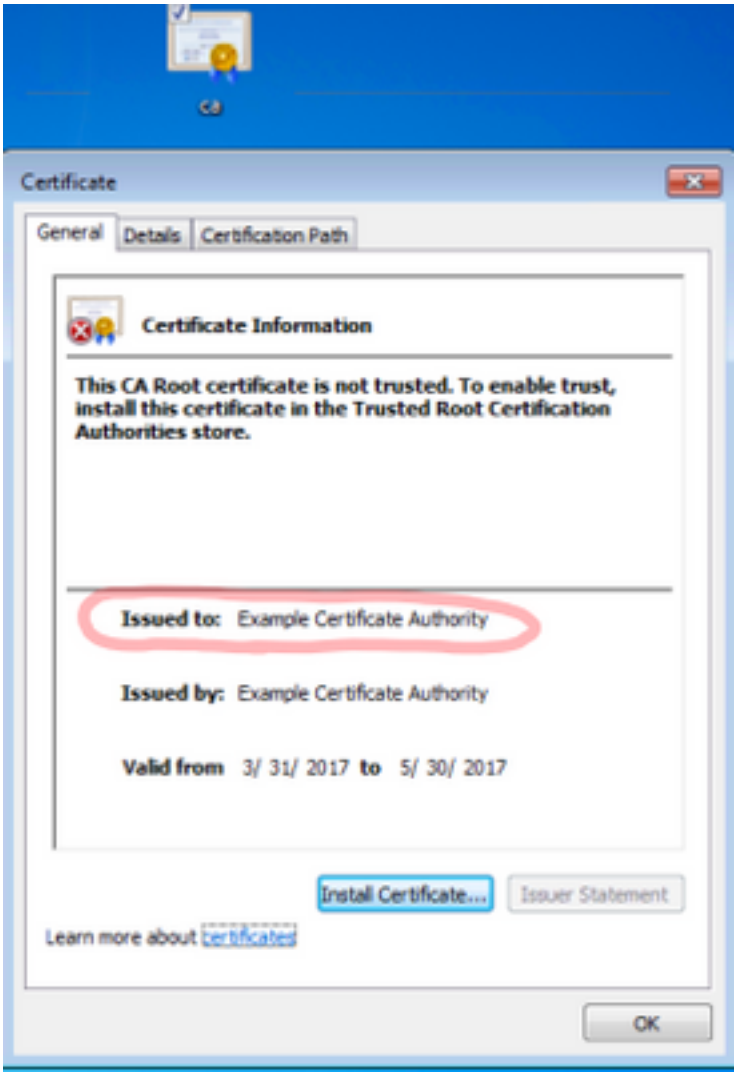
Se você usa os Certificados do padrão instalados no freeRADIUS, siga estas etapas a fim importar o certificado EAP do server do freeRADIUS no dispositivo final.

Etapa 1. Obtenha o CERT de FreeRadius:

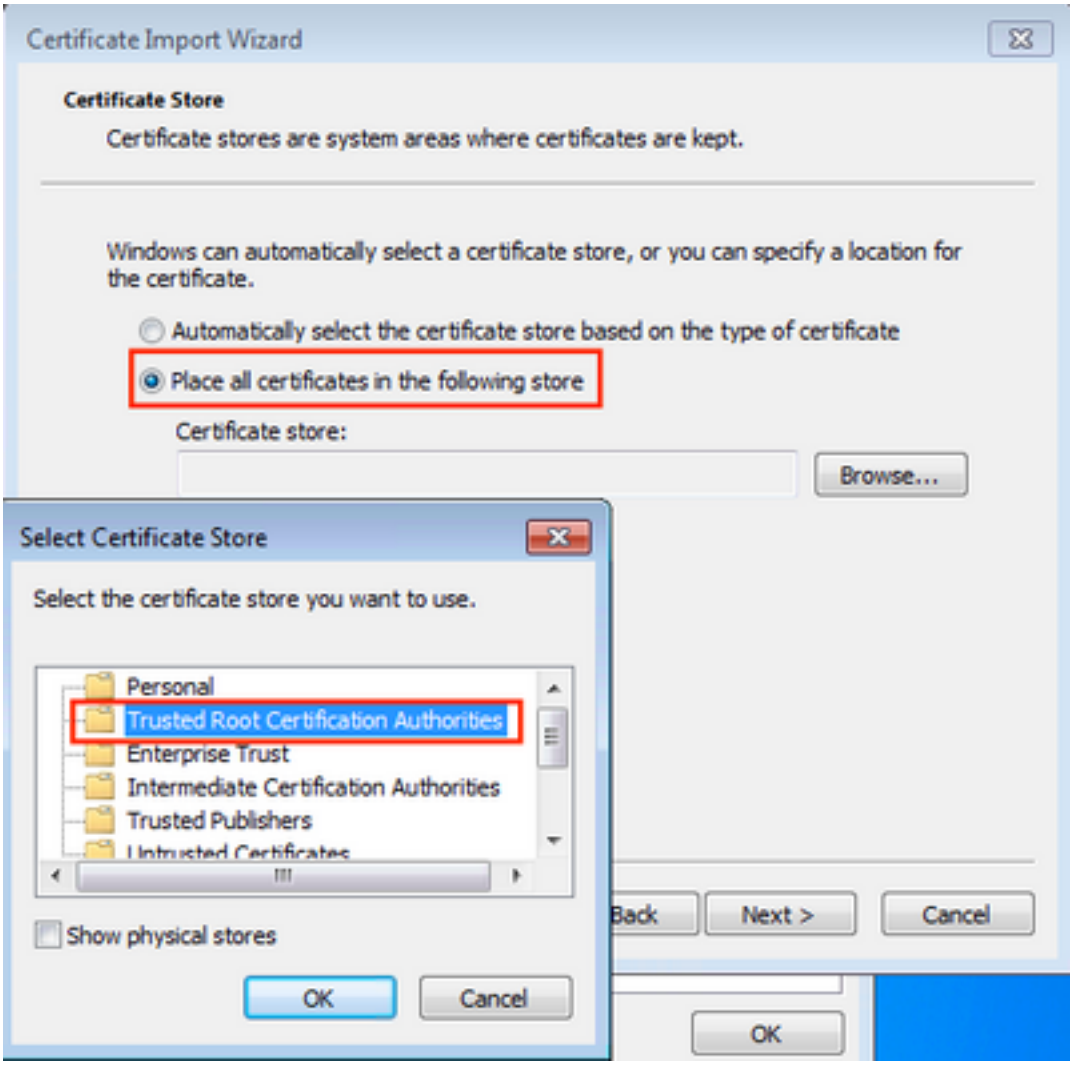
```
[root@tac-mxwireless ~]#mysql_secure_installation

NOTE: RUNNING ALL PARTS OF THIS SCRIPT IS RECOMMENDED FOR ALL MariaDB SERVERS IN PRODUCTION USE!
PLEASE READ EACH STEP CAREFULLY! In order to log into MariaDB to secure it, we'll need the
current password for the root user. If you've just installed MariaDB, and you haven't set the
root password yet, the password will be blank, so you should just press enter here. Enter
current password for root (enter for none): OK, successfully used password, moving on... Setting
the root password ensures that nobody can log into the MariaDB root user without the proper
authorisation. Set root password? [Y/n] Y New password: Re-enter new password: Password updated
successfully! Reloading privilege tables.. ... Success! By default, a MariaDB installation has
an anonymous user, allowing anyone to log into MariaDB without having to have a user account
created for them. This is intended only for testing, and to make the installation go a bit
smoother. You should remove them before moving into a production environment. Remove anonymous
users? [Y/n] y ... Success! Normally, root should only be allowed to connect from 'localhost'.
This ensures that someone cannot guess at the root password from the network. Disallow root
login remotely? [Y/n] y ... Success! By default, MariaDB comes with a database named 'test' that
anyone can access. This is also intended only for testing, and should be removed before moving
into a production environment. Remove test database and access to it? [Y/n] y - Dropping test
database... ... Success! - Removing privileges on test database... ... Success! Reloading the
privilege tables will ensure that all changes made so far will take effect immediately. Reload
privilege tables now? [Y/n] y ... Success! Cleaning up... All done! If you've completed all of
the above steps, your MariaDB installation should now be secure. Thanks for using MariaDB!
```

Etapa 2. A cópia e cola a saída da etapa precedente em um arquivo de texto e muda a extensão a .crt

Etapa 3. Fazer duplo clique o arquivo e seleto **instale o certificado...**

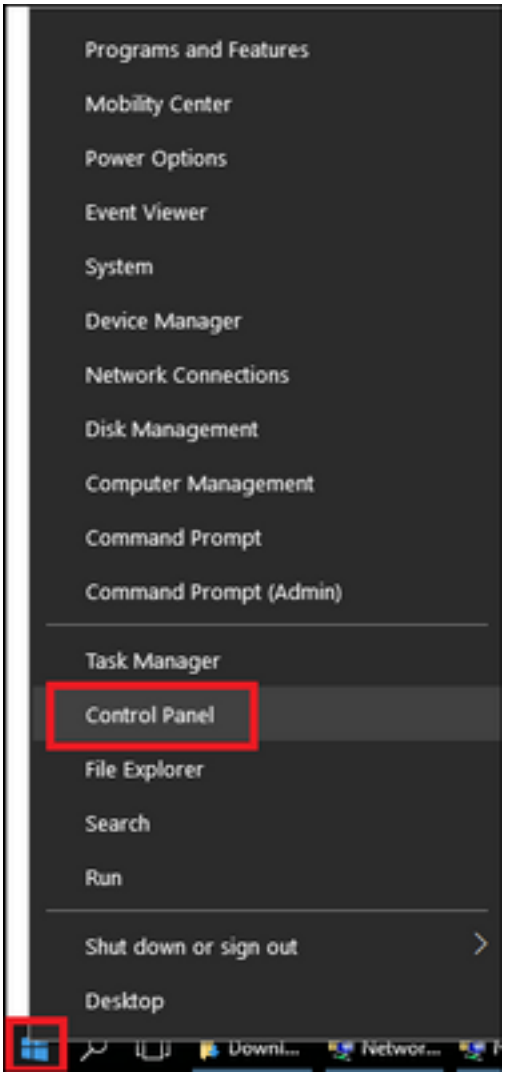


Etapa 4. Instale o certificado na loja das **Autoridades de certificação de raiz confiável**.

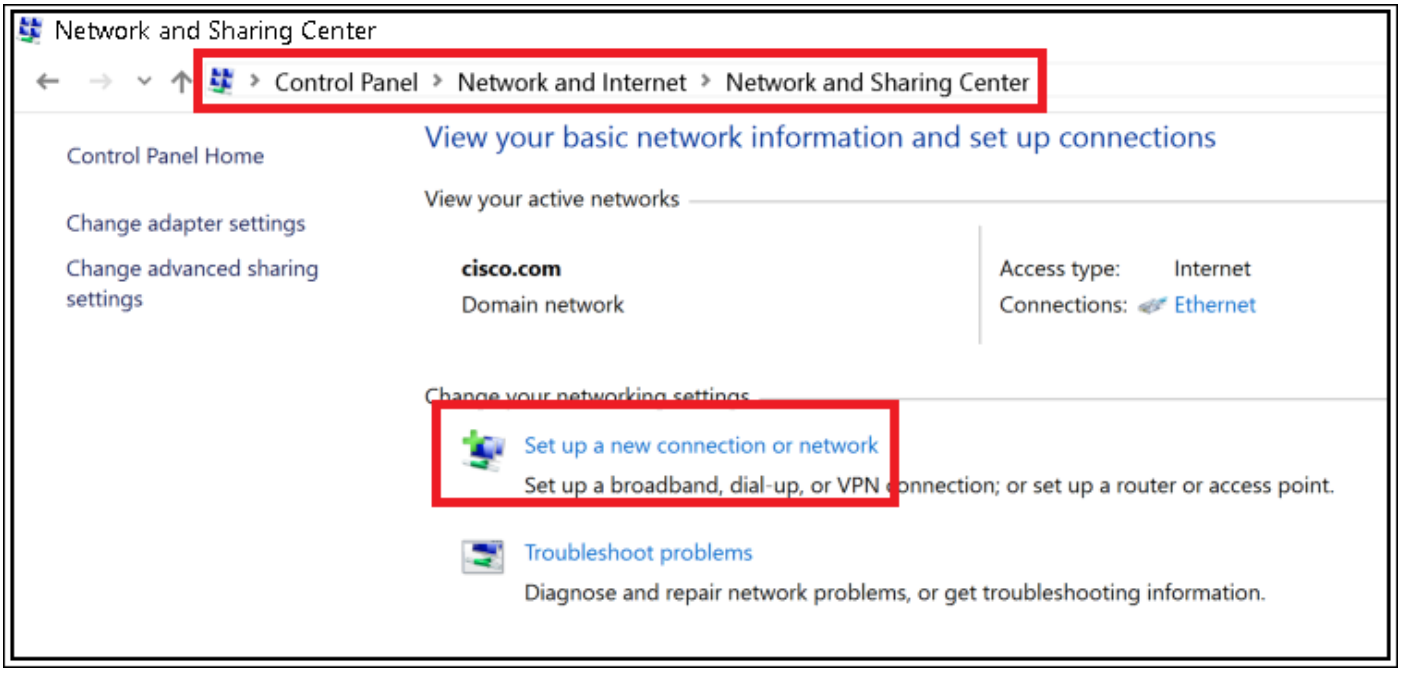


Configuração de dispositivo final - Crie o perfil WLAN

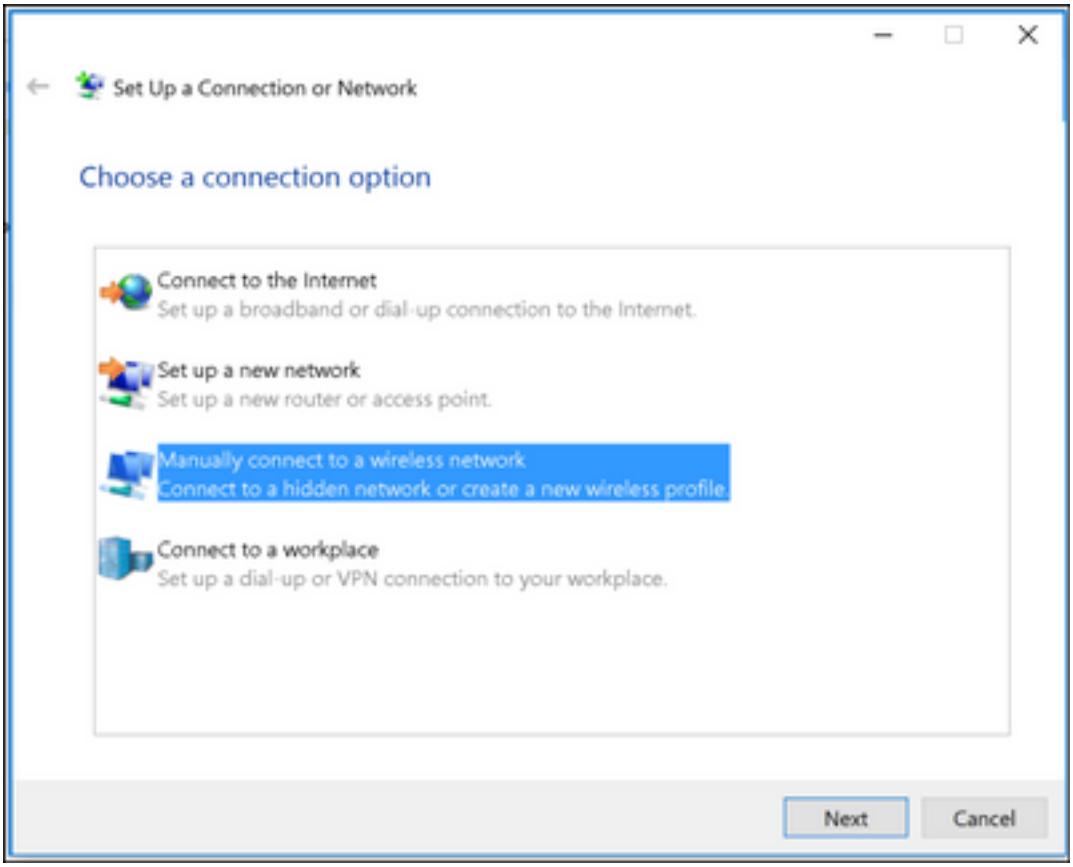
Etapa 1. Clicar com o botão direito no ícone do começo e selecione o **Control Panel**.



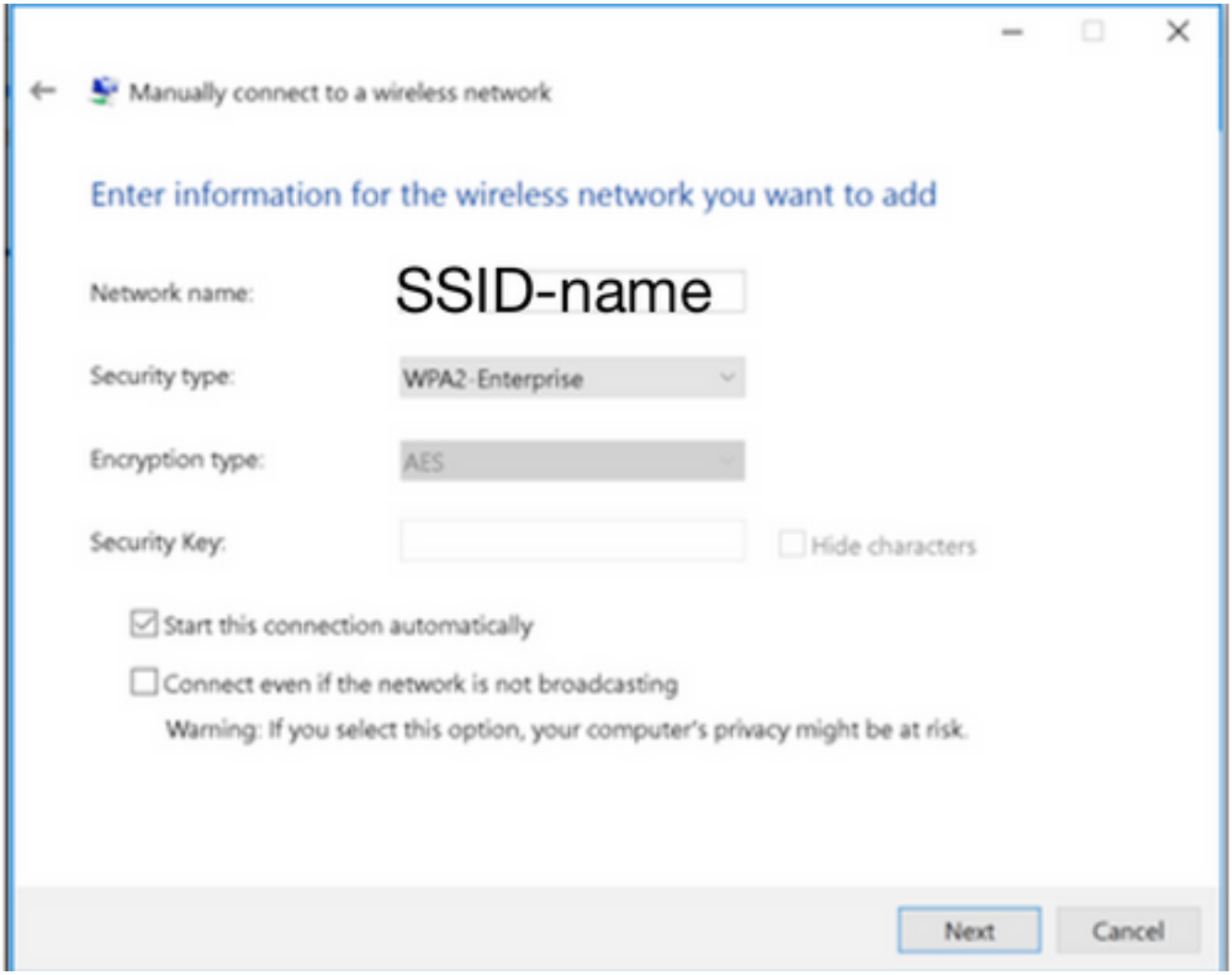
Etapa 2. Navegue à **rede e ao Internet**, em seguida isso navega à **rede e à partilha Center** e clica **estabelece** sobre uma **nova conexão ou uma rede.**



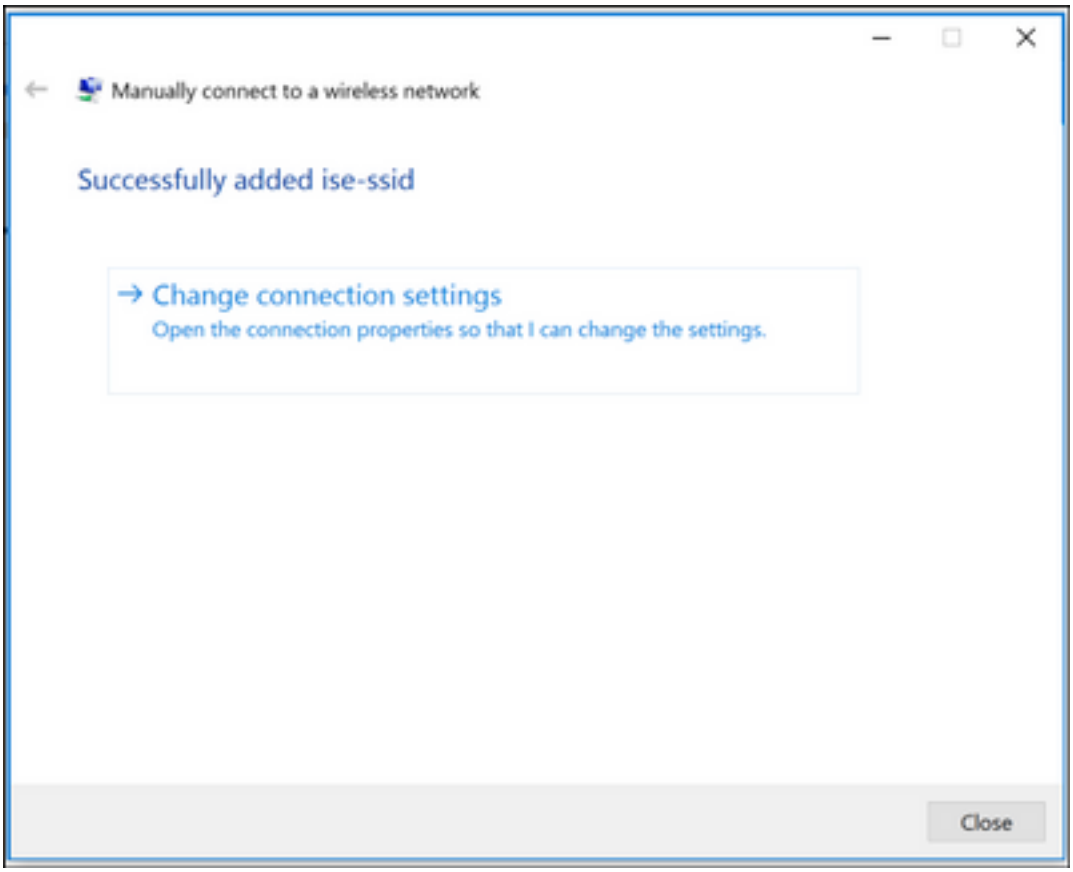
Etapa 3. Selecione **conectam manualmente a uma rede Wireless** e clicam **em seguida.**



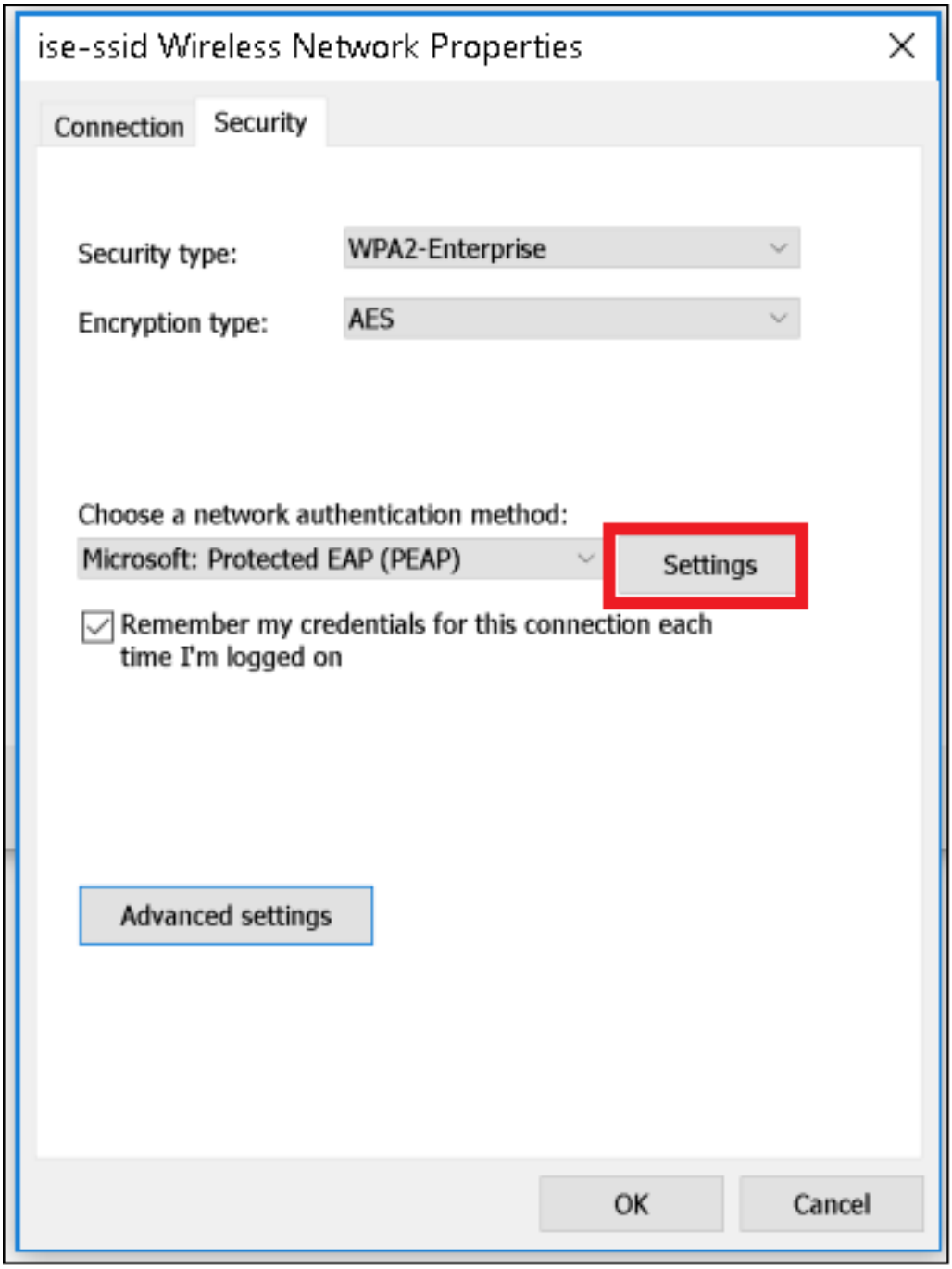
Etapa 4. Incorpore a informação com o nome do tipo WPA2-Enterprise SSID e de Segurança e clique-a **em seguida.**



Etapa 5. Selecione **configurações de conexão da mudança** a fim personalizar a configuração do perfil WLAN.



Etapa 6. Navegue à **ABA de segurança** e clique **ajustes.**



Etapa 7. Escolha se o servidor Radius é validado ou não.

Se sim, permita **verificam a identidade do server validando o certificado** e das **Autoridades de certificação de raiz confiável:** aliste seleto o certificado auto-assinado do freeRADIUS.

Em seguida esse seleto **configura** e desabilita **automaticamente o uso meus nome de logon e senha de Windows...**, a seguir clica a **APROVAÇÃO**