PALO ALTO NETWORKS FIREWALL 11.0 ESSENTIALS

Lab 3: Managing Firewall Administrator Accounts

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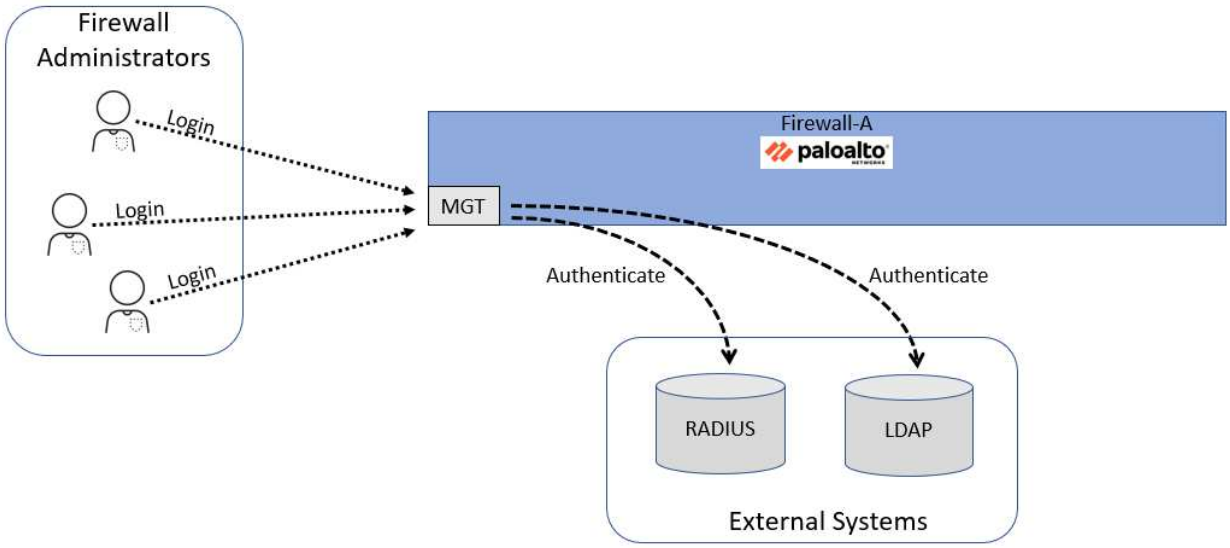
Contents

Introduction

When you deploy the firewall into your production network, you need to make sure that other members of your team have administrative access to the device. You want to leverage an existing LDAP server that maintains account and password information for members of your team. However, your organization recently merged with another company whose administrative accounts are maintained in a RADIUS database.

No one has had time yet to migrate all the accounts from RADIUS into LDAP, so you need to configure the firewall to check both LDAP and RADIUS to authenticate an account when an administrator logs in.

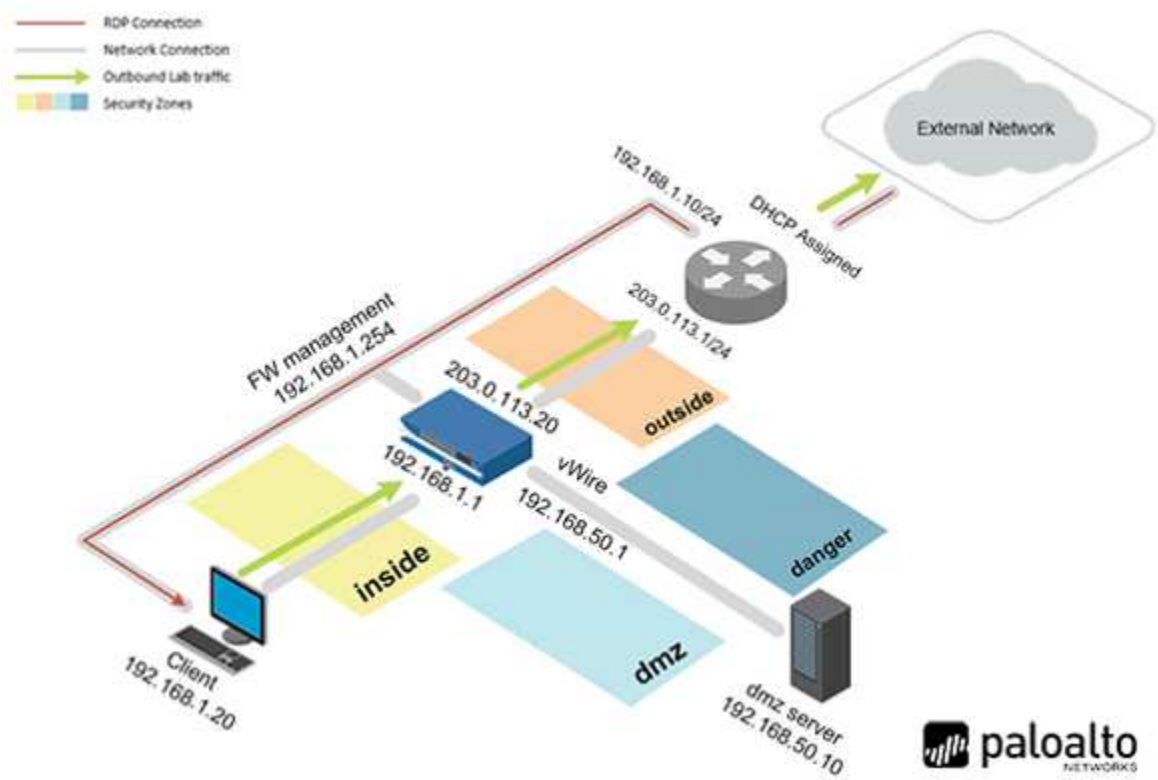


Objective

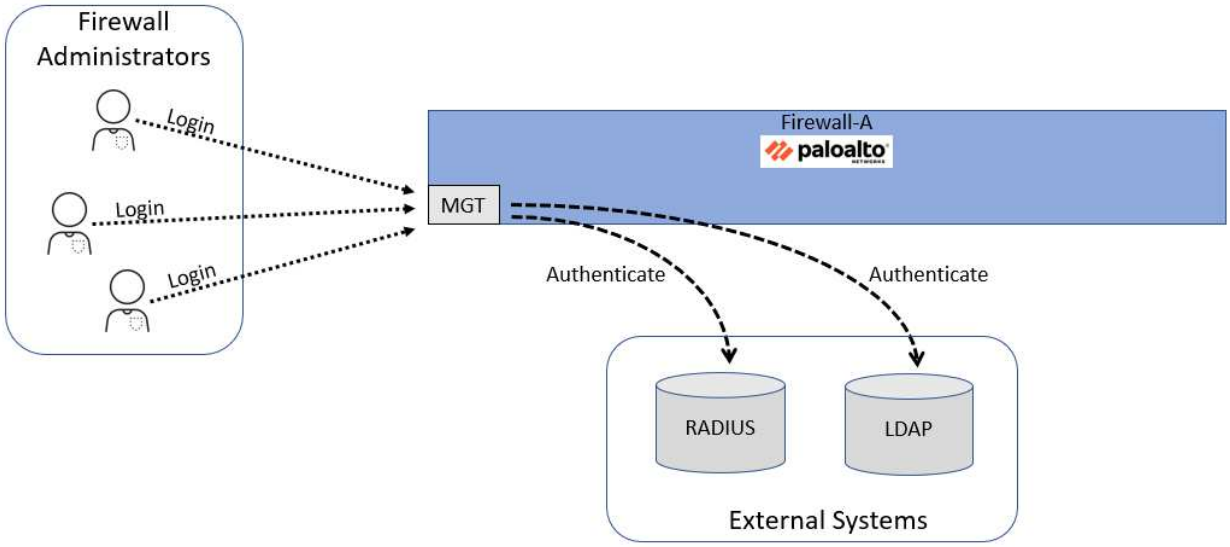
In this lab, you will perform the following tasks:

- Load a baseline configuration.
- Create a local firewall administrator account.
- Configure an LDAP Server Profile.
- Configure a RADIUS Server Profile.
- Configure an LDAP Authentication Profile.
- Configure a RADIUS Authentication Profile.
- Configure an Authentication Sequence.
- Create non-local firewall administrator accounts.

Lab Topology



Theoretical Lab Topology



Lab Settings

The information in the table below will be needed in order to complete the lab. The task sections below provide details on the use of this information.

Virtual Machine	IP Address	Account (if needed)	Password (if needed)
Client	**192.168.1.20**	`lab-user`	`Pal0Alt0!`
DMZ	**192.168.50.10**	`root`	`Pal0Alt0!`
Firewall	**192.168.1.254**	`admin`	`Pal0Alt0!`
vRouter	**192.168.1.10**	`root`	`Pal0Alt0`

Lab Guidance

There are two sections in this lab guide:

- High-Level Lab Steps
- Detailed Lab Steps

The High-Level Lab Steps section provides only general guidance and information about how to accomplish the lab objectives. This section is more challenging and is suited for students who have a working knowledge of Palo Alto Networks firewalls. If you have never worked with a Palo Alto Networks firewall, we strongly encourage you to use the Detailed Lab Steps section.

The instructions in the Detailed Lab Steps section provide guided, detailed steps and screenshots to accomplish the lab objectives.

If you decide to use the High-Level Lab Guide and get stuck, switch to the Detailed Lab Guide for guidance.

You are not required to complete both the High-Level Lab Guide and the Detailed Lab Guide for each lab. Instead, please select the appropriate section based on your familiarity with Palo Alto Networks Firewalls.

1 Managing Firewall Administrator Accounts – High Level Lab Steps

It is recommended to use this section if you possess significant experience in working with Palo Alto Networks firewalls. In case you require more comprehensive instructions to achieve the objectives, please utilize the Detailed-Lab Steps section in Task 2.

1.1 Apply a Baseline Configuration to the Firewall

- On the Zorin desktop, select *lab-user*, enter **Pal0Alt0!** for the password.
- For the Palo Alto Firewall, enter admin for the user and **Pal0Alt0!** for the password.
- Load and commit the configuration file - **edu-210-11.0a-03.xml** to the Firewall.

1.2 Create a Local Database Authentication Profile

- Create a **Local Database Authentication Profile** called **Local-Database.**
- Set the **Allow List** for the **Local-Database Profile** to **all.**

1.3 Create a Local User Database Account

- Create an entry in the **Local User Database** called **adminBob** with **Pal0Alt0!** as the **Password.**

1.4 Create an Administrator Account

- Create an **Administrator** account using the **Local Database** entry for **adminBob.**
- Set the **Authentication Profile** to **Local-Database.**

1.5 Commit the Configuration

- Commit the changes to the firewall before proceeding.

1.6 Log in With New Admin Account

- Log out of the firewall web interface and log back into the firewall with **adminBob** as the **Username** and **Pal0Alt0!** as the **Password**.
- Use the **System log** to verify that the **adminBob** account was authenticated by the **local-database.**
- Log out of the firewall and log back into the firewall with the **admin/Pal0Alt0!** credentials.

1.7 Configure LDAP Authentication

- Use the information in the table below to configure an LDAP Server Profile.

Profile Name	**LDAP-Server-Profile**
Server Name	**ldap.panw.lab**
LDAP Server IP Address	**192.168.50.89**
Port field	**389**

Server Settings Type	**Other**
Base DN	**dc=panw,dc=lab**
Bind DN	**cn=admin,dc=panw,dc=lab**
Password / Confirm Password	**Pal0Alt0!**
Require SSL/TLS secured connection	**unchecked**

- Use the information in the table below to create an LDAP Authentication Profile.

Name	**LDAP-Auth-Profile**
Type	**LDAP**
Server Profile	**LDAP-Server-Profile**
Allow List (Advanced Tab)	**all**

- Use the information in the table below to create a new administrator account that will be authenticated by LDAP.

Name	**adminSally**
Authentication Profile	**LDAP-Auth-Profile**

1.8 Commit the Configuration

- Commit the changes to the firewall before proceeding.

1.9 Log in With New Admin Account

- Test LDAP Authentication by logging in with the **adminSally/Pal0Alt0!** credentials.
- Use the System log to verify that the **adminSally** account was authenticated using LDAP.

1.10 Configure RADIUS Authentication

- Use the information in the table below to configure a RADIUS Server Profile.

Profile Name	**RADIUS-Server-Profile**
Authentication Protocol	**CHAP**
Server Name	**radius.panw.lab**
RADIUS Server	**192.168.50.150**
Secret / Confirm Secret	**Pal0Alt0!**
Port	**1812**

- Use the information in the table below to create a RADIUS Authentication Profile.

Name	**RADIUS-Auth-Profile**
Type	**RADIUS**
Server Profile	**RADIUS-Server-Profile**
Allow List (Advanced Tab)	**all**

- Use the information in the table below to create a new administrator account that will be authenticated by RADIUS.

Name	**adminHelga**
Authentication Profile	**RADIUS-Auth-Profile**

1.11 Commit the Configuration

- Commit the changes to the firewall before proceeding.

1.12 Log in With New Admin Account

- Test RADIUS Authentication by logging in with the **adminHelga/Pal0Alt0!** credentials.
- Use the System log to verify that the **adminHelga** account was authenticated using RADIUS.

1.13 Configure an Authentication Sequence

- Create an authentication sequence called **LDAP-then-RADIUS** that uses the **LDAP-Auth-Profile** first and the **RADIUS-Auth-Profile** second.
- Commit the configuration.

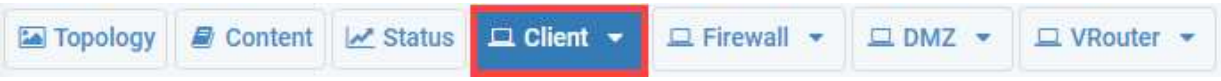
2 Managing Firewall Administrator Accounts – Detailed Lab Steps

It is recommended to use this section if you prefer detailed guidance to complete the objectives for this lab. It is strongly recommended that you use this section if you do not have extensive experience working with Palo Alto Networks firewalls.

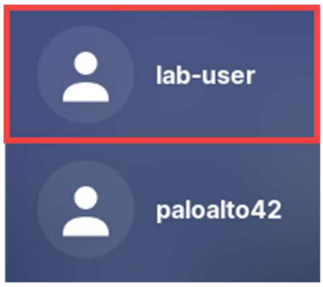
2.1 Load Lab Configuration

In this section, you will connect to the Firewall and load the Firewall configuration file.

1. Click on the **Client** tab to access the Client PC.



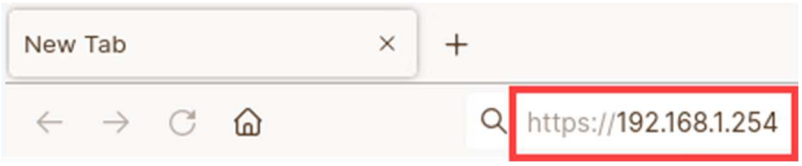
2. On the *Zorin* desktop, click **lab-user.**



3. For the *lab-user* password, enter **Pal0Alt0!** and press **Enter**.

4. Double-click the **Firefox Web Browser** icon located on the *Desktop*.

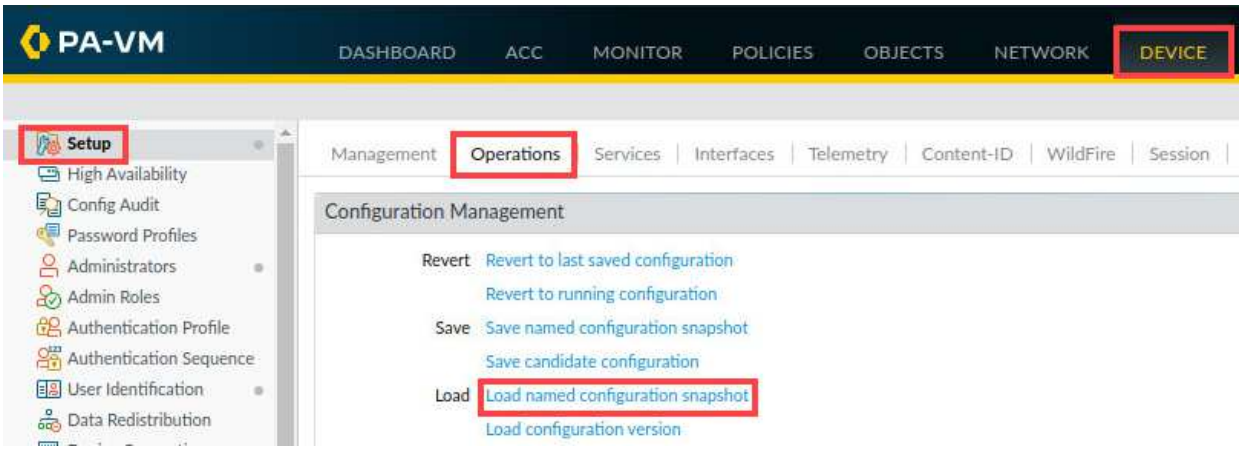
5. In the *Firefox* address field, type **`https://192.168.1.254`** and press **Enter**.



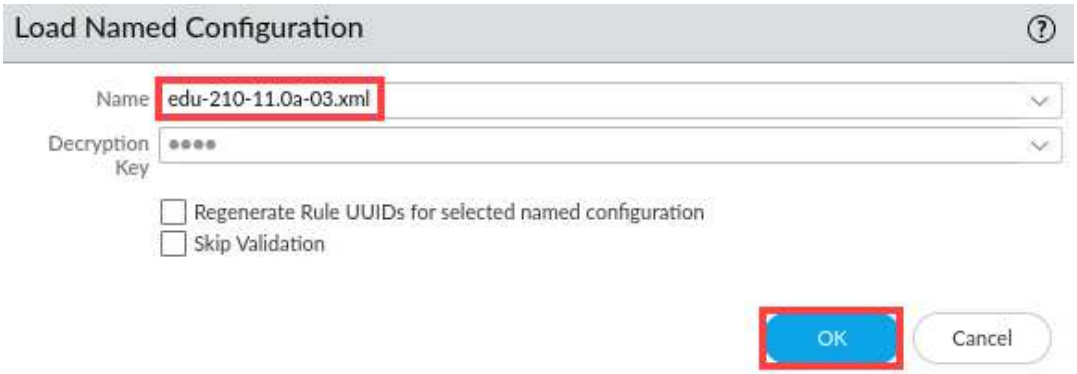
6. Log in to the Firewall web interface as username **`admin`**, password **`Pal0Alt0!.`**

If you do not immediately see the login page, please wait an additional 1-3 minutes for the *Firewall* to fully initialize. If needed, refresh the page.

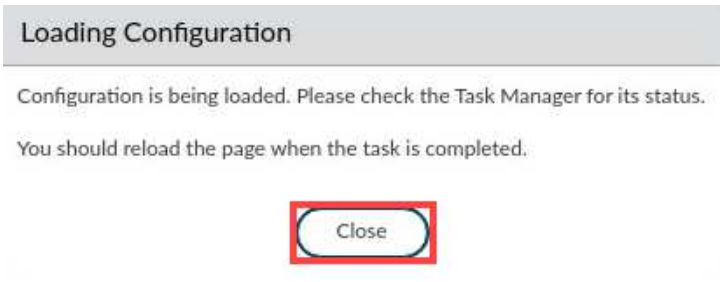
7. Navigate to **Device > Setup > Operations** in the web interface and click on **Load named configuration snapshot** underneath the *Configuration Management* section.



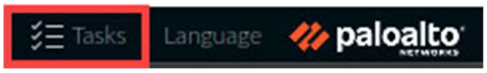
8. In the *Load Named Configuration* window, select **edu-210-11.0a-03.xml** from the *Name* drop-down box and click **OK**.



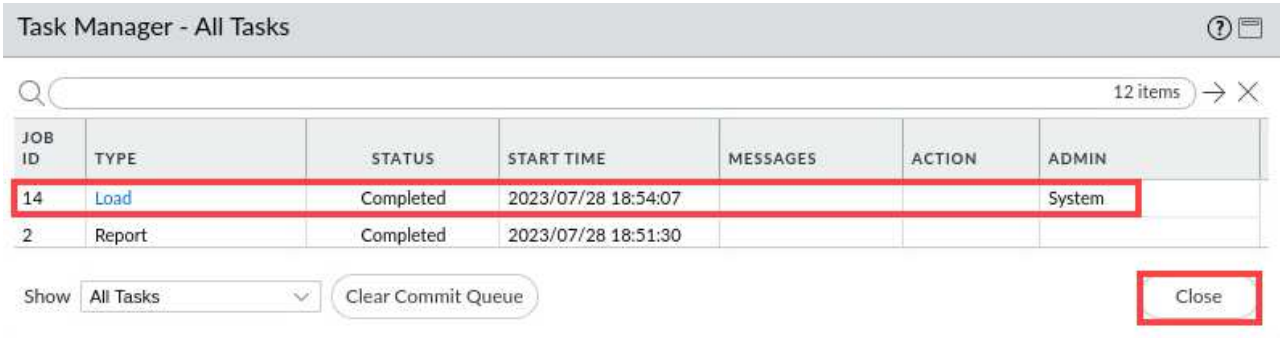
9. In the *Loading Configuration* window, a message will show *Configuration is being loaded*. *Please check the Task Manager for its status. You should reload the page when the task is completed.* Click **Close** to continue.



10. Click the **Tasks** icon located at the bottom-right of the web interface.

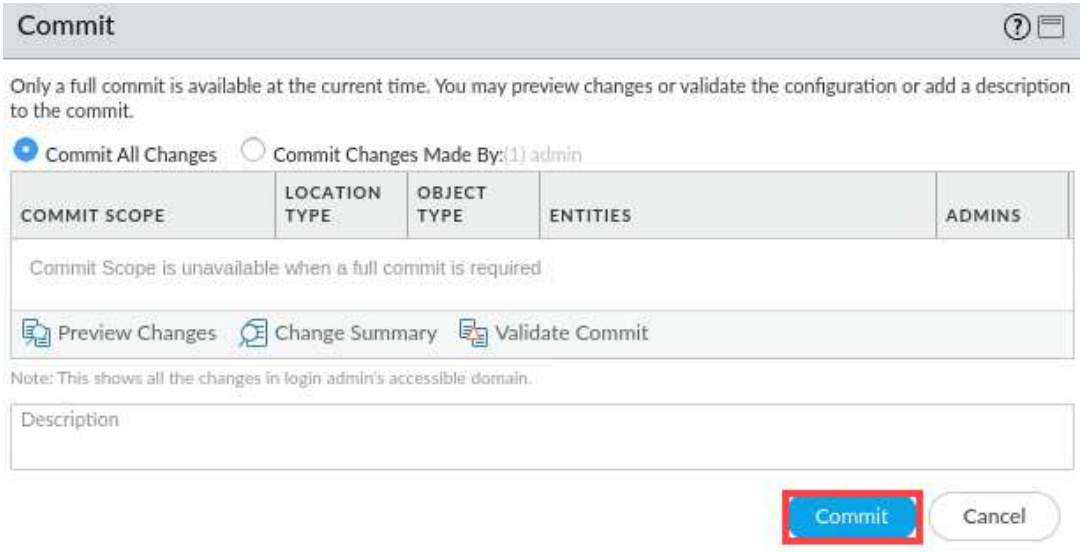


11. In the *Task Manager – All Tasks* window, verify the *Load* type has been completed. Click **Close**

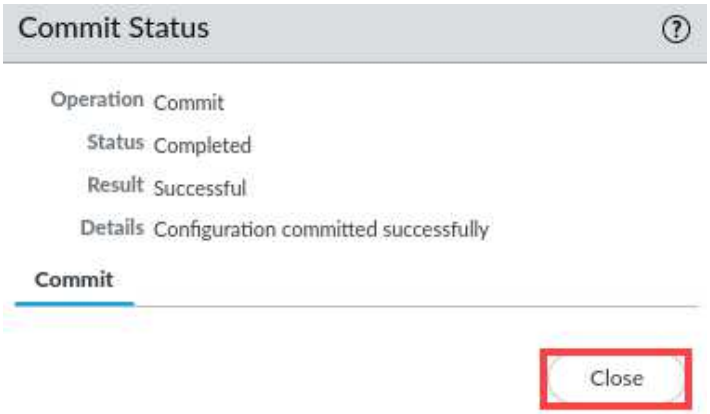


12. Click the **Commit** link located at the top-right of the web interface.

13. In the *Commit* window, click **Commit** to proceed with committing the changes.



14. When the commit operation is complete, click **Close** to continue.



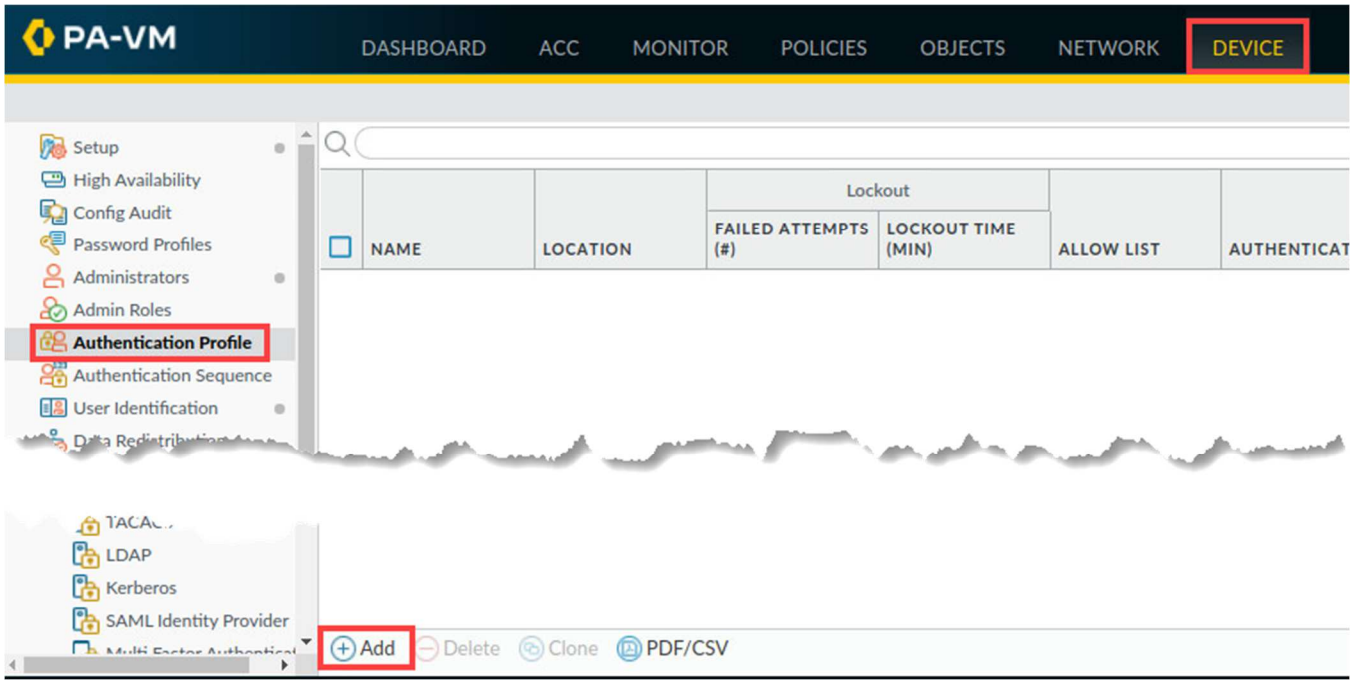
The commit process takes changes made to the Firewall and copies them to the running configuration, which will activate all configuration changes since the last commit.

15. Leave the *Palo Alto Networks Firewall* open and continue to the next task.

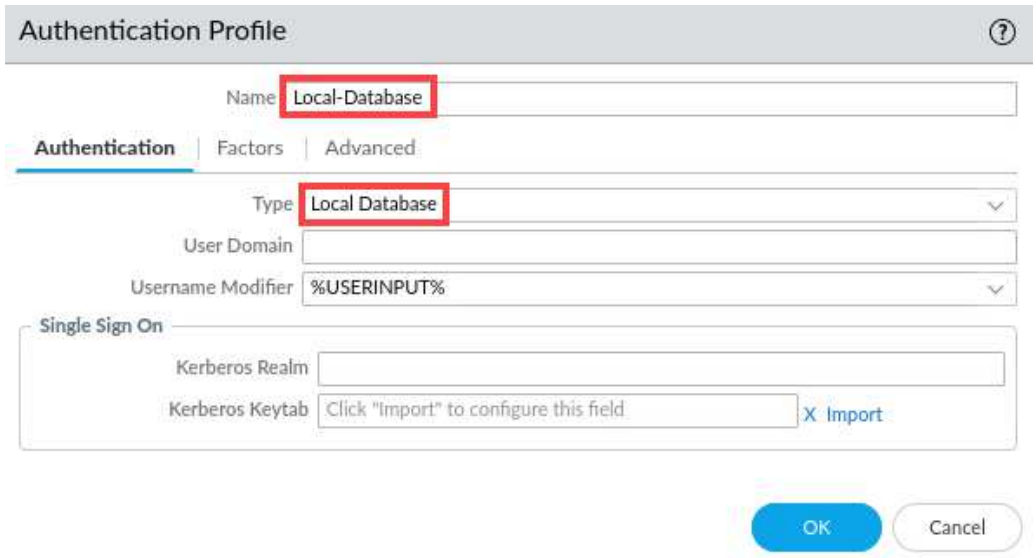
2.2 Create a Local Database Authentication Profile

In this section, you will create a local database authentication profile. Local database profiles allow the firewall to authenticate administrators who need access to the firewall web interface through Captive Portal or GlobalProtect.

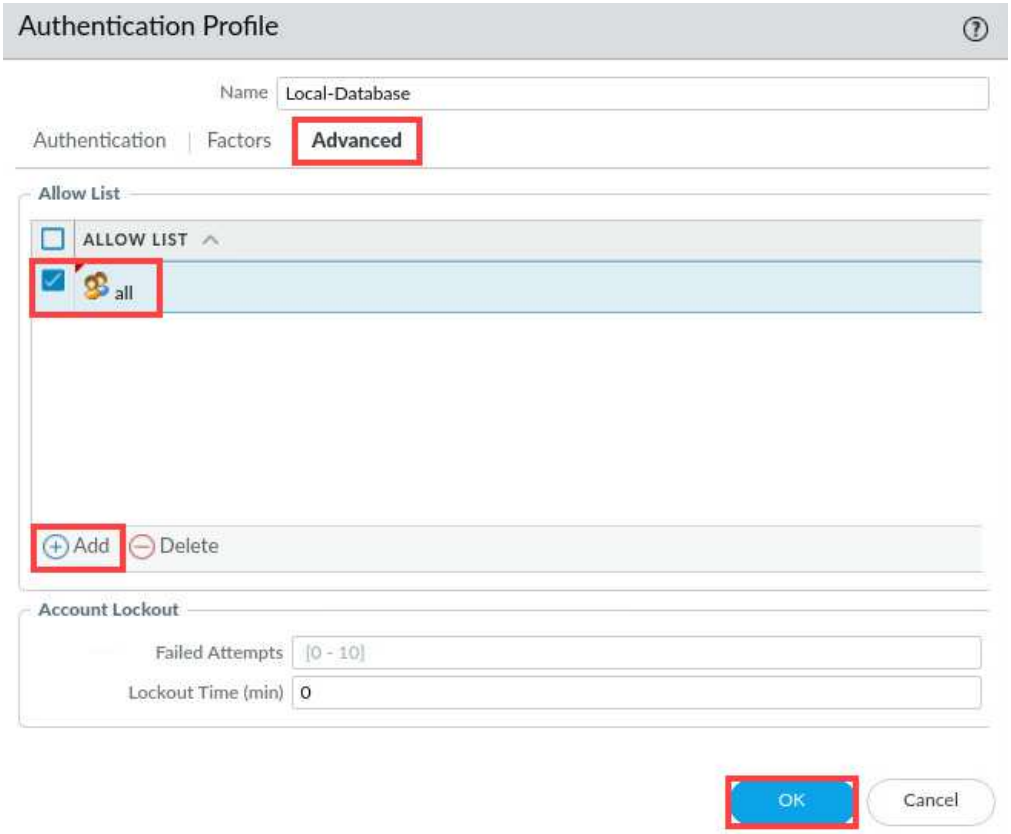
1. In the *PA-VM* web interface, navigate to **Device > Authentication Profile**. Click **Add** at the bottom of the window.



2. In the *Authentication Profile* window, under the *Authentication* tab, enter **`Local-Database`** for the *Name***,** for *Type*, use the drop-down list to select **Local Database.**



3. Select the **Advanced** tab, in the *Allow List* section, click **Add**. Select **All** and click **OK**.

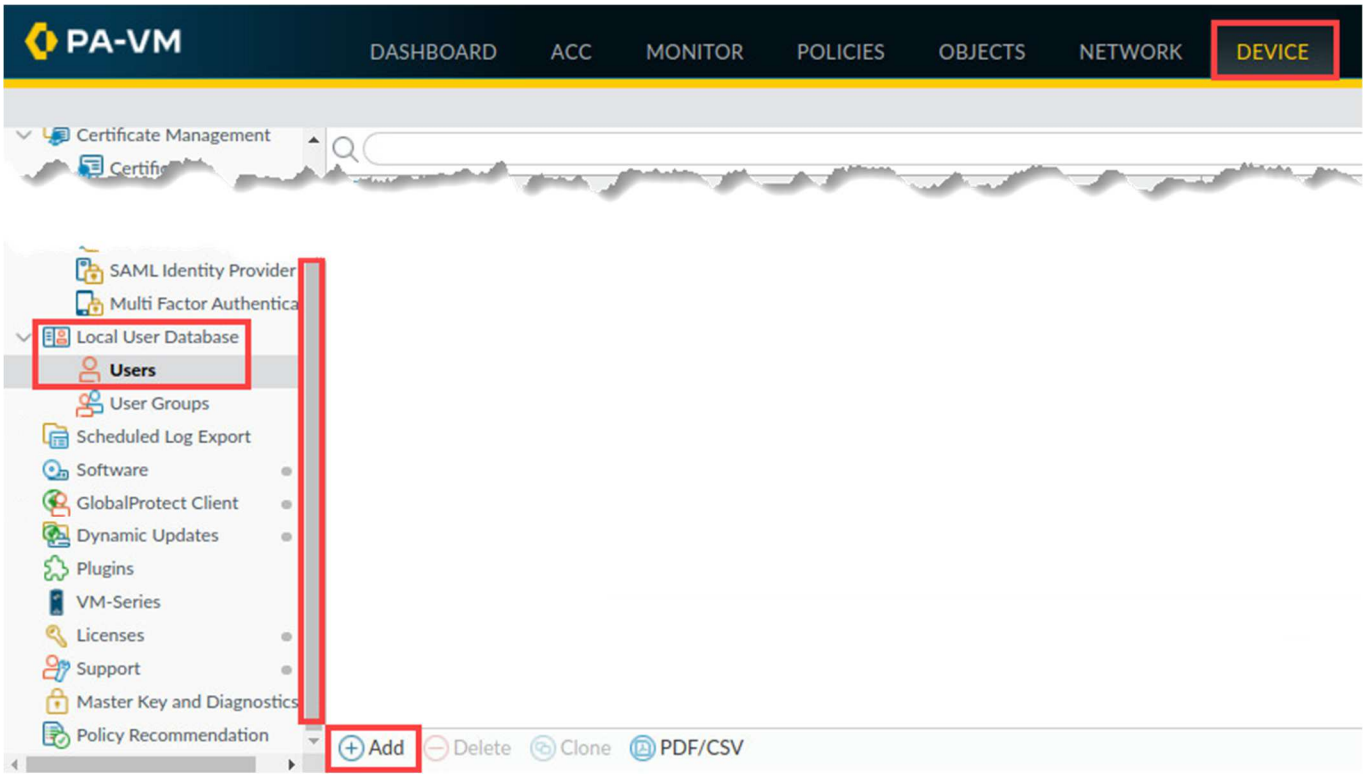


4. Leave the firewall web interface open to continue with the next task.

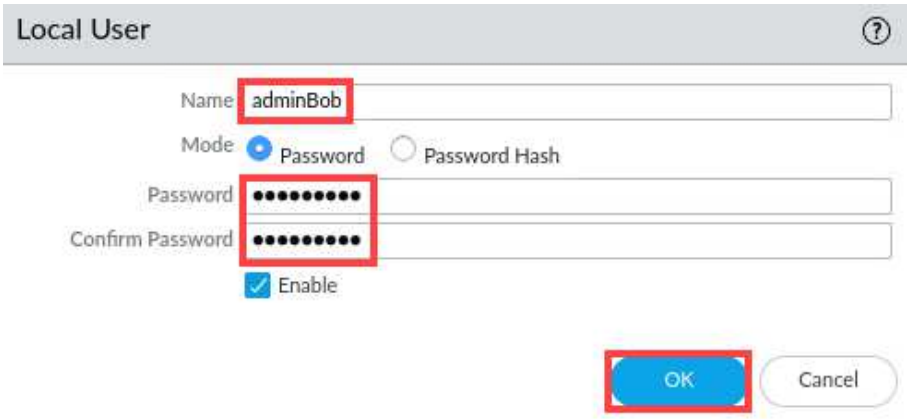
2.3 Create a Local User Database Account

In this section, you will create a new entry in the Local User Database on the firewall. This entry will be for a new team member, **adminBob**.

1. In the web interface, select **Device > Local User Database > Users**. In the bottom left corner of the window, click **Add**. You may need to use the scroll bar to locate the Local User Database drop down.



2. In the *Local User* window, type **`adminBob`** for the *Name* field. Enter **`Pal0Alt0!`** for *Password* and *Confirm Password*. Click **OK**.

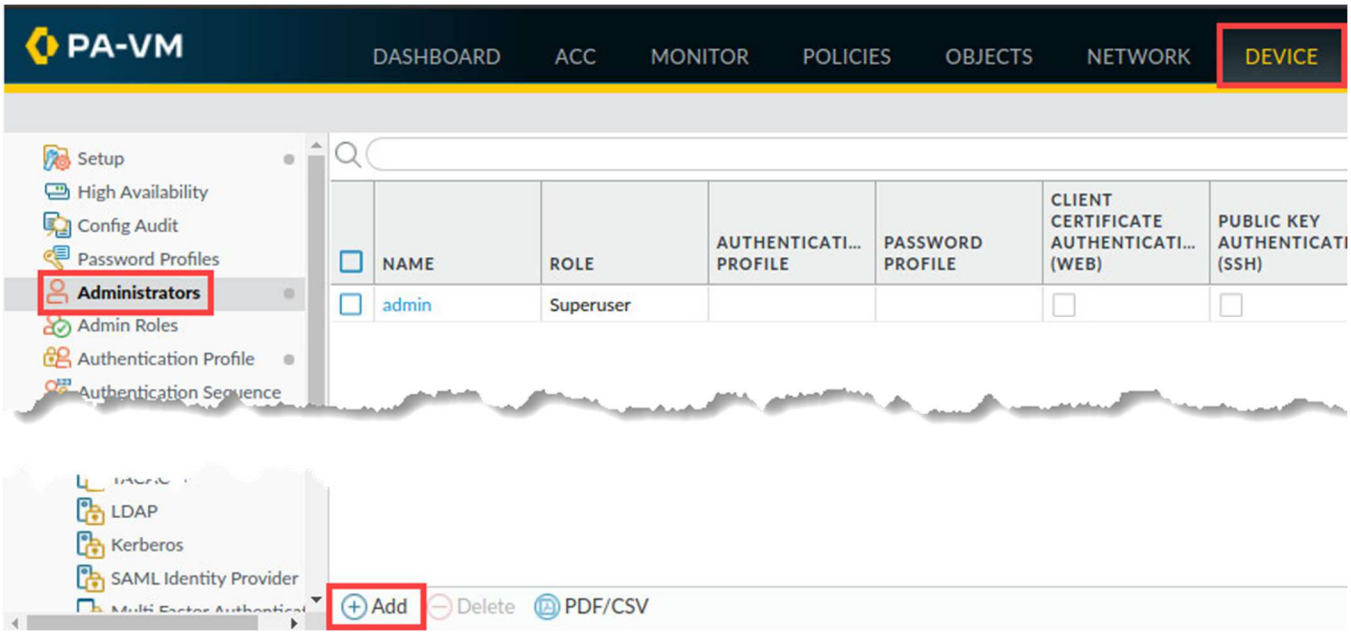


3. Leave the firewall web interface open to continue with the next task.

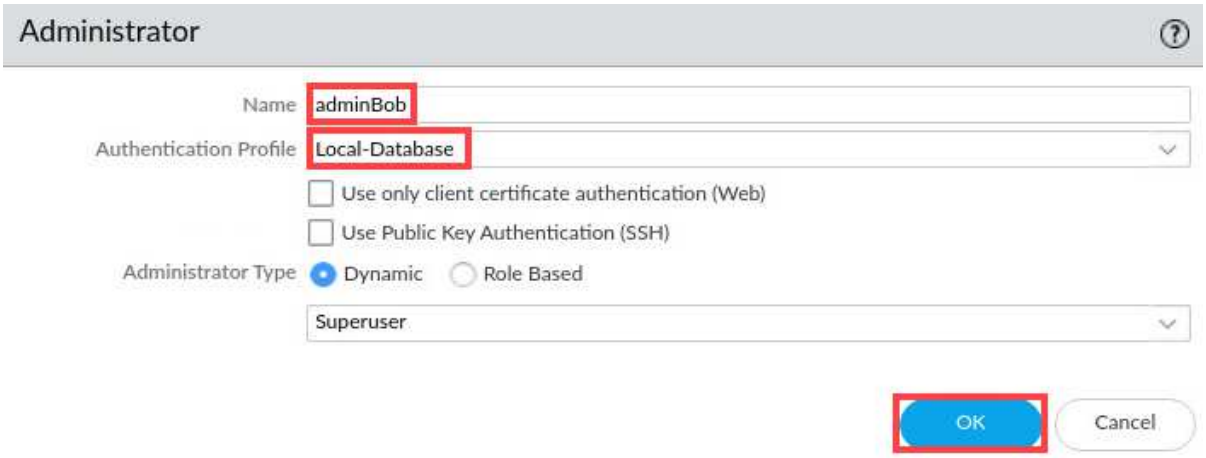
2.4 Create an Administrator Account

In this task, you will create an administrator account for adminBob. The adminBob account will use the Local-Database Authentication Profile.

1. In the web interface, select **Device > Administrators**. Click **Add** at the bottom of the window.



2. In the *Administrator* window, enter **adminBob** for the *Name*. For the *Authentication Profile*, select **Local-Database**. Click **OK**.

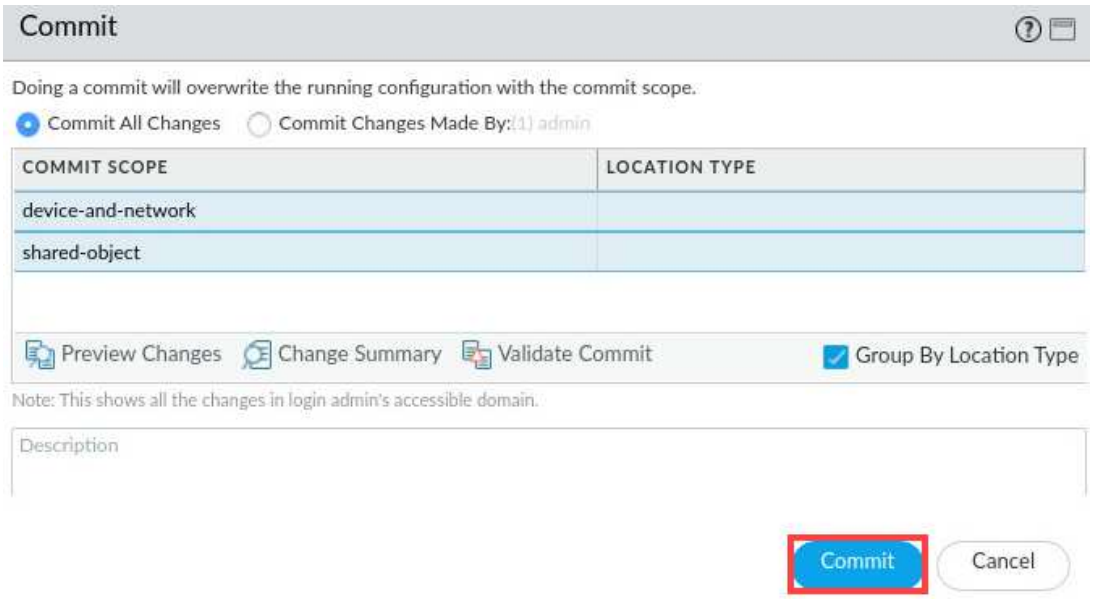


Please Note

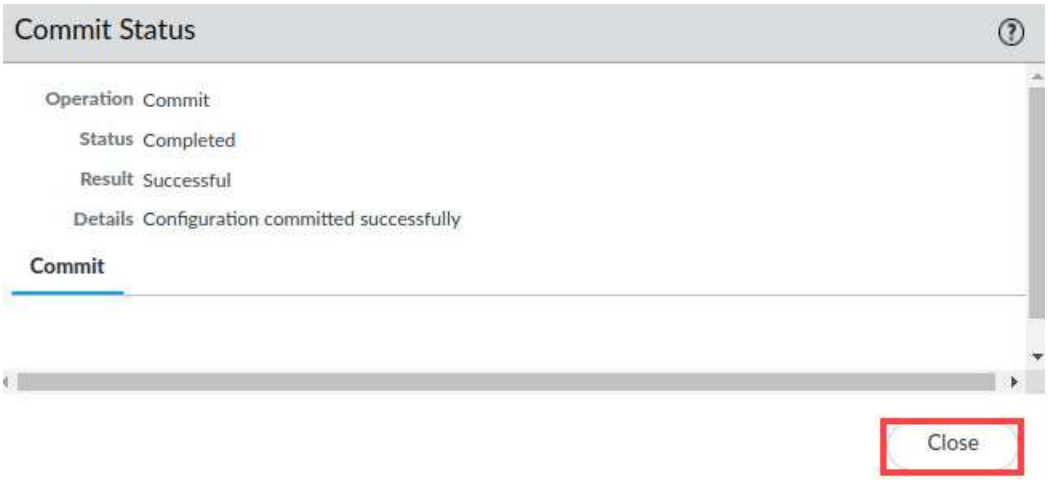
Note that when you select Local-Database for the Authentication Profile, there is no option to enter a Password for the administrator. The password information for this account is maintained in the Local-database on the firewall.

3. Click the **Commit** button at the upper right of the *PA-VM* web interface.

4. In the *Commit* window, click **Commit** to proceed with committing the changes.



5. When the commit operation is complete, click **Close** to continue**.**

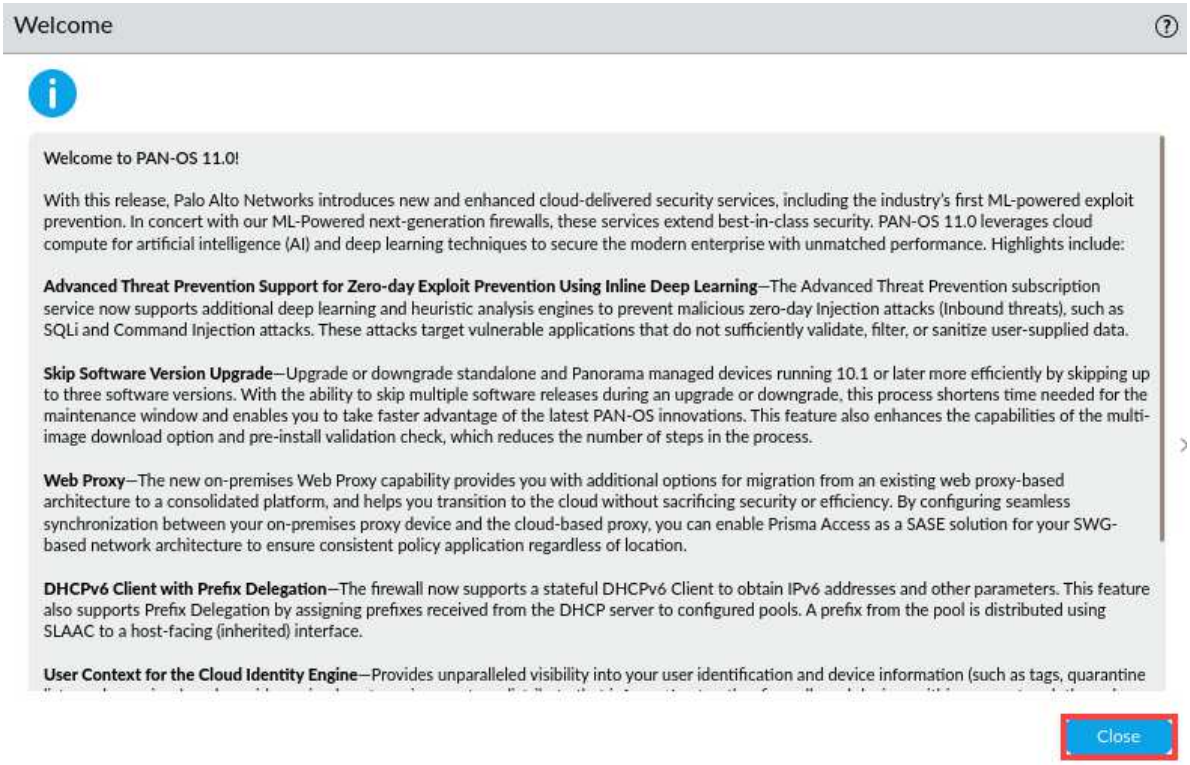


6. Log out of the firewall web interface by clicking the **Logout** button in the bottom left corner of the window.

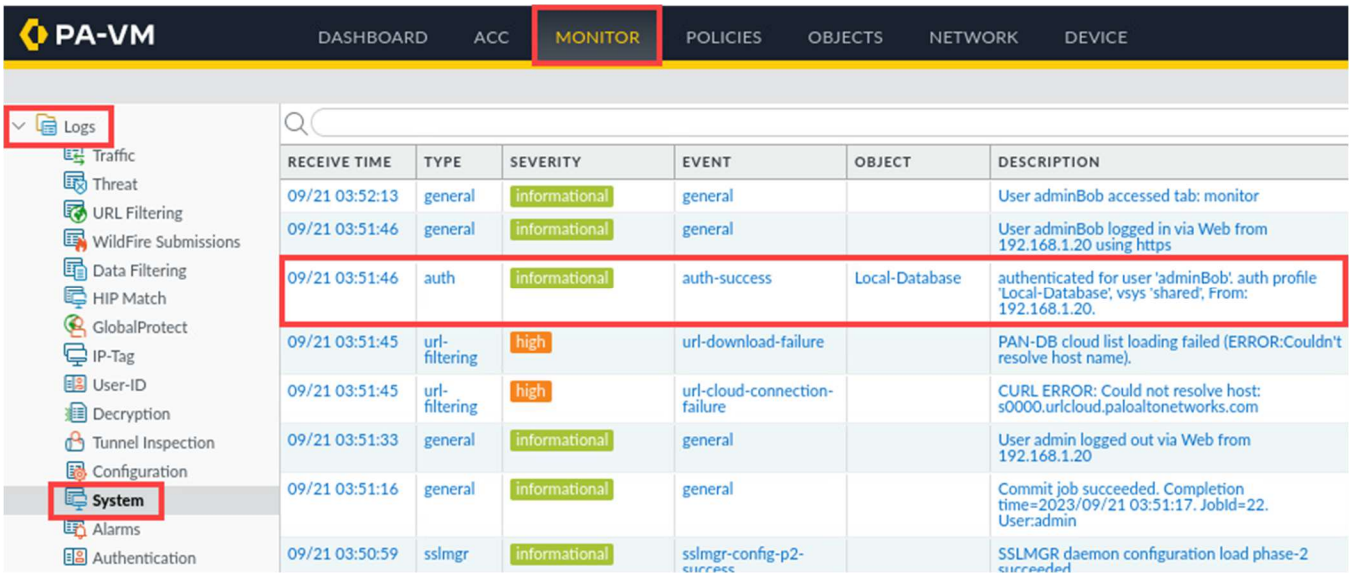
7. In the *Log In* window, click **Log In**.

8. Log back into the firewall as username **adminBob**, password **`Pal0Alt0!`**. Click **Log In**.

9. In the *Welcome* window, click **Close**.



10. Select **Monitor > Logs > System**. Look for an entry with **Type > Auth**. You may need to scroll through the logs to find the auth type.



Please Note

Note that the entry in the firewall system log indicates that adminBob was successfully authenticated against the **Local-Database.**

If you do not see an entry in the System log indicating a successful authentication for adminBob, you can use a filter (subtype eq auth) as the syntax.

11. Log out of the Firewall.

12. In the *Log In* window, click **Log In**.

13. Log back into the firewall with the **`admin/Pal0Alt0!`** credentials.

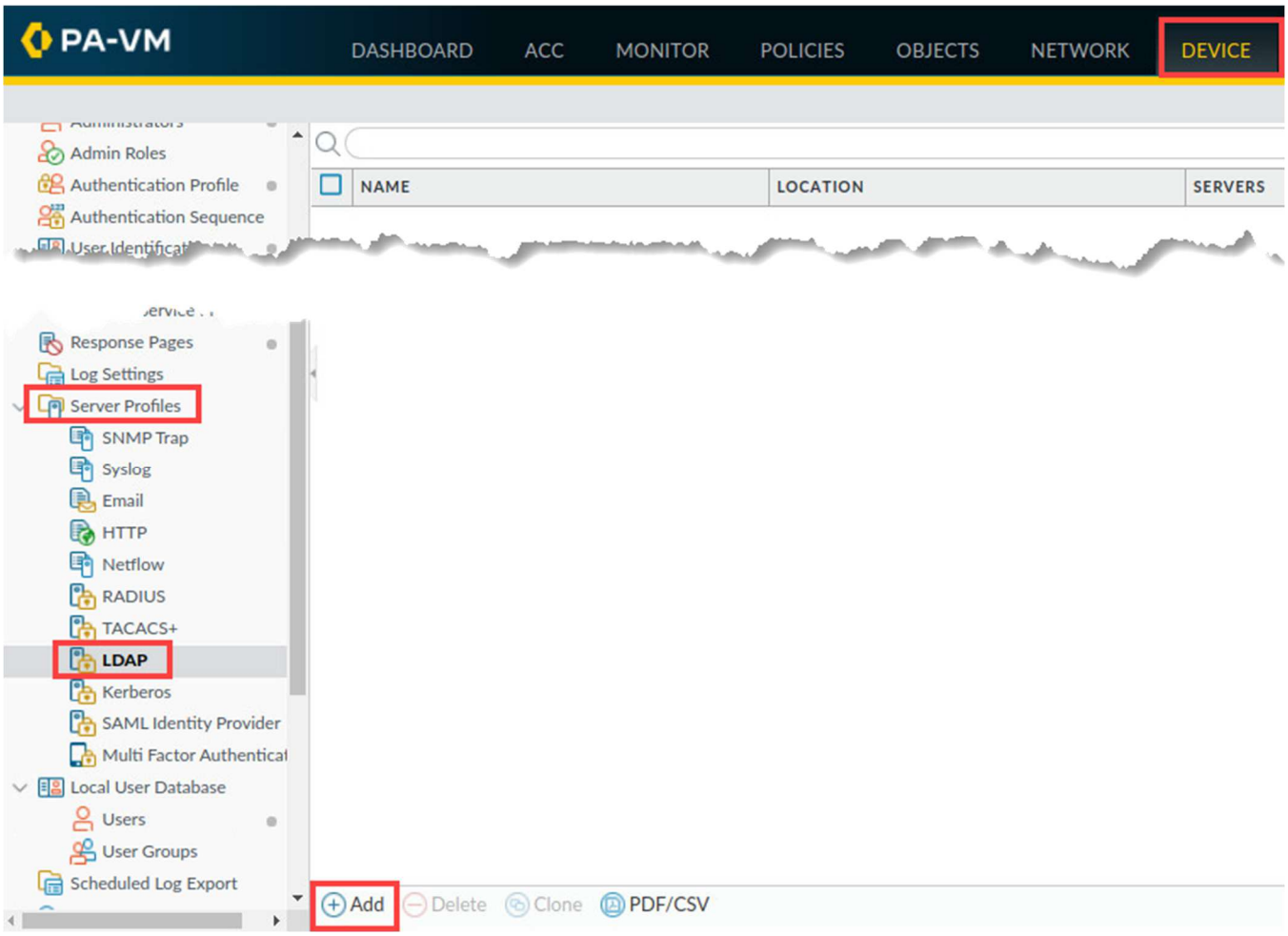
14. Leave the firewall web interface open to continue with the next task.

2.5 Configure LDAP Authentication

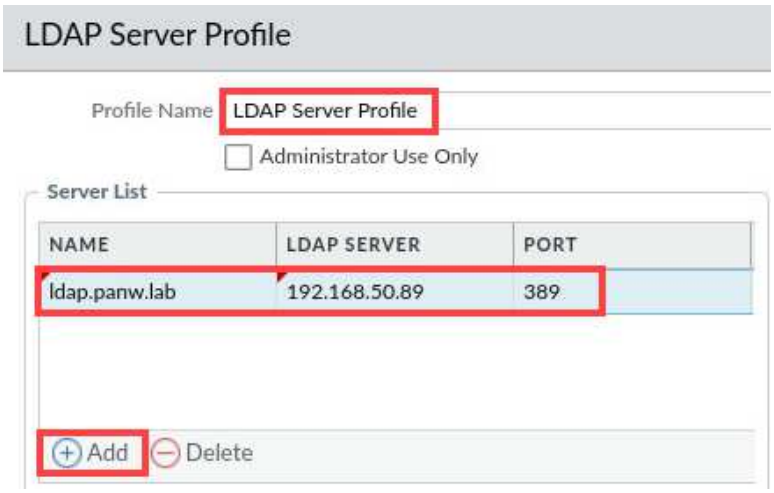
Your organization uses an LDAP server to maintain a database of users, including network administrators. Your team of security personnel is growing each month and you want to leverage the existing LDAP server to authenticate administrators when they attempt to log into the firewall.

The first step in this process is to define an LDAP server profile which contains specific information that the firewall can use when sending queries for authentication.

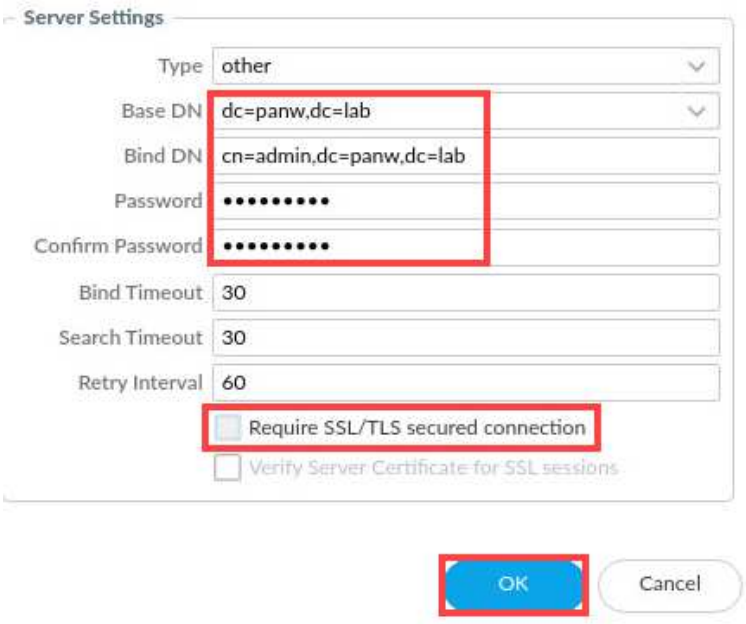
1. In the web interface, select **Device > Server Profiles > LDAP**. At the bottom of the window, click **Add**.



2. In the *LDAP Server Profile* window, enter **`LDAP Server Profile`** for the *Profile Name*. Under the *Server List*, click **Add**. Enter **`ldap.panw.lab`** for the *Name*, **`192.168.50.89`** for the *LDAP Server*, and confirm **389** populates for the *Port* number.



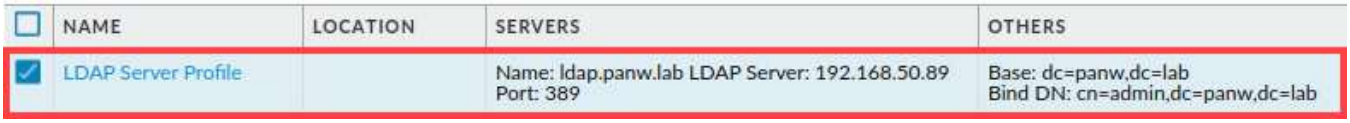
3. In the *Server Settings* section, enter **`dc=panw,dc=lab`** for *Base DN*, enter **`cn=admin,dc=panw,dc=lab`** for *Bind DN*, enter **`Pal0Alt0!`** for *Password* and *Confirm Password* and uncheck **Require SSL/TLS secured connection**. Click **OK**.



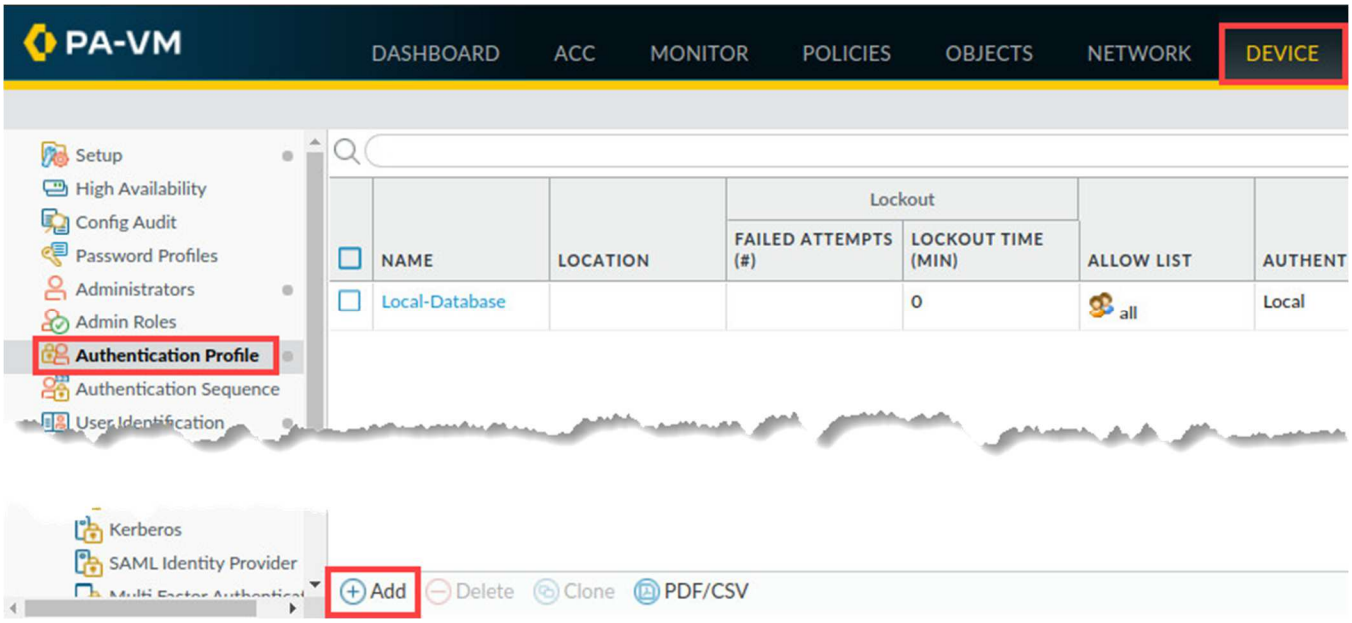
Please Note

With your LDAP Server Profile in place, you will now create an Authentication Profile and reference the LDAP Server Profile you just created.

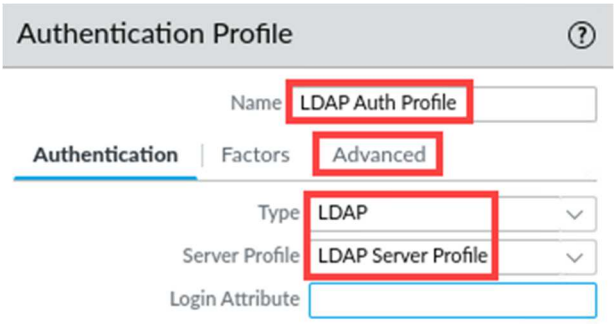
4. Verify the *LDAP Server Profile* is showing.



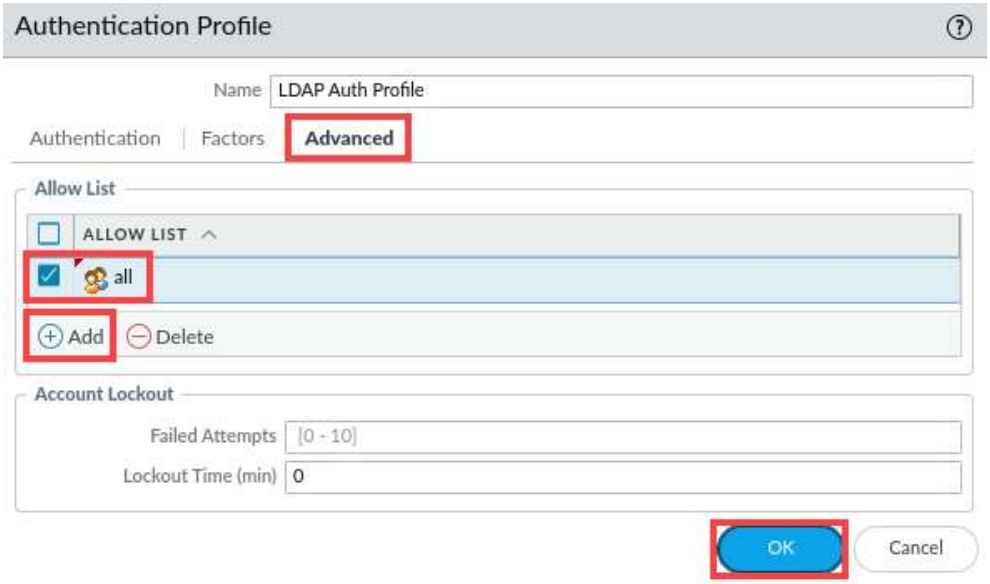
5. Select **Device > Authentication Profile**. Click **Add**.



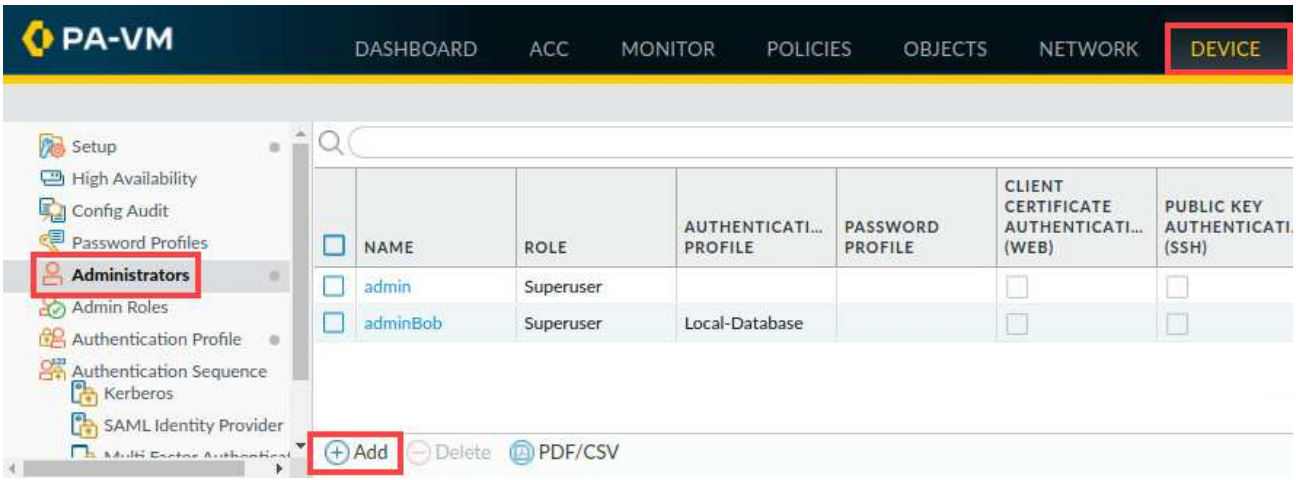
6. In the *Authentication Profile* window, type **`LDAP Auth Profile`** for the *Name*. Select **LDAP** for the *Type* and **LDAP Server Profile** for the *Server Profile*. Click **Advanced**.



7. On the *Advanced* tab, in the *Allow List,* click **Add**. Select **all** and click **OK**.



8. Navigate to **Device > Administrators** and click **Add**.



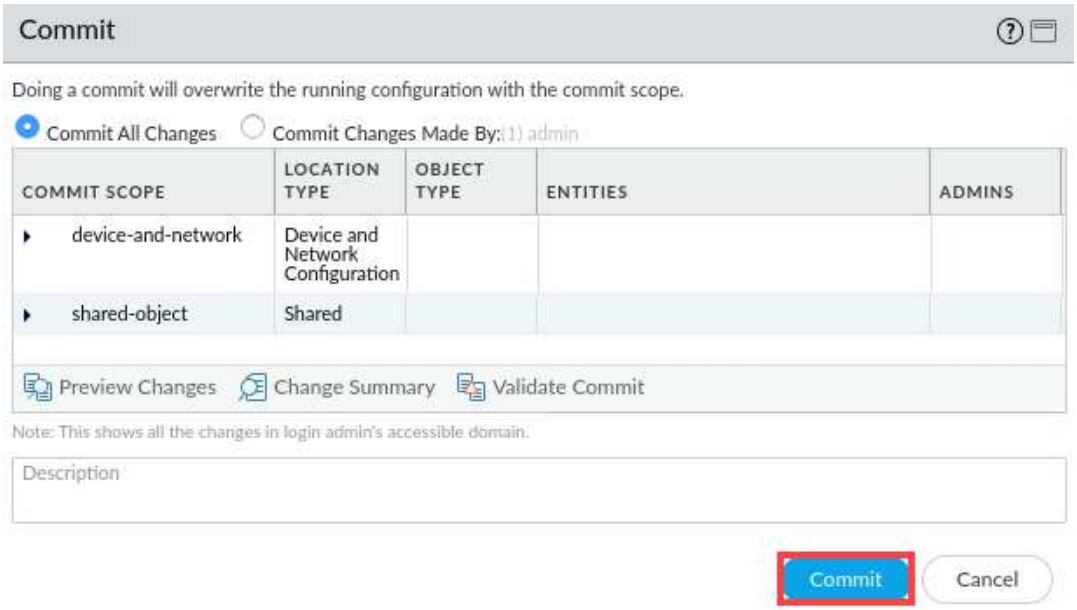
9. In the *Administrator* window, type **`adminSally`** for the *Name*. Select **LDAP Auth Profile** for the *Authentication Profile*. Click **OK**.

Please Note

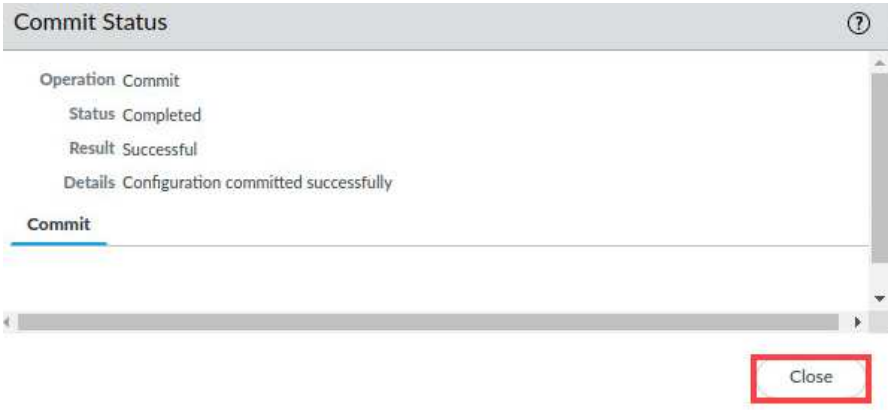
The *adminSally* account is one which exists in the LDAP server.

10. Click the **Commit** link located at the top-right of the web interface.

11. In the *Commit* window, click **Commit** to proceed with committing the changes.



12. When the commit operation successfully completes, click **Close** to continue.

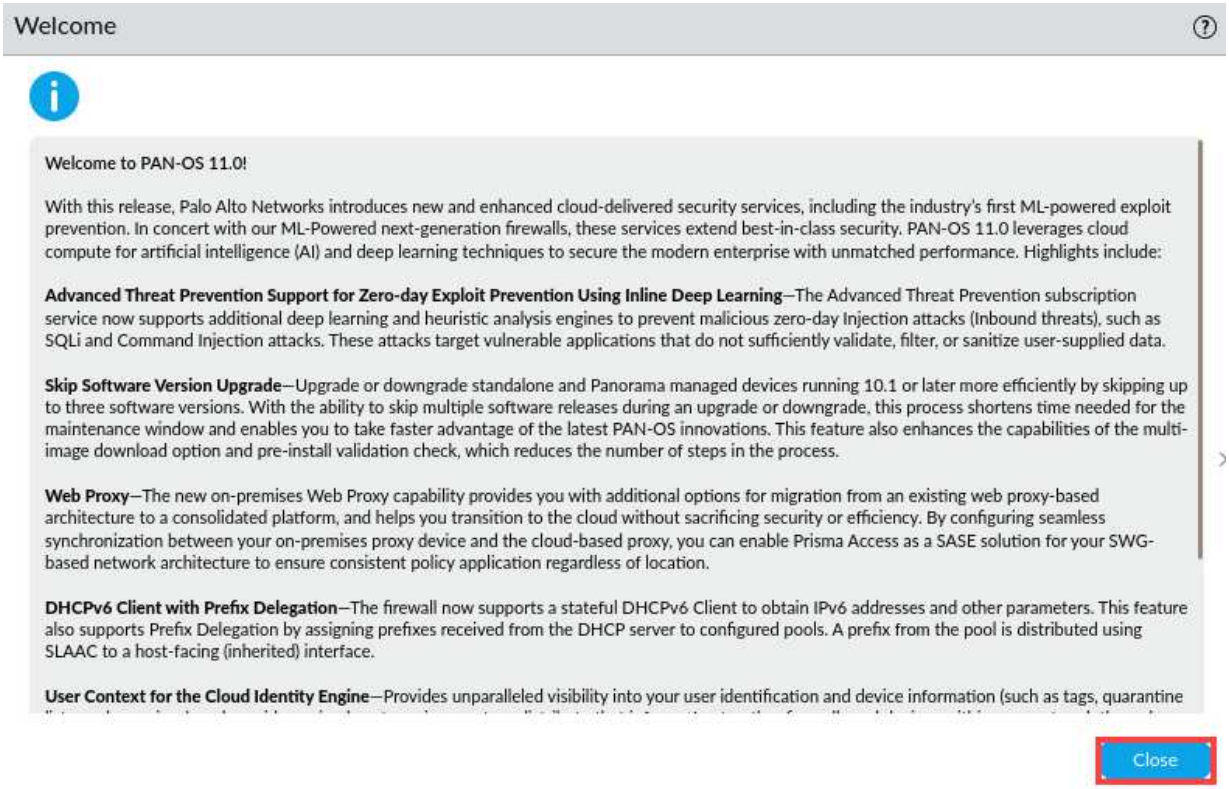


13. Log out of the firewall web interface by clicking the **Logout** button in the bottom left corner of the window.

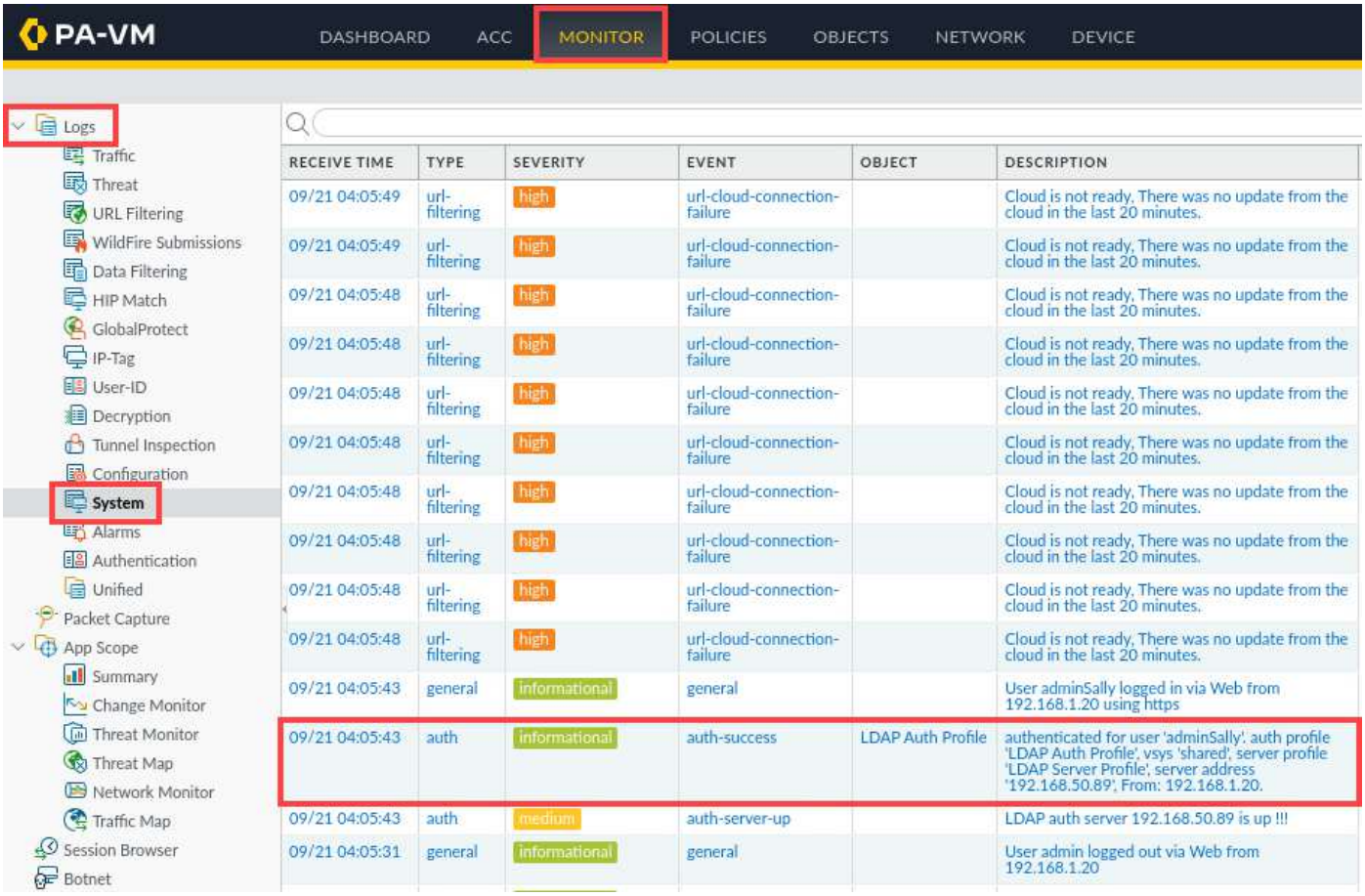
14. In the *Log In* window, click **Log In**.

15. Log back into the firewall as username **`adminSally`**, password **`Pal0Alt0!`**. Click **Log In**.

16. In the *Welcome* window, click **Close**.



17. Navigate to **Monitor > Logs > System**. Look for an entry with **Type > Auth**. You may need to scroll through the logs to find the *auth* type.



Please Note

Note that the entry in the firewall system log indicates that adminSally was successfully authenticated against the **LDAP Server.**

If you do not see an entry in the System log indicating a successful authentication for adminSally, you can use a filter (subtype eq auth) as the syntax.

18. Log out of the Firewall.

19. In the *Log In* window, click **Log In**.

20. Log back into the firewall with the **`admin/Pal0Alt0!`** credentials.

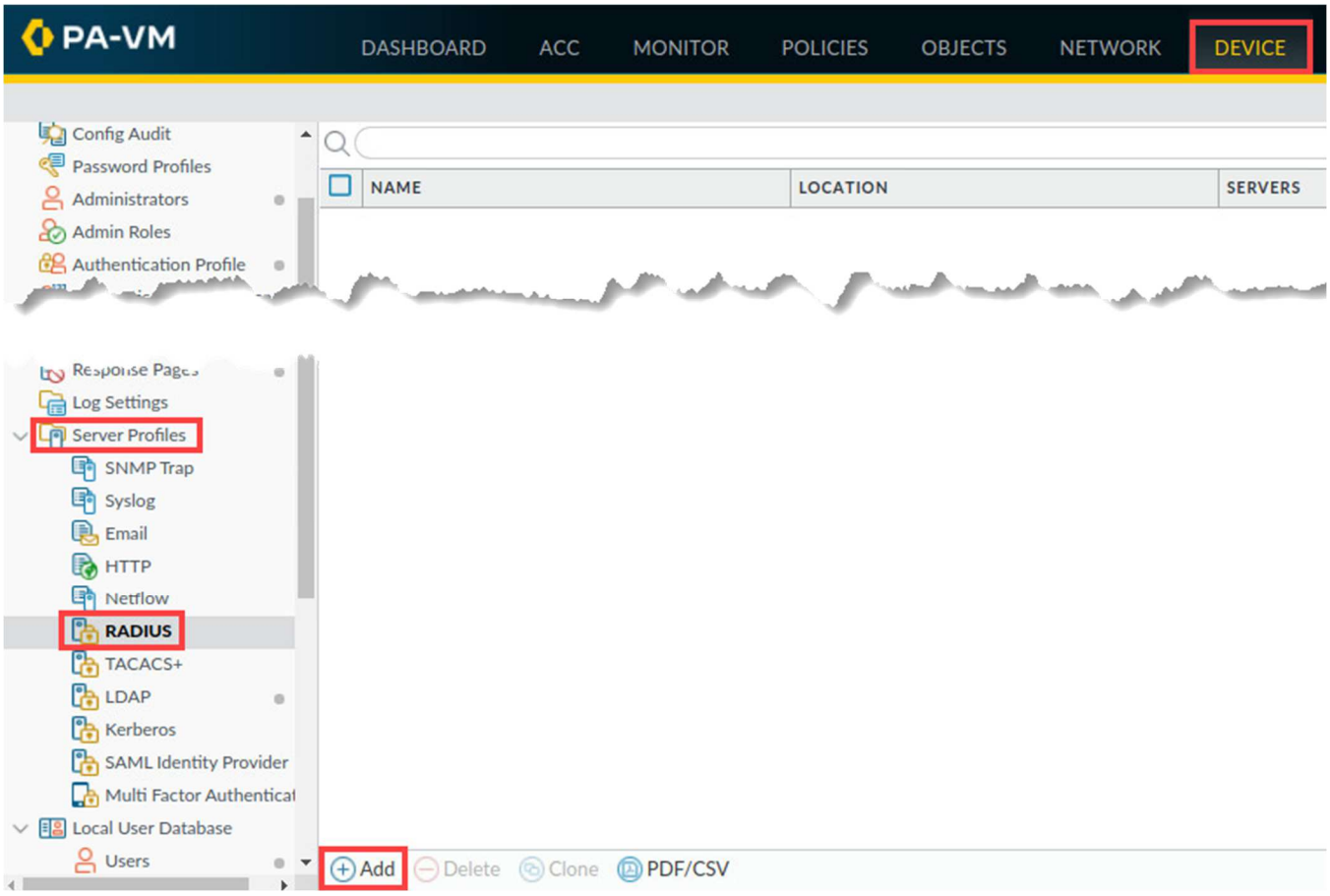
21. Leave the firewall web interface open to continue with the next task.

2.6 Configure RADIUS Authentication

Your organization has recently acquired another company. The newly acquired company maintains all network administrator accounts in a RADIUS server. You need to incorporate RADIUS authentication for the firewall so the new network administrators who have joined your team can access the firewall for management purposes.

For this section, you will configure RADIUS Authentication and test the user adminHelga can login in.

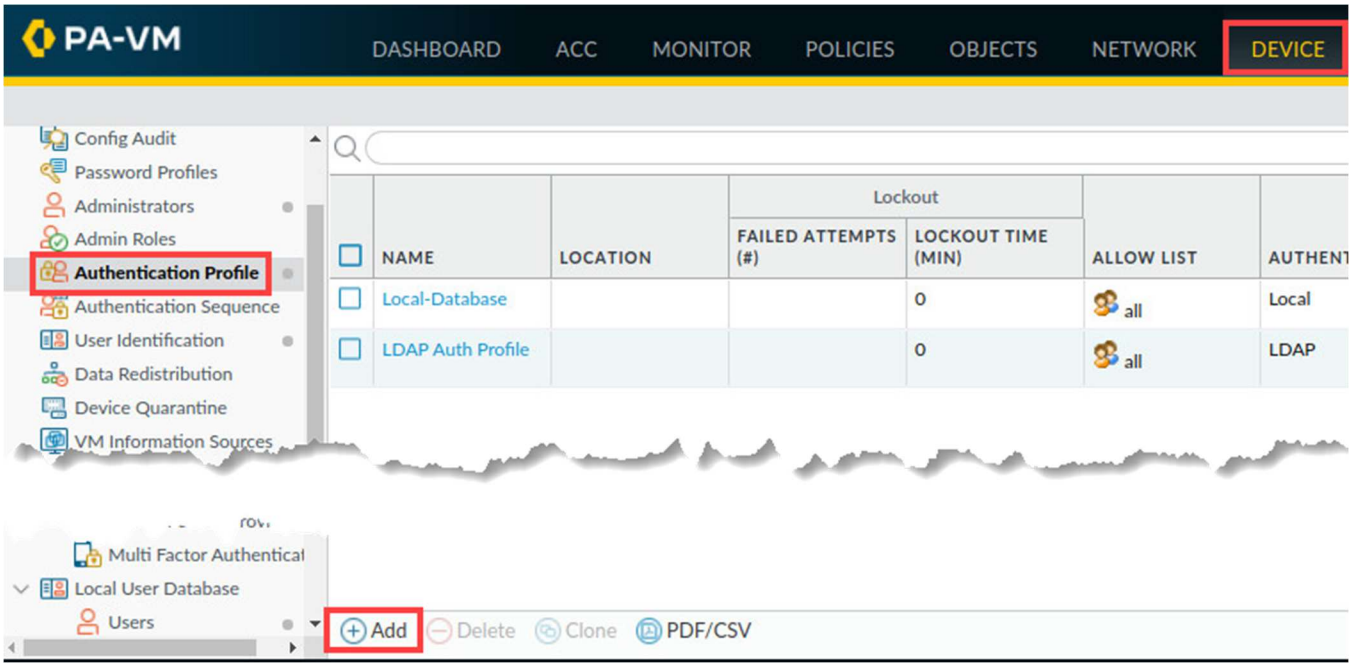
1. Navigate to **Device > Server Profiles > RADIUS.** Click **Add.**



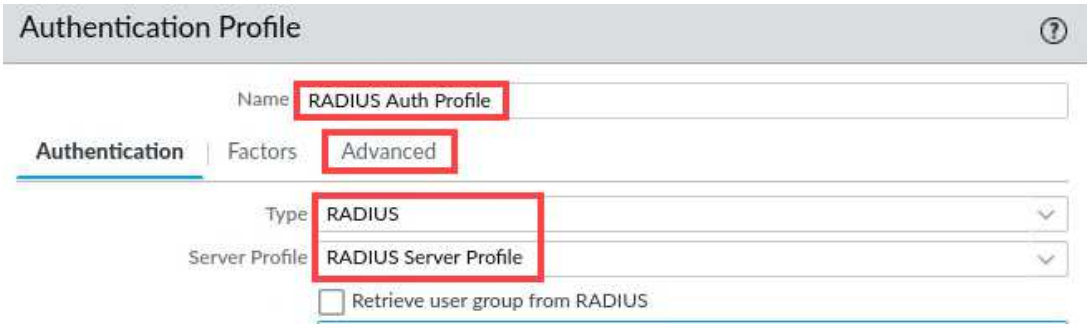
2. In the *RADIUS Server Profile* window, enter **`RADIUS Server Profile`** for the *Profile Name*. For the *Authentication Protocol*, select **CHAP**. Under the *Servers* section, click **Add.** For the server *Name* field, enter **`radius.panw.lab`.** For the *RADIUS Server* field, enter **`192.168.50.150`.** Enter **`Pal0Alt0!`** for *Secret* and *Confirm Secret*. Leave the *Port* set to **1812.** Click **OK.**

Never use CHAP in a production environment because it is not secure. We are using it in the lab for the sake of simplicity.

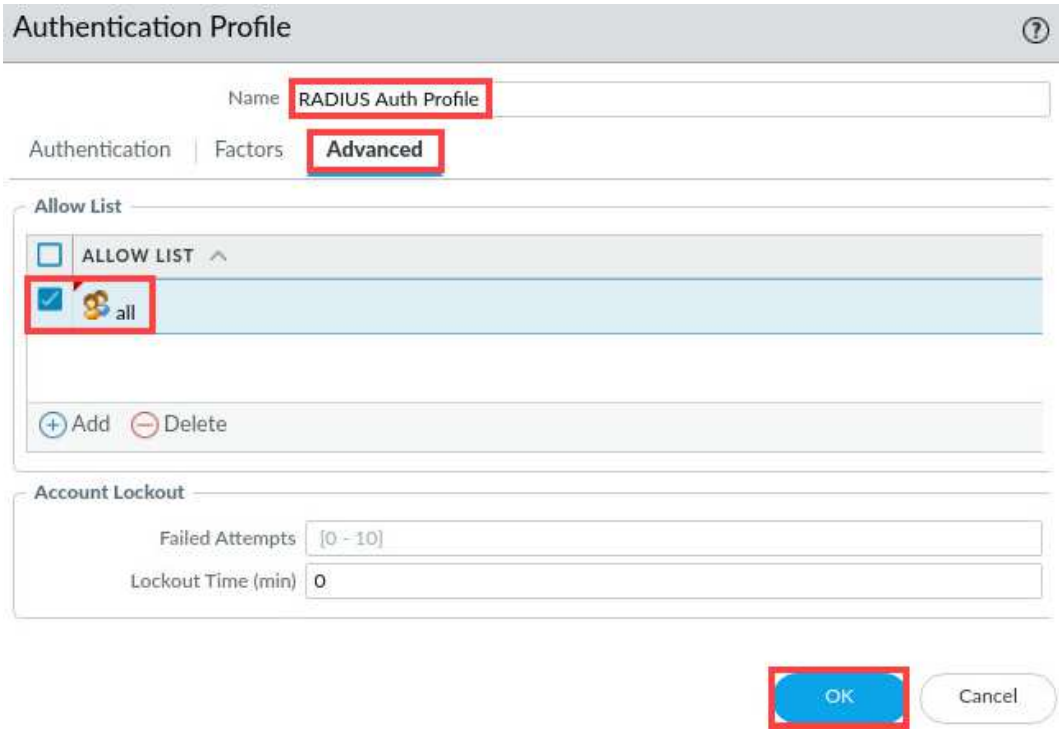
3. Navigate to **Device > Authentication Profile**. Click **Add**.



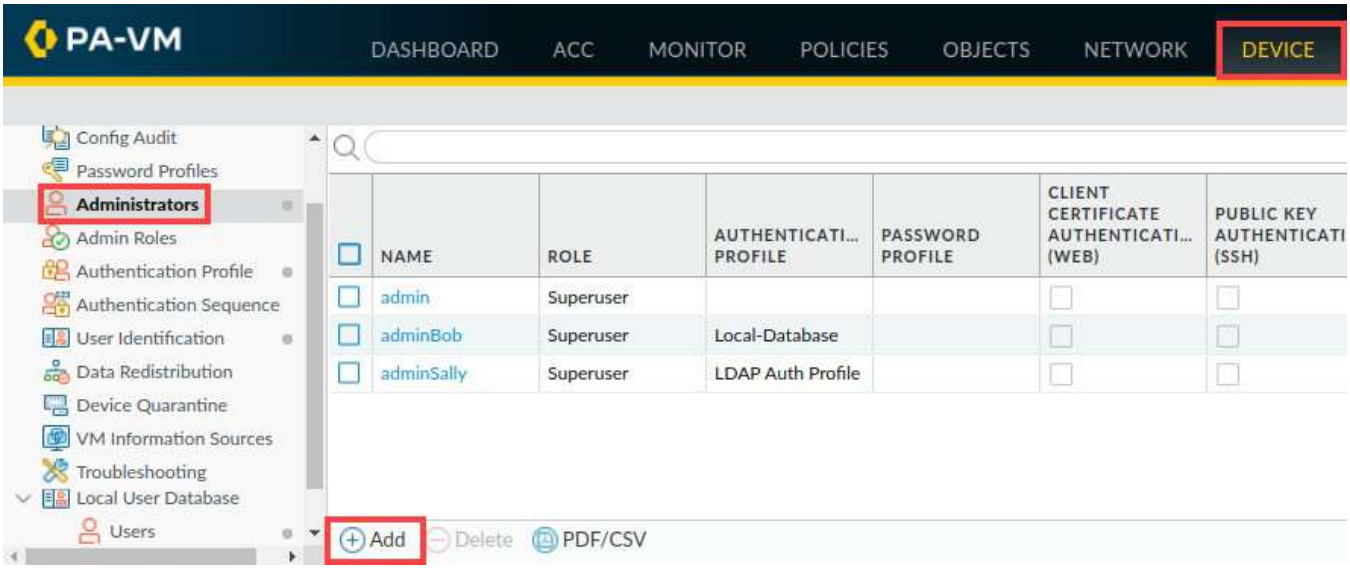
4. In the *Authentication Profile* window, enter **`RADIUS Auth Profile`** for the *Profile Name*. For the *Type*, select **RADIUS**. For the *Server Profile*, select **RADIUS Server Profile**. Click the **Advanced** tab.



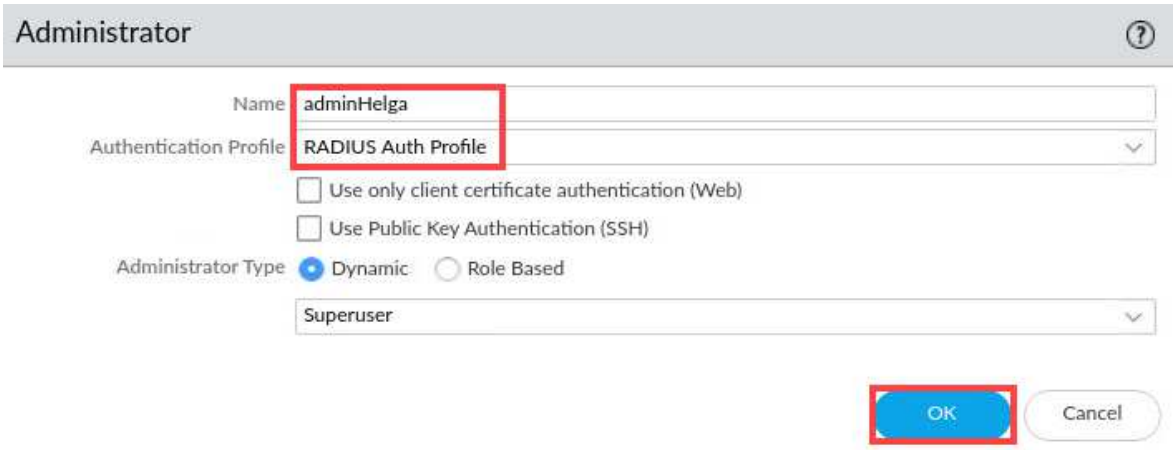
5. Under the *Allow List,* click **Add**. Select **all** and click **OK**.



6. To test *RADIUS Authentication*, create an *administrator* account named **adminHelga** by selecting **Device > Administrators**. Click **Add**.

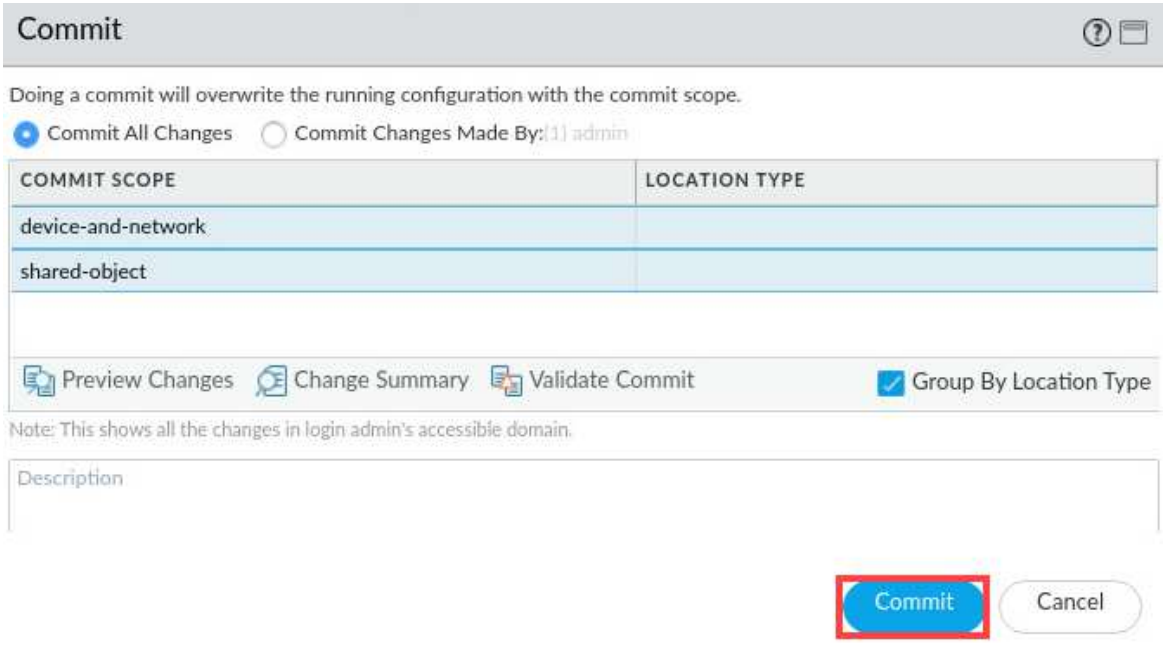


7. In the *Administrator* window, enter **`adminHelga`** for the *Name*. For the *Authentication Profile*, select **RADIUS Auth Profile**. Click **OK**.

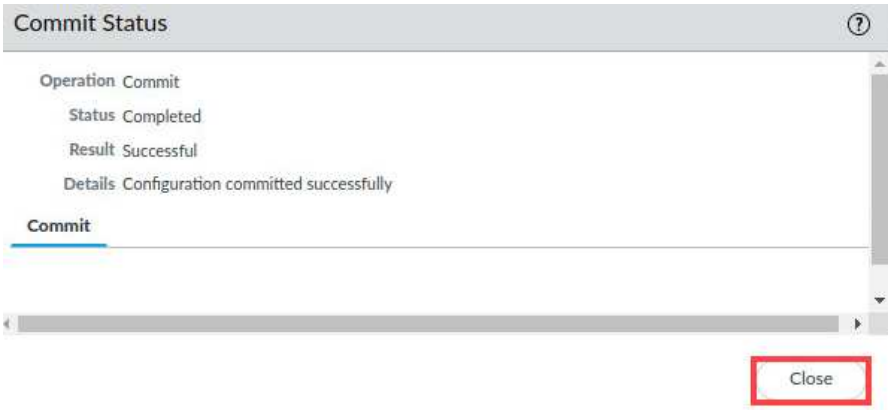


8. Click the **Commit** link located at the top-right of the web interface.

9. In the *Commit* window, click **Commit** to proceed with committing the changes.



10. When the commit operation successfully completes, click **Close** to continue.

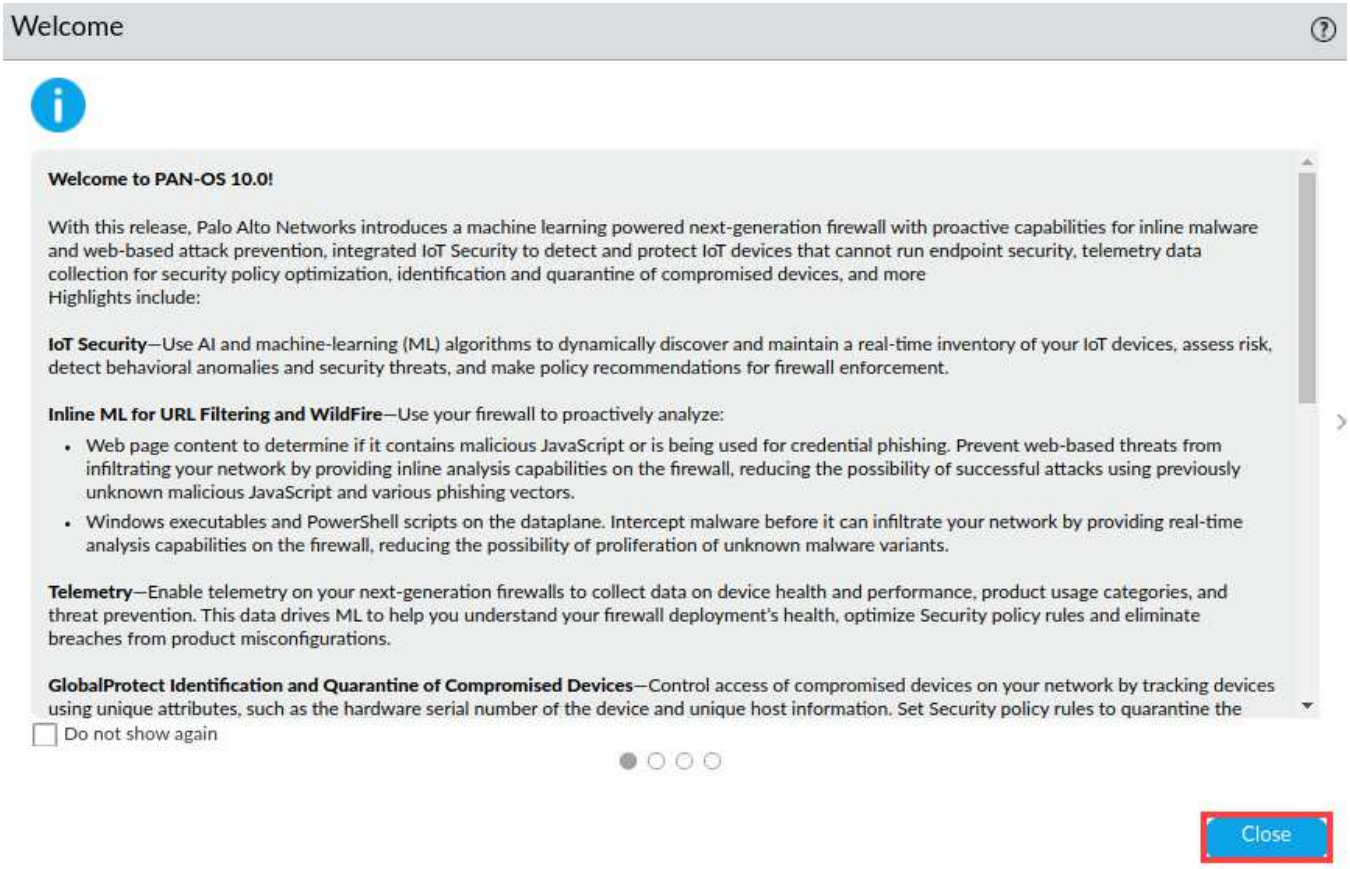


11. Log out of the firewall web interface by clicking the **Logout** button in the bottom left corner of the window.

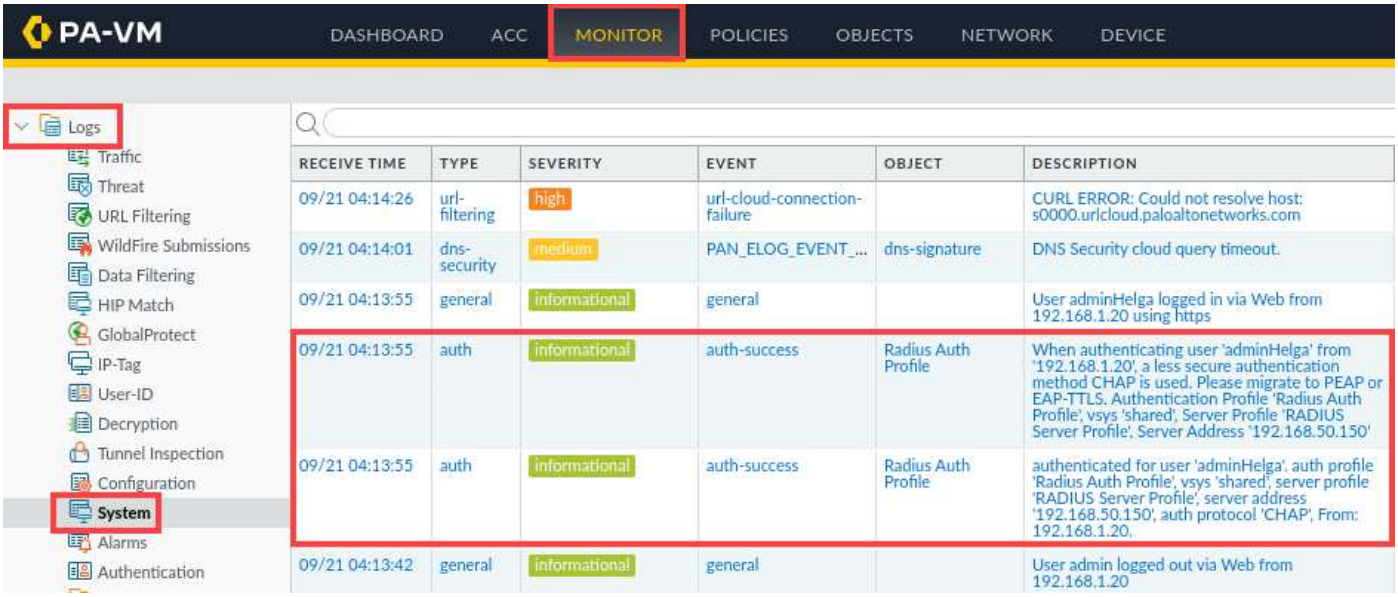
12. In the *Log In* window, click **Log In**.

13. Log back into the firewall as username **`adminHelga`**, password **`Pal0Alt0!`**. Click **Log In**.

14. In the *Welcome* window, click **Close**.



15. Select **Monitor > Logs > System**. Look for an entry with **Type > Auth**. You may need to scroll through the logs to find the *auth* type.



Please Note

Note that the entry in the firewall system log indicates that adminHelga was successfully authenticated against the **RADIUS Profile.**

If you do not see an entry in the System log indicating a successful authentication for adminHelga, you can use a filter (subtype eq auth) as the syntax.

16. Log out of the Firewall.

17. In the *Log In* window, click **Log In**.

18. Log back into the firewall with the **`admin/Pal0Alt0!`** credentials.

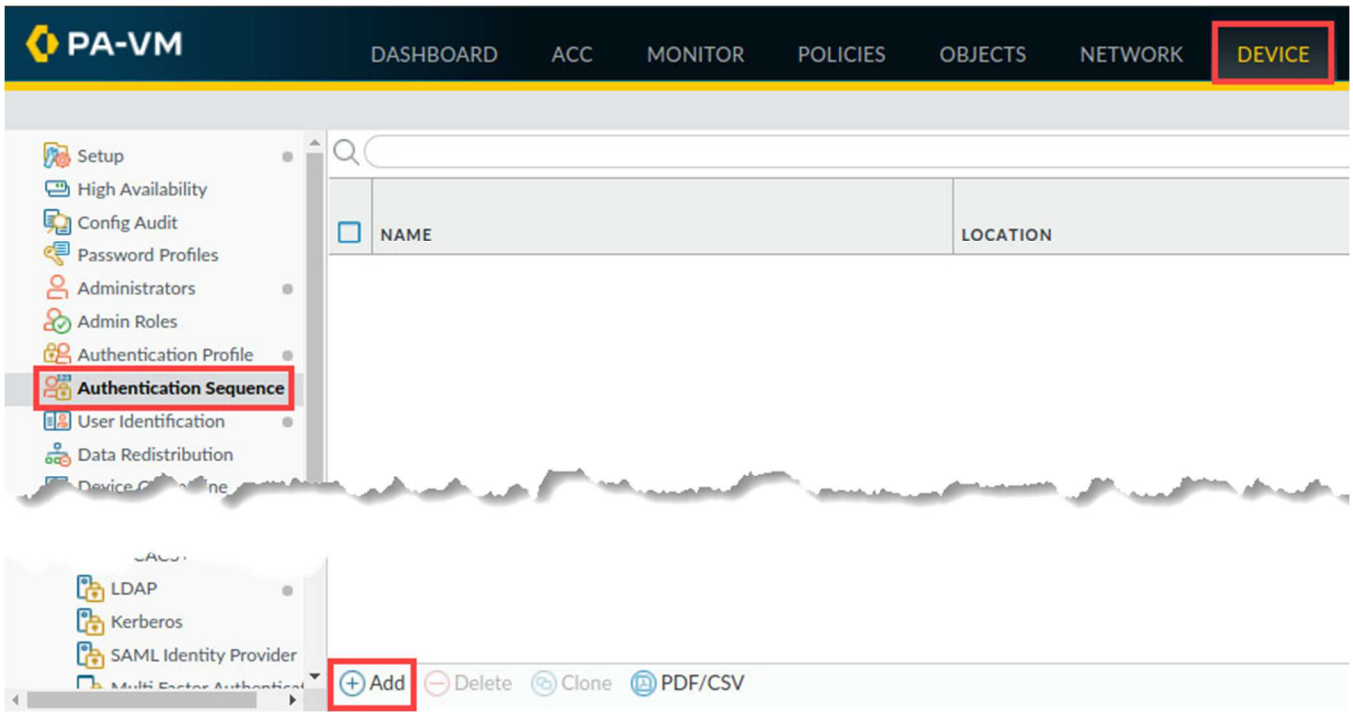
19. Leave the firewall web interface open to continue with the next task.

2.7 Configure and Authentication Sequence

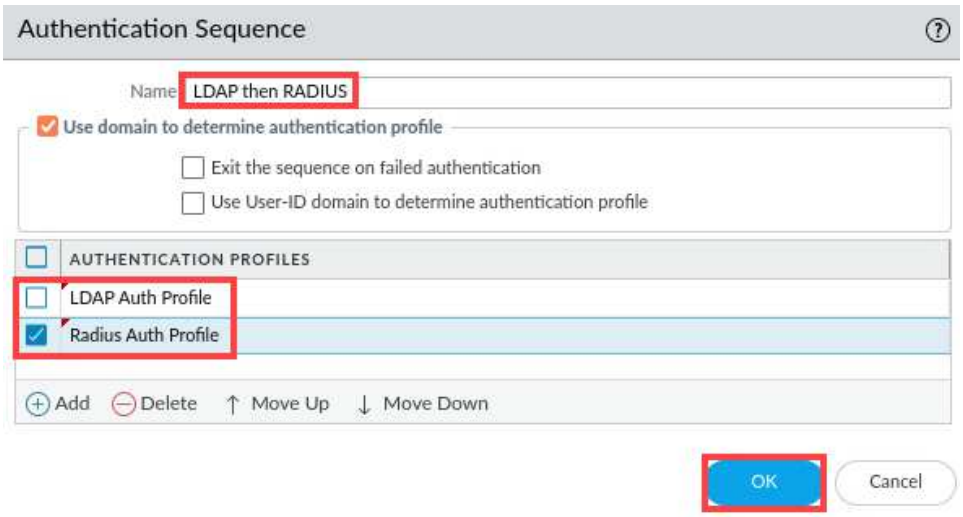
Since the acquisition, some administrator accounts exist in LDAP and other accounts exist in RADIUS. With administrator accounts in these two different systems, you need to configure the firewall so that it can check both external databases when an administrator attempts to log in.

In this section you will accomplish this by creating an Authentication Sequence. The sequence will instruct the firewall to check an account against LDAP first and then against RADIUS if the account does not exist in LDAP (or if the LDAP server is unavailable).

1. Navigate to **Device > Authentication Sequence.** Click **Add**.



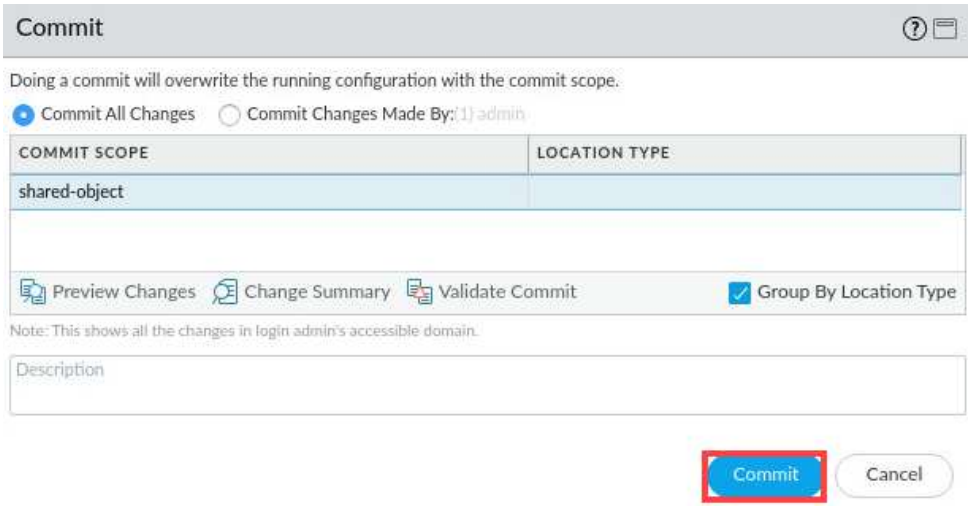
2. In the *Authentication Sequence* window, type **LDAP then RADIUS** for the *Name*. Under the *Authentication Profiles*, click **Add**. Select **LDAP Auth Profile**. Click **Add** again and select **RADIUS Auth Profile**. Click **OK**.



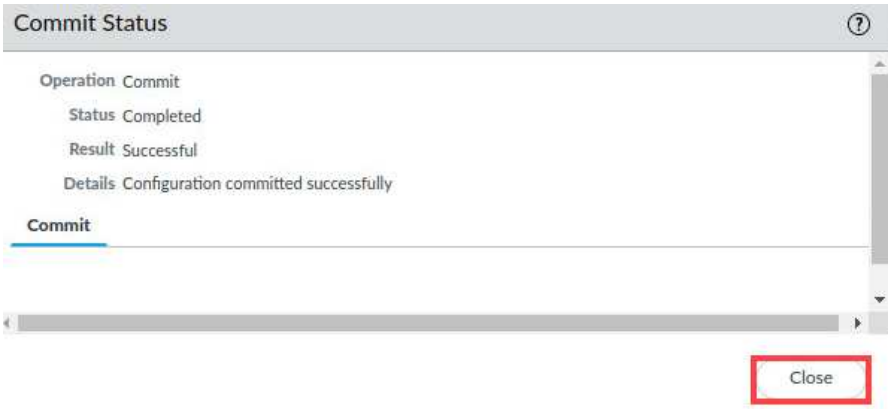
Note the Move Up and Move Down buttons. These allow you to change the order of the Authentication Profiles if necessary. In this example, the firewall will use the LDAP-Auth-Profile first when an administrator logs in to attempt authentication; if the user account does not exist in LDAP (or if the LDAP server is unavailable), the firewall will use the RADIUS-Auth-Profile to attempt authentication.

3. Click the **Commit** link located at the top-right of the web interface.

4. In the *Commit* window, click **Commit** to proceed with committing the changes.



5. When the commit operation successfully completes, click **Close** to continue.



6. The lab is now complete; you may end your reservation.