Configuring AWS Devices

This chapter covers the following sections:

Update AWS VPC Connection Credentials

If you create a new access key and secret access key to connect to the AWS VPC, you must update the connection credentials in Security Cloud Control. Update the credentials in the AWS console and then update the credentials from the Security Cloud Control console using the procedure below. See *Managing Access Keys for IAM Users* (https://docs.aws.amazon.com/IAM/latest/UserGuide/id_credentials_access-keys.html) or *Creating, Disabling, and Deleting Access Keys for Your AWS Account Root User* (https://docs.aws.amazon.com/general/latest/gr/managing-aws-access-keys.html) for more information.

You **cannot** change the access key or secret access key from Security Cloud Control; you must manually manage the connection credentials from the AWS console or the AWS CLI console.

Note If you have multiple AWS VPCs onboarded to your Security Cloud Control tenant, you must update the credentials for one device at a time.

Procedure

Step 1 In the left pane, click **Security Devices**.

Step 2 Click the **Devices** tab and then click **AWS VPC**.

Step 3 Select the AWS VPC whose connection credentials you want to update.

You can use the filter and search functionalities to find the required device.

Step 4 In the **Device Action** pane, click **Update Credentials**.

Step 5 Enter the new **access key** and **secret access key** you want to use to connect to the AWS VPC.

Step 6 Click **Update**.

Note
If Security Cloud Control fails to sync the device, the connectivity status in Security Cloud Control may show "Invalid Credentials." If that's the case, you may have tried to use an invalid username and password combination. See Troubleshoot Invalid Credentials

Related Information

- Onboard an AWS VPC

Monitor AWS VPC Tunnels using AWS Transit Gateway

Amazon Web Service (AWS) Transit Gateway acts as a cloud router connecting enterprise virtual private clouds (VPCs) to AWS VPCs through a central hub that allows for simplified peering relationships.

Security Cloud Control allows you to monitor the connection status of your onboarded AWS VPCs using AWS Transit Gateway.

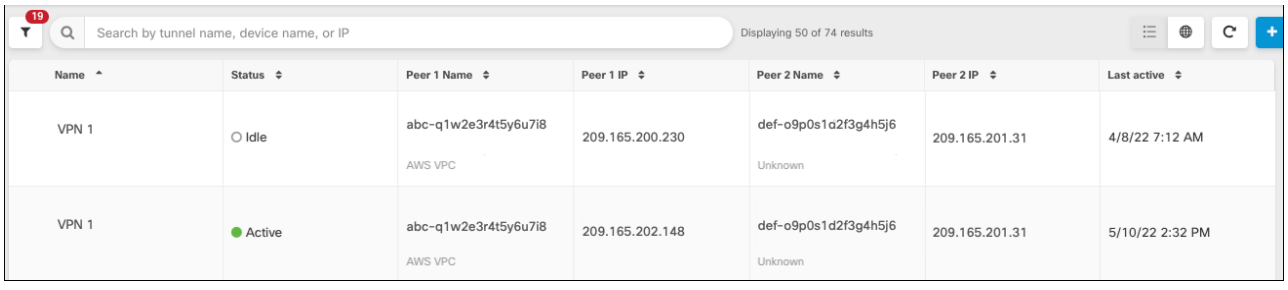
Procedure

Step 1 In the left pane, click **Manage** > **Secure Connections** > **Network Connections** > **Site to Site VPN**.

Step 2 The **VPN Tunnels** page displays the connection status for all network tunnels managed by your Security Cloud Control tenant. The connection status for the VPN tunnel can be active or idle.

Step 3 Select a VPC and under **Actions** click **Check Connectivity** to trigger a real-time connectivity check against the tunnel and identify whether the tunnel is currently active or idle. Unless you click the on-demand connectivity check link, a check across all tunnels, available across all onboarded devices, occurs every ten minutes.

Note
Security Cloud Control prompts a notification if a VPN tunnel's connection goes down. However, there is no notification prompt if the link is back up.



Search and Filter Site-to-Site VPN Tunnels

Use the filter sidebar in combination with the search field to focus your search of VPN tunnels presented in the VPN tunnel diagram.

Procedure

Step 1 In the left pane, click **Manage** > **Secure Connections** > **Network Connections** > **Site to Site VPN** to open the VPN page.

Step 2 Click the filter icon to open the filter pane.

Step 3 Use these filters to refine your search:

- **Filter by Device**-Click **Filter by Device**, select the device type tab, and check the devices you want to find by filtering.
- **Tunnel Issues**-Whether or not we have detected either side of the tunnel has issues. Some examples of a device having issues may be but not limited to is: missing associated interface or peer IP address or access list, IKEv1 proposal mismatches, etc. (Detecting tunnel issues is not yet available for AWS VPC VPN tunnels.)
- **Devices/Services**-Filter by type of device.
- **Status**–Tunnel status can be active or idle.
  - **Active**-There is an open session where network packets are traversing the VPN tunnel or a successful session was established and hasn't been timed-out yet. Active can assist to indicate that tunnel is active and relevant.
  - **Idle** - Security Cloud Control is unable to discover an open session for this tunnel. The tunnel may either be not in use or there is an issue with this tunnel.
- **Onboarded** - Devices could be managed by Security Cloud Control or not managed (unmanaged) by Security Cloud Control.
  - **Managed** – Filter by devices that Security Cloud Control manages.
  - **Unmanaged** – Filter by devices that Security Cloud Control does not manage.
- **Device Types** - Whether or not either side of the tunnel is a live (connected device) or model device.

Step 4 You can also search the filtered results by device name or IP address by entering that information in the search bar. The search is case-insensitive.

View a history of changes made to the AWS VPC tunnels

To view a history of changes made to AWS VPC tunnels:

Procedure

Step 1 In the left pane, click **Monitor** > **Events & Logs** > **Logs** > **Change Log**.

Step 2 On the **Change Log** page, click the filter icon and select **Filter by device** tab and then click **AWS VPC** .

Step 3 Select the AWS VPC whose history you want to review and click **OK**.

Related Information

- Manage Change Logs in Security Cloud Control

Manage Security Policies in Security Cloud Control

Security policies examine network traffic with the ultimate goal of allowing the traffic to its intended destination or dropping it if a security threat is identified. You can use Security Cloud Control to configure security policies on many different types of devices.

- AWS VPC Policy, on page 4

AWS VPC Policy

Security Cloud Control provides users the ability to keep security policies consistent across an Amazon Web Services (AWS) Virtual Private Cloud (VPC) associated with your AWS account. You can also use Security Cloud Control to share objects across multiple device types. See the following topics for more information:

AWS VPCs and Security Groups in Security Cloud Control

AWS VPC Security Groups Rules

AWS security groups are a collection of rules that govern inbound and outbound network traffic to all the AWS EC2 instances, and other entities, associated with the security group.

Similar to the Amazon Web Services (AWS) console, Security Cloud Control displays each rule individually. As long as your SDC has access to the Internet, you can create and manage AWS Virtual Private Cloud (VPC) rules for the following environments:

- A security group allowing information to or from another security group within the same AWS VPC.
- A security group allowing to or from an IPv4 or IPv6 address.

When creating a rule in Security Cloud Control that contains an AWS security group, keep the following limitations in mind:

- For a rule allowing inbound traffic, the source can be one or more security group objects in the same AWS VPC, an IPv4 or IPv6 CIDR block, or a single IPv4 or IPv6 address. Inbound rules can only have **one** security group object as the destination.

- For a rule allowing outbound traffic, the destination can be one or more security group objects in the same AWS VPC, a prefix list ID, an IPv4 or IPv6 CIDR block, a single IPv4 or IPv6 address. Outbound rules can only have **one** security group object as the source.
- Security Cloud Control translates rules that contain multiple entities, such as more than one port or subnet, into separate rules before deploying them to an AWS VPC.
- When you add or remove rules, the changes are automatically applied to all AWS entities associated with the security group.
- An AWS security group is limited to hosting a maximum of 60 inbound rules and 60 outbound rules. This limit is enforced separately for IPv4 rules and IPv6 rules; any additional rules created in Security Cloud Control are inclusive to the total number of rules. In short, you cannot exceed the 60 rule limitation by onboarding to Security Cloud Control.

Warning Any edits made to existing rules will result in the edited rule being deleted and a new rule created with the new details. This will cause traffic that depends on that rule to be dropped for a very brief period of time until the new rule can be created. This does not occur if you create a brand new rule.

If you need more information on the types of rules you can create from the AWS console, see AWS Security Group Object. See AWS Security Groups and Cloud Security Group Objects for more information on objects that can be associated with AWS VPCs.

Related Information

- Create a Security Group Rule, on page 5
- Edit a Security Group Rule, on page 7
- Delete a Security Group Rule, on page 7

Create a Security Group Rule

By default, Amazon Web Services (AWS) Virtual Private Cloud (VPC) blocks all network traffic. This means that any rules are automatically configured to **Allow** traffic. You cannot edit this action.

Note When you create a new security group rule you must associate it with a security group.

The AWS console does not support rules that contain more than one source or destination. This means that if you deploy a single security group rule that contains more than one entity, Security Cloud Control translates the rule into separate rules before deploying it to the AWS VPC. For example, if you create an inbound rule that allows traffic from two port ranges into one cloud security group object, Security Cloud Control translates it into two separate rules: (1) to allow traffic from the first port range to the security group and (2) to allow traffic from the second port range to the security group.

Use this procedure to create a security group rule:

Procedure

Step 1 In the left pane, click **Security Devices**.

Step 2 Click the **Template** tab.

Step 3 Click the **AWS** tab and select the AWS VPC device template whose access control policy you want to edit..

Step 4 In the Management pane at the right, select **Policy**.

Step 5 Click the blue plus button next to the security group you wish to add the rule to.

Step 6 Click **Inbound** or **Outbound**.

- **Inbound** rules - The source network can contain one or multiple IPv4 addresses, IPv6 addresses, or cloud security group objects. The destination network **must** be defined as a single cloud security group object.
- **Outbound** rules - The source network **must** be defined as a single cloud security group object. The destination network can contain one or multiple IPv4 addresses, IPv6 addresses, or security group objects

Step 7 Enter the rule name. You can use alphanumeric characters, spaces, and these special characters: + . _ -

Step 8 Define the traffic matching criteria by using any combination of attributes in the following tabs:

- **Source** - Click the **Source** tab and add or remove networks (which includes networks and continents). You cannot define a port or port range as the source.
- **Destination** - Click the **Destination** tab and add or remove networks (which includes networks and continents), or ports on which the traffic arrives. The default value is "Any."
  - **Note:**

    If no network object is defined, it will be translated into two rules in the AWS Console: one for IPv4 (0.0.0.0/0) and one for IPv6 (::0/0)

Step 9 Click **Save**.

Step 10 Review and deploy now the changes you made, or wait and deploy multiple changes at once.

Caution
If the deploy fails, Security Cloud Control attempts to return the state of the AWS VPC to what it was before you made the deployment attempt. This is done on a "best effort" basis. Because AWS doesn't maintain a state, this rollback attempt could fail. In that case, you will have to log in to the AWS management console and manually return the AWS VPC to its previous configuration and then read the changes into Security Cloud Control.

Edit a Security Group Rule

Use this procedure to edit an access control rule for an AWS VPC using Security Cloud Control:

Procedure

Step 1 In the left pane, click **Security Devices**.

Step 2 Click the **Devices** tab to locate the device or the **Templates** tab to locate the model device.

Step 3 Click the **AWS** tab and select the AWS VPC whose access control policy you want to edit.

Step 4 In the **Management** pane on the right, select **Policy**.

Step 5 To edit an existing security group rule, select the rule and click the edit icon in the Actions pane. (Simple edits may also be performed inline without entering edit mode.) See AWS VPC Security Group Rules for rule limitations and exceptions.

Step 6 Click **Save**.

Step 7 Review and deploy now the changes you made, or wait and deploy multiple changes at once.

Caution
If the deployment fails, Security Cloud Control attempts to return the state of the AWS VPC to what it was before you made the deployment attempt. This is done on a "best effort" basis. Because AWS doesn't maintain a state, this rollback attempt could fail. In that case, you will have to log in to the AWS management console and manually return the AWS VPC to its previous configuration and then poll for changes between the AWS VPC device configuration and the configuration in Security Cloud Control.

Delete a Security Group Rule

Procedure

Step 1 In the left pane, click **Security Devices**.

Step 2 Click the **Devices** tab to locate the device or the **Templates** tab to locate the model device.

Step 3 Click the **AWS** tab and select the AWS VPC whose access control policy you want to edit.

Step 4 In the **Management** pane on the right, select **Policy**.

Step 5 To delete a security group rule you no longer need, select the rule and click the remove icon in the **Actions** pane.

Step 6 Review and deploy now the changes you made, or wait and deploy multiple changes at once.

Caution
If the deployment fails, Security Cloud Control attempts to return the state of the AWS VPC to what it was before you made the deployment attempt. This is done on a "best effort" basis. Because AWS doesn't maintain a "state," this rollback attempt could fail. In that case, you will have to log in to the AWS management console and manually return the AWS VPC to its previous configuration and then poll for changes between the AWS VPC device configuration and the configuration in Security Cloud Control.

Reading, Discarding, and Deploying Configuration Changes

Read All Device Configurations

If a configuration change is made to a device outside of Security Cloud Control, the device's configuration stored on Security Cloud Control and the device's local copy of its configuration are no longer the same. You many want to overwrite Security Cloud Control's copy of the device's configuration with the configuration stored on the device to make the configurations the same again. You can perform this task on many devices simultaneously using the **Read All** link.

See Reading, Discarding, Checking for, and Deploying Configuration Changes for more information about how Security Cloud Control manages the two copies of the device's configuration.

Here are three configuration statuses where clicking **Read All** will overwrite Security Cloud Control's copy of the device's configuration with the device's copy of the configuration.

- **Conflict Detected**-If conflict detection is enabled, Security Cloud Control polls the devices it manages every 10 minutes for changes made to their configurations. If Security Cloud Control finds that the configuration on the device has changed, Security Cloud Control displays a "Conflict detected" configuration status for the device.
- **Synced**-If the device is in a synced state, and you click **Read All**, Security Cloud Control immediately checks the devices to determine if there have been any changes made to its configurations directly. After clicking **Read All**, Security Cloud Control confirms your intent to overwrite its copy of the device's configuration and then Security Cloud Control performs the overwrite.
- **Not Synced**-If the device is in the Not Synced state, and you click **Read All**, Security Cloud Control warns you that there are pending changes made to to the device's configuration using Security Cloud Control and that proceeding with the Read All operation will delete those changes and then overwrite Security Cloud Control's copy of the configuration with the configuration on the device. This Read All functions like Discard Changes.

Procedure

Step 1 In the left pane, click **Security Devices**.

Step 2 Click the **Devices** tab.

Step 3 Click the appropriate device type tab.

Step 4 (Optional) Create a change request label to identify the results of this bulk action easily in the Change Log.

Step 5 Select the devices whose configurations you want to save Security Cloud Control. Notice that Security Cloud Control only provides command buttons for actions that can be applied to all the selected devices.

Step 6 Click **Read All**.

Step 7 Security Cloud Control warns you if there are configuration changes staged on Security Cloud Control, for any of the devices you selected, and asks if you want to continue with the bulk reading configurations action. Click **Read All** to continue.

Step 8 Look at the notifications tab for the progress of the Read All configurations operation. If you want more information about how individual actions in the bulk operation succeeded or failed, click the blue Review link and you will be directed to the Jobs page.

Step 9 If you created and activated a change request label, remember to clear it so that you don't inadvertently associate other configuration changes with this event.

Related Information

- Reading, Discarding, Checking for, and Deploying Configuration Changes
- Discard Changes
- Check for Changes

Preview and Deploy Configuration Changes for All Devices

Security Cloud Control informs you when you have made a configuration change to a device in your tenant, but you have not deployed that change, by displaying an orange dot on the Deploy icon . The devices affected by these changes show the status "Not Synced" in the **Security Devices** page. By clicking **Deploy**, you can review which devices have pending changes and deploy the changes to those devices.

This deployment method is available for all supported devices.

You can use this deployment method for single configuration changes or wait and deploy multiple changes at once.

Procedure

Step 1 In the menu bar of Security Cloud Control click the **Deploy** button .

Step 2 Select the devices with changes you want to deploy. If a device has a yellow caution triangle, you can not deploy changes to that device. Hover your mouse over the yellow caution triangle to find out why you can't deploy changes to that device.

Step 3 (Optional) If you want to see more information about a pending change, click the **View Detailed Changelog** link to open the change log associated with that change. Click the **Deploy** icon to return to the **Devices with Pending Changes** page.

Step 4 Click **Deploy Now** to deploy the changes immediately to the devices you selected. You'll see the progress in the Active jobs indicator in the Jobs tray.

Step 5 (Optional) After the deployment has finished, click **Jobs** in the Security Cloud Control navigation bar. You will see a recent "Deploy Changes" job showing the results of the deployment.

Step 6 If you created a change request label, and you have no more configuration changes to associate with it, clear it.

Deploy Changes to a Device

Procedure

Step 1 After you make a configuration change for a device using Security Cloud Control and save it, that change is saved in Security Cloud Control instance of the device's configuration.

Step 2 In the navigation bar, click **Security Devices**.

Step 3 Click the **Devices** tab.

Step 4 Click the appropriate device type tab. You should see that the configuration status of the device you made changes to is now "Not synced."

Step 5 Deploy the changes using one of these methods:

- Select the device and in the Not Synced pane on the right, click **Preview and Deploy.** On the Pending Changes screen, review the changes. If you are satisfied with the pending version, click **Deploy Now**.

  After the changes are deployed successfully, you can view the change log to confirm what just happened.

- Click the **Deploy** icon  at the top-right of the screen. See Preview and Deploy Configuration Changes for All Devices, on page 9 for more information.

Cancelling Changes

If, when deploying a change from Security Cloud Control to a device, you click **Cancel**, the changes you made are not deployed to the device. The process is canceled. The changes you made are still pending on Security Cloud Control and can be edited further before you finally deploy them to FDM-managed device.

Discarding Changes

If, when previewing changes, you click **Discard all**, the changes you made, and any other changes any other user made but did not deploy to the device, are deleted. Security Cloud Control reverts its pending configuration to the last read or deployed configuration before any changes were made.

Bulk Deploy Device Configurations

If you have made changes to multiple devices, for instance by editing a shared object, you can apply those change to all of the affected devices at once:

Procedure

Step 1 In the left pane, click **Security Devices**.

Step 2 Click the **Devices** tab.

Step 3 Click the appropriate device type tab.

Step 4 Select all of the devices for which you have made configuration changes on Security Cloud Control. These devices should show "Not Synced" status.

Step 5 Deploy the changes using one of these methods:

- Click the  button at the top-right of the screen to view the **Devices with Pending Changes** window. This gives you a chance to review the pending changes on the devices you selected before you deploy them. Click **Deploy Now** to deploy the changes.

  Note

If you see a yellow warning triangle next to a device on the **Devices with Pending Changes** screen, you cannot deploy a change to that device. Hover your mouse over the warning triangle for information about why changes cannot be deployed to that device.

- Click **Deploy All** on the details pane. Review any warnings and click **OK**. The bulk deployment starts immediately without a review of the changes.

Step 6 (Optional) Click the Jobs icon  in the navigation bar to view the results of the bulk deploy.

About Scheduled Automatic Deployments

Using Security Cloud Control, you can make configuration changes to one or more of the devices it manages and then schedule the changes to be deployed to those devices at a time that is convenient for you.

You can only schedule deployments if you Enable the Option to Schedule Automatic Deployments in the **Tenant Settings** tab of the Settings page. Once this option is enabled, you can create, edit, or delete scheduled deployments. A scheduled deployment deploys all the staged changes saved on Security Cloud Control at the date and time set. You can also view and delete scheduled deployments from the Jobs page.

If there were changes made directly to the device that have not been read to Security Cloud Control, the scheduled deployment will be skipped until that conflict is resolved. The Jobs page will list any instance where a scheduled deployment fails. If **Enable the Option to Schedule Automatic Deployments** is turned off, all scheduled deployments are deleted.

Caution If you schedule a new deployment for multiple devices, and some of those devices already have deployments scheduled, the new scheduled deployment overwrites the existing scheduled deployments.

Note When you create a scheduled deployment, the schedule is created in your local time, not in the time zone of the device. Scheduled deployments *do not* automatically adjust for daylight savings time.

Schedule an Automatic Deployment

The deployment schedule can be a single event or a recurring event. You may find recurring automatic deployments a convenient way to line up recurring deployments with your maintenance window. Follow this procedure to schedule a one-time or a recurring deployment for a single device:

Note If you schedule a deployment for a device that has an existing deployment scheduled, the new scheduled deployment overwrites the existing deployment.

Procedure

Step 1 In the left pane, click **Security Devices**.

Step 2 Click the **Devices** tab.

Step 3 Click the appropriate device type tab.

Step 4 Select one ore more devices.

Step 5 In the Device Details pane, locate the Scheduled Deployments tab and click **Schedule**.

Step 6 Select when the deployment should occur.

- For a one-time deployment, click the **Once on** option to select a date and time from the calendar.
- For a recurring deployment, click the **Every** option. You can choose either a daily or once a week deployment. Select the **Day** and **Time** the deployment should occur.

Step 7 Click **Save**.

Edit a Scheduled Deployment

Follow this procedure to edit a scheduled deployment:

Procedure

Step 1 In the left pane, click **Security Devices**.

Step 2 Click the **Devices** tab.

Step 3 Click the appropriate device type tab.

Step 4 Select one or more devices.

Step 5 In the **Device Details** pane, locate the Scheduled Deployments tab and click **Edit** .

Step 6 Edit the recurrence, date, or time of a scheduled deployment.

Step 7 Click **Save**.

Delete a Scheduled Deployment

Follow this procedure to delete a scheduled deployment:

Note If you schedule a deployment for multiple devices, and then change or delete the schedule for some of the devices, the original scheduled deployment for the remaining devices will be preserved.

Procedure

Step 1 In the left pane, click **Security Devices**.
Step 2 Click the **Devices** tab.
Step 3 Click the appropriate device type tab.
Step 4 Select one or more devices.
Step 5 In the **Device Details** pane, locate the Scheduled Deployments tab and click **Delete** .

What to do next

- Reading, Discarding, Checking for, and Deploying Configuration Changes
- Read All Device Configurations, on page 8
- Preview and Deploy Configuration Changes for All Devices, on page 9

Check for Configuration Changes

Check for Changes to determine if the device's configuration has been changed directly on the device and it is no longer the same as the copy of the configuration stored on Security Cloud Control. You will see the this option when the device is in the "Synced" state.

To check changes:

Procedure

Step 1 In the left pane, click **Security Devices**.
Step 2 Click the **Devices** tab.
Step 3 Click the appropriate device type tab.
Step 4 Select the device, whose configuration you suspect may have been changed directly on the device.
Step 5 Click **Check for Changes** in the Synced pane on the right.
Step 6 The behavior that follows is slightly different depending on the device:

- For AWS device if there has been a change to the device's configuration, you will receive the message:

```
Reading the policy from the device. If there are active deployments on the device, reading will
start after they are finished.
```

  - Click **OK** to continue. The configuration on the device will overwrite the stored configuration on Security Cloud Control.
  - Click **Cancel** to cancel the action.

- For device:

a. Compare the two configurations presented to you. Click **Continue**. The configuration labeled **Last Known Device Configuration** is the configuration stored on Security Cloud Control. The configuration labeled **Found on Device** is the configuration saved on the ASA.

b. Select either:

   1. **Reject** the out-of-band changes to keep the "Last Known Device Configuration."
   2. **Accept** the out-of-band changes to overwrite the device's configuration stored in Security Cloud Control with the configuration found on the device.

c. Click **Continue**.

Discard Configuration Changes

Click **Discard Changes** when you want to "undo" all the *undeployed* configuration changes you made to a device's configuration using Security Cloud Control. When you click **Discard Changes**, Security Cloud Control *completely overwrites* its local copy of a device's configuration with the configuration stored on the device.

When you click **Discard Changes**, your device's configuration status is in a **Not Synced** state. After you discard your changes, the copy of the configuration on Security Cloud Control will be the same as the copy of the configuration on the device and the configuration status in Security Cloud Control will return to Synced.

To discard, or "undo," all of your undeployed configuration changes for a device:

Procedure

Step 1 In the left pane, click **Security Devices**.

Step 2 Click the **Devices** tab.

Step 3 Click the appropriate device type tab.

Step 4 Select the device you have been making configuration changes to.

Step 5 Click **Discard Changes** in the **Not Synced** pane on the right.

- For FDM-managed devices-Security Cloud Control warns you that "Pending changes on Security Cloud Control will be discarded and the Security Cloud Control configuration for this device will be replaced with the configuration currently running on the device." Click **Continue** to discard your changes.
- For Meraki devices-Security Cloud Control deletes the change immediately.
- For AWS devices-Security Cloud Control displays what you are about to delete. Click **Accept** or **Cancel**.

Out-of-Band Changes on Devices

Out-of-band changes refer to changes made directly on the device without using Security Cloud Control. These changes may be made using the device's command-line interface over an SSH connection or by using

a local manager like the Adaptive Security Device Manager (ASDM) for the ASA, the FDM for the FDM-managed device, or for an On-Premises Firewall Management Center on the On-Premises Firewall Management Center user interface. An out-of-band change causes a conflict between the device's configuration stored on Security Cloud Control and the configuration stored on the device itself.

Detecting Out-of-Band Changes on Devices

If Conflict Detection is enabled for an ASA, or an FDM-managed device, a Cisco IOS device, or an On-Premises Firewall Management Center, Security Cloud Control checks the device every 10 minutes searching for any new changes made directly to the device's configuration outside of Security Cloud Control.

If Security Cloud Control finds that there are changes to the device's configuration that are not stored on Security Cloud Control, it changes the **Configuration Status** of that device to the "Conflict Detected" state.

When Security Cloud Control detects a conflict, one of two conditions is likely:

- There have been configuration changes made to the device directly that have not been saved to Security Cloud Control's database.
- In the case of an FDM-managed device, there may be "pending" configuration changes on the FDM-managed device that have not been deployed.
- In the case of an On-Premises Firewall Management Center, there may be changes made, for instance, to objects outside Security Cloud Control, which are pending to be synchronized with Security Cloud Control or changes made in Security Cloud Control which are pending to be deployed to the On-Premises Firewall Management Center.

Synchronizing Configurations Between Security Cloud Control and Device

About Configuration Conflicts

In the **Security Devices** page, you may see devices or services have the status "Synced," "Not Synced," or "Conflict Detected." To know the status of an On-Premises Firewall Management Center that you manage using Security Cloud Control, navigate **Administration** > **Integrations** > **Firewall Management Center**.

- When a device is **Synced**, the configuration on Security Cloud Control) and the configuration stored locally on the device are the same.
- When a device is **Not Synced**, the configuration stored in Security Cloud Control was changed and it is now different that the configuration stored locally on the device. Deploying your changes from Security Cloud Control to the device changes the configuration on the device to match Security Cloud Control's version.
- Changes made to devices outside of Security Cloud Control are called **out-of-band changes**. When out-of-band changes are made, you'll see the device state change to "Conflict Detected," if conflict detection is enabled for the device. Accepting the out-of-band changes, changes the configuration on Security Cloud Control to match the configuration on the device.

Conflict Detection

When conflict detection is enabled, Security Cloud Control polls the device for the default interval to to determine if a change has been made to the device's configuration outside of Security Cloud Control. If Security Cloud Control detects that a change was made, it changes the configuration status for the device to **Conflict Detected**. Changes made to a device outside of Security Cloud Control are called "out-of-band" changes.

In the case of an On-Premises Firewall Management Center that is managed by Security Cloud Control, if there are changes that are staged and the device is in **Not Synced** state, Security Cloud Control stops polling the device to check for changes. When there are changes made outside Security Cloud Control which are pending to be synchronized with Security Cloud Control and changes made in Security Cloud Control which are pending to be deployed to the on-premises management center, Security Cloud Control declares the on-premises management center to be in the **Conflict Detected** state.

Once this option is enabled, you can configure how often conflicts or OOB changes are detected per device. See Schedule Polling for Device Changes, on page 19 for more information.

Enable Conflict Detection

Enabling conflict detection alerts you to instances where changes have been made to a device outside of Security Cloud Control.

Procedure

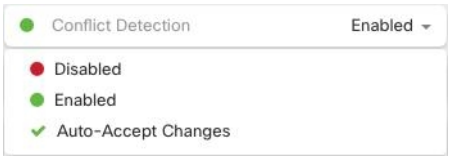
Step 1 In the left pane, click **Security Devices**.

Step 2 Click the **Devices** tab.

Step 3 Select the appropriate device type tab.

Step 4 Select the device or devices for which you want to enable conflict detection.

Step 5 In the **Conflict Detection** box at the right of the device table, select **Enabled** from the list.



Automatically Accept Out-of-Band Changes from your Device

You can configure Security Cloud Control to automatically accept any change made directly to a managed device by enabling auto-accept changes. Changes made directly to a device without using Security Cloud Control are referred to as out-of-band changes. An out-of-band change creates a *conflict* between the device's configuration stored on Security Cloud Control and the configuration stored on the device itself.

The auto-accept changes feature is an enhancement to conflict detection. If you have auto-accept changes enabled on your device, Security Cloud Control checks for changes every 10 minutes to determine if there have been any out-of-band changes made to the device's configuration. If there have been configuration changes, Security Cloud Control automatically updates its local version of the device's configuration without prompting you.

Security Cloud Control will ***not*** automatically accept a configuration change if there are configuration changes made on Security Cloud Control that have not yet been deployed to the device. Follow the prompts on the screen to determine your next action.

To use auto-accept changes, you first enable the tenant to display the auto-accept option in the Conflict Detection menu on the **Security Devices** page; then, you enable auto-accept changes for individual devices.

If you want Security Cloud Control to detect out-of-band changes but give you the option to accept or reject them manually, enable Conflict Detection, on page 16 instead.

Configure Auto-Accept Changes

Procedure

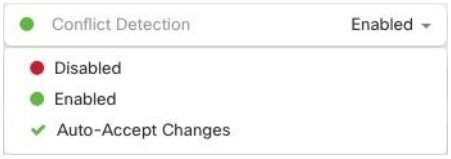
Step 1 Log in to Security Cloud Control using an account with Admin or Super Admin privileges.

Step 2 In the left pane, click **Administration** > **General Settings**.

Step 3 In the **Tenant Settings** area, click the toggle to **Enable the option to auto-accept device changes**. This enables the Auto-Accept Changes menu option to appear in the Conflict Detection menu on the **Security Devices** page.

Step 4 In the left pane, click **Security Devices** and select the device for which you want to automatically accept out-of-band changes.

Step 5 In the **Conflict Detection** menu, select **Auto-Accept Changes** in the drop-down menu.



Disabling Auto-Accept Changes for All Devices on the Tenant

Procedure

Step 1 Log-in to Security Cloud Control using an account with Admin or Super Admin privileges.

Step 2 In left pane, click **Administration** > **General Settings**.

Step 3 In the **Tenant Settings** area, disable the "**Enable the option to auto-accept device changes**" by sliding the toggle to the left so it shows a grey X. This disables Auto-Accept Changes option in the Conflict Detection menu and disables the feature for every device on your tenant.

Note
Disabling "Auto-Accept" will require you to review each device conflict before you can accept it into Security Cloud Control. This includes devices previously configured to auto-accept changes.

Resolve Configuration Conflicts

This section provides information about resolving configuration conflicts that occur on the device.

Resolve the Not Synced Status

Use the following procedure to resolve a device with a "Not Synced" Configuration Status:

Procedure

Step 1 In the navigation bar, click **Security Devices**.

Note
For an On-Premises Firewall Management Center, click **Administration** > **Integrations** > **Firewall Management Center** and select the FMC that is in **Not Synced** state and continue from Step 5.

Step 2 Click the **Devices** tab to locate the device or the **Templates** tab to locate the model device.

Step 3 Click the appropriate device type tab.

Step 4 Select the device reported as Not Synced.

Step 5 In the **Not synced** panel to the right, select either of the following:

- **Preview and Deploy...** -If you want to push the configuration change from Security Cloud Control to the device, preview and deploy the changes you made now, or wait and deploy multiple changes at once.
- **Discard Changes** -If you do **not** want to push the configuration change from Security Cloud Control to the device, or you want to "undo" the configuration changes you started making on Security Cloud Control. This option overwrites the configuration stored in Security Cloud Control with the running configuration stored on the device.

Resolve the Conflict Detected Status

Security Cloud Control allows you to enable or disable conflict detection on each live device. If Conflict Detection, on page 16 is enabled and there was a change made to the device's configuration without using Security Cloud Control, the device's configuration status will show **Conflict Detected**.

To resolve a "Conflict Detected" status, follow this procedure:

Procedure

Step 1 In the navigation bar, click **Security Devices**.

Note
For an On-Premises Firewall Management Center, click **Administration** > **Integrations** > **Firewall Management Center** and select the FMC that is in **Not Synced** state and continue from Step 5.

Step 2 Click the **Devices** tab to locate your device.

Step 3 Click the appropriate device type tab.

Step 4 Select the device reporting the conflict and click **Review Conflict** in the details pane on the right.

Step 5 In the **Device Sync** page, compare the two configurations by reviewing the highlighted differences.

- The panel labeled "Last Known Device Configuration" is the device configuration stored on Security Cloud Control.
- The panel labeled "Found on Device" is the configuration stored in the running configuration on the ASA.

Step 6 Resolve the conflict by selecting one of the following:

- **Accept Device changes**: This will overwrite the configuration **and any pending changes stored on** Security Cloud Control with the device's running configuration.

  Note
  As Security Cloud Control does not support deploying changes to the Cisco IOS devices outside of the command line interface, your only choice for a Cisco IOS device will be to select **Accept Without Review** when resolving the conflict.

- **Reject Device Changes**: This will overwrite the configuration stored on the device with the configuration stored on Security Cloud Control.

Note
All configuration changes, rejected or accepted, are recorded in the change log.

Schedule Polling for Device Changes

If you have Conflict Detection, on page 16 enabled, or if you **Enable the option to auto-accept device changes** from the Settings page,Security Cloud Control polls the device for the default interval to determine if a change has been made to the device's configuration outside of Security Cloud Control. You can customize how often Security Cloud Control polls for changes per device. These changes can be applied to more than one device.

If there is no selection configured for a device, the interval is automatically configured for "tenant default".

Note Customizing the interval per device from the **Security Devices** page overrides the polling interval selected as the Default Conflict Detection Interval from the **General Settings** page.

After you enable **Conflict Detection** from the **Security Devices** page or **Enable the option to auto-accept device changes** from the Settings page, use the following procedure to schedule how often you want Security Cloud Control to poll your devices:

Procedure

Step 1 In the left pane, click **Security Devices**.

Step 2 Click the **Devices** tab to locate your device.

Step 3 Click the appropriate device type tab.

Step 4 Select the device or devices for which you want to enable conflict detection.

Step 5 In the same area as **Conflict Detection**, click the drop-down menu for **Check every** and select the desired polling interval: