



## Rules and Rule Sets

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- [Rules, on page 1](#)
- [Policy Management, on page 1](#)
- [Rule Sets and Rule Set Groups, on page 2](#)

### Rules

In general, rules specify the rights of a user, group, role, or organization to access objects of a specified type and state within a domain. Multicloud Defense supports a variety of cloud service providers and each of these environments have their own requirements or methods for their rules. Rules created in your cloud account might be handled differently than rules that are created in the Multicloud Defense Controller. Some rules are applied to gateways and instances by default so the environments have a basic level of protection as you continue to add and modify the rules and policies for optimal performance and coverage.

Rule **types** are important when considering the type of gateway environment you are catering to. Not all rules or rule types are completely compatible with every gateway environment. Gateway types supported in Multicloud Defense Controller are ingress, egress, and east-west.

For information about rules and rule sets, or how to create or modify rules and rule sets for policies and groups, read the rest of this chapter.

### Policy Management

Policies are created in the Multicloud Defense dashboard or through orchestration using the Multicloud Defense Terraform provider. The policies are stored and retained as part of the Multicloud Defense Controller database. The gateway retrieves the policy or any policy changes through a periodic heartbeat where the gateway provides the controller health and telemetry information, while also requesting if there are any policy changes that need to be applied. The gateway to controller communication is fully encrypted and established through a mutual TLS session. The heartbeats occur every 5 seconds to ensure that policies on the gateway are synchronized with the policies created or modified by the user.

# Policy Rule Set Gateway and Management

## Policy Rule Management

A policy rule set assigned to a gateway can be changed dynamically to a different policy rule set. If there is a requirement to swap in a different policy rule set to an active gateway, this operation can be initiated in a non-impactful way. The assignment of the new policy rule set operates similarly to a gateway update/upgrade process. New gateway instances are instantiated with the new policy rule set. New traffic sessions are redirected to the new gateway instances once they are active and healthy. Old traffic sessions are flushed from the old gateway instances. The old gateway instances are deleted. The operation completes in a matter of minutes. This change is initiated as part of the gateway configuration settings. Navigate to **Manage > Gateways > Gateways**. The change can be initiated using the Multicloud Defense portal or the Multicloud Defense Terraform Provider.

## Policy Rule Set Gateway Status

The status of the connection between the policy rule and the gateway it is associated with can be one of the two options:

- **Updated** - The policy is active on the gateway and is synchronized with the controller.
- **Updating** - The gateway is actively processing a policy change. The policy change is known to the gateway, but is not yet active. The gateway is still process traffic using the current policy.

# Rule Sets and Rule Set Groups

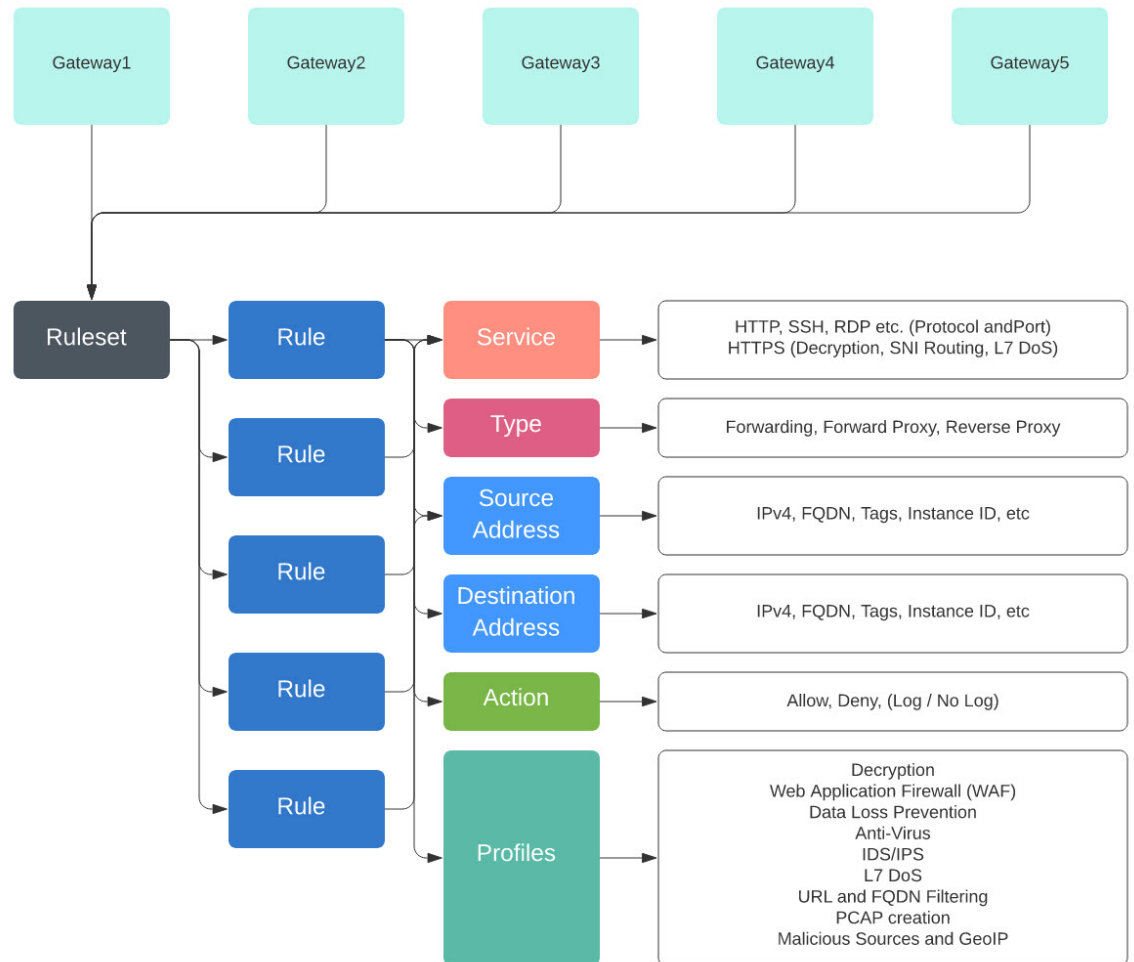
## Rule Sets

Rule sets consist of a set of rules that define a segmentation and advanced security policy that are applied to a set of one or more gateways to accommodate application and workload protection. The rules are organized as a priority list where traffic is processed by an matched rule, a general action is taken to allow or deny, and further inspection is accommodated through advanced security.

Rule sets must be associated with at least one Multicloud Defense Gateway. The following limitations apply to all rule sets:

- Rule sets are cloud agnostic and can be applied to one or more gateways operation across multiple cloud environment.
- A gateway can only be associated with a single rule set, although more than one rule set can be applied using a rule set group.
- Rules within a rule set can use discovered cloud asset information to form a dynamic policy, or a policy that adapts in real time to changes.
- A rule set can include rules that only apply to specific cloud accounts and/or cloud regions, although the rule set is applied to gateways that cross cloud environments. Here is an example:
  - A dynamic tag-based address object used in a rule within a rule set that is applied to two gateways across two clouds can resolve to a set of IP addresses that are associated with a gateway in one cloud, while resolving to a different set of IP addresses that are associated with a gateway in another cloud.

- Rule sets can be created from the **Manage > Security Policies > Rule Sets** page or from within the gateway creation workflow. The following diagram is of a single rule set applied to multiple gateways:



Another supported use case is of multiple rule sets associated with multiple gateways.

### Policy Rule Set Groups

A policy rule set group is a collection of standalone rule sets. Users can combine multiple standalone rule sets into a policy rule set group and associate the group to one or more Multicloud Defense Gateways. Policy rule set groups allow organizations to separate policies in an organized fashion and combine them to an overarching policy.



#### Note

- A policy rule set group can only consist of rule set members.
- Ensure all rule sets associated with a policy rule set group do not have conflicting rules.
- A policy rule set group can have a maximum of 100 rule set members.

## Create Policy Rule Set

To create a policy rule set:

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- Step 1** Navigate to **Manage > Security Policies > Rule Sets**.
  - Step 2** Click **Create**.
  - Step 3** Add a name and description for the policy rule set.
  - Step 4** Click **Save**.
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### What to do next

Once the policy rule set is created, [Add or Edit a Forward Proxy Rule in a Rule Set](#) to the rule set.

## Create a Rule in a Rule Set

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### Add or Edit a Forwarding Rule in a Rule Set

Use the following procedure to add existing rules to a policy rule set or to edit rules that are already included in a policy rule set:

#### Before you begin

You can create a new rule within the Multicloud Defense Gateway. Note the following limitations before you add or edit rules to your rule set:

- A single policy rule set can have a maximum of 2047 rules.
- A policy rule set group can have a maximum combined set of 2047 rules.

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- Step 1** Navigate to **Manage > Security Policies > Rule Sets**.
  - Step 2** Click the policy rule set name to view the policy rule set.
  - Step 3** Click **Add Rule** to create a new rule or add an existing rule. This generates a prompt.
  - Step 4** Enter the following properties:
    - **Name** - a unique name used to reference the rule.
    - (optional) **Description** - A brief description of the rule.
    - **Type** - Select **Forwarding**.
  - Step 5** Enter the following Object information:
    - **Service** - The service object used to determine the protocols and ports for which the rule will apply.
    - **Source** - The address object used to determine the resources for which the rule will apply.

- **Destination** - The address object used to determine the destination resources for which the rule will apply. For a **ReverseProxy** rule type, the destination is always the Multicloud Defense Gateway. For **ForwardProxy** rule types, the destination is always any.
- **FQDN** - Use the drop-down menu to select a set of FQDNs used for SNI match. Note this applies only to **Forwarding** rule types.

**Step 6** Enter the Details:

- **Action** - The action defines whether the traffic should be allowed or denied, and whether the traffic should be logged or not logged in events. Traffic is always logged in traffic summary, no matter whether the action is set to **Log** or **No Log**. For traffic that is allowed by the rule, the advanced security profiles are evaluated. Note that each advanced security profile has its own action that will either use or override this action.
- **Reset On Deny** - If enabled, the Multicloud Defense Gateway will send a TCP Reset packet for the sessions that matches this policy and is dropped by the gateway. Note this only applies to **Forwarding** rule types.

**Step 7** Enter the following Profiles information:

- (Optional) **Network Intrusion** - The Network Intrusion (IPS) profile to be used for advanced security.
- (Optional) **Anti-malware** - The Anti-malware profile to be used for advanced security. If you do not already have an Anti-malware profile created, click + **Create Anti Malware** here.
- (Optional) **Data Loss Prevention** - The Data Loss Prevention (DLP) profile to be used for advanced security. Note that this applies only to **ForwardProxy** rule types.
- (Optional) **FQDN Filtering** - The FQDN Filtering (FQDN) profile to be used for advanced security.
- (Optional) **Malicious IPs** - The Malicious IPs (MIP) profile to be used for advanced security.
- (Optional) **PCAP** - Check this box to enable. Whether packet capture is enabled or disabled for the rule. Whenever traffic matches a rule with PCAP enabled, a packet capture of the session traffic will occur and the PCAP will be stored in the location specified by the PCAP profile. The PCAP profile is configured on the Multicloud Defense Gateway.

**Step 8** After specifying the configuration for the rule, click **Save**.

**Step 9** Continue adding more rules. Once all desired rules have been added, click **Save Changes**. You will be presented with a before and after view of all changes made to the rule set. If satisfied with your changes, click **Save**. If you need to make further changes, click **Cancel** to return to editing your rule set.

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## Add or Edit a Reverse Proxy Rule in a Rule Set

Use the following procedure to add existing rules to a policy rule set or to edit rules that are already included in a policy rule set:

### Before you begin

You can create a new rule within the Multicloud Defense Gateway. Note the following limitations before you add or edit rules to your rule set:

- A single policy rule set can have a maximum of 2047 rules.
- A policy rule set group can have a maximum combined set of 2047 rules.

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- Step 1** Navigate to **Manage > Security Policies > Rule Sets**.
- Step 2** Click the policy rule set name to view the policy rule set.
- Step 3** Click **Add Rule** to create a new rule or add an existing rule. This generates a prompt.
- Step 4** Enter the following properties:
- **Name** - a unique name used to reference the rule.
  - (optional) **Description** - A brief description of the rule.
  - **Type** - Select **ReverseProxy**.
- Step 5** Enter the following Object information:
- **Service** - The service object used to determine the protocols and ports for which the rule will apply.
  - **Source** - The address object used to determine the resources for which the rule will apply.
  - **Destination** - The address object used to determine the destination resources for which the rule will apply. For a **ReverseProxy** rule type, the destination is always the Multicloud Defense Gateway.
  - **Target** - The address object used to specify the destination for which the Multicloud Defense Gateway will establish a gateway to server connection.
- Step 6** Select the preferred rule **Action**. This defines whether the traffic should be allowed or denied, and whether the traffic should be logged or not logged in events. Traffic is always logged in traffic summary, no matter whether the action is set to **Log** or **No Log**. For traffic that is allowed by the rule, the advanced security profiles are evaluated. Note that each advanced security profile has its own action that will either use or override this action.
- Step 7** Enter the following Profiles information:
- (Optional) **Network Intrusion** - The Network Intrusion (IPS) profile to be used for advanced security.
  - (Optional) **Anti-malware** - The Anti-malware profile to be used for advanced security. If you do not already have an Anti-malwre profile created, click + **Create Anti Malware** here.
  - (Optional) **Web Protection** - The Web Protection (WAF) profile to be used for advanced security. Note that this applies only to **ReverseProxy** rule types.
  - (Optional) **URL Filtering** - The URL Filtering (URL) profile to be used for advanced security. Note that this applies only to **ForwardProxy** and **ReverseProxy** rule types.
  - (Optional) **Malicious IPs** - The Malicious IPs (MIP) profile to be used for advanced security.
  - (Optional) **PCAP** - Check this box to enable. Whether packet capture is enabled or disabled for the rule. Whenever traffic matches a rule with PCAP enabled, a packet capture of the session traffic will occur and the PCAP will be stored in the location specified by the PCAP profile. The PCAP profile is configured on the Multicloud Defense Gateway.
- Step 8** After specifying the configuration for the rule, click **Save**.
- Step 9** Continue adding more rules. Once all desired rules have been added, click **Save Changes**. You will be presented with a before and after view of all changes made to the rule set. If satisfied with your changes, click **Save**. If you need to make further changes, click **Cancel** to return to editing your rule set.
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## Add or Edit a Forward Proxy Rule in a Rule Set

Use the following procedure to add existing rules to a policy rule set or to edit rules that are already included in a policy rule set:

### Before you begin

You can create a new rule within the Multicloud Defense Gateway. Note the following limitations before you add or edit rules to your rule set:

- A single policy rule set can have a maximum of 2047 rules.
- A policy rule set group can have a maximum combined set of 2047 rules.

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- Step 1** Navigate to **Manage > Security Policies > Rule Sets**.
- Step 2** Click the policy rule set name to view the policy rule set.
- Step 3** Click **Add Rule** to create a new rule or add an existing rule. This generates a prompt.
- Step 4** Enter the following properties:
- **Name** - a unique name used to reference the rule.
  - (optional) **Description** - A brief description of the rule.
  - **Type** - Select **ForwardProxy**.
- Step 5** Enter the following Object information:
- **Service** - The service object used to determine the protocols and ports for which the rule will apply.
  - **Source** - The address object used to determine the resources for which the rule will apply.
  - **Destination** - The address object used to determine the destination resources for which the rule will apply. For **ForwardProxy** rule types, the destination is always any.
  - **FQDN** - Use the drop-down menu to select a set of FQDNs used for SNI match. Note this applies only to **Forwarding** rule types.
- Step 6** Enter the preferred rule **Action**. This defines whether the traffic should be allowed or denied, and whether the traffic should be logged or not logged in events. Traffic is always logged in traffic summary, no matter whether the action is set to **Log** or **No Log**. For traffic that is allowed by the rule, the advanced security profiles are evaluated. Note that each advanced security profile has its own action that will either use or override this action.:
- Step 7** Enter the following Profiles information:
- (Optional) **Network Intrusion** - The Network Intrusion (IPS) profile to be used for advanced security.
  - (Optional) **Anti-malware** - The Anti-malware profile to be used for advanced security. If you do not already have an Anti-malware profile created, click + **Create Anti Malware** here.
  - (Optional) **Data Loss Prevention** - The Data Loss Prevention (DLP) profile to be used for advanced security. Note that this applies only to **ForwardProxy** rule types.
  - (Optional) **URL Filtering** - The URL Filtering (URL) profile to be used for advanced security. Note that this applies only to **ForwardProxy** and **ReverseProxy** rule types.

- (Optional) **FQDN Filtering** - The FQDN Filtering (FQDN) profile to be used for advanced security.
- (Optional) **Malicious IPs** - The Malicious IPs (MIP) profile to be used for advanced security.
- (Optional) **PCAP** - Check this box to enable. Whether packet capture is enabled or disabled for the rule. Whenever traffic matches a rule with PCAP enabled, a packet capture of the session traffic will occur and the PCAP will be stored in the location specified by the PCAP profile. The PCAP profile is configured on the Multicloud Defense Gateway.

**Step 8** After specifying the configuration for the rule, click **Save**.

**Step 9** Continue adding more rules. Once all desired rules have been added, click **Save Changes**. You will be presented with a before and after view of all changes made to the rule set. If satisfied with your changes, click **Save**. If you need to make further changes, click **Cancel** to return to editing your rule set.

## Disable, Edit, Clone, or Delete Rules in a Rule Set

Use the following procedure to edit or clone an existing rule that is configured for a rule set. You can also disable a rule if you do not need it active for your currently policies or rule set. You can delete a rule if you do not need it now or for any future deployment.

Note that you can only edit or clone one rule at a time. You can disable or delete multiple rules simultaneously.

**Step 1** Navigate to **Manage > Security Policies > Rule Sets**.

**Step 2** Locate the rule set that contains the rule you want to disable, edit, clone, or delete and click the rule set name.

**Step 3** Check the checkbox of the standalone rule.

**Step 4** Expand the **Actions** button.

**Step 5** Select your actionable item:

- **Disable** - This option keeps the rule in the rule set but disables the rule and the configured rule action from affecting traffic.
- **Edit** - This option launches the Properties window and allows you to edit the configuration of the rule. Click **Save** to keep the changes you made.
- **Clone** - This option creates a duplicate of the rule and opens the Properties window for you to name the cloned rule, or make any additional changes to the rule's configuration. Click **Save** to confirm the configuration. Saving a cloned rule automatically adds it to the rule set you are viewing.
- **Delete** - This option permanently removes the rule from the rule set. Note that this also removed the rule from the gateway.

**Step 6** Click **Save Changes** to confirm the changes you made to the rule and, indirectly, do the rule set. If you do not want to save the changes, click **Cancel**. Confirm that losing any changes made to the gateway is OK.

## Create a Policy Rule Set Group

To create a policy rule set group:



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- Step 1** Navigate to **Manage > Security Policies > Rules**.
- Step 2** Click **Create**.
- Step 3** Add a name and description for the policy rule set group.
- Step 4** Select **Type** as the group.
- Step 5** Expand the drop-down menu to add rule sets in the **Rule Set List** section. If you want to add more rule sets, click **Add Rule Sets** to add another row.
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