



# Illumio Core<sup>®</sup>

Version 22.2

## What's New in This Release

December 2022

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## Product Version

PCE Version: 22.2

For the complete list of Illumio Core components compatible with Core PCE, see the Illumio Support portal (login required).

For information on Illumio software support for Standard and LTS releases, see [Versions and Releases](#) on the Illumio Support portal.

## Resources

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## Welcome to Illumio Core 22.2

This chapter contains the following topics:

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Illumio is pleased to announce the general availability of version 22.2 of the Illumio Core for the PCE. This new release contains many improvements and changes as described in this document.

### About This Release

This documentation portal describes the new features, enhancements, platform support, and new and modified REST APIs for the Illumio Core 22.2 release.



**IMPORTANT:**

Illumio Core 22.2.x is available for Illumio Core On-Premises customers, and for Illumio Core Cloud customers depending on the version of the Illumio Core Cloud running in their environments. Illumio Core Cloud customers can verify their version in the PCE web console.

### Product Versions

PCE Version: 22.2.40 (LTS Candidate)

VEN Version: 22.2.40 (LTS Candidate)

NEN Version: 2.4.10

FlowLink Version: 1.1.2+H2

Core for Kubernetes: 3.1.0

PCE CLI Tool Version: 1.4.2

Illumio App for ServiceNow: 1.4

### Standard versus LTS Releases

22.2.40-PCE and 22.2.40-VEN are LTS Candidate releases.

For information on Illumio software support for Standard and LTS releases, see [Versions and Releases](#) on the Illumio Support portal.

### Release Types and Numbering

Illumio Core release numbering uses the following format: “a.b.c-d+e”

- “a.b”: Standard or LTS release number, for example “22.2”
- “.c”: Maintenance release number, for example “.0”
- “-d”: Optional descriptor for pre-release versions, for example “preview2”

## General Advisories

The information in this section provides general advisories about important aspects of this release. To ensure proper operation of the system after upgrade, you might need to take account on these advisories.

### Supported Operating Systems

The 22.2.40 PCE is supported on operating systems detailed on the Illumio Support portal.

For information, see [PCE OS Support and Package Dependencies](#).

### Open Source Package Updates

Illumio updated several open source packages for the PCE in this release. See the “Change History” in [Illumio Open Source Licensing Disclosures](#) for information.

### The Upgrade to This Release

As part of the upgrade process, Illumio strongly encourages you to review the prior release notes from your previously installed version of Illumio Core to version 22.2.40.

You have the option to upgrade the VENs in your environment at any time. For information about the upgrade path and tools, go to the Illumio Support portal and review the [VEN Upgrade paths](#) (login required).

## Announcements

End of Support Announcements, Deprecations, Compatibility

## End of Support

### Illumio REST API v1

The version 1 of Illumio REST APIs (API v1) is not supported effectively with the 21.1 and later releases. Illumio recommends that you upgrade to API v2.

### Internet Explorer 11

Illumio Core 19.1 was the last release to support Internet Explorer 11. Internet Explorer 11 is no longer supported in Illumio Core 19.2 and later releases. Illumio recommends Chrome, Edge, or Firefox for use with the PCE web console.

### Organization Events

Since the 19.1.0 release, the older form of events, known as “audit or organization events,” is no longer supported or available.

Any versions of the former SIEM Integration Guide that are earlier than version 18.2.1 are valid only for their corresponding versions, not version 18.2.1 or later releases.

Customers should upgrade to the latest version of Illumio Adaptive Security and take advantage of the newly designed auditable events. See the *Events Administration Guide* for information.

## Chapter 2

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### What's New and Changed in This Release

This chapter contains the following topics:

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Before upgrading to Illumio Core 22.2.x, familiarize yourself with the following new and modified features in this release.

The information in this section describes the new and modified features to the PCE, REST API, and PCE web console.

#### What's New and Changed in Release 22.2.40

Illumio Core 22.2.40 introduces the following enhancements.

**IMPORTANT:**

Illumio Core 22.2.40-PCE is available for Illumio Core On-Premises customers only.

The 22.2.40-VEN is available for both Illumio Core On-Premises customers and Illumio Core Cloud customers.

## Illumio Core 22.2.40 Maintenance Release

Illumio provides regular maintenance updates for reported bugs and security issues, and to add support for new operating system versions. As a maintenance release, Illumio Core 22.2.40 solved software and security issues to refine the software and improve its reliability and performance.

For the complete list of improvements and enhancements to the PCE and VEN, see “Resolved Issues in 22.2.40” in the [Illumio Core Release Notes 22.2](#).

For more information about the Illumio software release types and software support, see Versions and Compatibility on the [Illumio Support portal](#) (login required).

## New Feature in 22.2.40

Red Hat Enterprise Linux (RHEL) 9 is supported for VENs.

## What's New and Changed in Release 22.2.30

Illumio Core 22.2.10 introduces the following enhancements.

**IMPORTANT:**

Illumio Core 22.2.30-PCE is available for Illumio Core On-Premises customers only.

The 22.2.30-VEN and 22.2.31-VEN are available for both Illumio Core On-Premises customers and Illumio Core Cloud customers.

## Illumio Core 22.2.30 Maintenance Release

Illumio provides regular maintenance updates for reported bugs and security issues, and to add support for new operating system versions. As a maintenance release, Illumio Core 22.2.30 solved software and security issues to refine the software and improve its reliability and performance.



For the complete list of improvements and enhancements to the PCE and VEN, see “Resolved Issues in 22.2.30” and “Resolved Issue in 22.2.31-VEN” in the [Illumio Core Release Notes 22.2](#).

For more information about the Illumio software release types and software support, see Versions and Compatibility on the [Illumio Support portal](#) (login required).

## What's New and Changed in Release 22.2.20

Illumio Core 22.2.20 introduces the following enhancements.



**IMPORTANT:**

Illumio Core 22.2.20-PCE is available for Illumio Core On-Premises customers only.

The 22.2.20-VEN is available for both Illumio Core On-Premises customers and Illumio Core Cloud customers.

### Illumio Core 22.2.20 Maintenance Release

Illumio provides regular maintenance updates for reported bugs and security issues, and to add support for new operating system versions. As a maintenance release, Illumio Core 22.2.20 solved software and security issues to refine the software and improve its reliability and performance.

For the complete list of improvements and enhancements to the PCE and VEN, see “Resolved Issues in 22.2.20” in the [Illumio Core Release Notes 22.2](#).

For more information about the Illumio software release types and software support, see Versions and Compatibility on the [Illumio Support portal](#) (login required).

## What's New and Changed in Release 22.2.10

Illumio Core 22.2.10 introduces the following new features and enhancements.



**IMPORTANT:**

Illumio Core 22.2.10-PCE is available for Illumio Core On-Premises customers only.

The 22.2.10-VEN is available for both Illumio Core On-Premises customers and Illumio Core Cloud customers.

## Illumio Core 22.2.10 Maintenance Release

Illumio provides regular maintenance updates for reported bugs and security issues, and to add support for new operating system versions. As a maintenance release, Illumio Core 22.2.10 solved software and security issues to refine the software and improve its reliability and performance.

For the complete list of improvements and enhancements to the PCE and VEN, see “Resolved Issue in 22.2.10” in the [Illumio Core Release Notes 22.2](#).

For more information about the Illumio software release types and software support, see Versions and Compatibility on the [Illumio Support portal](#) (login required).

## New Features in Illumio Core 22.2.10

### PCE Replication and Failover

To increase reliability, you can set up replication and failover for PCEs. Having a PCE on “warm standby,” ready to take over if the active PCE fails, contributes to a resilient disaster recovery (DR) plan.

For PCE replication and failover, set up PCEs in pairs. Each pair has an active PCE and a standby PCE. A combination of continuous real-time replication and periodic synchronization is used to keep the standby PCE’s data up to date with the active PCE. If the active PCE fails, the standby PCE can take over and become the new active PCE.

See the [PCE HA and DR](#) section in the *PCE Administration Guide* for information.

### Reassign a NEN from one PCE to Another in a Supercluster through CLI or API

You can move a NEN from one PCE to another PCE in the same supercluster using either a command line or through the API. When a NEN is moved in this way, associated Server Load Balancers maintain policy for managed virtual servers. After the PCE database is restored, the moved NEN remains connected to the new PCE. For details on reassigning a NEN from one PCE to another in a Supercluster using either method, see [Reassign NENs from one PCE to Another in a Supercluster](#).

## Enhancements in the Illumio Core REST APIs

Illumio Core 22.2.10 introduced the following new public experimental REST API.

### Update the NEN with a New Target PCE hostname

```
/api/v2/orgs/<org-id>/network_enforcement_nodes/<uuid>
```

Use the following payload:

```
{
  "$schema": "http://json-schema.org/draft-04/schema#",
  "description": "Update a NEN's target PCE.",
  "type": "object",
  "additionalProperties": false,
  "properties": {
    "target_pce_fqdn": {
      "description": "cluster FQDN for target PCE",
      "type": "string"
    }
  }
}
```

## What's New and Changed in Release 22.2.3

Illumio Core 22.2.3 introduces the following new features and enhancements.



### IMPORTANT:

Illumio Core 22.2.3-PCE was initially available for Illumio Core Cloud customers only. However, the issues resolved in this release are available in later 22.2.x releases for Illumio Core On Premises customers.

## Illumio Core 22.2.3 Maintenance Release

Illumio provides regular maintenance updates for reported bugs and security issues, and to add support for new operating system versions. As a maintenance release, Illumio Core 22.2.3-PCE solved software and security issues to refine the software and improve its reliability and performance.

For the complete list of improvements and enhancements to the PCE and VEN, see “Resolved Issue in 22.2.3-PCE” in the [Illumio Core Release Notes 22.2](#).

For more information about the Illumio software release types and software support, see Versions and Compatibility on the [Illumio Support portal](#) (login required).

## What's New and Changed in Release 22.2.1

Illumio Core 22.2.1 introduces the following new features and enhancements.

**IMPORTANT:**

Illumio Core 22.2.1-PCE is available for Illumio Core On-Premises customers.

## Illumio Core 22.2.1 Maintenance Release

Illumio provides regular maintenance updates for reported bugs and security issues, and to add support for new operating system versions. As a maintenance release, Illumio Core 22.2.1 solved software and security issues to refine the software and improve its reliability and performance.

For the complete list of improvements and enhancements to the PCE and VEN, see “Resolved Issue in 22.2.1” in the [Illumio Core Release Notes 22.2](#).

For more information about the Illumio software release types and software support, see Versions and Compatibility on the [Illumio Support portal](#) (login required).

## What's New and Changed in Release 22.2.0

Illumio Core 22.2.0 introduces the following new features and enhancements.

### Installation Change

In the name of the Illumio Core PCE installation RPM file, c6 has changed to c7. This reflects the change in CentOS support to CentOS version 7, which was made in an earlier PCE version. In the PCE Installation and Upgrade Guide, this file is referred to as `illumio_pce_rpm`.

### New Features in This Release

The following new features were added in Illumio Core 22.2.0.

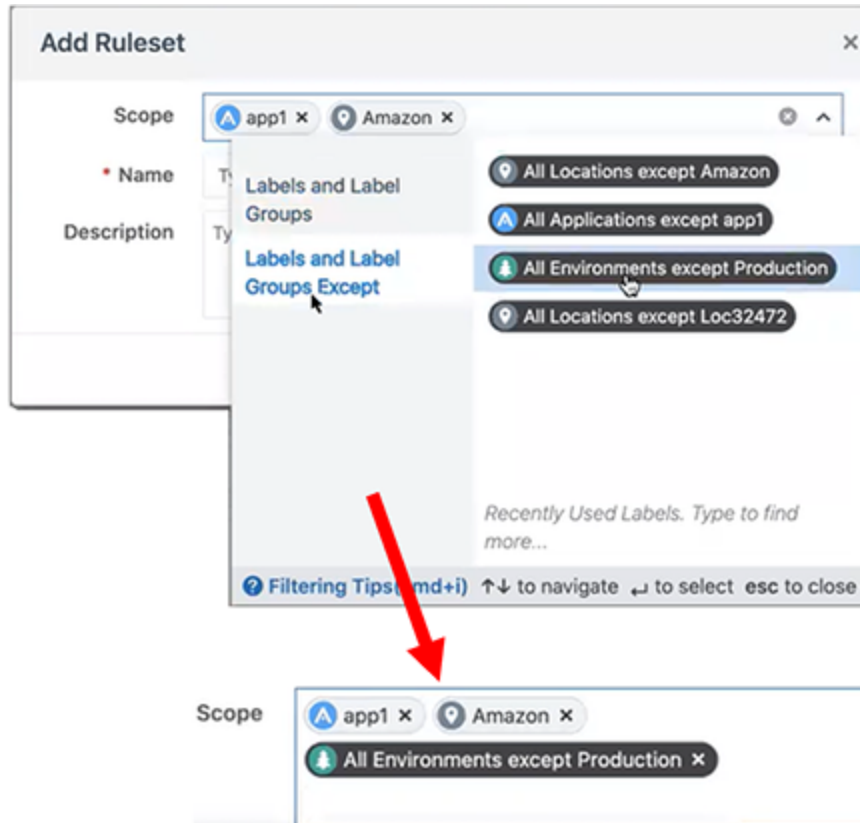
#### Policy Exclusions

Illumio Core 22.2.0 delivers policy exclusions as a new feature. In particular, the PCE supports including policy exclusions in ruleset scopes and rules.

Using policy exclusions in your Illumio Core policy can greatly simplify the rule writing process. Specifically, using a policy exclusion in a ruleset scope or in rules allows you to replace the inclusion of a large number of required labels with the exclusion of a small number of unwanted labels. Security policy written with policy exclusions can be easier to read and definitely easier to maintain.

Using a policy exclusions gives you a way to state in your security policy that you want a ruleset or rule to apply to “all except X,” where X can be both labels and label

groups. To state this another way, “all except X” means “All labeled workloads except X.”



For a description of the feature and how to use them, see [Policy Exclusions](#) in the *Security Policy Guide*.

For information about everywhere they are supported in Illumio Core, see [Support for Policy Exclusions](#) in the *Security Policy Guide*

## Scopeless Rulesets

In this release, you have the option to create basic or scoped rulesets. You can choose whether you want to include scopes when creating new rulesets. The **Scope** field appears in the **Add Ruleset** dialog box only when the PCE is configured to display scopes in rulesets. When the PCE is configured to create scopeless rulesets, you create simple rules that do not apply to specific environments, locations, or applications. These rules are scopeless rules because they do not belong to a ruleset that uses scopes.

You might want to create these basic rules when you are new to using Illumio Core and you are creating your first security policy rules. For example, you might want to create a simple rule to control SSH traffic for all your workloads. As you become more

familiar with Illumio Core or you need to create more complicated rules, you can choose to create scoped rules; namely intra-scope, extra-scope, and custom iptables rules. Creating scoped rules allows you to create rulesets and rules that are defined for specific environments, locations, and applications (typically larger environments).

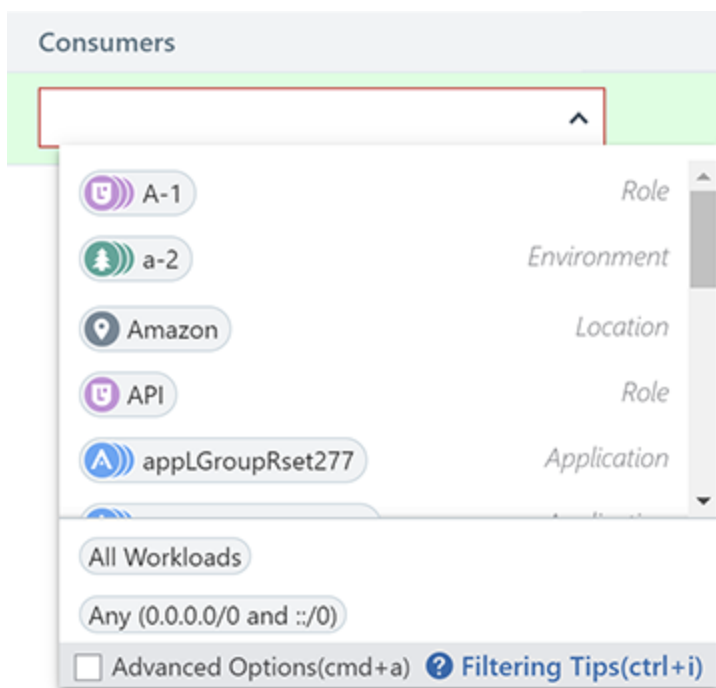
When the PCE is configured create scopeless rulesets, you can still add a scope to a ruleset after saving the ruleset. From the **Ruleset Actions** menu at the top right corner of the **Ruleset** page, select **Add Scope**.

For more information about rulesets, see [Rulesets](#) and [Rule Writing](#) in the *Security Policy Guide*.

## Simplified Rule Writing

In this release, the dialog boxes in the PCE web console are split into a simple mode and an advanced mode.

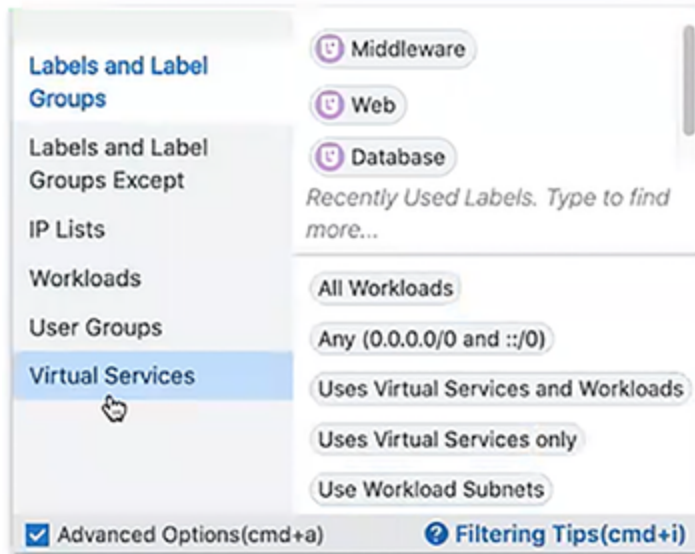
In the simple mode, you can select labels and label groups for your rules. Your most recently used labels appear in this screen, then as you type, the UI auto-completes the names to find labels in the PCE.



To access the Advanced Options for rules, select the **Advanced Options** checkbox:



A panel appears on the left providing the following policy objects that you can add to your rules:

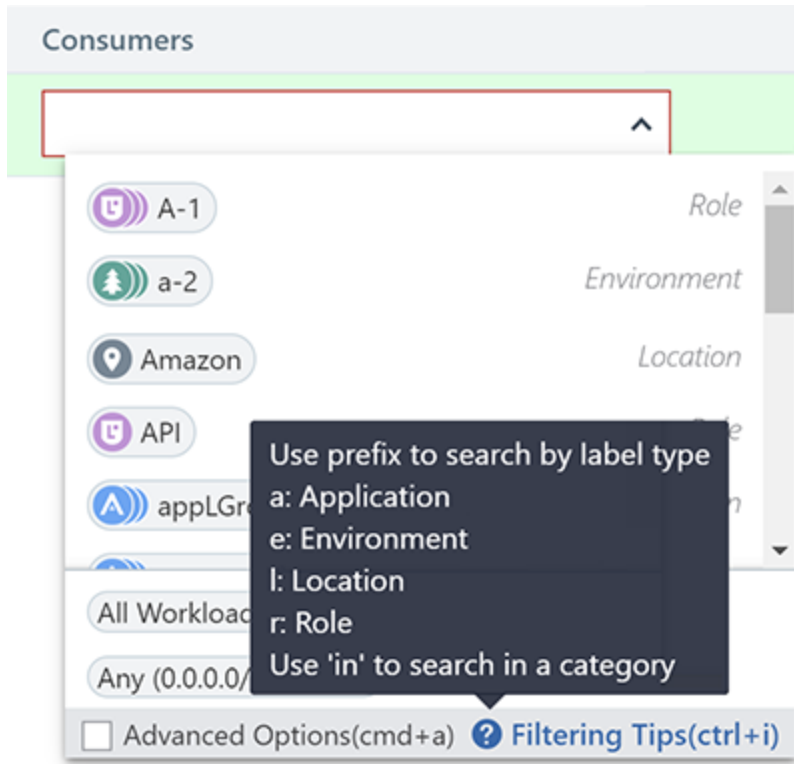


In Advanced Options, you can also select *Use Workload Subnets* and *Container Host* options for Consumers and *Use Workload Subnets* and *Virtual Servers* for providers.

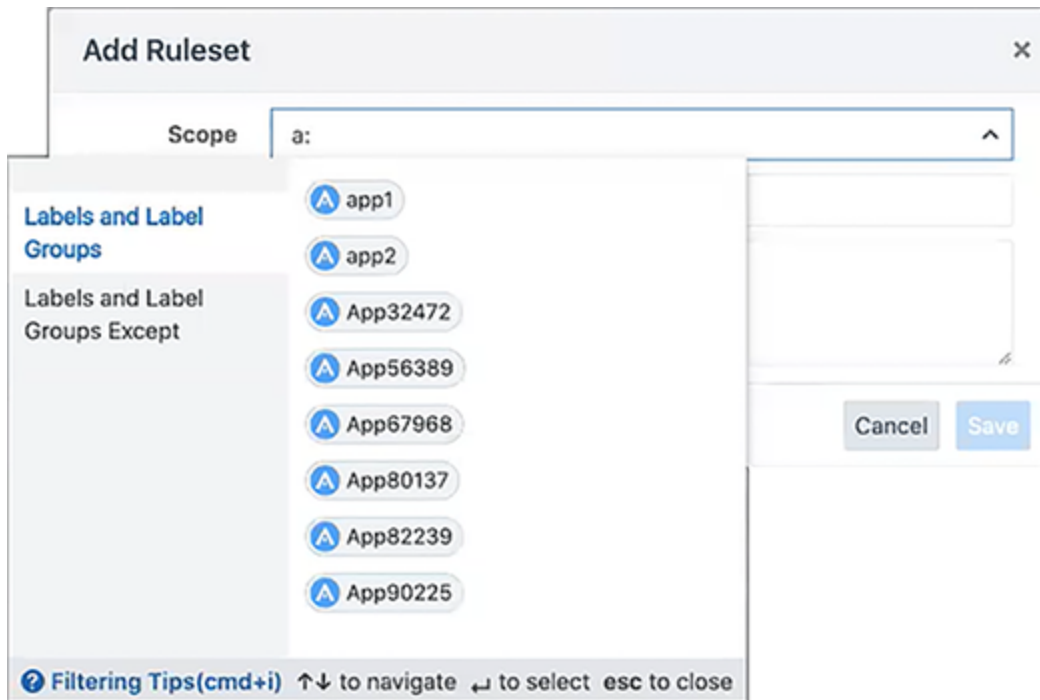
For more information about creating rules, see [Rule Writing](#) in the *Security Policy Guide*

## Enhanced Filtering Support for Labels

It's not uncommon in customer environments to find an Application label and a Role label, for example, with the same name. To provide added usability, the PCE web console in this release includes icons before the label types.



In addition, you can be more explicit in what you want to specify by prefacing what you're typing with an "a," "e," "l," or "r" and a colon before you start typing in names.





## Enforcement Boundaries in the Illumination Map

The Illumination map now displays traffic blocked by Enforcement Boundaries.

In previous releases, you could detect that traffic was blocked in Illumination; however, the map did not distinguish between traffic that was blocked because of full enforcement or because an Enforcement Boundary was in place.

For more information about the Illumination map, see [Illumination](#) in the *Visualization Guide*.

## Single Pane of Glass and Scale

The Single Pane of Glass and Scale feature is a method of writing policy for endpoints so the PCE can scale its support of workloads from 5,000 (1,000 servers and 2,000 endpoints) to 25,000 workloads. In previous releases, Illumio Core supported up to 5,000 VENs for the Single Pane of Glass Feature.

For information about the maximum number of VENs supported in this release, see [Illumio Environment](#) in the *Single Pane of Glass Segmentation Guide*.

## Traffic Flow Query Report

You can generate, schedule, and email reports which are based off saved and recent filters from Explorer for reporting. The report can be downloaded as a CSV file.

For more information, see [VEN Logging](#) in the *VEN Administration Guide*.

## Configurable Time for Heartbeat Warning Events

You can change the 15-minute threshold for the time the VEN goes without a heartbeat and goes into the Warning state.

For more information, see [VEN-to-PCE Communication](#) in the *VEN Administration Guide*.

## VEN Firewall Script Logging

Before this release, logging scripts did not log much information which resulted in unnecessary time to debug environmental issues. In this release, the Illumio scripts log all errors and other key information into `platform.log`. This will reduce the amount of time it takes Illumio to debug issues.

For more information, see [VEN Logging](#) in the *VEN Administration Guide*.

## PCE Platform Enhancements

The following enhancements were added to existing features in Illumio Core 22.2.0.

## Disable and Enable Enforcement Boundaries

In the Enforcement Boundaries list page and the Enforcement Boundary detail page, Enable and Disable buttons have been added. You can enable or disable one or more enforcement boundary rules by selecting them on these pages and clicking the button.

## Illumio Core REST API in 22.2.0

The Illumio Core REST API v2 has changed in 22.2.0 in the following ways.

See the *REST API Developer Guide* for more information.

### New Public APIs

#### New Schema to Workload Notifications

Customers asked to be able to control when they get alerted about missing agents, as well as to have this control be separate from the policy offline timer. They might have a relatively high offline timer but a short warning threshold.

This change allows the customers to set explicit thresholds when they want a warning sent as well as its severity.

- `settings_workload_notifications.schema.json`: This new schema has additional properties: `info` and `error`.

Here is the new schema part that defines warning and error:

```
[ "end_user_private_perm" ]
  },
  "warning": {
    "description": "Workload disconnect warning timeout",
    "type": "integer",
    "minimum": -1,
    "maximum": 2147483647
  },
  "error": {
    "description": "Workload disconnect error timeout",
    "type": "integer",
    "minimum": -1,
    "maximum": 2147483647,
    "expose_to": [ "end_user_private_perm" ]
```

## Changed Public APIs

### SAML Configuration Changes

#### GET /api/v2/authentication\_settings\_saml\_config

Changes to this API apply to two properties, where `issuer_url` was deleted and replaced with the `issuer` property.

```
"properties": {
  "issuer": {
    "description": "The URL for the Illumio login server.
    Some identity providers might need this to establish the
    identity of the service provider requesting authentication.",
    "type": "string"
```

The two properties have the same meaning.

### Reports Changes

The APIs for the endpoints

- /api/v2/orgs/:xorg\_id/report\_schedules
- /api/v2/orgs/:xorg\_id/reports

have been changed for saved query explorer reports as follows:

#### GET /api/v2/report\_schedules

This API has two new properties:

- `scheduled_at`: which provides the timestamp to return the scheduled time.
- `send_by_email`: which defines whether to send the report via email.

Here are the two new properties:

```
{
  "properties": {
    "scheduled_at": {
      "description": "Timestamp in UTC for report generation",
```

```
    "type": "string",
    "format": "date-time"
  },
  "send_by_email": {
    "description": "Flag for whether to send user report by email",
    "type": "boolean"
  }
}
```

## POST /api/v2/report\_schedules

This API has three new properties:

- `send_by_email`: defines whether to use email)
- `cheduled_at`: timestamp for report generation at a specific time
- `report_generation_frequency`: in addition to daily, weekly, monthly, and quarterly reports, you can schedule to receive the report only once.

Here are the new properties:

```
properties": {
  "send_by_email": {
    "description": "Flag for whether to send user report by email",
    "type": "boolean"
  },
  "scheduled_at": {
    "description": "Timestamp in UTC for report generation",
    "type": "string",
    "format": "date-time"
  },
  "report_generation_frequency": {
    "enum": [
      .....
      "once"
    ]
  }
}
```

## GET /api/v2/reports

and

## POST /api/v2/reports

These two APIs have a new property `send_by_email`, which defines whether to use email for sending reports.

Here is the new property:

```
{
  "properties": {
    "send_by_email": {
      "description": "Flag for whether to send
user report by email",
      "type": "boolean"
    }
  }
}
```

## Security Policy Changes

### Enable or Disable Enforcement Boundaries

Security policy APIs have an additional property that enables or disables updating of a request executed against the specific enforcement boundary object. These changes provide an ability to enable/disable an enforcement boundary rule, which is used for troubleshooting and to add a baseline capability for pre-packaged boundary rules.

The following schema files are updated by adding a description for the new enabled boolean field.

- `/api/v2/orgs/:xorg_id/sec_policy/:version/enforcement_boundaries`
- `/api/v2/orgs/:xorg_id/sec_policy/:version/enforcement_boundaries/:id`

The only change is the additional enabled field in the response.

## POST /api/v2/orgs/:xorg\_id/sec\_policy/:version/enforcement\_boundaries

The optional enabled boolean field can be provided in the payload. If it is not provided, the newly created enforcement boundary object is enabled by default.

## PUT /api/v2/orgs/:xorg\_id/sec\_policy/:version/enforcement\_boundaries/:id

A single change to provide the optional boolean value for the enabled field in the payload is: "enabled": true

The new property enabled looks as follows:

```
{
  "properties": {
    "enabled": {
      "description": "Enabled flag",
      "type": "boolean"
    }
  }
}
```

## Settings Changes

### settings\_get.schema.json

### settings\_put.schema.json

These APIs have been changed so that a new property `advanced_ruleset_display` was added, which can display rulesets in advanced mode.

```
{
  "properties": {
    "advanced_ruleset_display": {
      "description": "When true, the UI will display rulesets
in advanced mode. This means that scopes will be displayed
for any unscoped rulesets, including newly added rulesets.",
```

```

        "type": "boolean",
        "default": true
      }
    }
  }
}

```

### settings\_workloads\_get.schema.json

### settings\_workloads\_put.schema.json

These APIs have been changed so that a new property `workload_disconnected_notification_seconds` was added:

```

{
  "properties": {
    "workload_disconnected_notification_seconds": {
      "$ref": "settings_workload_notifications.schema.json"
    }
  }
}

```

## Other Changed APIs

### slbs\_get.schema.json

A new property `status` was added, which describes the SLB status that can be error, pending connection, or active.

The SLB `get_collection` API can be filtered by the following:

- `name`
- `description`
- `has_virtual_server`
- `status`: this is a new property that can be active, pending, or error.

For the HA pair case, if either one device is in error, then the SLB has the status error. If neither device is in error and one device is pending, the SLB has the status pending. The SLB has the status active if neither device is in error or pending connection state.

- device type - this is a dynamic list of values (requires facet API)
- number of devices

```
{
  "properties": {
    "status": {
      "description": "Status of the SLB: error, pending
connection, or active. In an HA pair, the status will be
pending connection or error if either device is pending
connection or error.",
      "type": "string"
    }
  }
}
```

### resource\_canonical\_representations.schema.json

Three new properties have been added to describe LOG\_INFO level notification, LOG\_WARNING level notification, and LOG\_ERR level notification for workloads going offline.

When a VEN does not contact the PCE within a set time interval, it is marked as being offline. Previously, before that happened, a notification was created when the VEN was AWOL (missing) for 25% of the offline time.

These three new optional settings generate different levels of notifications at different intervals so the user can customize the timing and levels of notification.

```
{
  "oneOf": [
    .....
    {
      "workload_setting": {
        "type": "object",
        "properties": {
```



```

        "workload_disconnected_timeout_seconds":
    {
        "description": "Disconnected timeout in seconds",
        "type": "integer"
    },
        "workload_goodbye_timeout_seconds": {
        "description": "Goodbye timeout in seconds",
        type": "integer"
    },
        "workload_disconnect_notification_info": {
        "description": "Threshold in seconds for LOG_INFO
    level notification of a workload going offline",
        "type": "integer"
    },
        "workload_disconnect_notification_warning": {
        "description": "Threshold in seconds for LOG_WARNING
    level notification of a workload going offline",
        "type": "integer"
    },
        "workload_disconnect_notification_error": {
        "description": "Threshold in seconds for LOG_ERR
    level notification of a workload going offline",
        "type": "integer"
    }
    }
}
.....
    
```