Tanium™ Reputation User Guide

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Reputation overview

With Reputation, you can build a repository of reputation data from various sources, such as Palo Alto WildFire, Recorded Future, ReversingLabs, and VirusTotal. These sources determine threat levels for file hashes. Other Tanium products, such as Tanium™ Threat Response, can use this data to give an indication of potentially malicious files. You can also send reputation data to supported Tanium™ Connect destinations or import reputation data to Tanium™ Trends boards.

The reputation database is a cache that consists of *reputation items*. When configured, reputation items are scanned by a *reputation source*. A reputation source is a service that determines whether a reputation item is considered to be malicious, non-malicious, suspicious, or has an unknown status.

Reputation item life cycle

A reputation item remains in the database as long as the Tanium processes are accessing the status of the item. The status of the reputation items is kept up to date based on the settings for the reputation service and provider.

Reputation items are added to the reputation database

As long as the maximum database size is not exceeded, reputation items are added to the reputation database in the following scenarios:

- When a Tanium process, such as Threat Response, identifies a new hash.
- When a saved question connection source sends a list of hashes to Connect.

When the reputation items are first added, it is unknown whether they are malicious. The reputation item state most likely starts out as unknown or pending.

Reputation items are scanned

How long it takes for an initial scan of the items depends on your configured reputation service settings.

If you configure multiple reputation service providers, a reputation item is created for each reputation source. For example, for a single hash, three separate reputation items are created for WildFire, ReversingLabs, and VirusTotal.

WILDFIRE

All reputation items are sent to WildFire as they are received.

RECORDED FUTURE

The settings for Recorded Future determine how many hashes to send at a time, and the maximum API calls per minute/day. For more information about these settings, see Configure Recorded Future reputation source on page 22.

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REVERSINGLABS A1000

The settings for ReversingLabs A1000 determine how many hashes to send at a time, and the maximum API calls per minute/day. For more information about these settings, see Configure ReversingLabs A1000 reputation source on page 25.

REVERSINGLABS TITANIUMCLOUD

The settings for ReversingLabs TitaniumCloud determine how many hashes to send at a time, and the maximum API calls per minute/day. For more information about these settings, see Configure ReversingLabs TitaniumCloud reputation source on page 27.

VIRUSTOTAL

The settings for VirusTotal determine how many hashes to send at a time, and the maximum API calls per minute/day. For more information about these settings, see Configure VirusTotal reputation source on page 31.

Reputation items are rescanned

Reputations might change for reputation items over time. When Reputation rescans an item, it is checked against the reputation sources again. For more information on how to configure the rescan properties, see Configure Reputation service settings on page 17.

The **Rescan Item Interval** setting is global for all reputation provider types. The value determines how often Reputation rescans items. For example, if this value is set to 1 day, all of the items in the database get checked every day.

WILDFIRE

Reputation scans Items according to the **Rescan Item Interval** value.

RECORDED FUTURE

You can configure Reputation to rescan items when Recorded Future gets new reputations for hashes.

Reputation compares the **Maximum Age of New Items** setting with the First Seen attribute in Recorded Future. The First Seen attribute is the date when Recorded Future first records any instance of that hash, from any Recorded Future customer. If the item is less than the configured maximum, Reputation considers the item as new and rescans the item. The **Rescan New Item Interval** setting determines how often Reputation rescans the new items.

REVERSINGLABS A1000

You can configure Reputation to rescan items when ReversingLabs A1000 gets new reputations for hashes.

Reputation compares the **Maximum Age of New Items** setting with the First Seen attribute in ReversingLabs A1000. The First Seen attribute is the date when ReversingLabs A1000 first records any

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instance of that hash. If the item is less than the configured maximum, Reputation considers the item as new and rescans the item. The **Rescan New Item Interval** setting determines how often Reputation rescans the new items.

REVERSINGLABS TITANIUMCLOUD

You can configure Reputation to rescan items when ReversingLabs TitaniumCloud gets new reputations for hashes.

Reputation compares the **Maximum Age of New Items** setting with the First Seen attribute in ReversingLabs TitaniumCloud. The First Seen attribute is the date when ReversingLabs TitaniumCloud first records any instance of that hash, from any ReversingLabs TitaniumCloud customer. If the item is less than the configured maximum, Reputation considers the item as new and rescans the item. The **Rescan New Item Interval** setting determines how often Reputation rescans the new items.

VIRUSTOTAL

If you have a paid API key for VirusTotal, you can configure Reputation to rescan items when VirusTotal gets new reputations for hashes.

Reputation compares the **Maximum Age of New Items** setting with the First Seen attribute in VirusTotal. The First Seen attribute is the date when VirusTotal first records any instance of that hash, from any VirusTotal customer. If the item is less than the configured maximum, Reputation considers the item as new and rescans the item. The **Rescan New Item Interval** setting determines how often Reputation rescans the new items.

When you configure these settings, be careful to keep the number of API calls within the bounds of your agreement with VirusTotal.

Items are removed from the reputation database

When the number of days in the **Remove Item Interval** value passes, and that item has not been queried by a saved question or other Tanium process to check its status, the item is removed from the database.

A reputation item can be re-added to the database if the hash is found again.

Hash List

The hash list is a list of reputation hashes that are known to be false detections or known to be malicious. You can add or delete specific hashes from the hash list, or you can export and import the entire list.

For more information, see Managing hashes on page 33.

Integration with other Tanium products

Reputation has built in integration with other Tanium products for additional reporting of related data.

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Connect

You can use Tanium Reputation as a connection source or destination in Connect. For more information, see Send data to Connect destinations on page 36 and Exporting connect data on page 36.

Threat Response

You can use configure Tanium Threat Response to search for specific data from Tanium Reputation. For more information, see Tanium Threat Response: Set up the reputation service.

Trends

Reputation features Trends boards that provide data visualization of Reputation concepts.

The **Reputation** board displays how much data is sent to reputation providers, and usage metrics within Reputation. The following sections and panels are in the **Reputation** board:

- Resource Usage
  - Outbound Items
  - Outbound Processing Queue
  - Outbound API Requests
  - Successful Outbound API Requests
  - Failed Outbound API Requests
  - Reputation Database Size
- Service Usage
  - Inbound Items
  - Total Items
  - Purged Items
  - Hash List
  - Hash List Items in Environment

For more information about how to import the Trends boards that are provided by Reputation, see Send data to Trends boards on page 39 and Tanium Trends User Guide: Importing the initial gallery.

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Getting started

Step 1: Install and configure Reputation

Install and configure Tanium Reputation.

For more information, see Installing Reputation on page 16.

Step 2: Enable Reputation sources

Configure and enable Reputation sources.

For more information, see Configuring connect sources on page 20.

Step 3: Manage hashes

Manage hashes. The **Reputations** section of the Reputation **Overview** page shows a list of hashes that are malicious or non-malicious. You can also search for file hashes and add, import, export, or delete reputation data hashes.

For more information, see Managing hashes on page 33.

Step 4: Export data

Export Reputation data.

For more information, see Exporting connect data on page 36.

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Reputation requirements

Review the requirements before you install and use Reputation.

Tanium dependencies

Make sure that your environment meets the following requirements.

Component	Requirement
Tanium™ Core Platform	7.3.314.4250 or later
Tanium™ Client	No client requirements.
Tanium products	If you selected **Install with Recommended Configurations** when you installed Reputation, the Tanium Server automatically installed all your licensed modules at the same time. Otherwise, you must manually install the modules that Reputation requires to function, as described under Tanium Console User Guide: Manage Tanium modules. The following modules are optional, but Reputation requires the specified minimum versions to work with them: • Tanium Connect 5.2.3 or later • Tanium™ Incident Response for hash data • Tanium Threat Response 1.4 or later • Tanium Trends 3.6.323 or later

Tanium™ Module Server

Reputation is installed and runs as a service on the Module Server host computer. The impact on the Module Server is minimal and depends on usage.

> **Note:** The Reputation service is automatically disabled when the disk usage of the Module Server exceeds the value of the **Maximum Disk Capacity** setting. The default value is 85%. For more information on how to configure the Reputation service settings, see Configure Reputation service settings on page 17.

Endpoints

Reputation does not deploy packages to endpoints. For Tanium Client operating system support, see Tanium Client Management User Guide: Client version and host system requirements.

Third-party software

With Reputation, you can integrate with several different kinds of third-party software. If no specific version is listed, there are no version requirements for that software.

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- Palo Alto Networks WildFire
- Recorded Future
- ReversingLabs A1000
- ReversingLabs TitaniumCloud
- VirusTotal

Host and network security requirements

Specific ports and processes are needed to run Reputation.

Ports

The following ports are required for Reputation communication.

Source	Destination	Port	Protocol	Purpose
Module Server	Module Server (loopback)	17455	TCP	Internal purposes; not externally accessible

Best Practice: Configure firewall policies to open ports for Tanium traffic with TCP-based rules instead of application identity-based rules. For example, on a Palo Alto Networks firewall, configure the rules with service objects or service groups instead of application objects or application groups.

Security exclusions

If security software is in use in the environment to monitor and block unknown host system processes, your security administrator must create exclusions to allow the Tanium processes to run without interference. For a list of all security exclusions to define across Tanium, see Tanium Core Platform Deployment Reference Guide: Host system security exclusions.

Reputation security exclusions

Target device	Notes	Process
Module Server		`<Module Server>\services\reputation-service\node.exe`

Internet URLs

If security software is deployed in the environment to monitor and block unknown URLS, your security administrator might need to allow the following URLs.

- recordedfuture.com
- reversinglabs.com
- virustotal.com
- wildfire.paloaltonetworks.com

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User role requirements

The following tables list the role permissions required to use Reputation. For more information about role permissions and associated content sets, see Tanium Core Platform User Guide: Managing RBAC.

Reputation user role permissions

Permission	Reputation Administrator[4]	Reputation Operator[4]	Reputation Service Account[3,4]
Show Reputation[1,2] View the Reputation workbench	✓	✓	✗
Reputation Provider Read Read access to the provider configurations	✓	✓	✗
Reputation Provider Write Write access to the provider configurations	✓	✓	✗
Reputation Read[1] Read access to the Reputation shared service	✓	✓	✗
Reputation Write[1] Write access to the Reputation shared service	✓	✓	✗
Reputation Whitelist Blacklist Read[2, 5] (deprecated) Read access to the Reputation hash list data **Note:** In Reputation 6.0.77 and later, use the Hash List Read permission instead.	✓	✓	✗
Reputation Hash List Read[2] Read access to the Reputation hash list data	✓	✓	✗

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Reputation user role permissions (continued)

Permission	Reputation Administrator[4]	Reputation Operator[4]	Reputation Service Account[3,4]
Reputation Whitelist Blacklist Write[2, 5] (deprecated) Write access to the Reputation hash list data **Note:** In Reputation 6.0.77 and later, use the Hash List Write permission instead.	✓	✓	✗
Reputation Hash List Write[2] Write access to the Reputation hash list data	✓	✓	✗
Reputation Administrator Administrative access to the Reputation shared service	✓	✗	✗
Reputation Service Account Access to module service accounts to read and write data	✗	✗	✓

[1] If you need access to only the **Malicious** tab in the **Reputations** section of the Reputation **Overview** page, you can add the **Show Reputation** and **Reputation Read** or **Reputation Write** permissions to your user.

[2] If you need access to only the **Reputations** section of the Reputation **Overview** page, you can add the **Show Reputation**, **Reputation Hash List Read**, and either the **Reputation Read** or **Reputation Write** permissions to your user.

[3]This role provides module permissions for Tanium Connect. You can view which Connect permissions are granted to this role in the Tanium Console. For more information, see Tanium Connect User Guide: User role requirements.

[4] This role provides module permissions for Tanium Trends. You can view which Trends permissions are granted to this role in the Tanium Console. For more information, see Tanium Trends User Guide: User role requirements.

[5] The Reputation Whitelist Blacklist Read and Reputation Whitelist Blacklist Write permissions are deprecated. When you upgrade to Version 6.0.77 or later, default roles (Reputation Administrator and Reputation Operator) automatically update to use the Reputation Hash List Read and Reputation Hash List Write permissions. You must manually update any custom roles that use the deprecated permissions.

Provided Reputation Advanced user role permissions

Permission	Content Set for Permission	Reputation Administrator	Reputation Operator	Reputation Service Account
Execute Plugin	Reputation	✓	✓	✓
Execute Plugin	Connect	✗	✗	✓
Execute Plugin	Trends	✓	✓	✓

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For more information and descriptions of content sets and permissions, see Tanium Core Platform User Guide: Users and user groups.

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Installing Reputation

Use the **Tanium Solutions** page to install Reputation and choose either automatic or manual configuration:

- **Automatic configuration with default settings** (Tanium Core Platform 7.4.2 or later only): Reputation is installed with any required dependencies and other selected products. After installation, the Tanium Server automatically configures the recommended default settings. This option is the best practice for most deployments. For more information about the automatic configuration for Reputation, see Import and configure Reputation with default settings on page 16.
- **Manual configuration with custom settings**: After installing Reputation, you must manually configure required settings. Select this option only if Reputation requires settings that differ from the recommended default settings. For more information, see Import and configure Reputation with custom settings on page 16.

Before you begin

- Read the release notes.
- Review the Reputation requirements on page 11.
- If you have Tanium Connect 4.10 or earlier installed, you must first either uninstall Connect or upgrade to Connect 4.11 or later. For more information, see Tanium Connect User Guide: Uninstall Connect or Tanium Connect User Guide: Upgrade Connect.

Import and configure Reputation with default settings

When you import Reputation with automatic configuration, the Reputation service account is set to the account that you used to import the module.

To import Reputation and configure default settings, be sure to select the **Apply Tanium recommended configurations** check box while performing the steps in Tanium Console User Guide: Manage Tanium modules. After the import, verify that the correct version is installed: see Verify Reputation version on page 18.

Import and configure Reputation with custom settings

To import Reputation without automatically configuring default settings, be sure to clear the **Apply Tanium recommended configurations** check box while performing the steps in Tanium Console User Guide: Manage Tanium modules. After the import, verify that the correct version is installed: see Verify Reputation version on page 18.

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Configure service account

The service account is a user that runs several background processes for Reputation. This user requires the following roles and access:

- **Reputation Service Account** role
- (Optional) **Connect User** role to send Reputation data to Tanium Connect

For more information about Reputation permissions, see User role requirements on page 13.

1. From the Main menu, go to **Administration > Shared Services > Reputation** to open the Reputation **Overview** page.
2. Click Settings and open the **Service Account** tab.
3. Update the service account settings and click **Save**.

Configure Reputation service settings

Reputation service settings determine the contents of the reputation database. These settings determine how often reputation items are scanned in the reputation source, how long to consider items as new, and how long to keep items in the database if their reputation status has not been referenced. For more information about these settings and how they affect the reputation items, see Reputation item life cycle on

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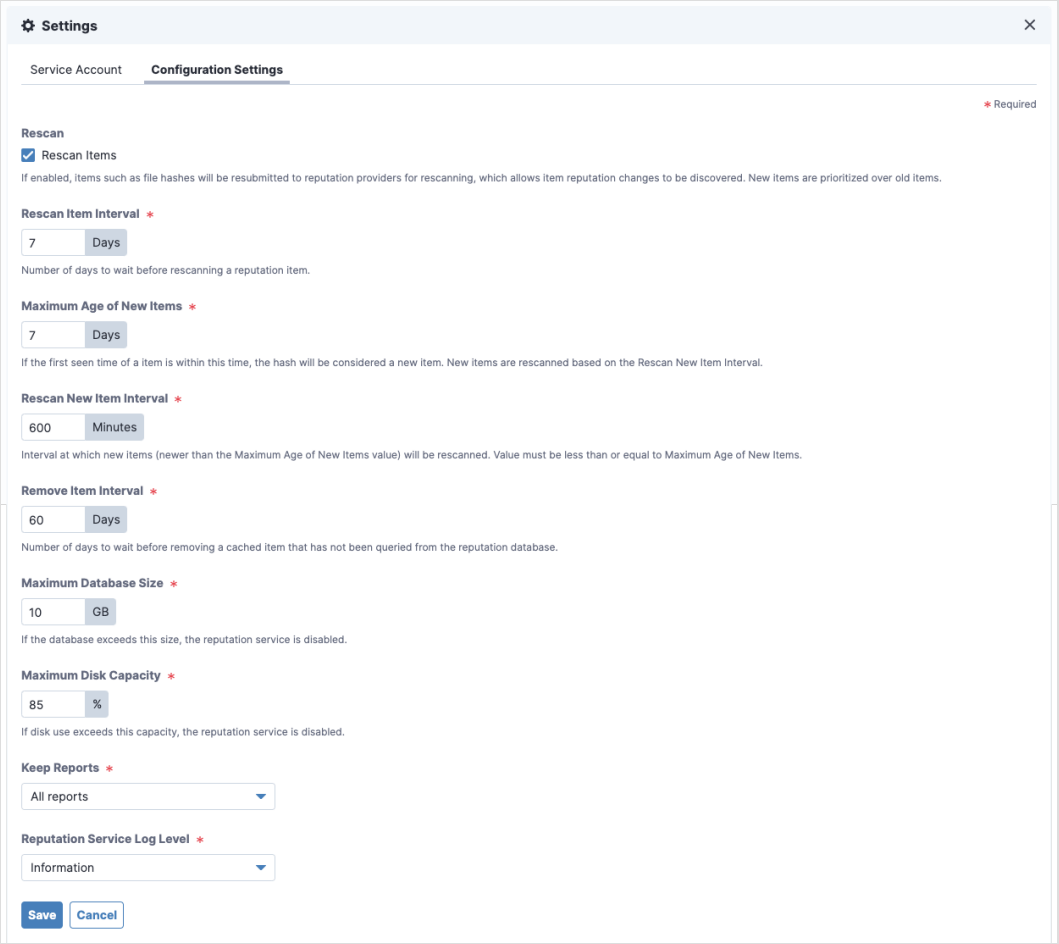
page 6.



To update these settings, from the Reputation **Overview** page, click Settings, and then click **Configuration Settings**.

The **Keep Reports** setting determines whether you want the full reports from the reputation source to be kept in the reputation database. You can choose to keep all reports, or only malicious and suspicious reports. Selecting only malicious and suspicious reports saves space in the database. If you are using VirusTotal as a connection source, use the keep all reports option to get the enhanced reporting information.

Upgrade Reputation

For the steps to upgrade Reputation, see Tanium Console User Guide: Manage Tanium modules. After the upgrade, verify that the correct version is installed: see Verify Reputation version on page 18.

Verify Reputation version

After you import or upgrade Reputation, verify that the correct version is installed:

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1. Refresh your browser.
2. From the Main menu, go to **Administration > Shared Services > Reputation** to open the Reputation **Overview** page.
3. To display version information, click Info .

What to do next

See Getting started on page 10 for more information about using Reputation.

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Configuring connect sources

Reputation is a service that queries reputation providers for threat intelligence about given file hashes. You can configure one or more reputation sources to build a repository of reputation data.

View reputation scan status

The **Providers** section of the Reputation **Overview** page shows the total number of reputation items, and the following information about each reputation source:

- **Items**: total number of reputation items on this reputation source
- **New**: reputation items that still need to be scanned on this reputation source
- **Processed**: reputation items scanned on this reputation source
- **Rescanning**: reputation items that are rescanning on this reputation source
- **Malicious Items**: malicious reputation items on this reputation source
- **Malicious %**: percentage of malicious items out of total reputation items

For configured providers, the **Actions** column contains an **Enable** or **Disable** button, depending on the current state of the provider.

Configure Palo Alto Networks WildFire reputation source

You can use Palo Alto Networks firewall security policies to capture suspicious files and forward them to the WildFire system for threat analysis. If the file is malware, the status is reported back to the firewall.

After the WildFire analysis is completed, the reputation service can query the results and update the reputation data.

Prerequisites

- A subscription to Cloud WildFire (wildfire.paloaltonetworks.com) or a configured WF-500 WildFire appliance.
- Palo Alto Networks Firewall with or without Panorama.

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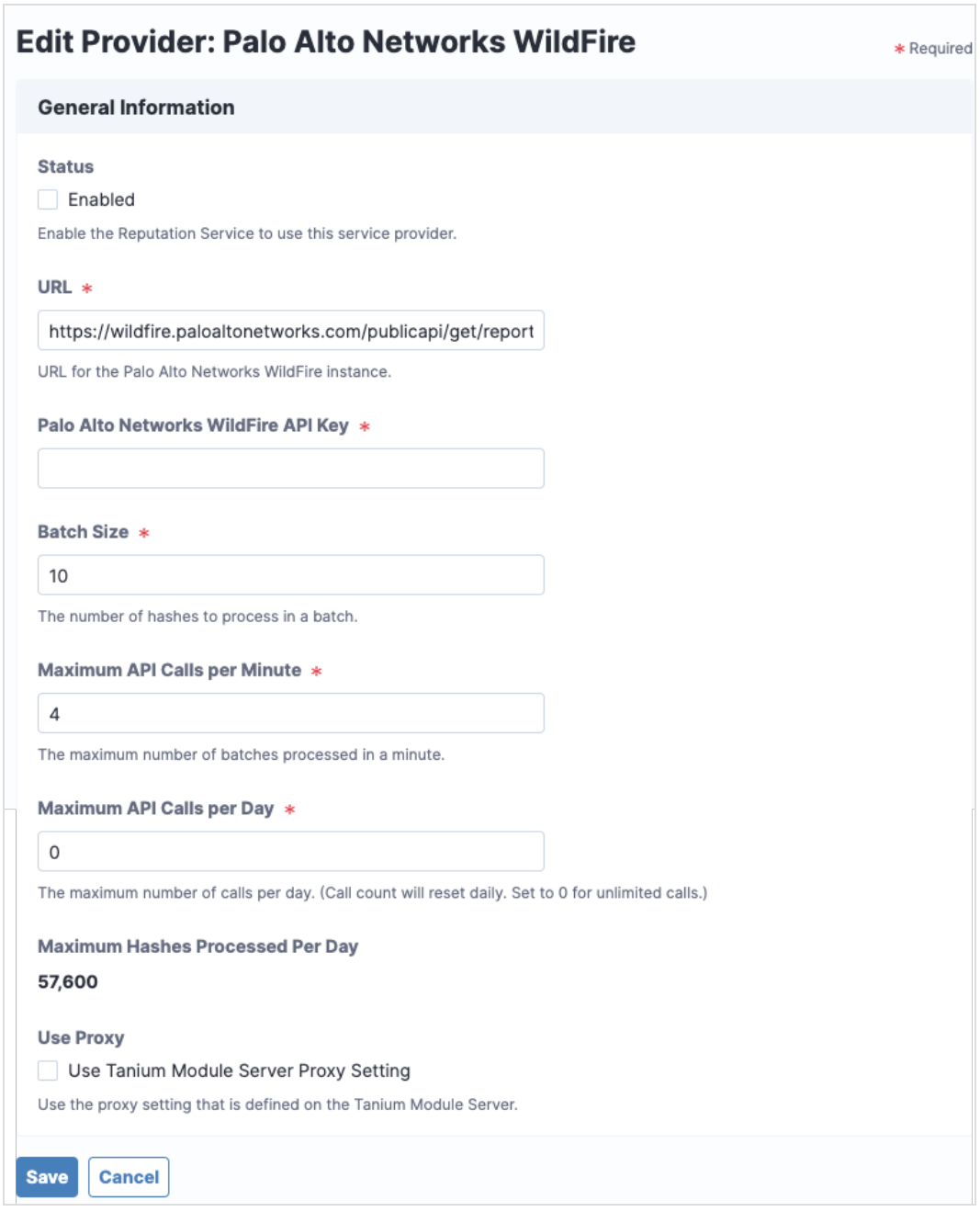
Configure settings

1. In the **Providers** section, click Configure Provider in the Palo Alto Networks WildFire row.



2. Select **Enabled** to enable the reputation source.
3. Specify the settings for Palo Alto Networks WildFire, including the URL for your WildFire instance and the API key.

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4. Adjust the settings for **Batch Size**, **Maximum API Calls Per Minute**, and **Maximum API Calls Per Day** according to your agreement with Palo Alto Networks. The **Maximum Hashes Processed Per Day** value is automatically calculated based on these configured settings.
5. Select **Use Tanium Module Server Proxy Setting** to use the proxy setting defined on the Tanium Module Server.
6. Click **Save**.

Configure Recorded Future reputation source

Recorded Future is a cloud-based reputation service provider. The reputation service sends reputation items to the Recorded Future API and returns the results to the reputation database.

Prerequisites

You must already have a Recorded Future API token. If you have not already registered for Recorded Future access, contact their sales team at recordedfuture.com.

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Configure settings

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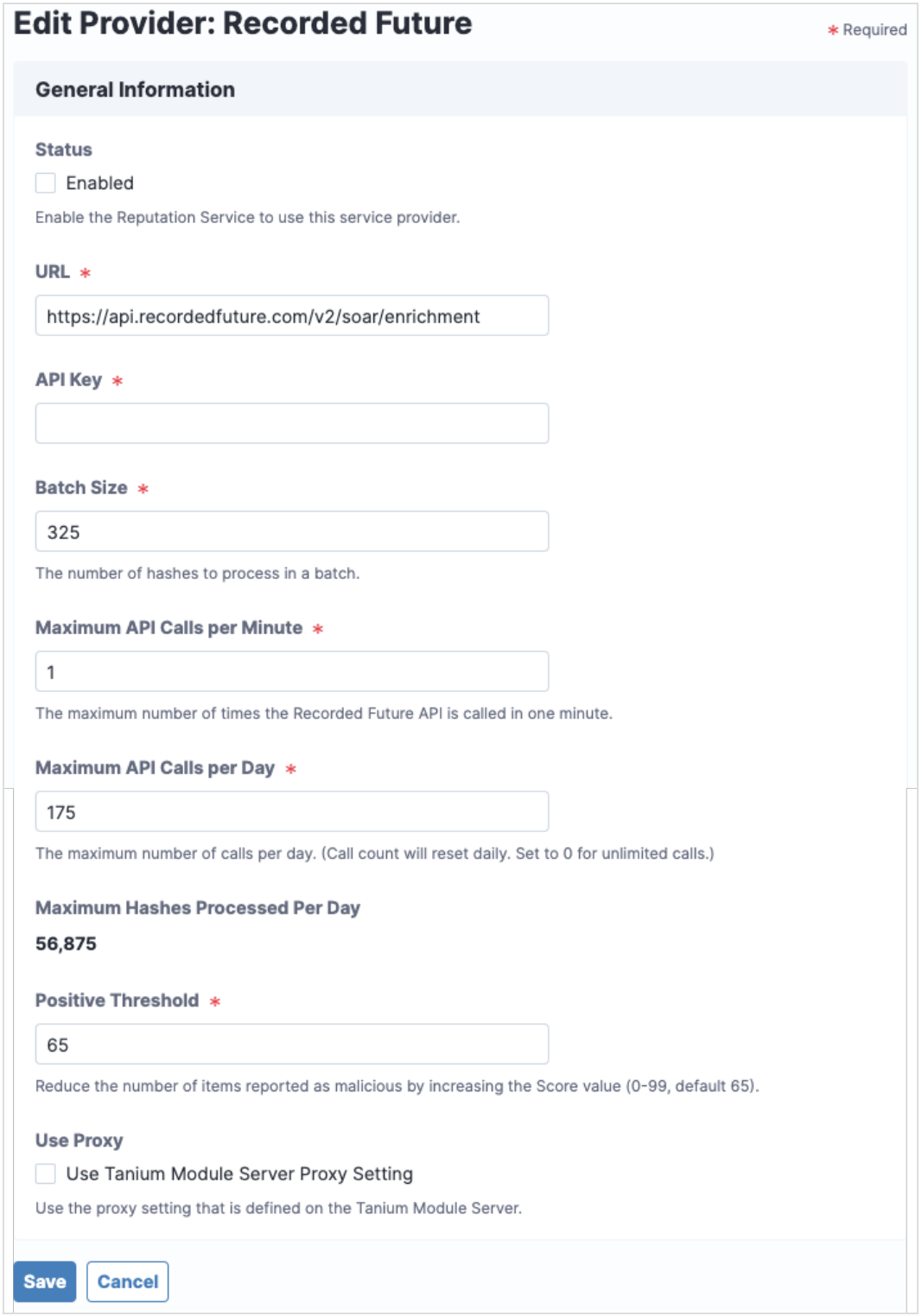
1. In the **Providers** section, click Configure Provider in the Recorded Future row.



2. Select **Enabled** to enable the reputation source.

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3. Specify the settings for Recorded Future, including the URL and API key.
4. Adjust the settings for **Batch Size**, **Maximum API Calls Per Minute**, and **Maximum API Calls Per Day** according to your agreement with Recorded Future. The **Maximum Hashes Processed Per Day** value is automatically calculated based on these configured settings.
5. Adjust the **Positive Threshold**, which is the risk score as determined by Recorded Future. The default value is `65`, which means that any hash that has a Recorded Future risk score of 65 or higher is considered malicious by Reputation.

   Recorded Future risk scores are determined as follows:
   - Very Malicious: risk score of 90-99
   - Malicious: risk score of 65-89
   - Suspicious: risk score of 25-64
   - Unusual: risk score of 5-24
   - No current evidence of risk: risk score of zero

   > **Tip:** Setting **Positive Threshold** to `0` results in the maximum number of reports for malicious items. Setting **Threat Level** to `99` results in the fewest number of reports for malicious items.
6. Select **Use Tanium Module Server Proxy Setting** to use the proxy setting defined on the Tanium Module Server.
7. Click **Save**.

Configure ReversingLabs A1000 reputation source

ReversingLabs is an application that companies can install locally to analyze files and provide reputation results through API requests or a web interface.

Prerequisites

You must already have a ReversingLabs API token. If you have not already registered for ReversingLabs access, contact their sales team at reversinglabs.com.

To get an API key:

1. Sign in to ReversingLabs.
2. Click the User Profile icon.
3. Select **Administration**.
4. Click **Tokens**.

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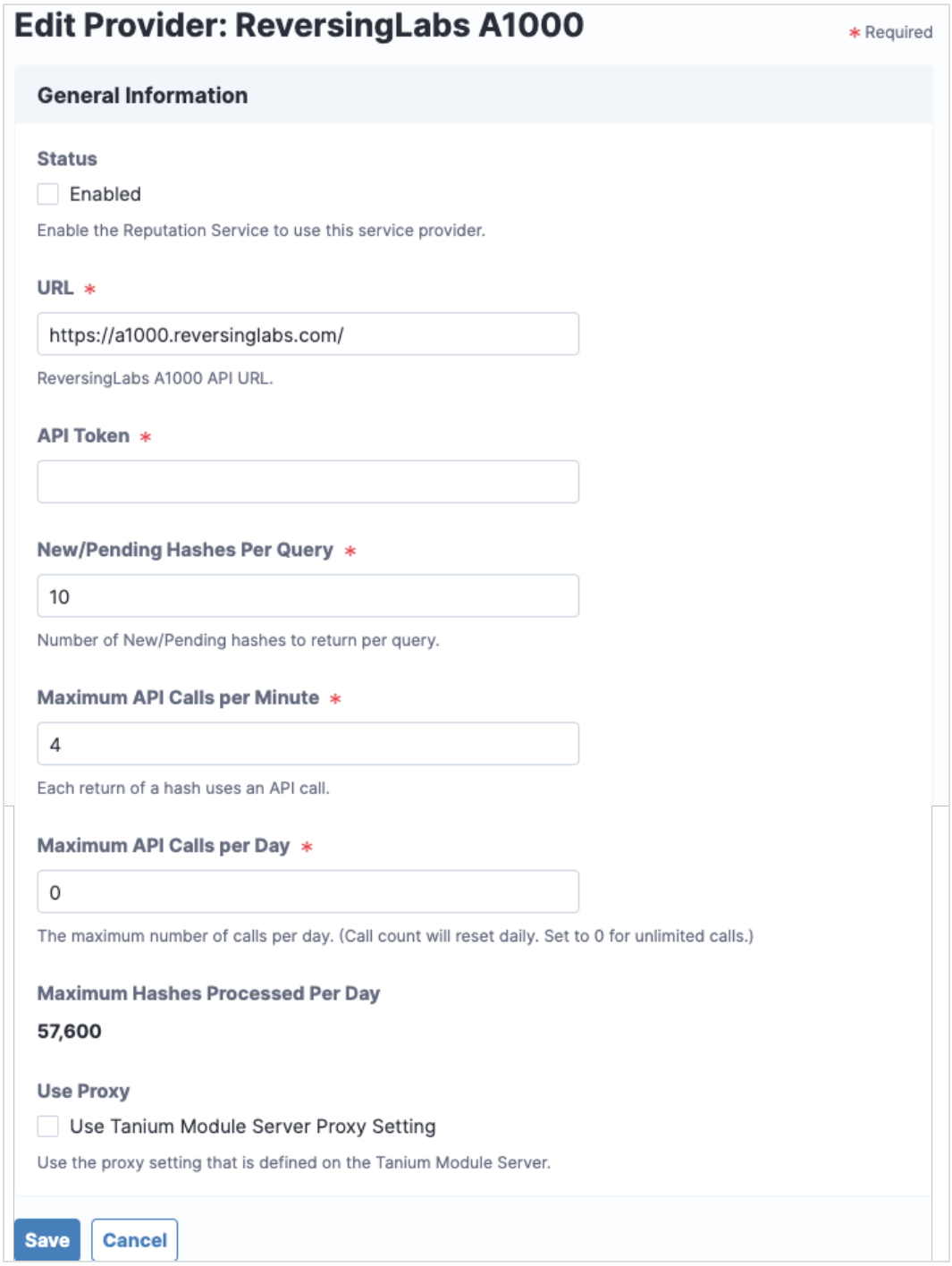
Configure settings

1. In the **Providers** section, click Configure Provider in the ReversingLabs A1000 row.



2. Select **Enabled** to enable the reputation source.

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3. Specify the settings for ReversingLabs A1000, including the **URL** for your API access and your **API Token**.
4. Adjust the settings for **New/Pending Hashes Per Query**, **Maximum API Calls Per Minute**, and **Maximum API Calls Per Day** according to your API agreement with ReversingLabs and your network requirements. The **Maximum Hashes Processed Per Day** value is automatically calculated based on these configured settings.
5. Select **Use Tanium Module Server Proxy Setting** to use the proxy setting defined on the Tanium Module Server.
6. Click **Save**.

Configure ReversingLabs TitaniumCloud reputation source

ReversingLabs TitaniumCloud is an online service that analyzes files, hashes, and URLs to identify viruses, worms, trojans, and other kinds of malicious content that is detected by anti-virus software and website scanners. The reputation service sends reputation items to the ReversingLabs API and returns the results to the reputation database.

Prerequisites

You must already have a ReversingLabs TitaniumCloud account. If you have not already registered for ReversingLabs TitaniumCloud access, contact their sales team at reversinglabs.com.

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Configure settings

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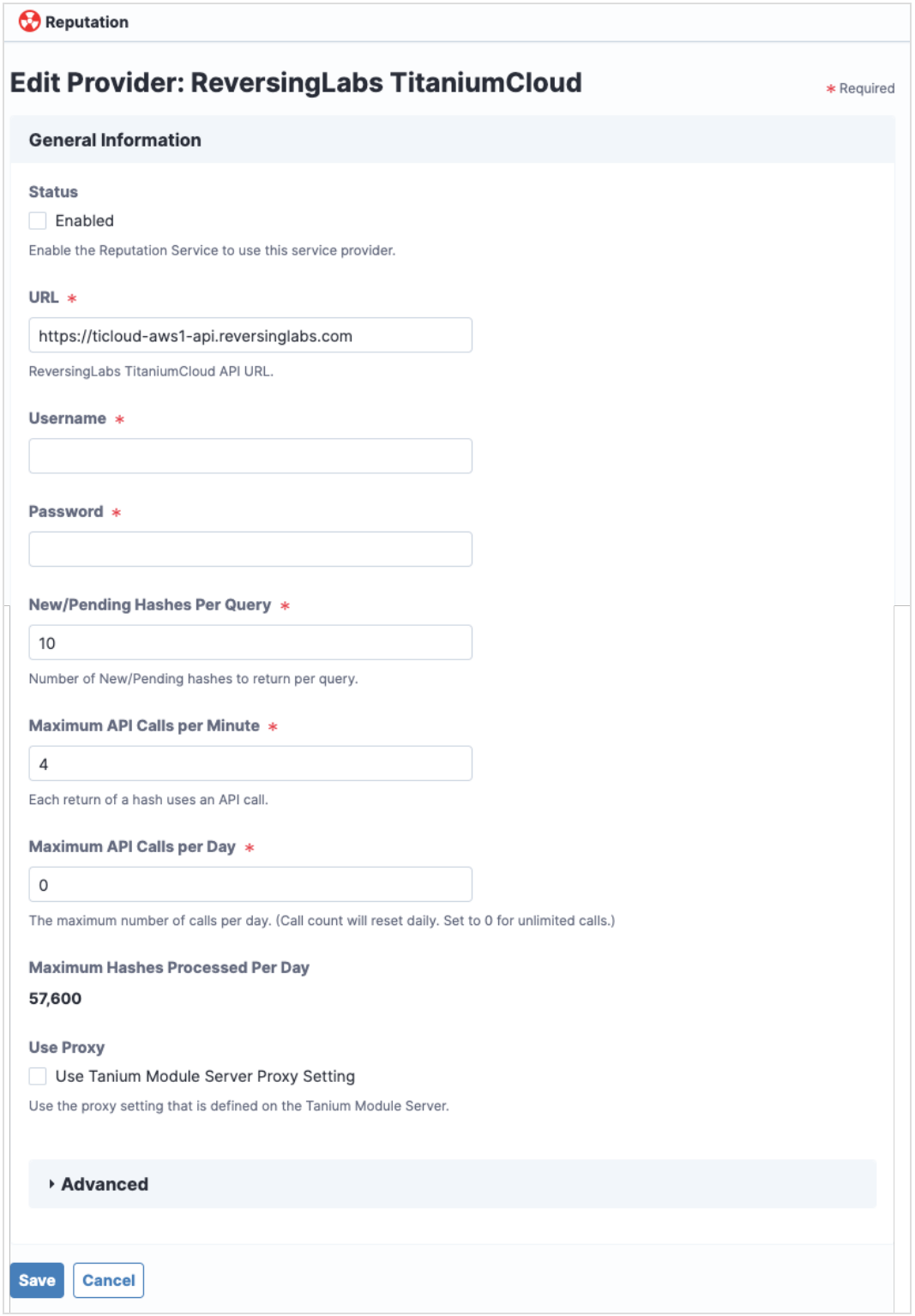
1. In the **Providers** section, click Configure Provider in the ReversingLabs TitaniumCloud row.



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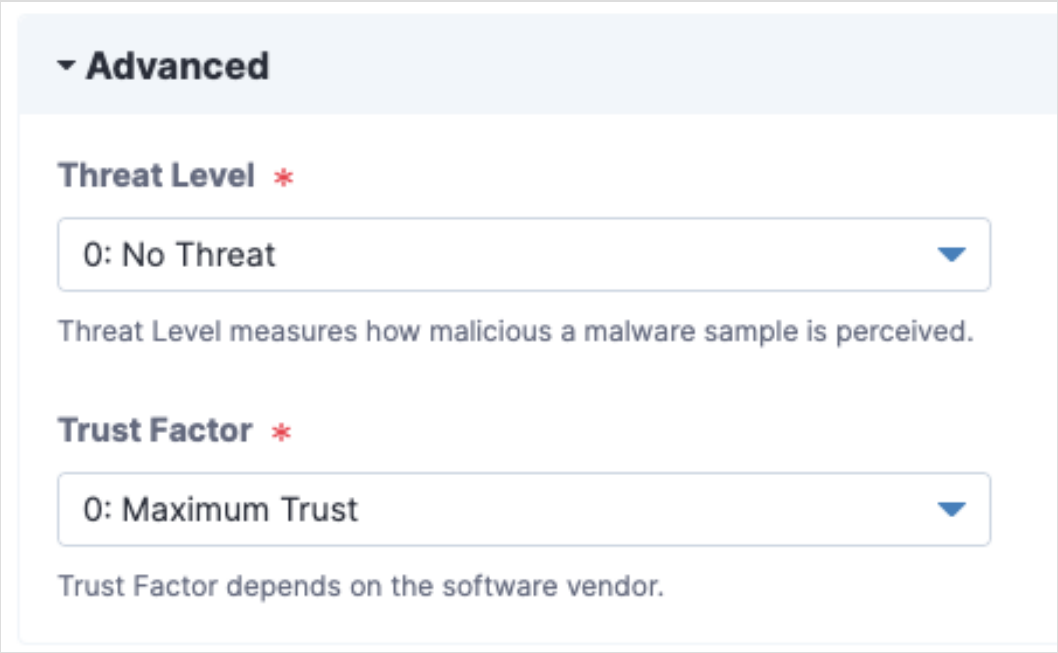
2. Select **Enabled** to enable the reputation source.
3. Add your ReversingLabs TitaniumCloud credentials: the **URL** for your API access, your **Username**, and your **Password**.
4. Adjust the settings for **New/Pending Hashes Per Query**, **Maximum API Calls Per Minute**, and **Maximum API Calls Per Day** according to your API agreement with ReversingLabs and your network requirements. The **Maximum Hashes Processed Per Day** value is automatically calculated based on these configured settings.
5. Select **Use Tanium Module Server Proxy Setting** to use the proxy setting defined on the Tanium Module Server.
6. To reduce the number of items reported as malicious, expand **Advanced** and adjust the settings for **Threat Level** and **Trust Factor**.



Tip: Setting **Threat Level** to `0` and **Trust Factor** to `0` results in the maximum number of reports for malicious items. Setting **Threat Level** to `5` and **Trust Factor** to `5` results in the fewest number of reports for malicious items.

7. Click **Save**.

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Configure VirusTotal reputation source

VirusTotal is an online service that analyzes files, hashes, and URLs to identify viruses, worms, trojans, and other kinds of malicious content that is detected by antivirus engines and website scanners. The reputation service sends reputation items to the VirusTotal API and returns the results to the reputation database.

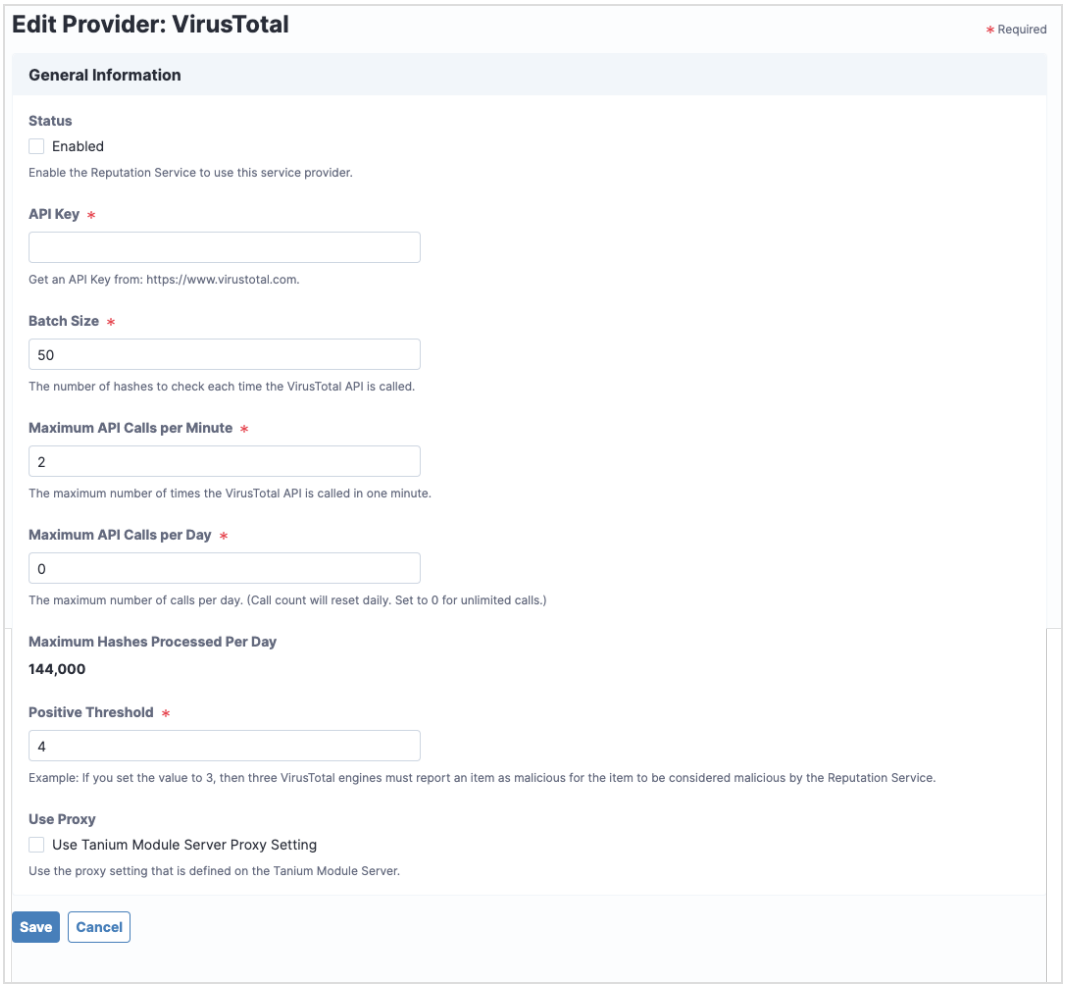
Prerequisites

Register for a VirusTotal API key at virustotal.com. VirusTotal makes their catalog available for query with an API key. Refer to the VirusTotal API use policy to determine which type of API key is appropriate.

To get the API key on the VirusTotal website, sign in and click ***your_user_image*** **> Settings > API Key**.

Configure settings

1. In the **Providers** section, click Configure Provider in the VirusTotal row.



2. Select **Enabled** to enable the reputation source.

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3. Specify settings for VirusTotal, including the API key.
4. Adjust the settings for **Batch Size**, **Maximum API Calls Per Minute**, and **Maximum API Calls Per Day** according to your agreement with VirusTotal. The **Maximum Hashes Processed Per Day** value is automatically calculated based on these configured settings.
5. Adjust the **Positive Threshold**, which is a number of positive reports that must be on the hash to be considered a potential threat or malware.

   > **Tip:** The likelihood that VirusTotal reports might include false positive indicators is higher when the value is set lower.

   Example: If you set the value to `3`, then three VirusTotal engines must report an item as malicious for the item to be sent to Connect.

   Setting the value to `0` disables the threshold. If any VirusTotal engine reports that item as malicious, the item is sent to Reputation.

   Reputation results for VirusTotal are determined as follows:
   - Malicious: if the number of positives is greater than the threshold
   - Suspicious: if the number of positives is greater than zero, but less than the threshold
   - Non-malicious: if the number of positives is zero
   - Unknown: if there is no data
6. Select **Use Tanium Module Server Proxy Setting** to use the proxy setting defined on the Tanium Module Server.
7. Click **Save**.

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Managing hashes

The **Reputations** section of the Reputation **Overview** page shows a list of hashes that are malicious or non-malicious. You can also search for file hashes and add, import, export, or delete reputation data hashes.

Add data hashes

1. In the **Reputations** section, click **Hash List**.
2. Click **Add**.
3. To add hashes that are known to be malicious, select **Malicious**, enter the hash, and click **Save**.
4. To add hashes that are known to be false detections, select **Non-Malicious**, enter the hash, and click **Save**.

> **Note:** The **Hashes** field is limited to 1,000 hashes. To add more than 1,000 hashes at one time, use a file import. For more information, see Import hashes.

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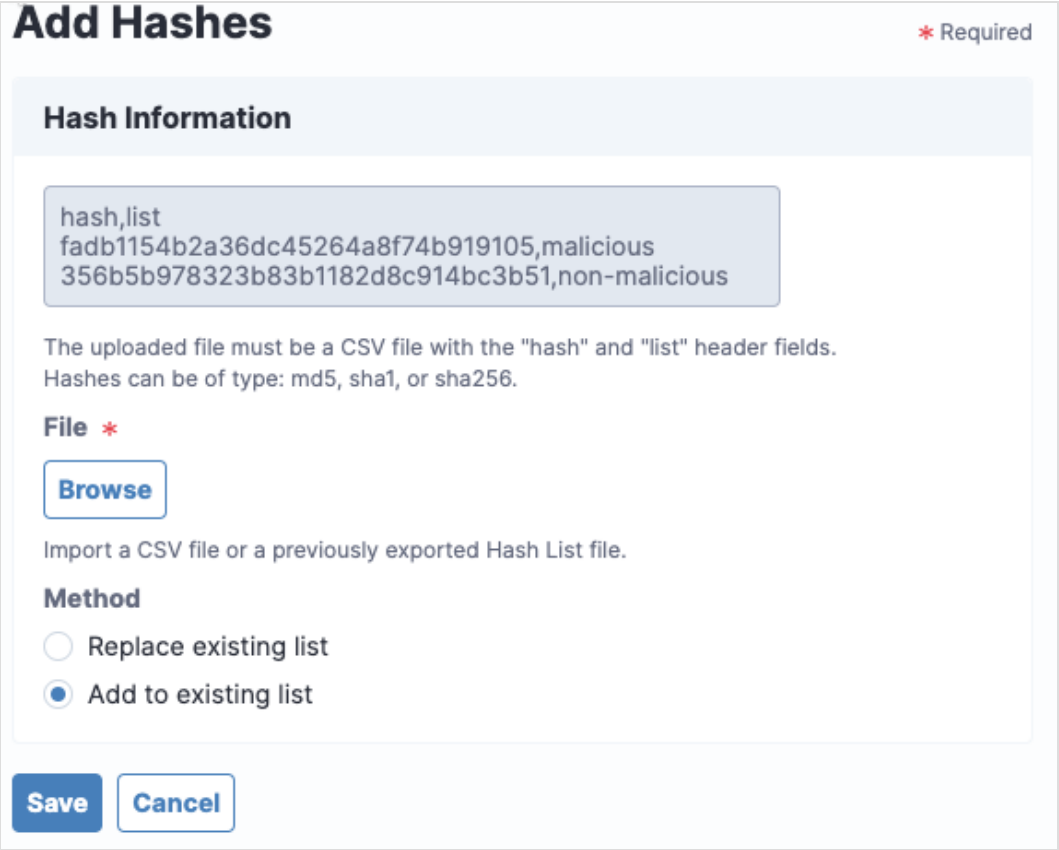
Import hashes

1. In the **Reputations** section, click **Hash List**.
2. Click **Import**.
3. Click **Browse** and select the file to import.



   The uploaded file must be a CSV file with `hash` and `list` header fields. Hashes can be MD5, SHA1, or SHA256.

4. Select a **Method** for the import:
   - To replace the current hashes, select **Replace existing list**.
   - To append to the current hashes, select **Add to existing list**.
5. Click **Save**.

> **Note:** Reputation automatically handles consolidating duplicate records by learning from service providers when different types of hashes represent the same file.

If you want to manually consolidate hashes, you can export the existing hash list, edit the file to add hashes in the appropriate columns for a specific row, and then import the updated file using the **Replace existing list** option.

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Export hashes

1. In the **Reputations** section, click **Hash List**.
2. To export specific hashes, select one or more hashes and click Export .
3. To export all malicious hashes, click the **Malicious** tab, and then click **Download All**.

Edit notes

1. In the **Reputations** section, click **Hash List**.
2. Select a hash and click **Edit Notes**.
3. Update the notes for the hash and click **Save**.

Remove hashes

1. In the **Reputations** section, click **Hash List**.
2. To delete specific hashes, select one or more hashes and click Remove from Hash List .

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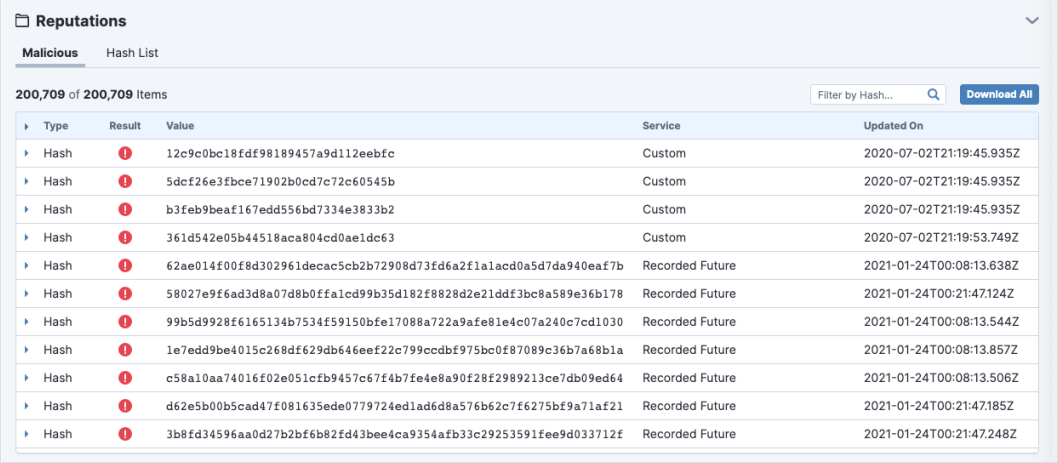
Exporting connect data

View reputation data

To view a list of the malicious hashes that Reputation has pulled from the reputation services, click **Malicious** in the **Reputations** section of the **Overview** page.



Only hashes with a malicious or pending status are listed.

In Threat Response, you can view the ratings on hashes for live endpoints or snapshots. For more information, see Tanium Threat Response User Guide: Connecting to live endpoints and exploring data.

Send data to Connect destinations

You can use Connect 5.2.3 or later to create a connection to send the data that is in the reputation database to any Connect destination. For example, you might configure a connection to create an email notification when a malicious item is found.

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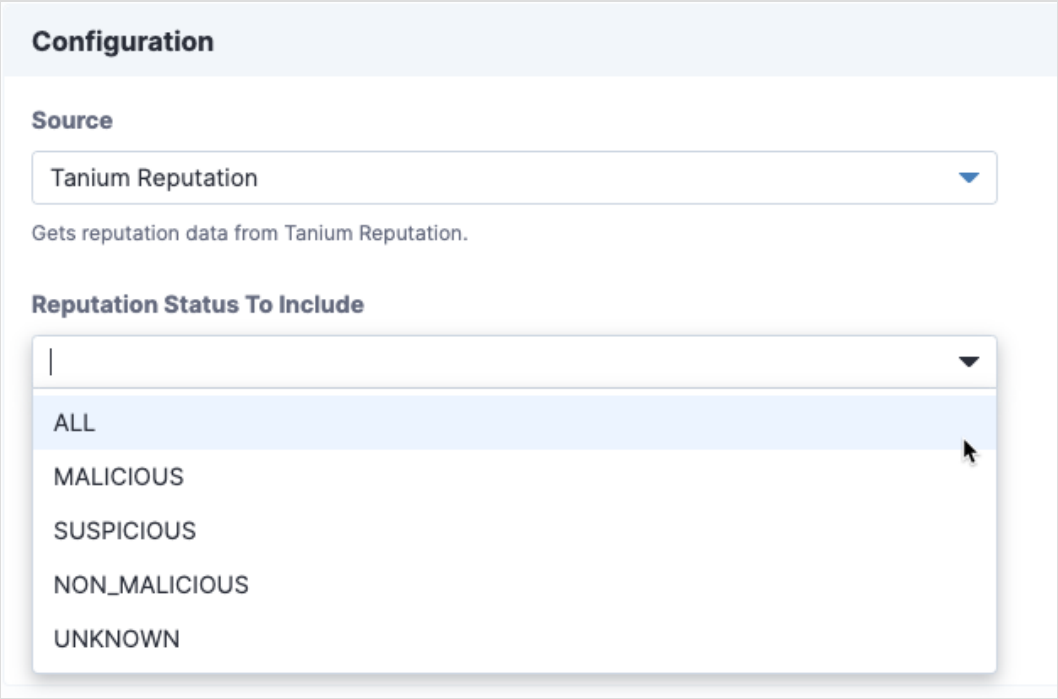
1. From the Connect **Overview** page, click **Create Connection**.
2. Specify a name and description.
3. For the source, select **Tanium Reputation**.



   You can also select the reputation status to include.
4. Configure the destination settings for the connection.

> **Note:** The first run of a connection that uses **Tanium Reputation** as a source retrieves all available reputation items. Subsequent runs of that connection retrieve only the reputation changes since the last time the connection ran.

For more information, see Tanium Connect User Guide: Managing connections.

Send data to the reputation service

If you want to pre-populate reputation data with hashes from your environment, you can send data to the reputation service as a connection destination. When this content is pre-populated, the reputation service can start querying about the status of the items from the reputation sources.

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1. From the Connect **Overview** page, click **Create Connection**.
2. Specify a name and description.
3. For the source, choose a saved question that returns a hash, such as **Running Processes with MD5 Hash**.

   You can use the following settings for saved questions:

Setting	Description
Flatten Results	You might want to enable the **Flatten Results** setting to process results as individual records. For example, you might want to get notified when you see a new MD5 hash on a machine. Without the **Flatten Results** setting enabled, the entire data set that is retrieved by the saved question from a machine, such as all MD5 hashes, is considered to be a single record. Any change that is made to this data set shows up in the destination. By enabling the **Flatten Results** setting, Connect processes the new hashes on an individual basis (one MD5 hash from one machine) instead of all hashes from a machine as a single record.
Hide Errors	If the saved question returns an error, you can use the **Hide Errors** setting to prevent the error results from getting sent to the destination.
Hide No Results	If the saved question returns `[No results]`, you can use the **Hide No Results** setting to prevent this result from being sent to the destination.
Include Recent Results	If you want to include results from machines that are offline, select **Include Recent Results**, which returns the most recent answer to the saved question for the offline endpoint.
Answer Complete Percent	Results are returned when the saved question returns the configured complete percent value. Any results that come in after the configured percent value has passed are not sent to the destination. If you are finding that the data returned from the saved question is incomplete in your destination, you can disable this setting by setting it to 0. If disabled, all data is returned after the timeout passes.
Timeout	Minutes to wait for clients to reply before returning processed results when **Answer Complete Percent** is set to 0. If the **Answer Complete Percent** value is not met at the end of the time limit, then the connection run is marked as a failure.
Batchsize	Number of rows that are returned for the saved question results at one time. This setting might vary depending on your destination.

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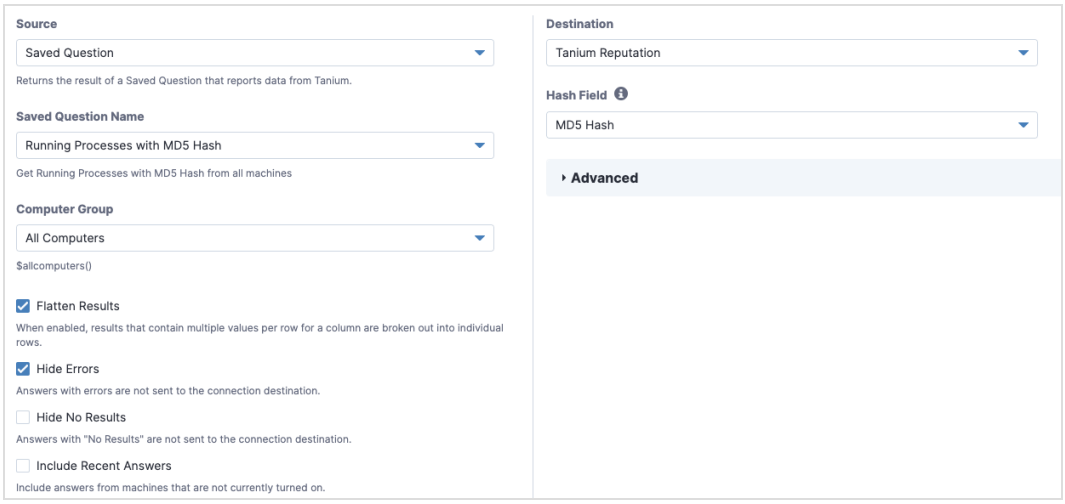
4. For the destination, choose **Tanium Reputation** and select the appropriate hash type for the **Hash Field**.



IMPORTANT: Each reputation service connection destination is configured for a specific hash column name. You must use a separate destination for each hash type that you are populating. For example, if you are populating both MD5 and SHA1 hashes from different saved questions, create two connection destinations with different values for the **Hash Field** field.

Send data to Trends boards

You can use Trends 3.6.323 or later to import a board that contains different panels of reputation metrics. By default, the Reputation **Overview** page shows the metrics from the Service Usage section of the Reputation board.

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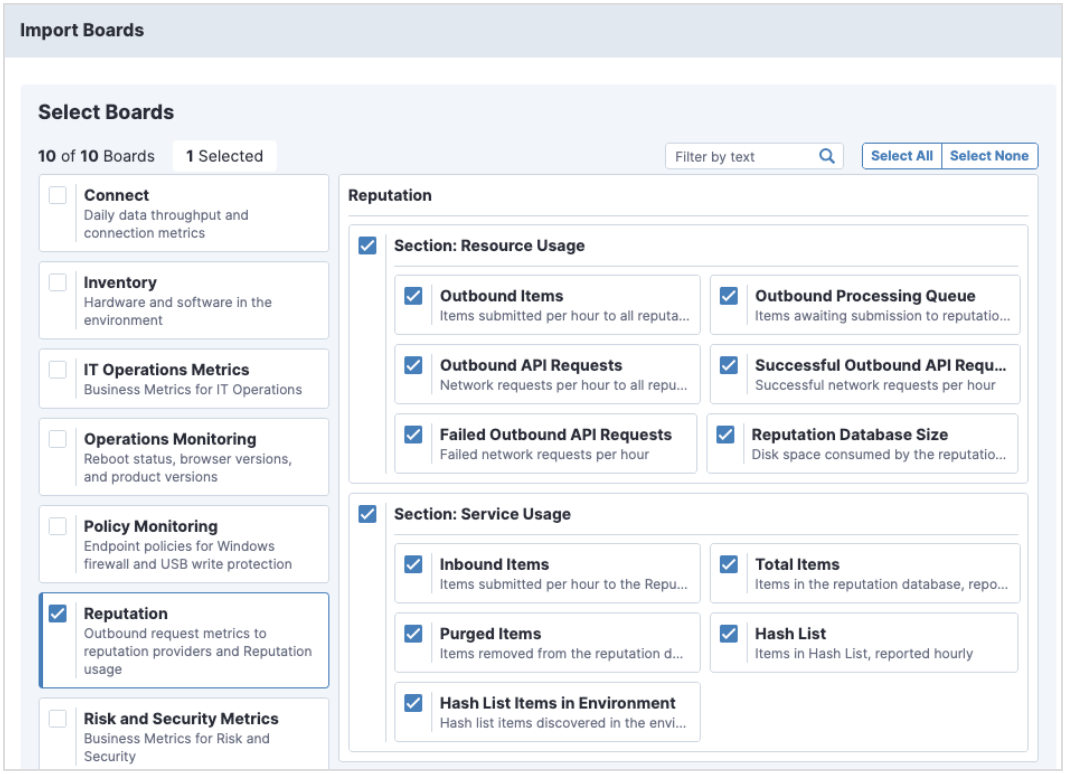
1. From the Trends menu, click **Boards** and then click **Import > Gallery**.
2. Select **Reputation** and then select which sections or panels you want to import.



   By default, everything is selected.
3. Click **Validate**.

   > **Note:** If you see a warning about missing content sets, select **Reputation**.

4. Click **Import**.

For more information, see Tanium Trends User Guide: Importing the initial gallery.

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Troubleshooting Reputation

To collect and send information to Tanium for troubleshooting, collect logs and other relevant information.

Collect logs

The information is saved as a ZIP file that you can download with your browser.

1. From the Reputation **Overview** page, click Help , then the **Troubleshooting** tab.
2. Click **Create Package**.
   A `reputation-support.[timestamp].zip` file downloads to the local download directory.
3. Contact Tanium Support to determine the best option to send the ZIP file. For more information, see Contact Tanium Support on page 42.

Tanium Reputation maintains logging information in the `reputation-service.log` file in the `<Module Server>\services\reputation-service` directory.

Check the Trends metrics for potential problems

1. From the Trends menu, click **Boards** and then click **Reputation**.
2. If the **Failed Outbound API Requests** panel displays failures, verify that your reputation sources are configured correctly.
3. If data shows up faster in the **Inbound Items** panel than it does in the **Outbound Items** panel and the **Outbound Processing Queue** panel is consistently high, configure your reputation sources to send fewer hashes.

Uninstall Reputation

The basic Reputation shared service uninstallation is designed so that the data you have collected is restored if you later decide to reinstall Reputation. In some cases, you might want to start "clean" and not restore the data. To do this, you must manually remove some files.

IMPORTANT: Consult with Tanium Support before you uninstall or reinstall Reputation.

Uninstall Reputation so data is restored on reinstall

1. Sign into the Tanium Console as a user with the Administrator role.
2. From the Main menu, click **Tanium Solutions**.
3. In the **Tanium Solutions** section, select the **Reputation** row and click **Uninstall Solution**.
4. Review the summary and click **Proceed with Uninstall**.

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5. When prompted to confirm, enter your password.

If you later import the Reputation shared service, the previous data is restored.

Uninstall Reputation so you start fresh when you reinstall

1. Uninstall Reputation so data is restored on reinstall on page 41.
2. Manually delete the `<Module Server>\services\reputation-files\` directory.

Deleting the `reputation-files` directory removes all existing Reputation data. All logs, output, the Reputation database, and any other Reputation data is deleted. If you later import the Reputation shared service, the previous data is not restored.

Contact Tanium Support

To contact Tanium Support for help, sign in to https://support.tanium.com.

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