



# 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 24](#).

#### 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 27](#).

## 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 29](#).

## 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 32](#).

## 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 [Installing Reputation 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 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. Reputation hashes in the hash list are not sent to reputation sources for analysis. 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 35](#).

## Integration with other Tanium products

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

### 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 38](#) and [Send data to the reputation service on page 39](#).

### 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 41](#) and [Tanium Trends User Guide: Importing the initial gallery](#).

# Getting started

## Step 1: Install and configure Reputation

Install and configure Tanium Reputation.

For more information, see [Installing Reputation on page 17](#).

## Step 2: Enable Reputation sources

Configure and enable Reputation sources.

For more information, see [Configuring Reputation sources on page 22](#).

## 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 35](#).

## Step 4: Export data

Export Reputation data.

For more information, see [Exporting Reputation data on page 38](#).

# Reputation requirements

Review the requirements before you install and use Reputation.

## Core platform dependencies

Make sure that your environment meets the following requirements:

- **Tanium™ Core Platform servers:** 7.3.314.4250 or later
- **Tanium™ Client:** No client requirements.

## Solution dependencies

Other Tanium solutions are required for specific Reputation features to work (feature-specific dependencies). The installation method that you select determines if the Tanium Server automatically imports dependencies or if you must manually import them.



Some Reputation dependencies have their own dependencies, which you can see by clicking the links in the lists of [Feature-specific dependencies on page 12](#). Note that the links open the user guides for the latest version of each solution, not necessarily the minimum version that Reputation requires.

### Tanium recommended installation

If you select **Tanium Recommended Installation** when you import Reputation, the Tanium Server automatically imports all your licensed solutions at the same time. See [Tanium Console User Guide: Import all modules and services](#).

### Import specific solutions

If you select only Reputation to import, you must manually import dependencies. See [Tanium Console User Guide: Import, re-import, or update specific solutions](#).

### Feature-specific dependencies

Reputation has the following feature-specific dependencies at the specified minimum versions:

- Tanium [Connect](#) 5.2.3 or later
- 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.



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 [Installing Reputation 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.

- 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



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, Tanium recommends that a security administrator create exclusions to allow the Tanium processes to run without interference. The configuration of these exclusions varies depending on AV software. 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	Exclusion Type	Exclusion
Module Server		Process	<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 URLs on the Tanium Module Server associated with a configured reputation source. For more information about required URLs to allow, see the reputation provider documentation.

## User role requirements

The following tables list the role permissions required to use Reputation. To review a summary of the predefined roles, see [Set up Reputation users on page 20](#).

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 <sup>4</sup>	Reputation Operator <sup>4</sup>	Reputation Service Account <sup>3,4</sup>
<b>Reputation<sup>1,2</sup></b>  READ: Read access to the Reputation shared service  WRITE: Write access to the Reputation shared service  SHOW: View the Reputation workbench	  READ WRITE SHOW	  READ WRITE SHOW	
<b>Reputation Administrator</b>  Administrative access to the Reputation shared service	  ADMINISTER		

Reputation user role permissions (continued)

Permission	Reputation Administrator <sup>4</sup>	Reputation Operator <sup>4</sup>	Reputation Service Account <sup>3,4</sup>
<b>Reputation Hash List<sup>2</sup></b> Access to the Reputation hash list data	 READ WRITE	 READ WRITE	
<b>Reputation Provider</b> Access to the provider configurations	 READ WRITE	 READ WRITE	
<b>Reputation Service Account</b> Access to module service accounts to read and write data			 EXECUTE
<b>Reputation Whitelist Blacklist<sup>2, 5</sup> (deprecated)</b> Access to the Reputation hash list data <div style="border: 1px solid #ccc; padding: 5px; margin-top: 10px;">   <small>NOTE</small>                      In Reputation 6.0.77 and later, use the <b>Reputation Hash List</b> permission instead.                 </div>			

<sup>1</sup> If you need access to only the **Malicious** tab in the **Reputations** section of the Reputation **Overview** page, you can add the **Reputation show** and **Reputation read** or **Reputation write** permissions to your user.




<sup>2</sup> If you need access to only the **Reputations** section of the Reputation **Overview** page, you can add the **Reputation show**, **Reputation Hash List read**, and either the **Reputation read** or **Reputation write** permissions to your user.

<sup>3</sup>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](#).

<sup>4</sup> 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](#).

<sup>5</sup> The **Reputation Whitelist Blacklist** read and 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 write permissions. You must manually update any custom roles that use the deprecated permissions.

**Provided Reputation platform content permissions**

	Content Set for Permission	Reputation Administrator	Reputation Operator	Reputation Service Account
Plugin	Reputation	 READ EXECUTE	 READ EXECUTE	 READ EXECUTE
Connect Plugin	Connect			 MANAGEMENT
Plugin	Trends	 READ EXECUTE	 READ EXECUTE	 READ EXECUTE

You can view which content sets are granted to any role in the Tanium Console.

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



# Installing Reputation

Use the Tanium Console **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 Reputation with default settings on page 17](#).
- **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 Reputation with custom settings on page 17](#).

## Before you begin

- Read the [release notes](#).
- Review the [Reputation requirements on page 12](#).
- 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](#).
- Assign the correct roles to users for Reputation. Review the [User role requirements on page 14](#).
  - To import the Reputation solution, you must be assigned the Administrator reserved role.

## Import 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.

Configuring a unique service account for each Tanium solution is an extra security measure to consider in consultation with the security team of your organization. See [Configure service account on page 19](#).

To import Reputation and configure default settings, see [Tanium Console User Guide: Import all modules and services](#). After the import, verify that the correct version is installed: see [Verify Reputation version on page 18](#).

## Import Reputation with custom settings

To import Reputation without automatically configuring default settings, be sure to deselect the **Apply All Tanium recommended configurations** check box while performing the steps in [Tanium Console User Guide: Import, re-import, or update specific solutions](#). After the import, verify that the correct version is installed: see [Verify Reputation version on page 18](#).

To configure the service account, see [Configure service account on page 19](#).

To configure settings, see [Configure Reputation service settings on page 19](#).

## Manage solution dependencies

When you start the Reputation workbench for the first time, the Tanium Server checks whether all the Tanium modules and shared services (solutions) that are required for Reputation are installed at the required versions. The Reputation workbench cannot load unless all required dependencies are installed. If you selected **Tanium Recommended Installation** when you imported Reputation, the Tanium Server automatically imported all your licensed solutions at the same time. Otherwise, if you manually imported Reputation and did not import all its dependencies, the Tanium Console displays a banner that lists the dependencies and the required versions. See [Solution dependencies](#).


1. Install the dependencies as described in [Tanium Console User Guide: Import, re-import, or update specific solutions](#).
2. From the Main menu, go to **Administration > Shared Services > Reputation** to open the Reputation **Overview** page and verify that the Console no longer displays a banner to list missing dependencies.

## Upgrade Reputation

For the steps to upgrade Reputation, see [Tanium Console User Guide: Import, re-import, or update specific solutions](#). 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:

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 .

# Configuring Reputation

If you did not install Reputation with the **Apply All Tanium recommended configurations** option, you must enable and configure certain features.

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

Configuring a unique service account for each Tanium solution is an extra security measure to consider in consultation with the security team of your organization. See [Configure service account on page 19](#).

## Configure Reputation

### 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 14](#).



If you imported Reputation with default settings, the service account is set to the account that you used to perform the import. Configuring a unique service account for each Tanium solution is an extra security measure to consider in consultation with the security team of your organization.

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 page 7.](#)

The screenshot shows a 'Settings' dialog box with a 'Configuration Settings' tab. It contains several configuration options, each with a red asterisk indicating it is required. The 'Rescan' section has a checked 'Rescan Items' checkbox and a 'Rescan Item Interval' of 7 Days. The 'Maximum Age of New Items' is set to 7 Days. The 'Rescan New Item Interval' is set to 600 Minutes. The 'Remove Item Interval' is set to 60 Days. The 'Maximum Database Size' is set to 10 GB. The 'Maximum Disk Capacity' is set to 85%. The 'Keep Reports' dropdown is set to 'All reports'. The 'Reputation Service Log Level' dropdown is set to 'Information'. At the bottom are 'Save' and 'Cancel' buttons.

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.

## Set up Reputation users

You can use the following set of predefined user roles to set up Reputation users.

To review specific permissions for each role, see [User role requirements on page 14](#).

For more information about assigning user roles, see [Tanium Core Platform User Guide: Manage role assignments for a user](#).

### Reputation Administrator

Assign the **Reputation Administrator** role to users who manage the configuration of Reputation.

This role can perform the following tasks:

- Configure Reputation settings, including the service account, scanning, storage, and logging
- View, create, edit, and delete reputation provider configurations
- View, create, edit, and delete file data hashes

### **Reputation Operator**

Assign the **Reputation Operator** role to users who manage the configuration of Reputation but do not need to manage the service account.

This role can perform the following tasks:

- Configure some Reputation settings, including scanning, storage, and logging
- View, create, edit, and delete reputation provider configurations
- View, create, edit, and delete file data hashes

### **Reputation Service Account**

Assign the **Reputation Service Account** role to the account that configures system settings for Reputation.

This role can perform several background processes for Reputation. For more information, see [Installing Reputation on page 17](#).

# Configuring Reputation 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:

Status	Name	Items	New	Processed	Rescanning	Malicious Items	Malicious %	Actions
⊖	Palo Alto Networks WildFire	0	0	0	0	0	-	Enable ⚙️
⊕	Recorded Future	28,763	28,719	44	44	26	0.1%	Disable ⚙️
⊖	ReversingLabs A1000	0	0	0	0	0	-	⚙️
⊕	ReversingLabs TitaniumCloud	23,960	0	23,960	0	9	0%	Disable ⚙️
⊕	VirusTotal	79,578	0	79,578	0	15	0%	Disable ⚙️
⊕	Hash List: Non-Malicious	1,145	-	-	-	0	0%	
⊕	Hash List: Malicious	200,659	-	-	-	200,659	100%	

- **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](http://wildfire.paloaltonetworks.com)) or a configured WF-500 WildFire appliance.
- Palo Alto Networks Firewall with or without Panorama.

## 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.

### Edit Provider: Palo Alto Networks WildFire \* Required

#### General Information

**Status**

Enabled

Enable the Reputation Service to use this service provider.

**URL \***

URL for the Palo Alto Networks WildFire instance.

**Palo Alto Networks WildFire API Key \***

**Batch Size \***

The number of hashes to process in a batch.

**Maximum API Calls per Minute \***

The maximum number of batches processed in a minute.

**Maximum API Calls per Day \***

The maximum number of calls per day. (Call count will reset daily. Set to 0 for unlimited calls.)

**Maximum Hashes Processed Per Day**

**57,600**

**Use Proxy**

Use Tanium Module Server Proxy Setting

Use the proxy setting that is defined on the Tanium Module Server.

3. Specify the settings for Palo Alto Networks WildFire, including the URL for your WildFire instance and 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 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](https://recordedfuture.com).



Configure settings

1. In the **Providers** section, click Configure Provider  in the Recorded Future row.
2. Select **Enabled** to enable the reputation source.

## Edit Provider: Recorded Future \* Required

### General Information

**Status**

Enabled

Enable the Reputation Service to use this service provider.

**URL \***

**API Key \***

**Batch Size \***

The number of hashes to process in a batch.

**Maximum API Calls per Minute \***

The maximum number of times the Recorded Future API is called in one minute.

**Maximum API Calls per Day \***

The maximum number of calls per day. (Call count will reset daily. Set to 0 for unlimited calls.)

**Maximum Hashes Processed Per Day**

**56,875**

**Positive Threshold \***

Reduce the number of items reported as malicious by increasing the Score value (0-99, default 65).

**Use Proxy**

Use Tanium Module Server Proxy Setting

Use the proxy setting that is defined on the Tanium Module Server.

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 with 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



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 that is 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](https://reversinglabs.com).

To get an API key:

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

## Configure settings

1. In the **Providers** section, click Configure Provider  in the ReversingLabs A1000 row.
2. Select **Enabled** to enable the reputation source.

### Edit Provider: ReversingLabs A1000 \* Required

#### General Information

**Status**

Enabled

Enable the Reputation Service to use this service provider.

**URL \***

ReversingLabs A1000 API URL.

**API Token \***

**New/Pending Hashes Per Query \***

Number of New/Pending hashes to return per query.

**Maximum API Calls per Minute \***

Each return of a hash uses an API call.

**Maximum API Calls per Day \***

The maximum number of calls per day. (Call count will reset daily. Set to 0 for unlimited calls.)

**Maximum Hashes Processed Per Day**

**57,600**

**Use Proxy**

Use Tanium Module Server Proxy Setting

Use the proxy setting that is defined on the Tanium Module Server.

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](https://reversinglabs.com).

Configure settings

1. In the **Providers** section, click Configure Provider  in the ReversingLabs TitaniumCloud row.
2. Select **Enabled** to enable the reputation source.

 Reputation

## Edit Provider: ReversingLabs TitaniumCloud \* Required

### General Information

**Status**

Enabled

Enable the Reputation Service to use this service provider.

**URL \***

ReversingLabs TitaniumCloud API URL.

**Username \***

**Password \***

**New/Pending Hashes Per Query \***

Number of New/Pending hashes to return per query.

**Maximum API Calls per Minute \***

Each return of a hash uses an API call.

**Maximum API Calls per Day \***

The maximum number of calls per day. (Call count will reset daily. Set to 0 for unlimited calls.)

**Maximum Hashes Processed Per Day**

**57,600**

**Use Proxy**

Use Tanium Module Server Proxy Setting

Use the proxy setting that is defined on the Tanium Module Server.

**Advanced**

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**.

**Advanced**

**Threat Level \***

0: No Threat

Threat Level measures how malicious a malware sample is perceived.

**Trust Factor \***

0: Maximum Trust

Trust Factor depends on the software vendor.



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**.

## 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](https://www.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.

### Edit Provider: VirusTotal \* Required

**General Information**

**Status**  
 Enabled  
Enable the Reputation Service to use this service provider.

**API Key \***  
  
Get an API Key from: <https://www.virustotal.com>.

**Batch Size \***  
  
The number of hashes to check each time the VirusTotal API is called.

**Maximum API Calls per Minute \***  
  
The maximum number of times the VirusTotal API is called in one minute.

**Maximum API Calls per Day \***  
  
The maximum number of calls per day. (Call count will reset daily. Set to 0 for unlimited calls.)

**Maximum Hashes Processed Per Day**  
**144,000**

**Positive Threshold \***  
  
Example: If you set the value to 3, then three VirusTotal engines must report an item as malicious for the item to be considered malicious by the Reputation Service.

**Use Proxy**  
 Use Tanium Module Server Proxy Setting  
Use the proxy setting that is defined on the Tanium Module Server.

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.



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**.

# Managing hashes


The **Reputations** section of the Reputation **Overview** page shows a list of hashes that are malicious or non-malicious. You can view additional context for each hash, and for certain sources you can also view additional information on the source's website. You can also search for file hashes and add, import, export, or delete reputation data hashes.



Hashes that you add to the hash list are not sent to reputation sources for analysis.

NOTE

## View additional hash data

1. In the **Reputations** section, click the **Malicious** tab.
2. Click  to expand the **Hash** line-item to view reputation data for a hash.

## Add data hashes

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



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](#).

NOTE

## Import hashes

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

### Add Hashes \* Required

#### Hash Information

```
hash,list
fadb1154b2a36dc45264a8f74b919105,malicious
356b5b978323b83b1182d8c914bc3b51,non-malicious
```

The uploaded file must be a CSV file with the "hash" and "list" header fields. Hashes can be of type: md5, sha1, or sha256.

**File \***

**Browse**

Import a CSV file or a previously exported Hash List file.

**Method**

Replace existing list

Add to existing list

**Save** **Cancel**

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**.



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.


## Export hashes

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

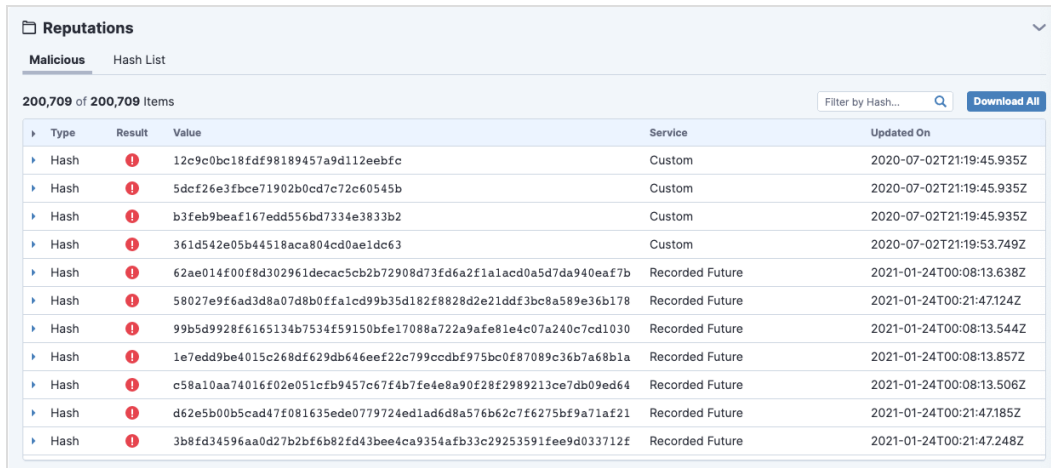
## Remove hashes

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

# Exporting Reputation data

## View reputation data

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



Type	Result	Value	Service	Updated On
Hash	🚫	12c9c0bc18fdf98189457a9d112eebfc	Custom	2020-07-02T21:19:45.935Z
Hash	🚫	5dcf26e3fbce71902b0cd7c72c60545b	Custom	2020-07-02T21:19:45.935Z
Hash	🚫	b3feb9beaf167edd556bd7334e3833b2	Custom	2020-07-02T21:19:45.935Z
Hash	🚫	361d542e05b44518aca804cd0ae1dc63	Custom	2020-07-02T21:19:53.749Z
Hash	🚫	62ae014f00f8d302961deccac5cb2b72908d73fd6a2f1alacd0a5d7da940eaf7b	Recorded Future	2021-01-24T00:08:13.638Z
Hash	🚫	58027e9f6ad3d8a07d8b0ffa1cd99b35d182f8828d2e21ddf3bc8a589e36b178	Recorded Future	2021-01-24T00:21:47.124Z
Hash	🚫	99b5d9928f6165134b7534f59150bfe17088a722a9afe81e4c07a240c7cd1030	Recorded Future	2021-01-24T00:08:13.544Z
Hash	🚫	1e7edd9be4015c268df629db646eeef22c799ccdbf975bc0f87089c36b7a68b1a	Recorded Future	2021-01-24T00:08:13.857Z
Hash	🚫	c58a10aa74016f02e051cfb9457c67f4b7fe4e8a90f28f2989213ce7db09ed64	Recorded Future	2021-01-24T00:08:13.506Z
Hash	🚫	d62e5b00b5cad47f081635ede0779724ed1ad6d8a576b62c7f6275bf9a71af21	Recorded Future	2021-01-24T00:21:47.185Z
Hash	🚫	3b8fd34596aa0d27b2bf6b82fd43bee4ca9354afb33c29253591fee9d033712f	Recorded Future	2021-01-24T00:21:47.248Z

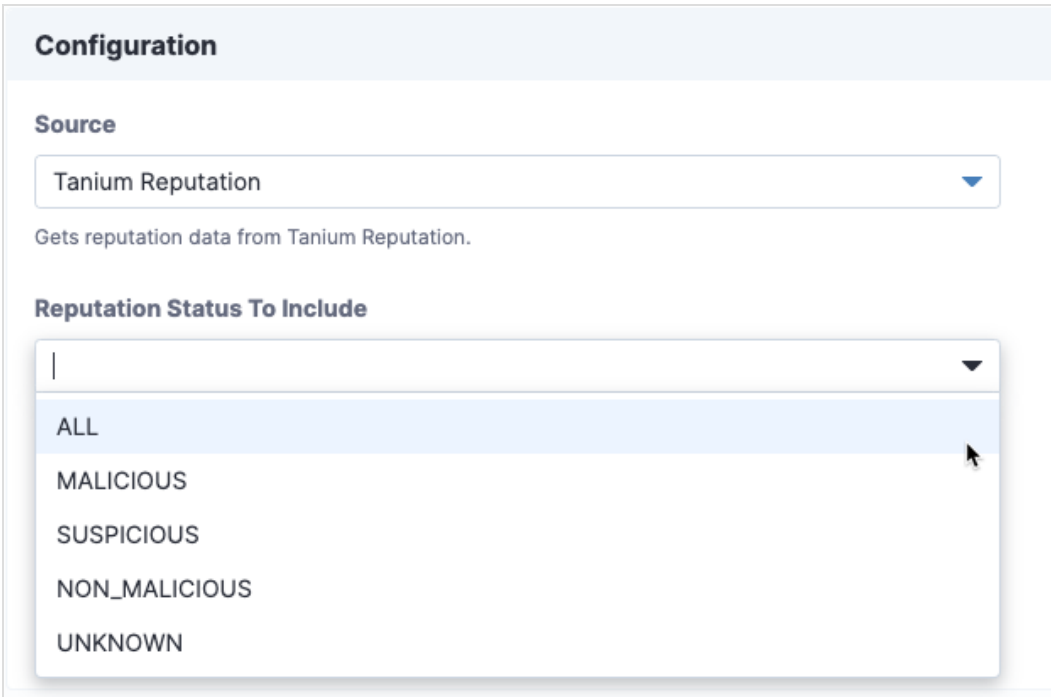
Only hashes with a malicious or pending status are listed.

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

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.

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



**Configuration**

**Source**

Tanium Reputation

Gets reputation data from Tanium Reputation.

**Reputation Status To Include**

ALL  
MALICIOUS  
SUSPICIOUS  
NON\_MALICIOUS  
UNKNOWN

You can also select the reputation status to include.

4. Configure the destination settings for the connection.



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.

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
<b>Flatten Results</b>	You might want to enable the <b>Flatten Results</b> 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 <b>Flatten Results</b> 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 <b>Flatten Results</b> 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.
<b>Hide Errors</b>	If the saved question returns an error, you can use the <b>Hide Errors</b> setting to prevent the error results from getting sent to the destination.
<b>Hide No Results</b>	If the saved question returns [No results], you can use the <b>Hide No Results</b> setting to prevent this result from being sent to the destination.
<b>Include Recent Results</b>	If you want to include results from machines that are offline, select <b>Include Recent Results</b> , which returns the most recent answer to the saved question for the offline endpoint.
<b>Answer Complete Percent</b>	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.
<b>Timeout</b>	Minutes to wait for clients to reply before returning processed results when <b>Answer Complete Percent</b> is set to 0. If the <b>Answer Complete Percent</b> value is not met at the end of the time limit, then the connection run is marked as a failure.
<b>Batchsize</b>	Number of rows that are returned for the saved question results at one time. This setting might vary depending on your destination.

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

**Source**

Saved Question ▼

Returns the result of a Saved Question that reports data from Tanium.

Saved Question Name

Running Processes with MD5 Hash ▼

Get Running Processes with MD5 Hash from all machines

Computer Group

All Computers ▼

\$allcomputers()

Flatten Results

When enabled, results that contain multiple values per row for a column are broken out into individual rows.

Hide Errors

Answers with errors are not sent to the connection destination.

Hide No Results

Answers with "No Results" are not sent to the connection destination.

Include Recent Answers

Include answers from machines that are not currently turned on.

**Destination**

Tanium Reputation ▼

Hash Field ⓘ

MD5 Hash ▼

Advanced





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

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.

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.

**Import Boards**

**Select Boards**

10 of 10 Boards 1 Selected

Filter by text [Q] [Select All] [Select None]

- Connect**  
Daily data throughput and connection metrics
- Inventory**  
Hardware and software in the environment
- IT Operations Metrics**  
Business Metrics for IT Operations
- Operations Monitoring**  
Reboot status, browser versions, and product versions
- Policy Monitoring**  
Endpoint policies for Windows firewall and USB write protection
- Reputation**  
Outbound request metrics to reputation providers and Reputation usage
- Risk and Security Metrics**  
Business Metrics for Risk and Security

**Reputation**

- Section: Resource Usage**
  - Outbound Items**  
Items submitted per hour to all reputa...
  - Outbound Processing Queue**  
Items awaiting submission to reputatio...
  - Outbound API Requests**  
Network requests per hour to all repu...
  - Successful Outbound API Requ...**  
Successful network requests per hour
  - Failed Outbound API Requests**  
Failed network requests per hour
  - Reputation Database Size**  
Disk space consumed by the reputatio...
- Section: Service Usage**
  - Inbound Items**  
Items submitted per hour to the Reput...
  - Total Items**  
Items in the reputation database, repo...
  - Purged Items**  
Items removed from the reputation d...
  - Hash List**  
Items in Hash List, reported hourly
  - Hash List Items in Environment**  
Hash list items discovered in the envi...

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](#).

# 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 43](#).

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 issues

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.



Consult with Tanium Support before you uninstall or reinstall Reputation.

IMPORTANT

### Uninstall Reputation so data is restored on reinstall

1. Sign in to the Tanium Console as a user with the Administrator role.
2. From the Main menu, go to **Administration > Configuration > Solutions**.
3. In the **Content** section, select the **Reputation** row and click **Uninstall**.
4. Review the summary and click **Yes** to proceed with the uninstallation.

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 42.](#)
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>.