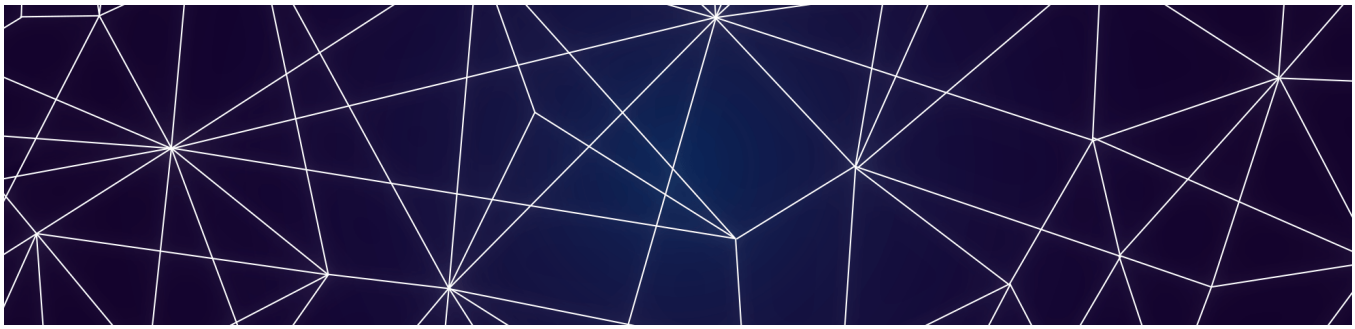

PAESSLER PRTG NETWORK MONITOR

ITOps Board

Installation Guide

Release 2.9.2

Document Date: April 20, 2020

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Installation Guide
Release 2.9.2 - April 20, 2020

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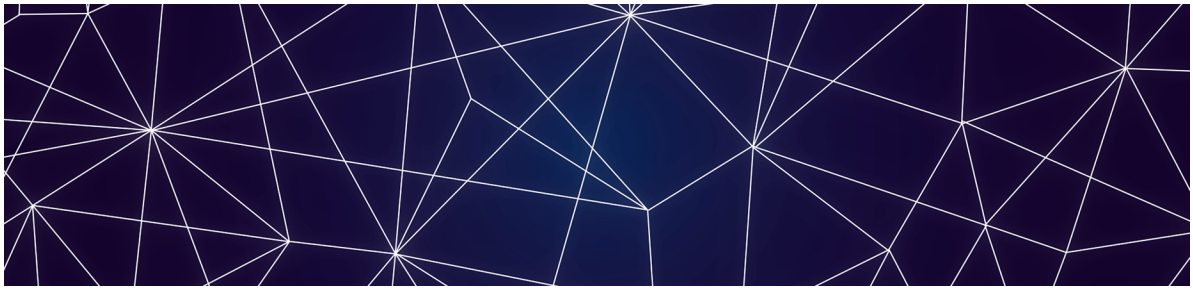


CHAPTER 1

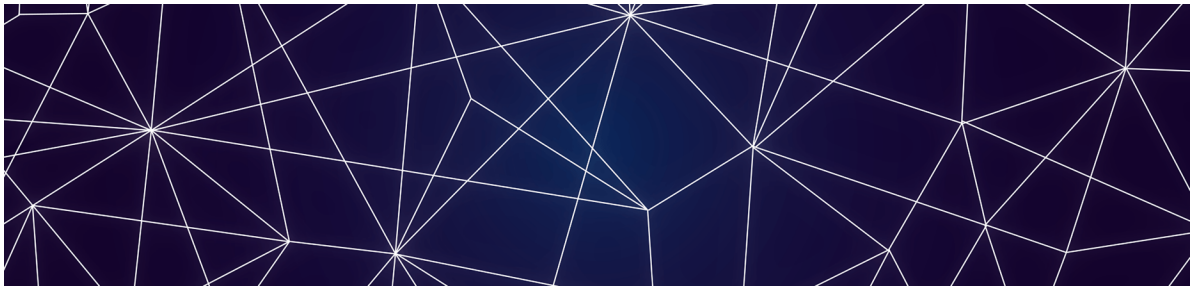
Introduction

Document Purpose and Intended Audience

This guide is intended to help you install ITOps Board. It contains information about the system requirements and the supported integrations.

Revision History

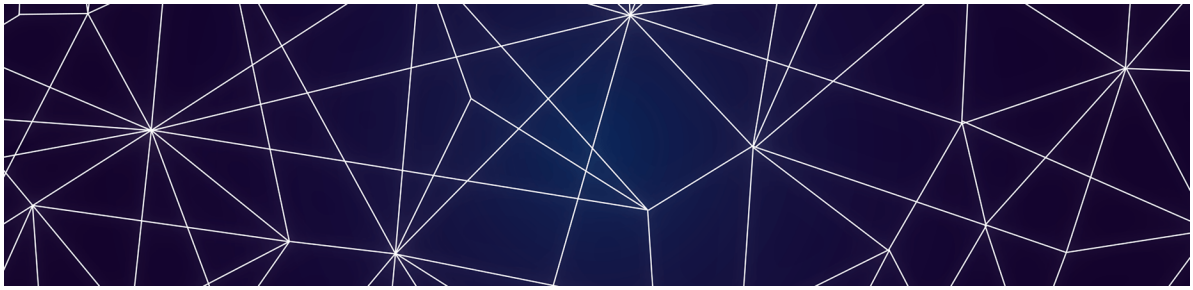
Document Date	Description
April 20, 2020	ITOps Board Installation Guide, Release 2.9.2



CHAPTER 2

About ITOps Board

ITOps Board is a powerful IT analytics solution that consolidates the information from multiple PRTG servers into a single system. It pulls alerts and health state information from your PRTG installations and unifies them in groups, known as boards. Consolidating the information from various systems allows you to quickly see the overall health status of a system.



CHAPTER 3

Planning

The following sections provide information about the requirements that your system must meet before you can install or upgrade ITOps Board.

- "Server Requirements" on page 7
- "IIS Roles and Features" on page 8
- "Java" on page 9
- "SQL Database" on page 10
- "Elasticsearch" on page 10
- "Active Directory" on page 10
- "Firewall Access" on page 11
- "Supported Upgrade Paths" on page 1

Server Requirements

You can install ITOps Board on a Windows Server 2012 (or higher) running IIS 8.0 (or higher). We recommend that you use the latest available version of Windows Server. The server must be a member of an Active Directory domain, and ITOps Board must be installed by a Domain user with local Admin rights.

We recommend that you install ITOps Board on its own server. The following table lists the minimum requirements and recommendations for the server.

Table 1: Server Requirements and Recommendations

Component	Minimum Requirement	Recommended
Processor	1.4 GHz 2 cores	2 GHz or faster 4 cores
Memory	8 GB RAM; assign 4 GB to Elasticsearch	16 GB or greater, but not greater than 64 GB; assign 8 GB to Elasticsearch
Available Server Disk Space (Program Files Directory)	2 GB per integration	10 GB or greater per integration
Available SQL Server Disk Space	20 MB	100 MB
.NET Framework	4.6.2 or higher	4.6.2 or higher

IIS Roles and Features

The ITOps Board installer can add the roles and features needed for ITOps Board to function properly.

If you want to install the roles and features manually, add the roles and features listed in the table below to your Windows Server:

Table 2: Server Requirements and Recommendations

Web Server Components	Type
Roles	
Common	Default Document Static Content
Health and Diagnostics	HTTP Logging. Optional, but recommended for troubleshooting.
Security	Request Filtering Windows Authentication

Web Server Components	Type
Application Development	.NET Extensibility 4.5 NET 4.5 ISAPI Extensions ISAPI Filters WebSocket Protocol. Optional, but recommended.
Management Tools	IIS Management Console. We recommend that you install this on all IIS servers so you can manage them from a centralized Microsoft Management Console (MMC).
Features	
.NET Framework 4.6 Features	.NET Framework 4.6 NET 4.5 WCF Services: • HTTP Activation

In addition, ensure that you enable the following:

- Automatic start-up for the Windows Process Activation (WAS).
- World Wide Web Publishing (W3SVC) services.

Note: ITOps Board is installed as a new website with a self-signed certificate running on port 59212. You can change the port using the IIS Management Console under the bindings for the ITOps Board website.

Java

ITOps Board uses Elasticsearch to store the majority of its data. This allows it to retrieve information quickly. Elasticsearch requires Java JRE V8 (at least u131 or higher), Java JDK version 11, or Java JDK version 12.

We recommend that you use Amazon Corretto, a no-cost, production-ready distribution of the OpenJDK supported by Amazon. Amazon Corretto 11 is available at the following link:

https://docs.aws.amazon.com/corretto/latest/corretto-11-ug/downloads-list.html

Alternatively, you can download and install Oracle Java SE from the following link:

https://www.oracle.com/technetwork/java/javase/downloads/index.html

Please note that you may need a commercial license from Oracle to use Oracle Java SE.

Note: After you install a valid version of Java, ensure that the environment variable "JAVA_HOME" is correctly set.

SQL Database

ITOps Board stores configuration information in a SQL database. We recommend that you use SQL Server 2012 or higher. The server can be a locally running instance or an instance running in a cluster. ITOps Board is also compatible with SQL Express.

If you are evaluating the software or wish to use SQL Express, you can download it using the following link: https://www.microsoft.com/en-us/download/details.aspx?id=55994.

During the installation, you are prompted to enter the SQL instance and user credentials that have permission to create a database. This same user account is used as the app pool account for ITOps Board. After the installation is complete, you can adjust the account to a lower privilege level, as long as the account continues to have read/write permissions to the ITOps Board database.

Note: ITOps Board requires the collation of your SQL instance to be case insensitive.

Elasticsearch

ITOps Board release 2.6 and higher requires Elasticsearch version 6.8. If it is not already installed, a single-node deployment of Elasticsearch is installed with ITOps Board. This single-node deployment is suitable for evaluations and small deployments; however, you may wish or need to move to a larger Elasticsearch environment. For guidelines about sizing please refer to the following link:

https://www.elastic.co/guide/en/elasticsearch/guide/current/hardware.html

Active Directory

By default, ITOps Board queries the Global Catalog for available domain controllers and works with users and groups from all the domains in the forest.

To allow a user to target a specific Active Directory domain controller, you must edit the `Web.config` file. Add the following lines to the <appSettings> section:

```
<add key="ad.dc" value="" />
<add key="ad.user" value="" />
```

```
<add key="ad.password" value="" />
<add key="ad.domains" value="*" />
<add key="ad.scan_trusted_domains" value="false" />
<add key="ad.ignore_token_groups" value="true" />
```

If you use default values, the application reverts to the current Active Directory Forest settings.

```
<add key="ad.dc" value="<empty or Domain Controller>" />
<add key="ad.domains" value="<* or domains to query, separated by
comma>" />
```

The parameter `scan_trusted_domains` tells ITOps Board to look for trusted domains in AD and is by default set to false.

The parameter `ignore_token_groups` tells ITOps Board to ignore retrieving AD User groups by token groups. It is true by default.

These two parameters can make ITOps Board slow if they are enabled.

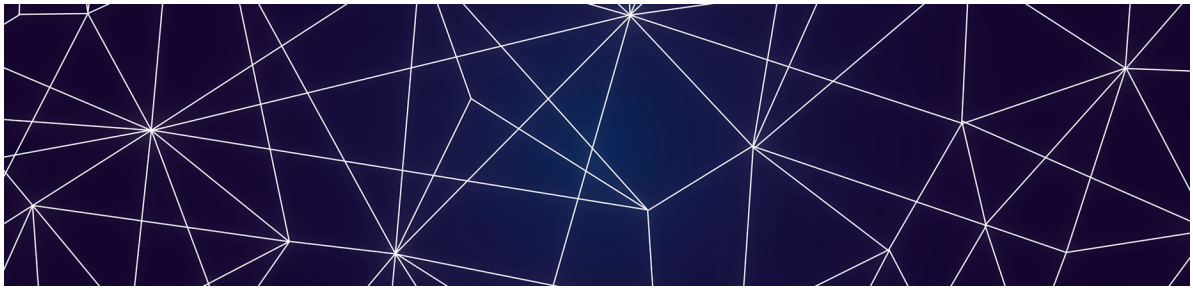
Firewall Access

By default, ITOps Board is installed as a website running under port 59212. You can change the port number if you wish.

Each integration has its own requirements for access. Your firewall rules for outbound traffic must allow ITOps Board to communicate with the integrated system.

For the PRTG integration, the port is customizable.

For the PowerShell integration, no ports are needed. The PowerShell integration runs on the ITOps Board web server or on the Windows Server that a ITOps Board Remote Agent is running on.



CHAPTER 4

Install ITOps Board

Use the procedures in this section to install ITOps Board.

Before you Begin

- Ensure that your system meets all the prerequisites listed in "Planning " on page 7.
- Download the installation package from our website at: https://www.paessler.com/itops-board

The installation package contains the following installers:

- ITOps Board Agent-2.9.2.exe
- ITOps Board-2.9.2.exe
- Elasticsearch-6.8.1.exe

After you download the installation package, complete the following tasks:

Task	Description
"Install ITOps Board" on page 12	Install a new instance of ITOps Board.
"Install Remote Agents" on page 14	Optional. Install a remote agent only if the source system is not accessible from the ITOps Board web server.
"Add a License Key" on page 14	Activate the license.

Install ITOps Board

Use the following procedure to install ITOps Board. You must be a domain administrator with local administration privileges to complete this procedure.

Before you Begin

ITOps Board needs to access information that is stored on the SQL server. You can use a full SQL server, or you can use SQL Server Express. Before you begin, ensure that you have the server instance and the credentials for the SQL server that is used to store this metadata.

- For an SQL server, the default instance name is `<SQL Server host name or IP Address>`. The non-default instance name is `<SQL Server host name or IP Address>\<instance name>`.
- For SQL Server Express, the default instance name is `<SQL Server host name or IP Address>\SQLExpress`. The non-default instance name is `<SQL Server host name or IP Address>\<instance name>`.

If you do not have a full SQL server, the ITOps Board installer provides a link to SQL Server Express. If you are using this option, ensure that you record the connection string that SQL Express generates; you will need this connection string during the installation process. The connection string uses the following format: `<machine_name>\SQLExpress`. Ensure that Windows updates are installed and there are no pending reboots.

1. Right-click the `ITOps Board-2.9.2.exe` file and select **Run As Administrator**.
2. Click **Next** at the welcome screen.
3. Click on **I accept the agreement** and then click **Next**.
4. On the **Connect to SQL Server** page, enter the SQL server instance as well as the credentials of a user that has rights to create the database.

Note: If you do not have a SQL Server, you can click on **Install SQL Server Express** to install the express version of SQL Server. This option is useful if you have a small environment or would like to use ITOps Board for demonstration or evaluation purposes. When you choose this option, you can de-select the following features: SQL Server Replication and SQL Client Connectivity SDK.

5. Click **Verify**. When the credentials are verified, click **Next**.
6. Select the destination where you want to install ITOps Board and click **Next**.
7. Optional. Click on **Create a desktop shortcut** and click **Next**.
8. If Elasticsearch is not already installed on this server, the Elasticsearch installer launches. When the Welcome to the Elasticsearch Setup Wizard displays, click **Next** .
9. Click **I accept the agreement** and click **Next**.
10. Select the destination where you want to install Elasticsearch and click **Next**.
11. When the Elasticsearch installation is complete, click **Finish**.
    ITOps Board continues its installation. It verifies the IIS Roles and Features and adds any requirements that are missing.

12. When the installation is complete, click **Finish**.
    ITOps Board launches.

Next Steps

To complete the installation, perform the following procedures:

- Optional. Perform the procedure "Install Remote Agents" on page 14 only if the source system is not accessible from the ITOps Board web server.
- To activate the installation, perform the procedure "Add a License Key" on page 14

Install Remote Agents

When you install ITOps Board, it will install an agent locally on the server. For most installations the local agent is all that is needed. In some cases, you may need to install a remote agent to access certain systems you want ITOps Board to integrate with. For example, you need to install a remote agent when the source system is not accessible from the ITOps Board web server.

The remote agent installs as a Windows service.

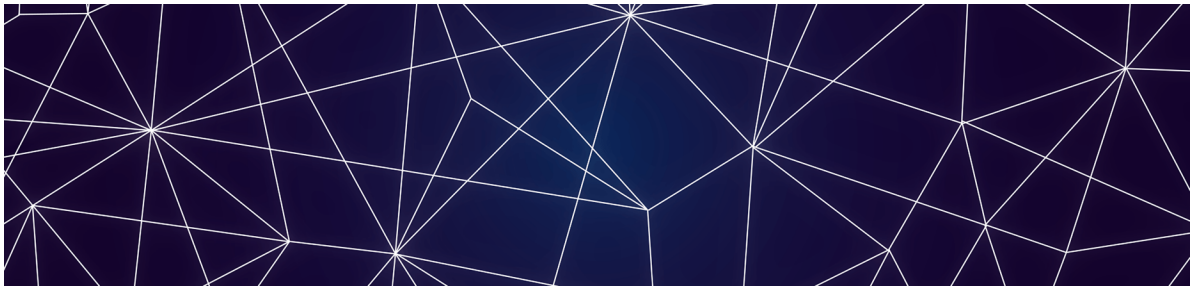
1. From the remote computer, open your browser and log into ITOps Board.
2. From the main menu, select **Settings >Agents**.
3. Click the **Download Agent** icon in the bottom corner of the page.
   The AgentInstaller.zip file downloads.
4. Extract the files.
   There are two files: `ITOps Board Agent-2.9.2.exe` and `Setup.cmd`.
5. Choose one of the following options:
   - Double-click the `Setup.cmd` to launch the installer with the ITOps Board web server URL pre-populated.
   - Right-click on `ITOps Board Agent-2.9.2.exe` and select **Run As Administrator**.
6. Click **Next** on the welcome screen.
7. Select **I accept the agreement** and click **Next**.
8. Enter the URL of the ITOps Board web server, as well as your ITOps Board Administrator credentials; click **Verify**.
9. Enter the destination where you want to install the agent and click **Next**.
10. Click **Finish** when the installation is complete.
    After a few moments, the remote agent is listed as an available agent in ITOps Board.

Add a License Key

After you purchase a license, the support team sends you an email with the license key attached in a text file. Use this procedure to activate the license.

1. From the main menu, select **Settings**.

2. Click the **Licensing** tab.
3. Click the **Add License** button.
4. Paste your license key in the dialog box and click **Activate**.



CHAPTER 5

Configure Elasticsearch

By default, the ITOps Board installation will install Elasticsearch on the web server. It is not bound to an external IP address so there is no user authentication enabled. This works fine in an evaluation scenario or with limited users, integrations and data.

If you use ITOps Board in a more demanding scenario, we recommend that you set up a multi-node Elasticsearch cluster. Documentation about how to set this up can be found here: https://www.elastic.co/guide/en/elasticsearch/reference/current/setup.html.

When security is required, such as when Elasticsearch is installed on a different machine, you need to use X-Pack (you can also do monitoring with X-Pack). Elasticsearch has changed the way X-Pack works. You can find more details here: https://www.elastic.co/products/x-pack/open.

Connection settings are configured in the `web.config` under `<connectionStrings>`. The Elasticsearch connection string can be defined as follows:

Default

```
<add name="defaultElasticSearchConnection"
connectionString="Nodes=http://localhost:9200" /> Multi node cluster:

<add name="defaultElasticSearchConnection"
connectionString="Nodes=http://ESNode1:9200;http://ESNo
de2:9200;http://ESNode3:9200" />
```

With Authentication

```
<add name="defaultElasticSearchConnection"
connectionString="Nodes=http://ESServer:9200, Username=iquser,
Password=secret" />
```

Allocate Memory

By default, Elasticsearch is set up to use 2 GB of memory. Ensure that you assign additional memory. The following procedure provides an example of how to assign additional memory. For information about the memory requirements, see "Server Requirements" on page 7.

1. Open the `jvm.options` file.

The file is located where you installed Elasticsearch. The default location is: `C:\Program Files\Elasticsearch\elasticsearch\config\jvm.options`.

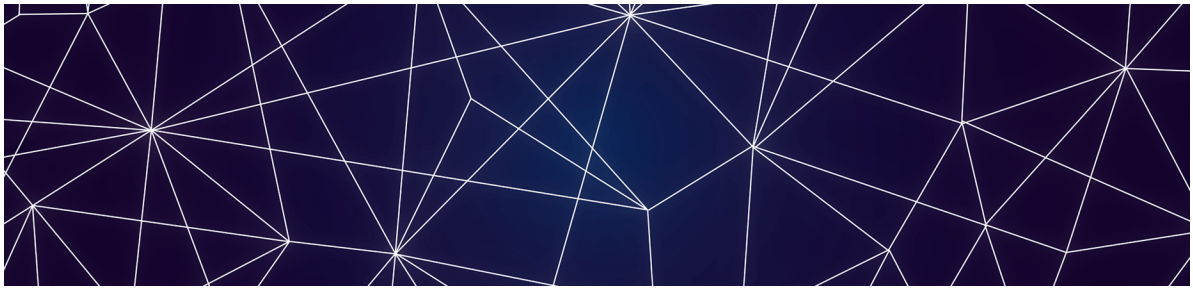
2. Edit the file to change the heap space as shown below. The heap space controls the amount of memory that Elasticsearch uses.

JVM Configuration

```
## JVM configuration

################################################################

## IMPORTANT: JVM heap size

################################################################

##

## You should always set the min and max JVM heap ## size to the same value. For example, to set

## the heap to 4 GB, set:

##

## -Xms4g

## -Xmx4g

## ## See

https://www.elastic.co/guide/en/elasticsearch/reference/current/heapsize.html

## for more information

##

################################################################

# Xms represents the initial size of total heap space

# Xmx represents the maximum size of total heap space

-Xms2g <--These are the values you want to change.

-Xmx2g <--
```

We recommend that you change both values to `-Xmx4g`.

3. After you have changed the values, save the file.
4. From **Services**, stop and restart the `Elasticsearch` service.



CHAPTER 6

Configure Integrations

Use the information in this section to complete the following tasks:

- Collect the information that you need for your integrations; review "Required Information" on page 18
- "Add an Integration" on page 18

Add an Integration

Use this procedure to integrate a monitoring system with ITOps Board.

Before you Begin

- For a list of the information required by each integration, see "Required Information" on page 18.

1. From the main menu, select **Settings**.
   The Integrations tab displays the currently installed integrations.
2. Click the **Add** button at the bottom of the page.
3. Select a monitoring system from the dialog box.
4. Enter the information required for the monitoring system.
5. Enter the following information:
   - **Discovery Interval**—The interval for collecting components and relationships. The default value is 3600 seconds.
   - **Operation Interval**—The interval for collecting alerts, incidents, and component health states. The default value is 120 seconds.
6. Click **Save**.

Required Information

Before you add an integration, ensure that you have all of the information required to access the monitoring system. The information required varies depending on the monitoring system that you are connecting to.

The user permissions in the source system are important, because those permissions determine the access that ITOps Board has to the source system. If the user in the source system does not have sufficient permissions, some data may not be visible in ITOps Board and some functionality—such as the ability to close an alert—may not work.

Use the links below to find a list of the information required for each integration.

- "Email Notification" on page 19
- "PowerShell" on page 19
- "PRTG Network Monitor" on page 20

Email Notification

Configure the following properties when you integrate Email Notification with ITOps Board:

Property	Description
Source	Read-only. The name of the source system.
Agent	Select a server to communicate with the source system. This can be the ITOps Board web server or a machine that has a ITOps Board Remote agent installed on it.
Name	Provide a name for the integration; this name displays on the ITOps Board interface.
From Email	The sending email address.
SMTP Server	The address of the SMTP server.
Port	The port to access the server
Username	The username for the email account.
Password	The password for the account.
Enable SSL	Optional.
Send emails as HTML	Optional.

PowerShell

Configure the following properties when you integrate PowerShell with ITOps Board:

Property	Description
Source	Read-only. The name of the source system.

Property	Description
Agent	Select a server to communicate with the source system. This can be the ITOps Board web server or a machine that has a ITOps Board Remote agent installed on it.
Name	Provide a name for the integration; this name displays on the ITOps Board interface.
Username	User credentials to use used as the "Run As Account"
Password	The password for the account.
Script	Select a PowerShell script from the drop-down menu. Scripts are available in the menu after you copy them to the **ITOps Board > PSScripts** folder.

PRTG Network Monitor

Configure the following properties when you integrate PRTG Network Monitor with ITOps Board:

Property	Description
Source	Read-only. The name of the source system.
Agent	Select a server to communicate with the source system. This can be the ITOps Board web server or a machine that has a ITOps Board Remote agent installed on it.
Name	Provide a name for the integration; this name displays on the ITOps Board interface.
URL	Default ports are 80 or 443.
Username	The login name of a PRTG administrator user.
Password	The password for a PRTG administrator user.
Roll-up worst sensor state to components and groups	Optional. By default, PRTG does not roll-up the worst sensor state. When you enable this option, ITOps Board calculates the states of the devices and groups based on the worst state of the related sensors.

Property	Description
Minimum number of items per request	This field controls the requests that ITOps Board sends to PRTG. The default value is 2000 items per request. You can set the value higher to have the PRTG server send larger, less frequent responses to ITOps Board. If the request times out before the PRTG server can respond with the number of requested items, you can lower the value.
Request delay in milliseconds	The interval between requests sent from ITOps Board to the PRTG server. The default value is 1000 milliseconds.
Discovery Interval	How often the objects are loaded from the integrated system. The default is 3600 seconds.
Operation Interval	How often health states, alerts, and/or incidents are collected. The default is 120 seconds.

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