Monitoring MySQL

MySQL PowerPack version 101

Table of Contents

Introduction 3
What is MySQL? 3
What Does the MySQL PowerPack Monitor? 4
Installing the MySQL PowerPack 4
Configuration and Discovery 6
Prerequisites for Monitoring MySQL 6
Creating a SOAP/XML Credential for MySQL 7
Configuring the Credential to Read the MySQL Error Log 8
Discovering MySQL Servers 11
Verifying Discovery and Dynamic Application Alignment 13
Viewing MySQL Component Devices 16
MySQL Dashboards 18
Device Dashboards 18
MySQL: Instance 19

Chapter 1

Introduction

Overview

This manual describes how to monitor MySQL servers and instances in SL1 using the *MySQL* PowerPack.

The following sections provide an overview of MySQL and the *MySQL* PowerPack:

What is MySQL? 3

What Does the MySQL PowerPack Monitor? 4

Installing the MySQL PowerPack 4

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What is MySQL?

MySQL is an open-source relational database management system delivering a Structured Query Language database server.

What Does the MySQL PowerPack Monitor?

To monitor MySQL servers using SL1, you must install the *MySQL* PowerPack. This PowerPack enables you to discover, model, and collect data about MySQL servers and instances.

The *MySQL* PowerPack includes:

- Dynamic Applications to discover, model, and monitor performance metrics and collect configuration data for MySQL servers and instances
- Device Classes for MySQL Servers and MySQL instances
- A sample credential for discovering MySQL servers
- Event Policies and corresponding alerts that are triggered when MySQL servers and instances meet certain status criteria
- A Device Dashboard for viewing data about MySQL servers and instances

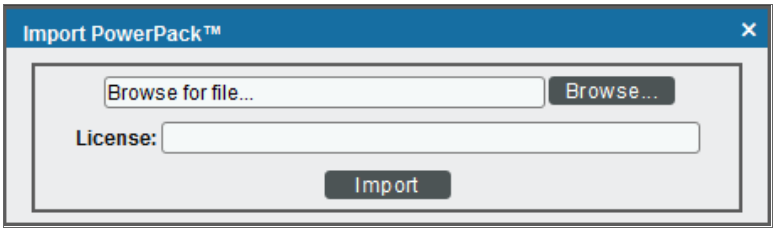
Installing the MySQL PowerPack

Before completing the steps in this manual, you must import and install the latest version of the *MySQL* PowerPack.

TIP: By default, installing a new version of a PowerPack overwrites all content from a previous version of that PowerPack that has already been installed on the target system. You can use the ***Enable Selective PowerPack Field Protection*** setting in the **Behavior Settings** page (System > Settings > Behavior) to prevent new PowerPacks from overwriting local changes for some commonly customized fields. (For more information, see the ***System Administration*** manual.)

To download and install a PowerPack:

1. Download the PowerPack from the ScienceLogic Support Site.
2. Go to the **PowerPack Manager** page (System > Manage > PowerPacks).
3. In the **PowerPack Manager** page, click the **[Actions]** button, then select *Import PowerPack*.
4. The **Import PowerPack** dialog box appears:



5. Click the **[Browse]** button and navigate to the PowerPack file.
6. When the **PowerPack Installer** modal appears, click the **[Install]** button to install the PowerPack.

> **NOTE:** If you exit the **PowerPack Installer** modal without installing the imported PowerPack, the imported PowerPack will not appear in the **PowerPack Manager** page. However, the imported PowerPack will appear in the **Imported PowerPacks** modal. This page appears when you click the **[Actions]** menu and select *Install PowerPack*.

Chapter 2

Configuration and Discovery

Overview

The following sections describe how to configure and discover MySQL for monitoring by SL1 using the *MySQL* PowerPack:

Prerequisites for Monitoring MySQL 6
Creating a SOAP/XML Credential for MySQL 7
Configuring the Credential to Read the MySQL Error Log 8
Discovering MySQL Servers 11
Verifying Discovery and Dynamic Application Alignment 13
Viewing MySQL Component Devices 16

Prerequisites for Monitoring MySQL

To configure the SL1 system to monitor MySQL servers and instances using the *MySQL* PowerPack, you must first create a read-only MySQL user for each instance to be monitored. For discovery of multiple instances on the same IP address, ScienceLogic recommends creating the same user and password on each instance. The user must have the minimum following privileges:

Privilege	Definition	Level(s)
SELECT	Enables the use of SELECT.	Global, database, table, column.

Privilege	Definition	Level(s)
EXECUTE	Enable the use of statements that execute stored routines (stored procedures and functions). This is necessary for queries on the system database.	

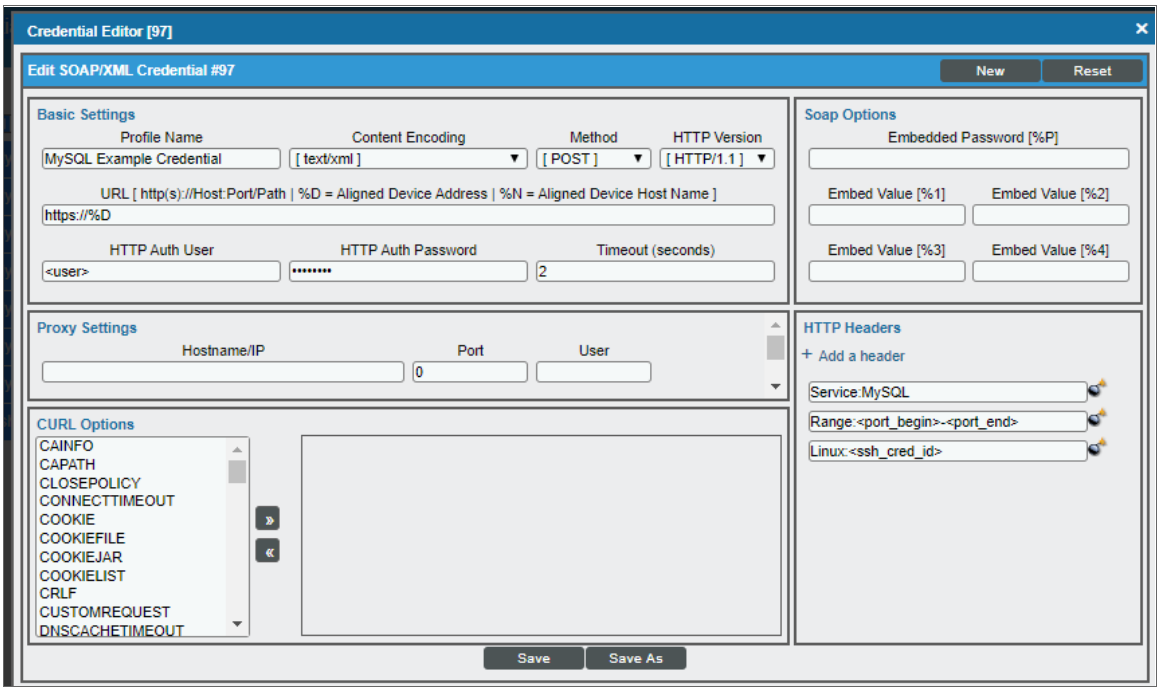
Creating a SOAP/XML Credential for MySQL

To configure SL1 to monitor MySQL, you must create a SOAP/XML credential. This credential allows the Dynamic Applications in the *MySQL* PowerPack to communicate with your MySQL server and instances.

The *MySQL*PowerPack includes an example SOAP/XML credential that you can use as a template for creating SOAP/XML credentials for MySQL.

To configure a SOAP/XML credential to access your MySQL server:

1. Go to the **Credential Management** page (System > Manage > Credentials).
2. Locate the **MySQL Example Credential** and click its wrench icon (). The **Edit SOAP/XML Credential** modal page appears.
3. Enter values in the following fields:



Basic Settings

- ***Profile Name***. Type a new name for the MySQL credential.

- ***URL***. Type "%D".
- ***HTTP Auth User***. Type the username for your MySQL server.
- ***HTTP Auth Password***. Type the password for your MySQL server.

NOTE: To discover multiple MySQL instances on the same IP address, ScienceLogic recommends creating the same user and password on each instance, so the user will need to create only one credential.

HTTP Headers

- ***HTTP Headers***. The following headers are in the example credential and are required:
  - Service:MySQL
  - Range:<port_begin>-<port_end>. Specify the range of ports on which your MySQL server is running. For example, "Range:3305-3310".
  - Linux:<ssh_cred_id>. If you have *configured credentials to read the error log*, enter the credential ID for the SSH credential for a Linux server. For Windows servers, update the field to "Windows:<powershell_cred_id>".

4. For all other fields, use the default values.
5. Click the **[Save As]** button.

NOTE: To discover a MySQL instance with one port, users must specify the "Range" header as "Range:<port_ begin>-<port_end>". Meaning, "port_begin" and "port_end" must be the same port. For example, "Range:7706-7706".

Configuring the Credential to Read the MySQL Error Log

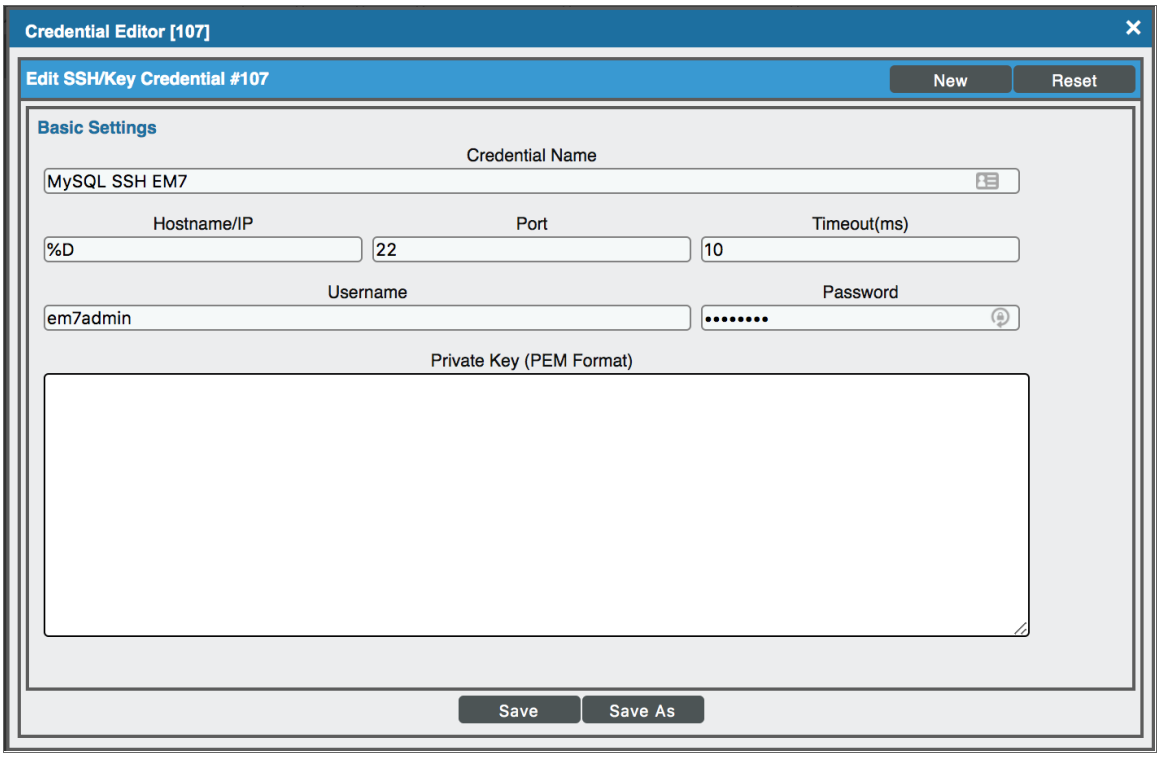
In addition to the *SOAP/XML credential created to monitor MySQL*, another credential must be created to read the MySQL Error Log. The credentials are configured differently for Linux and Windows servers.

For Linux servers, you must create an SSH/Key credential. To create the credential:

1. Go to the **Credential Management** page (System > Manage > Credentials).
2. Click the **[Action]**s button and select the option *Create SSH/Key Credential* for Linux servers or *Create PowerShell Credential* for Windows Servers.

3. Enter values in the following fields:

For Linux Servers:



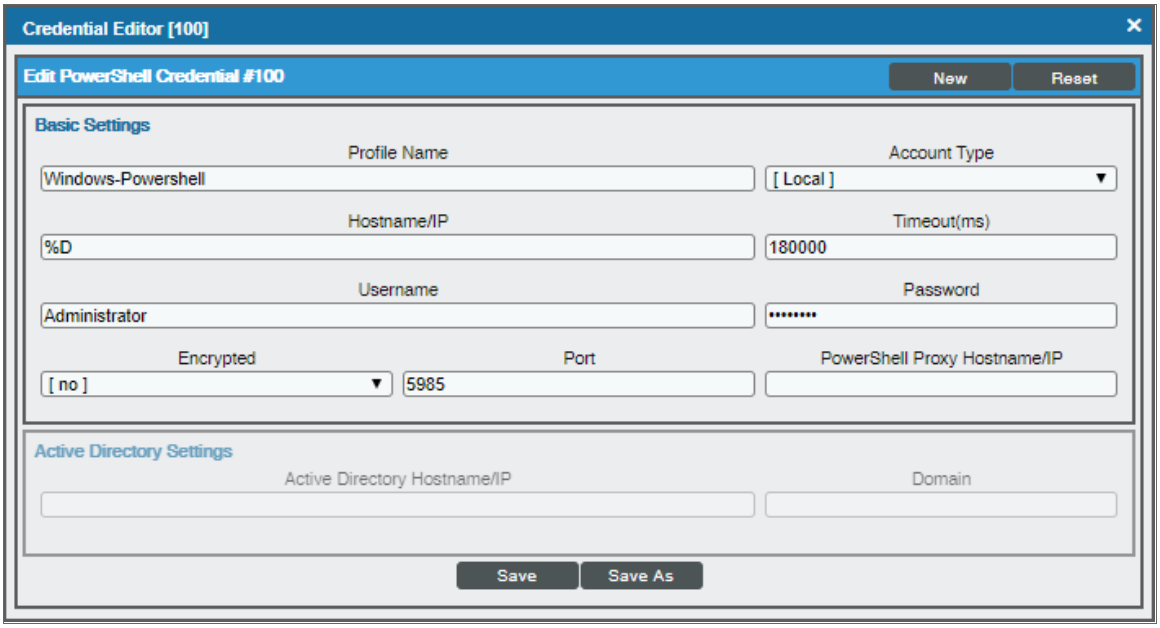
- ***Credential Name***. Type a new name for the credential.
- ***Hostname/IP***. Type "%D".
- ***Username***. Type the username for your Linux server.
- ***Password***. Type the password for your Linux server.

4. For all other fields, use the default values.
5. Click the **[Save]** button.

For Windows servers, you must create a PowerShell credential. To create the credential:

1. Go to the **Credential Management** page (System > Manage > Credentials).
2. Click the **[Action]**s button and select *Create PowerShell Credential*.

3. Enter values in the following fields:

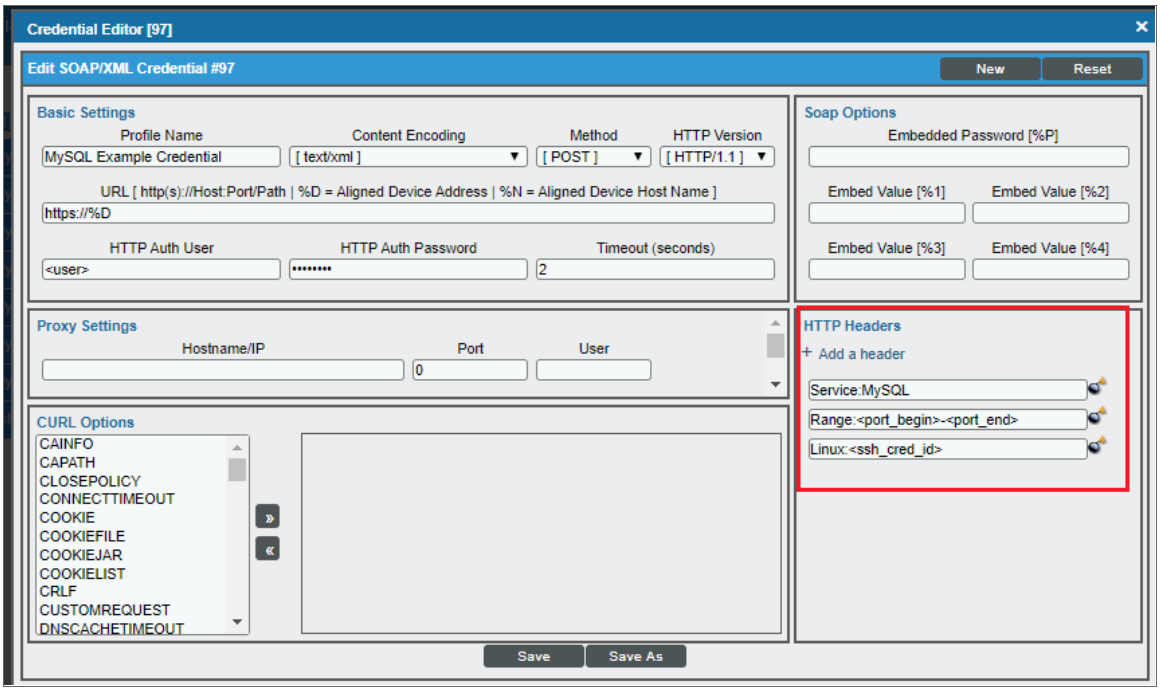


- ***Profile Name***. Type a new name for the credential.
- ***Hostname/IP***. Type "%D".
- ***Username***. Type your username for the Windows server.
- ***Password***. Type your password for the Windows server.

4. For all other fields, use the default values.
5. Click the **[Save]** button.

To configure the existing SOAP credential:

1. Go to the **Credential Management** page (System > Manage > Credentials).
2. Locate the *MySQL credential you created* and click its wrench icon ( ). The **Edit SOAP/XML Credential** modal page appears.
3. In the **HTTP Headers** pane, enter the credential ID for the SSH credential for a Linux server. For Windows servers, update the field to "Windows:<powershell_cred_id>".



4. Click the **[Save]** button.

Discovering MySQL Servers

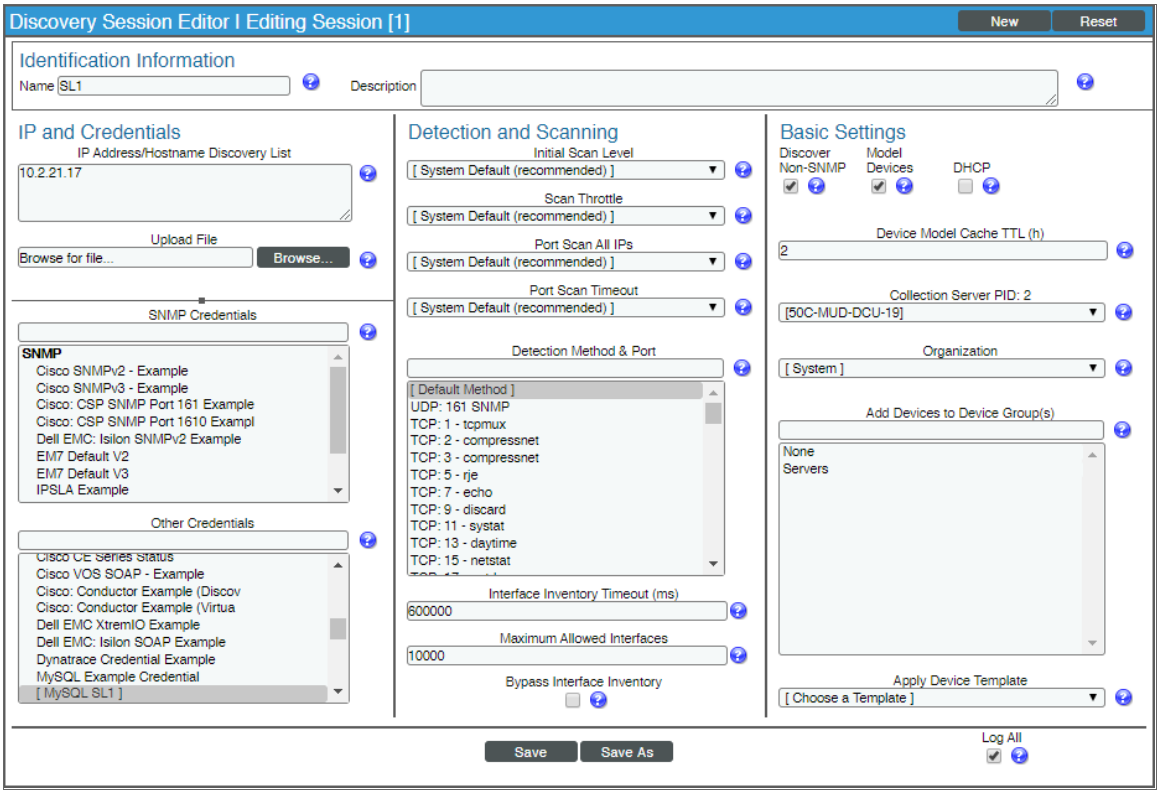
To model and monitor your MySQL servers and instances, you must run a discovery session to discover the MySQL server that SL1 will use as the root device for monitoring the MySQL instances.

Several minutes after the discovery session has completed, the "MySQL: Discovery" Dynamic Application in the *MySQL* PowerPack should automatically align to the MySQL server, creating the MySQL server container. The remaining Dynamic Applications in the PowerPack will then discover, model, and monitor the remaining MySQL instances.

To discover the MySQL server that you want to monitor, perform the following steps:

1. Go to the **Discovery Control Panel** page (System > Manage > Classic Discovery).
2. In the **Discovery Control Panel**, click the **[Create]** button.

3. The **Discovery Session Editor** page appears. In the **Discovery Session Editor** page, define values in the following fields:



- ***IP Address/Hostname Discovery List***. Type the IP address(es) of the MySQL server you want to discover.
- ***Other Credentials***. Select the SOAP/XML credential(s) you created for the MySQL server.
- ***Discover Non-SNMP***. Select this checkbox.
- ***Model Devices***. Select this checkbox.

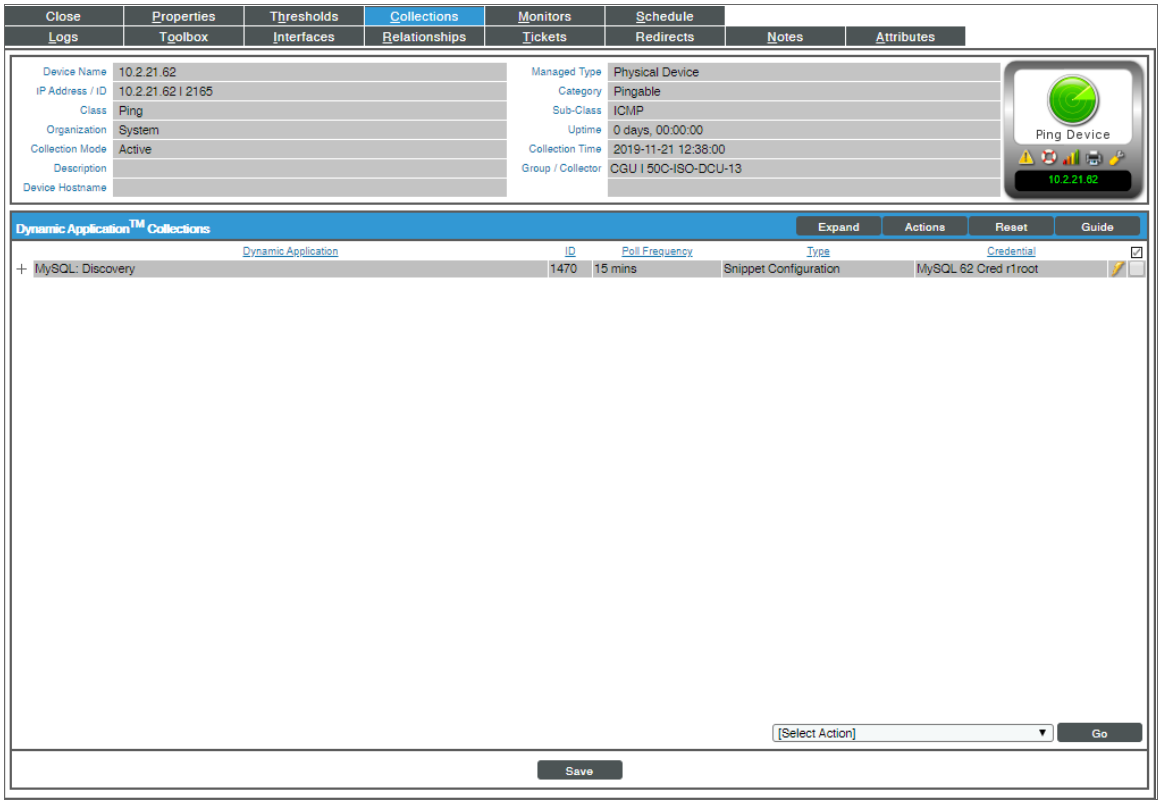
4. Optionally, you can enter values in the other fields on this page. For more information about the other fields on this page, see the ***Discovery & Credentials*** manual.
5. Click the **[Save]** button to save the discovery session and then close the **Discovery Session Editor** window.
6. The discovery session you created appears at the top of the **Discovery Control Panel** page. Click its lightning-bolt icon ( ) to run the discovery session.
7. The **Discovery Session** window appears. When the cluster root device(s) are discovered, click the device icon ( ) to view the **Device Properties** page for each device.

Verifying Discovery and Dynamic Application Alignment

To verify that SL1 has automatically aligned the correct Dynamic Applications during discovery, perform the following steps:

1. After discovery has completed, click the device icon for the MySQL server ( ).
2. From the **Device Properties** page for the MySQL server, click the **[Collections]** tab. The **Dynamic Application Collections** page appears.
3. The "MySQL: Discovery" Dynamic Application for the server is automatically aligned during discovery.

> **NOTE:** It can take several minutes after the discovery session has completed for Dynamic Applications to appear in the **Dynamic Application Collections** page.



The MySQL server container will then be created and the "MySQL: Instance Discovery" Dynamic Application will auto-align to the server container. The MySQL server container will then discover, model, and monitor the remaining MySQL instances.

The following Dynamic Applications will auto-align to the MySQL instances:

- MySQL: Instance Commands Performance
- MySQL: Instance Handler Performance
- MySQL: Instance InnoDB Buffer Pool Performance
- MySQL: Instance InnoDB Data Performance
- MySQL: Instance InnoDB Row Performance
- MySQL: Instance Overall Performance
- MySQL: Instance Sort and Select Performance
- MySQL: Instance Table Locking Performance
- MySQL: Instance Threads and Connections Performance
- MySQL: Instance Configuration
- MySQL: Instance InnoDB Configuration

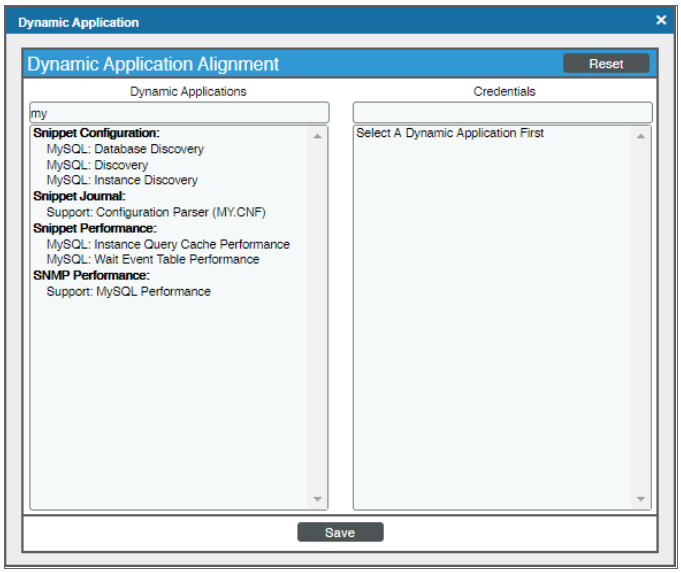
The following Dynamic Applications will not automatically align during discovery and will need to be manually aligned:

- MySQL: Events Errors Summary Configuration
- MySQL: Performance Schema Statements Configuration
- MySQL: Performance Schema Summary Statement Configuration
- MySQL: Process List Configuration
- MySQL: Statements With Error/Warning Configuration

NOTE: To collect data for the manually-aligned Dynamic Applications, you will need to enable the system database and performance_schema in the MySQL instance.

To manually align Dynamic Applications, perform the following steps:

1. Click the **[Action]** button and then select *Add Dynamic Application*. The **Dynamic Application Alignment** page appears:

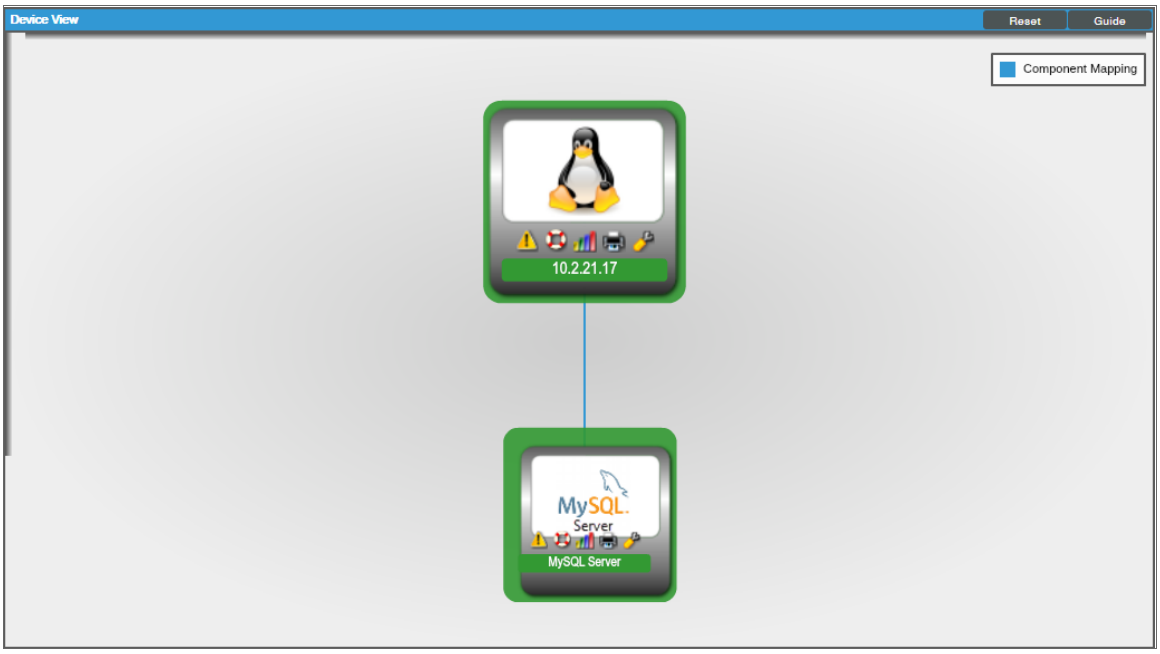


2. In the ***Dynamic Applications*** field, select the Dynamic Application you want to align.
3. In the ***Credentials*** field, select the credential specified in the table.
4. Click the **[Save]** button.
5. Repeat steps 1-4 for the other unaligned Dynamic Applications.

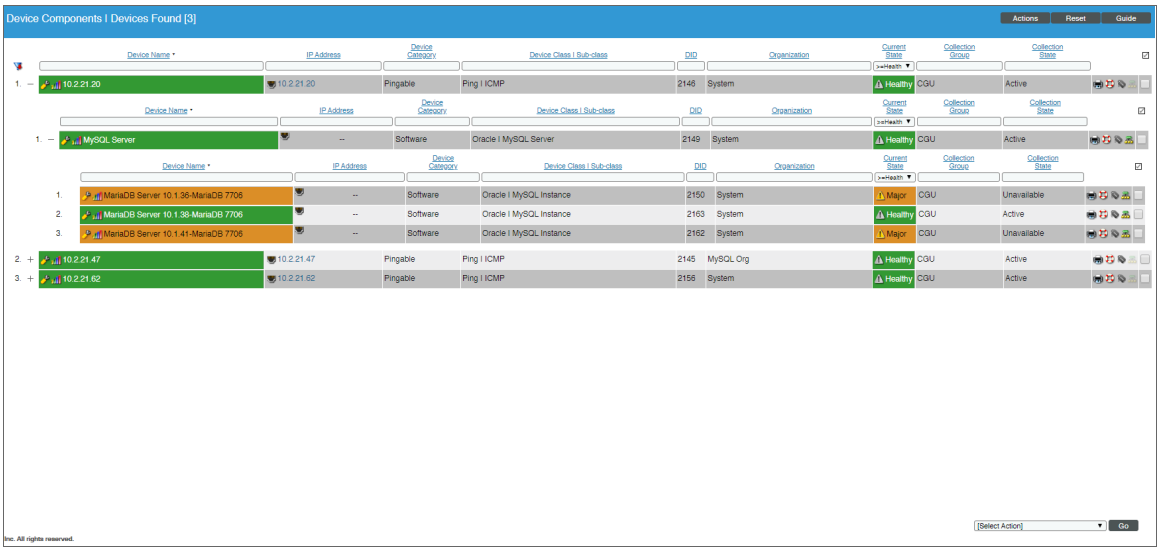
Viewing MySQL Component Devices

In addition to the **Device Manager** page (Registry > Devices > Device Manager), you can view the MySQL server and all associated component devices in the following places in the user interface:

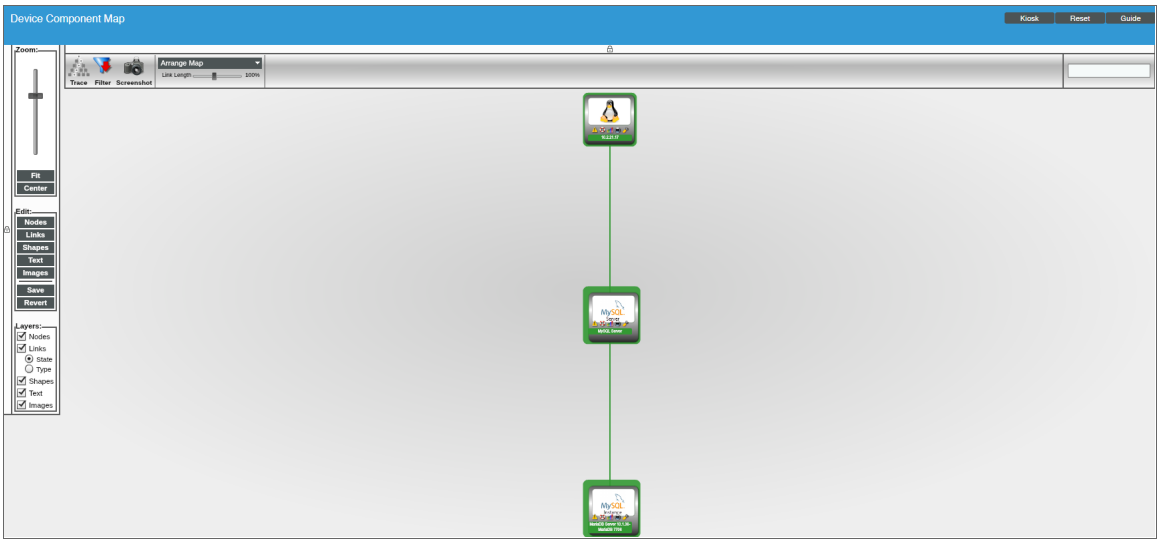
- The **Device View** modal page (click the bar-graph icon [ ] for a device, then click the **Topology** tab) displays a map of a particular device and all of the devices with which it has parent-child relationships. Double-clicking any of the devices listed reloads the page to make the selected device the primary device:



- The **Device Components** page (Registry > Devices > Device Components) displays a list of all root devices and component devices discovered by SL1 in an indented view, so you can easily view the hierarchy and relationships between child devices, parent devices, and root devices. To view the component devices associated with a MySQL server, find the MySQL server and click its plus icon (+):



- The **Component Map** page (Classic Maps > Device Maps > Components) allows you to view devices by root node and view the relationships between root nodes, parent components, and child components in a map. This makes it easy to visualize and manage root nodes and their components. SL1 automatically updates the **Component Map** as new component devices are discovered. The platform also updates each map with the latest status and event information. To view the map for a MySQL server, go to the **Component Map** page and select the map from the list in the left NavBar. To learn more about the **Component Map** page, see the ***Views*** manual.



Chapter 3

MySQL Dashboards

Overview

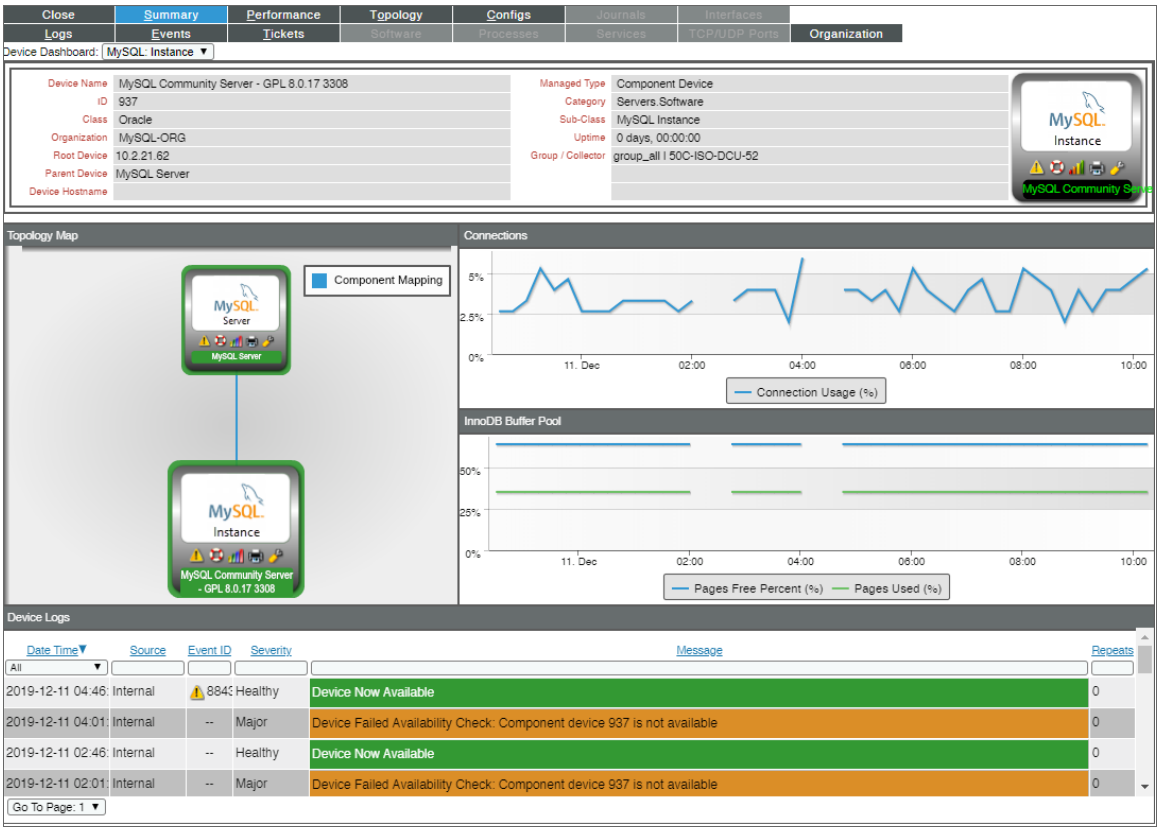
The following sections describe the device dashboards that are included in the *MySQL*PowerPack:

Device Dashboards *18*
MySQL: Instance *19*

Device Dashboards

The *MySQL* PowerPack includes a device dashboard that provides summary information for MySQL instances.

MySQL: Instance



The MySQL: Instance device dashboard displays the following information:

- A topology map
- A Connections line chart that displays connection usage over a specified period of time
- An InnoDB Buffer Pool line chart that displays Pages Free Percent and Pages Used over a specified period of time
- Device logs

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