

Monitoring IBM Tivoli Storage Manager

IBM: Tivoli Storage Manager PowerPack version 104

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Chapter

1

Introduction to Tivoli Storage Manager

Overview

This manual describes how to monitor IBM Tivoli Storage Manager environments in SL1 using the "IBM: Tivoli Storage Manager" PowerPack.

The following sections provide an overview of IBM Tivoli Storage Manager and the "IBM: Tivoli Storage Manager" PowerPack:

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What is IBM Tivoli Storage Manager?

IBM Tivoli Storage Manager is a data protection platform that gives enterprises a single point of control and administration for backup and recovery, providing centralized, automated data protection that can help reduce the risks that are associated with data loss and help manage compliance with data retention and availability requirements.

What Does the IBM: Tivoli Storage Manager PowerPack Monitor?

To monitor IBM Tivoli Storage Manager environments using SL1, you must install the "IBM: Tivoli Storage Manager" PowerPack. This PowerPack enables you to discover, model, and collect data from IBM Tivoli Storage Manager environments.

SL1 uses SSH to connect to the Tivoli Storage Manager server or proxy server. The administrative utility "dsmadmc" is then used to guery the TSM inventory.

The "IBM: Tivoli Storage Manager" PowerPack includes:

- Example credentials you can use as templates to create a SOAP/XML credential and an SSH/Key credential to connect to the IBM Tivoli Storage Manager environments you want to monitor
- Dynamic Applications to discover, model, and monitor performance metrics and collect configuration data for IBM Tivoli Storage Manager environments
- Device classes for the Tivoli Storage Manager devices that SL1 monitors
- Event policies and corresponding alerts that are triggered when IBM Tivoli Storage Manger devices meet certain status criteria
- A run book action and a run book automation policy that align the root device class

Installing the IBM: Tivoli Storage Manager PowerPack

Before completing the steps in this manual, you must import and install the latest version of the "IBM: Tivoli Storage Manager" 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 section on *Global Settings*.

NOTE: For details on upgrading SL1, see the relevant SL1 Platform Release Notes.

To download and install the PowerPack:

- Search for and download the PowerPack from the PowerPacks page (Product Downloads > PowerPacks & SyncPacks) at the <u>ScienceLogic Support Site</u>.
- 2. In SL1, go to the **PowerPacks** page (System > Manage > PowerPacks).
- 3. Click the [Actions] button and choose Import PowerPack. The Import PowerPack dialog box appears.
- 4. Click [Browse] and navigate to the PowerPack file from step 1.

- 5. Select the PowerPack file and click [Import]. The PowerPack Installer modal displays a list of the PowerPack contents.
- 6. Click [Install]. The PowerPack is added to the PowerPacks page.

NOTE: If you exit the **PowerPack Installer** modal without installing the imported PowerPack, the imported PowerPack will not appear in the **PowerPacks** 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 IBM Tivoli Storage Manager environments for monitoring by SL1 using the "IBM: Tivoli Storage Manager" PowerPack:

This chapter covers the following topics:

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Viewing IBM Tivoli Storage Manager Component Devices	. 15

Creating Credentials for IBM Tivoli Storage Manager

If you are connecting to your IBM Tivoli Storage Manager (TSM) environment using SSH with basic authentication, then you will need to create a SOAP/XML credential.

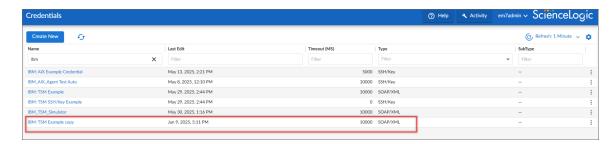
If you connecting to your TSM environment using SSH with public-key authentication, you will need to create an SSH/Key credential in addition to the SOAP/XML credential.

Creating a SOAP/XML Credential for IBM Tivoli Storage Manager

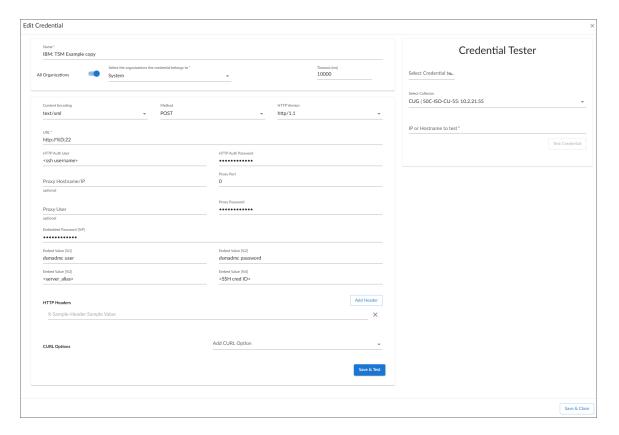
To use the Dynamic Applications in the "IBM: Tivoli Storage Manager" PowerPack, you must configure a SOAP/XML credential for your Tivoli Storage Manager (TSM) environment. The "IBM: Tivoli Storage Manager" PowerPack includes a template for SOAP/XML credentials that you can edit for use with your TSM environment.

To create a SOAP/XML credential:

- 1. Go to the **Credentials** page (Manage > Credentials).
- 2. Locate the "IBM: TSM Example" credential, then click its [Actions] icon (*) and select Duplicate from the drop-down field. The "IBM: TSM Example" copy credential appears.



3. Click the [Action] icon (*) for the "IBM: TSM Example" copy credential, then select *Edit*. The **Edit** Credential page appears.



- 4. Enter values in the following fields:
 - Name. Enter a new name for the credential. This field is required.
 - All Organizations. Toggle on (blue) to align the credential to all organizations, or toggle off (gray)
 and then select one or more specific organizations from the Select the organizations the
 credential belongs to drop-down field to align the credential with those specific organizations.
 - *Timeout*. Enter the time, in milliseconds, after which SL1 will stop trying to communicate with the TSM device. The default value is 10000. This field is required.

- URL. Enter the TSM url. The default is http://%D:22.
- HTTP Auth User. Enter the username for the TSM server or the proxy server that you are connecting
 to via SSH.

NOTE: The username you enter in the *HTTP Auth User* field must have the necessary permissions to successfully execute commands for dsmadmc, the administrative utility that is used to query the TSM inventory.

- **HTTP Auth Password**. Enter the password for the TSM server or the proxy server you are connecting to via SSH. This field is required if you are not using a private RSA key to connect.
- *Embed Value* [%1]. Enter the dsmadmc username. The dsmadmc login is configured separately by the TSM administrator. This field is required.
- Embed Value [%2]. Enter the dsmadmc password. This field is required.
- **Embed Value** [%3]. If you are using a proxy server, enter the TSM server name in this field as defined in your dsm.sys file. If this field is left unchanged, it's assumed that you're connecting directly to the TSM server instance.
- Embed Value [%4]. If you are using an SSH/Key credential for public/private key access, enter the credential ID of the SSH/Key credential in this field. Otherwise, leave this field blank.
- 5. Click [Save & Close].

Creating a SOAP/XML Credential for IBM Tivoli Storage Manager in the SL1 Classic User Interface

To use the Dynamic Applications in the SL1 classic user interface in the "IBM: Tivoli Storage Manager" PowerPack, you must configure a SOAP/XML credential for your Tivoli Storage Manager (TSM) environment. The "IBM: Tivoli Storage Manager" PowerPack includes a template for SOAP/XML credentials that you can edit for use with your TSM environment.

To modify the template in the classic SL1 user interface, perform the following steps:

- 1. Go to the **Credential Management** page (System > Manage > Credentials).
- 2. Click the wrench icon (⁸) for the "IBM: TSM Example" credential. The **Credential Editor** modal page appears.

- 3. Supply values in the following fields:
 - Profile Name. Enter a new name for the credential.
 - HTTP Auth User. Enter the username for the TSM server or the proxy server that you are connecting to via SSH.

NOTE: The username you enter in the *HTTP Auth User* field must have the necessary permissions to successfully execute dsmadmc commands.

- HTTP Auth Password. Enter the password for the TSM server or the proxy server you are connecting to via SSH. This field is required when not using a private RSA key to connect.
- *Embed Value* [%1]. Enter the dsmadmc username. The dsmadmc login is configured separately by the TSM administrator. This field is required.
- Embed Value [%2]. Enter the dsmadmc password. This field is required.
- **Embed Value [%3]**. If you are using a proxy server, enter the TSM server name in this field as defined in your dsm.sys file. If this field is left unchanged, it's assumed that you're connecting directly to the TSM server instance.
- Embed Value [%4]. If you are using an SSH/Key credential for public/private key access, enter the credential ID of the SSH/Key credential in this field. Otherwise, leave this field blank.
- 4. Click the [Save As] button to save your changes as a new credential.

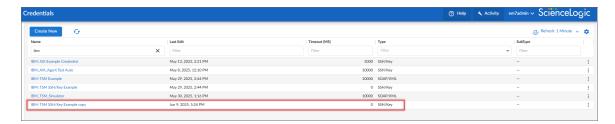
CAUTION: Do not click the **[Save]** button, as it will save over the example credential, which you may need for future use.

Creating an SSH/Key Credential for IBM Tivoli Storage Manager

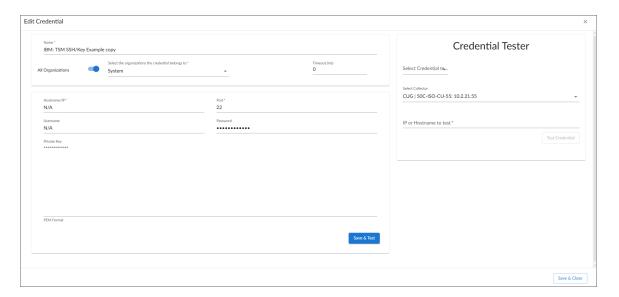
When configuring monitoring for IBM Tivoli Storage Manager (TSM) devices, if you want to use a public/private RSA key pair for the SSH connection rather than a username and password, you must also create an SSH/Key credential. This credential allows the Dynamic Applications in the "IBM: Tivoli Storage Manager" PowerPack to connect with an IBM TSM server or proxy client using an RSA key pair. After you create this credential, you must then enter its credential ID number in the SOAP/XML credential you created.

To create a SOAP/XML credential:

- 1. Go to the **Credentials** page (Manage > Credentials).
- 2. Locate the "IBM: TSM SSH/Key Example" credential, then click its [Actions] icon (*) and select *Duplicate* from the drop-down field. The "IBM: TSM SSH/Key Example copy" credential appears.



3. Click the [Action] icon (*) for the "IBM: TSM SSH/Key Example copy" credential, then select Edit. The Edit Credential page appears.



- 4. Enter values in the following fields:
 - Name. Enter a new name for the credential. This field is required.
 - All Organizations. Toggle on (blue) to align the credential to all organizations, or toggle off (gray) and then select one or more specific organizations from the Select the organizations the credential belongs to drop-down field to align the credential with those specific organizations.
 - *Timeout*. Enter the time, in milliseconds, after which SL1 will stop trying to communicate with the TSM device. The default value is 0. This field is required.
 - Hostname/IP. Type "N/A". This field cannot remain empty.
 - Port. Type "22".
 - Username. Type "N/A". This field cannot remain empty.
 - Password. Type "N/A". This field cannot remain empty.
 - **PEM Format**. Paste the SSH private key that you copied from your collector into this field, in PEM format.

NOTE: The private key can have a maximum of 64 characters per line. Therefore, you cannot use keys in the OpenSSH format, because that format uses 70 characters per line. When you attempt to save the credential, SL1 will validate that the private key entered is in the correct format. You will be able to save the credential only if the private key is correctly formatted.

- 5. Click [Save As]. On the Credentials page, note the credential ID of the SSH/Key credential you just created.
- 6. Save the corresponding public key to the authorized_keys file on your SSH target (the TSM server or proxy client). This is typically found at /root/.ssh/authorized_keys.
- 7. In the SOAP/XML credential you created, enter the credential ID of the SSH/Key credential in the **Embed** Value [%4] field.

Creating an SSH/Key Credential for IBM Tivoli Storage Manager in the SL1 Classic User Interface

When configuring monitoring for IBM Tivoli Storage Manager devices in the SL1 classic user interface, if you want to use a public/private RSA key pair for the SSH connection rather than a username and password, you must also create an SSH/Key credential. This credential allows the Dynamic Applications in the "IBM: Tivoli Storage Manager" PowerPack to connect with an IBM Tivoli Storage Manager server or proxy client using an RSA key pair. After you create this credential, you must then enter its credential ID number in the SOAP/XML credential you created.

The "IBM: Tivoli Storage Manager" PowerPack includes a template for SSH/Key credentials that you can edit for use with your TSM environment, if needed.

To create an SSH/Key credential in the classic SL1 user interface:

- 1. Generate an SSH RSA private/public key pair. This is commonly done using the ssh-keygen command-line utility.
- 2. Go to the **Credential Management** page (System > Manage > Credentials).
- 3. Click the wrench icon (^{s)} for the "IBM: TSM SSH/Key Example" credential. The **Credential Editor** modal page appears.
- 4. Supply values in the following fields:
 - Credential Name. Enter a new name for the credential.
 - *Username*. Type "N/A". The credential cannot be saved if this field is empty.
 - *Password*. Type "N/A". The credential cannot be saved if this field is empty.
 - Private Key (PEM Format). Paste the SSH private key that you copied from your collector into this
 field, in PEM format.

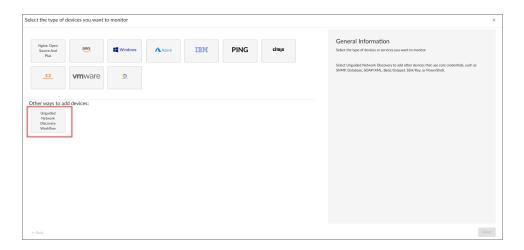
NOTE: The private key can have a maximum of 64 characters per line. Therefore, you cannot use keys in the OpenSSH format, because that format uses 70 characters per line. When you attempt to save the credential, SL1 will validate that the private key entered is in the correct format. You will be able to save the credential only if the private key is correctly formatted.

- 5. Click [Save As]. In the Credential Management, note the credential ID of the SSH/Key credential you just created.
- 6. Save the corresponding public key to the authorized_keys file on your SSH target (the TSM server or proxy client). This is typically found at /root/.ssh/authorized keys.
- 7. In the SOAP/XML credential you created, enter the credential ID of the SSH/Key credential in the Embed Value [%4] field.

Discovering IBM Tivoli Storage Manager Component Devices

To create and run a discovery session that will discover an IBM Tivoli Storage (TSM) appliance:

- 1. Go to the **Devices** page () or the **Discovery Session** page (Devices > Discovery Sessions) and click the [Add Devices] button.
- 2. Click the [Unguided Network Discovery Workflow] button. Additional information about that requirements for discovery appears in the General Information pane to the right.



- 3. Click [Select]. The Add Devices page appears.
- 4. Complete the following fields:
 - **Discovery Session Name**. Type a unique name for this discovery session. This name is displayed in the list of discovery sessions on the [**Discovery Session**] tab.
 - **Description**. Optional. Type a short description of the discovery session. You can use the test in this description to search for the discovery session on the [**Discovery Session**] tab.

- Select the organization to add discovered devices to. Select the name of the organization to which you want to add the discovered devices.
- 5. Click [Next]. The Credentials page of the Add Devices wizard appears.
- 6. On the Credentials page, locate and select the SOAP/XML credential you created for TSM appliances.
- 7. Click [Next]. The Discovery Session page of the Add Devices wizard appears.
- 8. Complete the following fields:
 - List of IP/Hostnames. Type the IP address for the TSM appliance.
 - Which collector will monitor these devices?. Required. Select an existing collector to monitor the discovered devices.
 - Run after save. Select this option to run this discovery session as soon as you save the session.
 - Advanced options. Click the down arrow (v) to complete the following fields:
 - **Discover Non-SNMP**. Enable this setting.
 - Model Devices. Enable this setting.
 - Select Device Template. If you configured a TSM device template, select it here. Otherwise, leave the default selection.
- 9. If you enabled the *Run after save* option, click the [Save and Run] button. The discovery session will run and the **Discovery Logs** page will display any relevant log messages. If the discovery session locates and adds any devices, the **Discovery Logs** page will include a link to the **Device Investigator** page for the discovered device.
- 10. If you did not enable the *Run after save* option, click the [Save and Close] button. The Discovery Session page (Devices > Discovery Sessions) will display the new discovery session.

To discover an IBM Tivoli Storage Manager (TSM) system in the SL1 classic user interface:

- 1. Go to the **Discovery Control Panel** page (System > Manage > Classic Discovery or System > Manage > Discovery in the classic user interface).
- 2. In the **Discovery Control Panel**, click the **[Create]** button. The **Discovery Session Editor** page appears.
- 3. Supply values in the following fields:
 - IP Address Discovery List. Type the IP address of the first controller listed in the Embed Value [%3] field of the SOAP/XML credential.
 - Other Credentials. Select the credential you created for the TSM system.
 - Discover Non-SNMP. Select this checkbox.
- 4. Optionally, supply values in the other fields in this page. For a description of the fields in this page, see the **Discovery & Credentials** manual.
- 5. Click the [Save] button.
- 6. The **Discovery Control Panel** page will refresh. Click the lightning bolt icon (*) for the discovery session you just created.
- 7. In the pop-up window that appears, click the **[OK]** button. The page displays the progress of the discovery session.

Verifying Discovery and Dynamic Application Alignment

To verify that SL1 has automatically aligned the correct Dynamic Applications during discovery:

- 1. After discovery has completed, click the device icon for the Tivoli Storage Manager (TSM) device (). From the **Device Properties** page for the TSM device, click the **[Collections]** tab. The **Dynamic Application Collections** page appears.
- 2. All applicable Dynamic Applications are automatically aligned to the root device during discovery.

NOTE: It can take 10 to 15 minutes after the discovery session has completed for Dynamic Applications to appear in the **Dynamic Application Collections** page.

NOTE: As data is collected and cached on the first polling interval and displayed on the second, you might not see any data until the second polling interval is completed. This could take as long as 30 minutes.

You should see the following Dynamic Applications aligned to the TSM device:

- IBM: TSM Admin Schedule Discovery
- IBM: TSM Collection Cache
- IBM: TSM Components Config
- IBM: TSM Events Cache
- IBM: TSM Library Discovery
- IBM: TSM Policy Domain Discovery
- IBM: TSM Server Config
- IBM: TSM Storage Pool Discovery

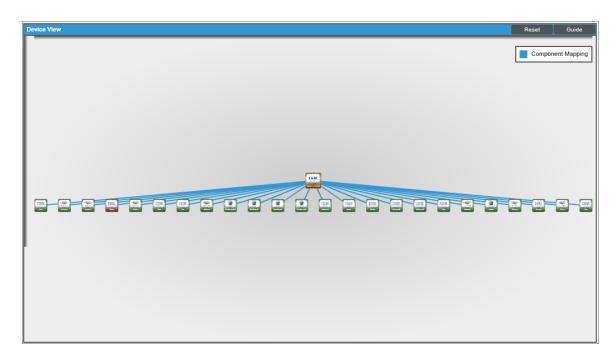
If the listed Dynamic Applications have not been automatically aligned during discovery, you can align them manually. To do so, perform the following steps:

- 1. Click the [Actions] 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 you created.
- 4. Click the [Save] button.
- 5. Repeat steps 1-4 for the other unaligned Dynamic Applications.

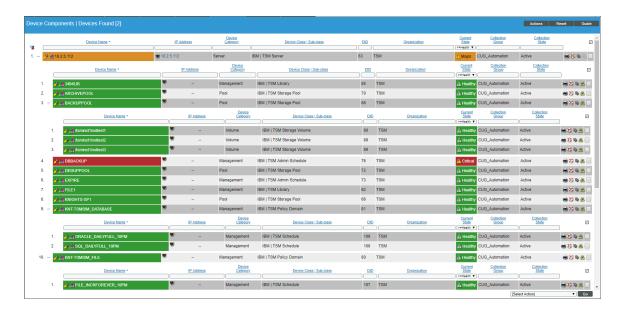
Viewing IBM Tivoli Storage Manager Component Devices

In addition to the **Device Manager** page (Devices > Classic Devices, or Registry > Devices > Device Manager in the classic SL1 user interface), you can view the IBM Tivoli Storage Manager (TSM) environment and all associated component devices in the following places in the user interface:

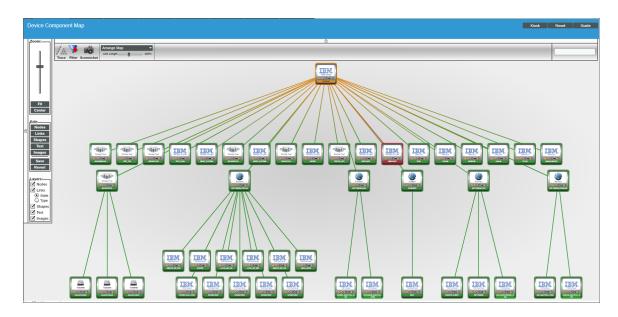
• All devices, virtual devices, and component devices appear in the **Device Manager** page (Devices > Classic Devices, or Registry > Devices > Device Manager in the classic SL1 user interface).



• The **Device Components** page (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 IBM Tivoli Storage Manager (TSM), find the TSM root device and click its plus icon (+):



• The **Device 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 IBM Tivoli Storage Manager (TSM) devices, 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.



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