



# **Violin Storage Management Plugin**

## User's Guide

For Release VSMP1.0.0

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Violin Memory, Inc.  
685 Clyde Avenue  
Mountain View, CA 94043  
USA

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## **DISCLAIMER**

Portions of this document are intended solely as an outline of methodologies to be followed during the installation, set-up, and maintenance of Violin Memory equipment. It is not intended as a step-by-step guide or a complete set of all necessary and sufficient procedures.

While every effort has been made to ensure that this document is complete and accurate at the time of publication, the information that it contains is subject to change. Violin Memory is not responsible for any additions to or alterations of the original document. This document is intended as a general guide only. It has not been tested for all possible applications, and it may not be complete or accurate for some situations.

Users of this document are urged to heed warnings interspersed throughout the document, such as service disruption warnings.

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# Preface

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This document describes how to install, register, and use the Violin Storage Management Plugin. This preface provides basic information on the document and covers the following topics:

- [Document Organization](#) on page 2
- [Document Conventions](#) on page 2
- [Reference Documents](#) on page 3
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## Document Organization

This document is organized as follows:

Chapters
CHAPTER 1, “ <i>Install and Register the Violin Storage Management Plugin</i> ” on page 5
CHAPTER 2, “ <i>Manage and Monitor Storage Arrays and Datastores</i> ” on page 13

Table 1.1 Document Organization

## Document Conventions

Violin Memory documentation follows the conventions outlined in this section.

### Important Information

The following table summarizes the notations used to call out important information, such as warning, caution, and note.

#### Important Notations

Notation and Sample Text
<b>WARNING!</b> Only authorized, qualified, and trained personnel should attempt to work on this equipment.
<b>Caution:</b> Follow the listed safety precautions when working on the Violin 6000 Series Memory Array.
<b>Note:</b> Read through this entire chapter and plan your installation according to your location before installing the equipment. The following procedures and the order in which they appear are general installation guidelines only.



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## Typographical Conventions

The following typographic conventions are used in this guide:

Format	Meaning
<b>Bold</b>	User Interface text.
<i>Italic</i>	Provides emphasis and identifies variables and document titles.
Courier	Command names, examples, and output.
<b>Courier bold</b>	Input you must type exactly as shown.
< <i>Courier italic</i> >	Information for which you must supply a value.
[ ]	Optional command parameters are enclosed within square brackets.
	Separates a set of command choices from which only one may be chosen.
{ }	Required command parameters that must be specified are enclosed within curly brackets.

### Typographical Conventions

## Reference Documents

In addition to this guide, the following Violin Memory documents comprise the documentation suite for the Violin 6000 Series Memory Array. These guides are available for download from the Violin Memory Support site at <http://www.violin-memory.com/support/>

This document...	Provides this information...
Release Notes	Describes the new features, resolved issues, known limitations and software upgrade instructions for the current release.
<i>Violin 6000 Series Memory Array Installation Guide</i>	Provides instructions for installing the Violin 6000 Series Memory Array in an equipment rack and completing the system setup and configuration.
<i>Violin 6000 Series Memory Array User's Guide</i>	Provides instructions for managing, monitoring, and maintaining the Violin 6000 Series Memory Array using the Violin Web interface and Command Line Interface (CLI).

### Reference Documents

## Contacting Violin Memory

To obtain additional information or technical support for Violin Memory products, or to obtain an RMA number and replacement product, contact us at:

Phone: 1-855-VIOLIN-5 (1-855-846-5465)

International: +1 650-396-1500 Extension 3

Web site: <http://www.violin-memory.com>

E-mail: [support@vmem.com](mailto:support@vmem.com)

When contacting Violin Memory Customer Support, please have the following information available:

- Model and serial number of the system for which you are requesting support
- Software version
- vCenter Server version and vSphere Client version running on your system
- A brief description of the problem

## Comments & Questions

Please submit your questions and feedback on this document to the following e-mail address: [support@vmem.com](mailto:support@vmem.com).

# CHAPTER 1 Install and Register the Violin Storage Management Plugin

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This chapter introduces the Violin Storage Management Plugin, and provides instructions on how to install and register the application. The following topics are covered:

- [About the Violin Storage Management Plugin](#) on page 5
- [System Requirements](#) on page 6
- [Installing and Registering the Violin Storage Management Plugin](#) on page 6
- [Uninstalling the Violin Storage Management Plugin](#) on page 9
- [Getting Started](#) on page 10

## About the Violin Storage Management Plugin

The Violin Storage Management Plugin works in conjunction with VMware vCenter Servers (5.0) to provide centralized management of Violin 6000 Series flash Memory Arrays from a single console.

The Violin Storage Management Plugin integrates seamlessly with a VMware vCenter server, allowing administrators to manage and monitor Violin 6000 Series flash Memory Arrays from the vCenter server.

## System Requirements

The system on which you install the Violin Storage Management Plugin must meet the following requirements:

- Windows 2008 or later (32 or 64 bit)
- 256 MB of RAM (minimum requirement)
- Internet Explorer 9 (IE9), or later
- vCenter server 4.x, 5.0
- Fibre Channel support only
- Violin 6000 Series flash Memory Array running G5.5.0 or later

## Installing and Registering the Violin Storage Management Plugin

After completing the installation, you must register the plugin. This section covers the following topics:

- [Installing the Violin Storage Management Plugin](#) on page 6
- [Registering the Violin Storage Management Plugin](#) on page 7
- [Alternate Registration Tasks](#) on page 8

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**Caution:** If you have a version of the Violin Storage Management Plugin running on your system, it is recommended that you uninstall the existing version before you begin installing a newer version. For more information, see [Uninstalling the Violin Storage Management Plugin](#) on page 9.

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### Installing the Violin Storage Management Plugin

This section demonstrates how to install the Violin Storage Management Plugin.

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**Note:** It is recommended that you install the Violin Storage Management Plugin on a Windows server that is not running the vCenter Server. The Windows server you install the plugin on can be 32 bit Windows.

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To install the Violin Storage Management Plugin, do the following:

1. Go to the Violin Memory Support site at <http://www.violin-memory.com/support/> and download the VSMP1.0.0.exe file.
2. Click **Run**, then click **Next**.
3. Select the **I accept agreement** check box, and then click **Next**.
4. Do one of the following:
  - Accept the default location where the plugin is to be installed by clicking **Next**.
  - Navigate to the location where you want the plugin to be installed, and then click **Next**.

5. (Optional) Customize the name that will appear in the Start menu, by entering the new name in the text box.
6. Click **Next**, then click **Install**.

A progress bar appears. The installation completes in approximately one minute.

7. When the installation is complete, click **Finish**.

A README file appears with instructions on how to register the plugin. If you choose to use the directions below, you can always go back to the README file located in `\Program Files\ViolinMemory\vmem`.

8. Continue with [Registering the Violin Storage Management Plugin](#) on this page. You must register the plugin for it to be recognized by the vCenter Server.

## Registering the Violin Storage Management Plugin

This section demonstrates how to register the Violin Storage Management Plugin.

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**Note:** The vCenter server password will be stored in encrypted form in the plugin database, to prevent your having to continuously re-enter the password.

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### Prerequisite:

You must have vSphere administrator privileges to register the plugin.

To register the Violin Storage Management Plugin, do the following:

1. Launch a command prompt window on the Windows server.
2. Navigate to the directory where you installed the plugin in one of the following ways, substituting the variables in brackets <variable> with the actual name:
  - For a 64 bit system, with a default installation path:  
`cd <Drive>:\Program Files(x86)\ViolinMemory\bin`
  - For a 32 bit system, with a default installation path:  
`cd <Drive>:\Program Files\ViolinMemory\bin`
  - For a customized installation path:  
`cd <Drive>:\<absolute_path>\ViolinMemory\bin`
3. Execute the following command, substituting the variables in brackets <variable\_name> with the actual names:

```
register.bat --name <vCenter_server_name> --vcip <vCenter_server_IP>
--username <vCenter_server_admin_username> --password
<vCenter_server_admin_password> --vmemip
<Violin_Memory_Plugin_Server_IP> --port
<Violin_Memory_Plugin_Service_Port | 8555 >
```

4. Restart the vSphere Client application. Upon restart, the Violin Storage Management Plugin registration is recognized.

5. Launch the Violin Storage Management Plugin, as described in [Getting Started](#) on page 10.

## Alternate Registration Tasks

This section covers other plugin registration tasks you can perform.

### Update Registration for the Plugin

Changes may arise that require updating the registration for the Violin Storage Management Plugin, such as a name change for the vCenter server on which the plugin is running. You can also use this procedure to change the administrator's password.

**To update the registration for the Violin Storage Management Plugin, do the following:**

1. Launch a command prompt window on the Windows server.
2. Navigate to the directory where you installed the plugin in one of the following ways, substituting the variables in brackets <variable> with the actual name:
  - For a 64 bit system, with a default installation path:  
`cd <Drive>:\Program Files(x86)\ViolinMemory\bin`
  - For a 32 bit system, with a default installation path:  
`cd <Drive>:\Program Files\ViolinMemory\bin`
  - For a customized installation path:  
`cd <Drive>:\<absolute_path>\ViolinMemory\bin`
3. Execute the following command, substituting the variables in brackets <variable\_name> with the actual names:

```
update.bat --name <old_vCenter_server_name> --newname  
<new_vCenter_server_name> --vcip <vCenter_server_IP> --username  
<vCenter_server_admin_username> --password  
<vCenter_server_admin_password> --vmemip  
<Violin_Memory_Plugin_service_host_IP> --port  
<Violin_Memory_Plugin_Service_Port | 8555 >
```

### Unregister the Plugin

After successfully uninstalling the Violin Storage Management Plugin, unregister the plugin using the following procedure.

**To unregister the Violin Storage Management Plugin, do the following:**

1. Launch a command prompt window on the Windows server.
2. Navigate to the directory where you installed the plugin in one of the following ways, substituting the variables in brackets <variable> with the actual name:
  - For a 64 bit system, with a default installation path:  
`cd <Drive>:\Program Files(x86)\ViolinMemory\bin`
  - For a 32 bit system, with a default installation path:  
`cd <Drive>:\Program Files\ViolinMemory\bin`
  - For a customized installation path:  
`cd <Drive>:\<absolute_path>\ViolinMemory\bin`

- Execute the following command, substituting the variables in brackets <variable\_name> with the actual names:

```
unregister.bat --name <vCenter_server_name> --vmemip
<Violin_Memory_Plugin_service_host_IP> --port
<Violin_Memory_Plugin_service_port | 8555 >
```

### View Registration Status for the Plugin

If you forget the name of the vCenter server on which the Violin Storage Management Plugin is installed, you can use the following procedure to display the name.

**To view the registration status of the Violin Storage Management Plugin, do the following:**

- Launch a command prompt window on the Windows server.
- Navigate to the directory where you installed the plugin in one of the following ways, substituting the variables in brackets <variable> with the actual name:
  - For a 64 bit system, with a default installation path:  
cd <Drive>:\Program Files (x86)\ViolinMemory\bin
  - For a 32 bit system, with a default installation path:  
cd <Drive>:\Program Files\ViolinMemory\bin
  - For a customized installation path:  
cd <Drive>:\<absolute\_path>\ViolinMemory\bin
- Execute the following command, substituting the variables in brackets <variable\_name> with the actual names:

```
registration_status.bat --vmemip
<Violin_Memory_Plugin_service_host_IP> --port
<Violin_Memory_Plugin_service_port | 8555 >
```

## Uninstalling the Violin Storage Management Plugin

This section demonstrates how to uninstall the Violin Storage Management Plugin. It is recommended that you uninstall the existing version of the plugin before you install a newer version.

---

**Caution:** Uninstalling the plugin completely removes the plugin database. Any datastores that were created using the plugin are not affected. However, should you reinstall the plugin at a later time, the datastores will not be visible even though they still exist on the storage array.

---

**To uninstall the Violin Storage Management Plugin, do the following:**

- From the Start menu, select **Programs > Violin Memory**.
- Select the link to uninstall the plugin.
- Click **Uninstall**, and then click **Yes**.

## Getting Started

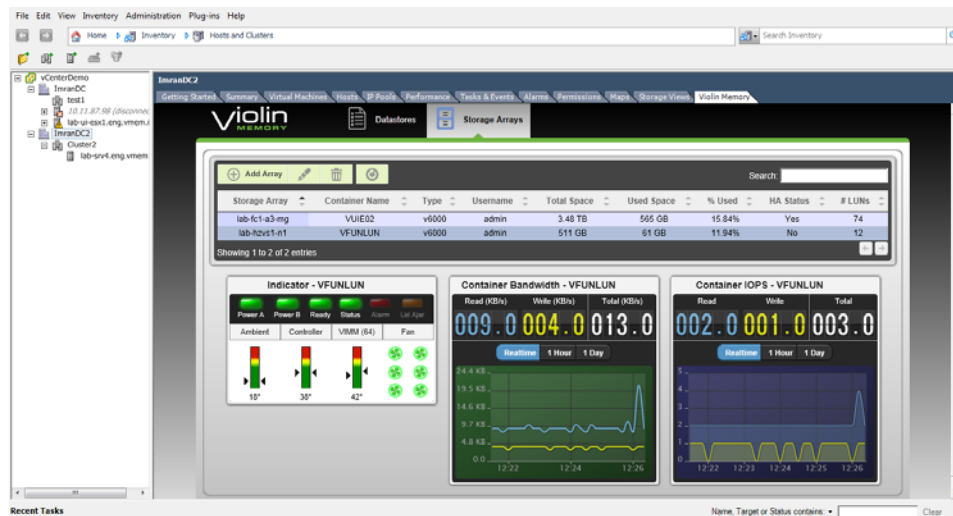
After you have successfully installed and registered the Violin Storage Management Plugin, you can launch the Violin Storage Management Plugin.

To launch the Violin Storage Management Plugin, do the following:

1. From the Start menu, select **VMware vSphere Client**. A login dialog appears.
2. Enter the IP address or Name for the vCenter server, then enter your User name and Password, and click **Login**.
3. Navigate to **Home > Inventory > Hosts and Clusters**.
4. Select a datacenter under the vCenter server in the hierarchy.

**Note:** If you select anything other than a datacenter, the Violin Memory tab will not be visible.

5. Click the **Violin Memory** tab on the far right. The plugin appears showing the Storage Arrays panel.



6. (Optional) For a full-screen view of the Violin Storage Management Plugin, do the following:
  - a. Navigate to **Home > Solutions & Applications**.
  - b. Click the **Violin Storage Management Plugin** icon. A full-screen view of the plugin appears showing the Storage Arrays panel.



The screenshot displays the Violin Storage Management Plugin User's Guide interface. The main window shows a table of storage arrays with the following data:

Storage Array	Container Name	Type	Username	Total Space	Used Space	% Used	HA Status	# LUNs
lab-ic1-83-mg	VUIE02	v6000	admin	3.48 TB	565 GB	15.84%	Yes	74
lab-icvst-01	VUIALLUN	v6000	admin	511 GB	61 GB	11.94%	No	12

Below the table, there are three performance monitoring panels for VUIE02:

- Indicator - VUIE02:** Shows power status (Power A, Power B, Ready, Status, Alarm, Off Type) and temperature (Ambient: 23°, Controller: 34°, VUIM (4): 36°).
- Container Bandwidth - VUIE02:** Shows Read (KB/s) at 010.0, Write (KB/s) at 008.0, and Total (KB/s) at 026.0.
- Container IOPS - VUIE02:** Shows Read at 004.0, Write at 002.0, and Total at 006.0.

The interface also includes a 'Recent Tasks' section at the bottom left and a search bar at the bottom right.

7. Go to [CHAPTER 2, “Manage and Monitor Storage Arrays and Datastores”](#) on page 13.



## CHAPTER 2 Manage and Monitor Storage Arrays and Datastores

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This chapter demonstrates how to manage and monitor storage arrays and datastores using the Violin Storage Management Plugin. The following topics are covered.

- [Managing Storage Arrays](#) on page 13
- [Managing Datastores](#) on page 17
- [Monitoring Storage Arrays](#) on page 20
- [Monitoring Datastores](#) on page 24

### Managing Storage Arrays

This section demonstrates how to add a storage array to the plugin. Once added, you can modify the name of the storage array, or remove the storage array from the database.

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**Note:** Deleting a storage array only removes the instance of the storage array—along with the associated datastores—from the plugin database. The physical storage array and the data it contains are not affected.

---

This section covers the following topics:

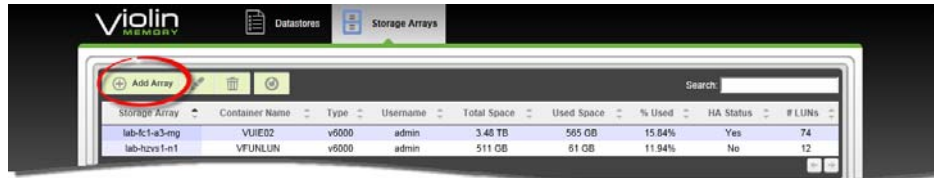
- [Adding a Storage Array](#) on page 14
- [Editing a Storage Array](#) on page 15
- [Deleting a Storage Array](#) on page 16

## Adding a Storage Array

When you add a storage array to the Violin Storage Management Plugin, you establish the storage array as a receptacle in the plugin database to which you can then add datastores.

To add a storage array, do the following:

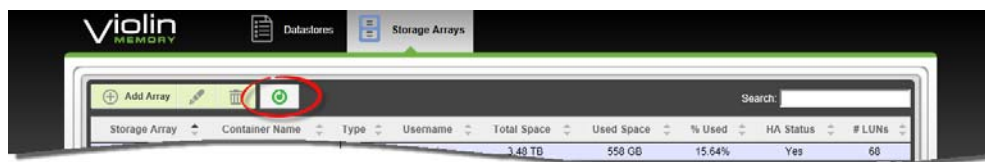
1. From the Storage Arrays panel of the Violin Storage Management Plugin, click **Add Array** in the upper left corner.



2. In the Add Storage Array dialog, enter the following information:
  - **Gateway Host:** IP address or DNS name of the master Memory Gateway
  - **Username:** User name to log in to the master Memory Gateway
  - **Password:** Password to log in to the master Memory Gateway
  - **Name (optional):** A personalized name for the storage array



3. Click **Add**. The storage array appears in the upper portion of the Storage Arrays panel.
4. To update the screen display, click the **Refresh** icon.

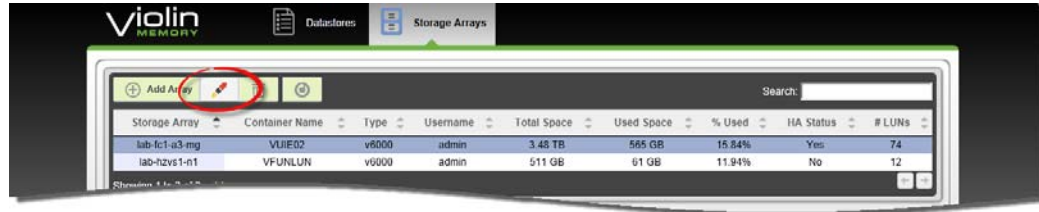


## Editing a Storage Array

You can change the name of the storage array in the plugin at any time.

To edit a storage array, do the following:

1. In the storage array list, highlight the array that you want to edit, then click the **Edit Storage Array** icon.



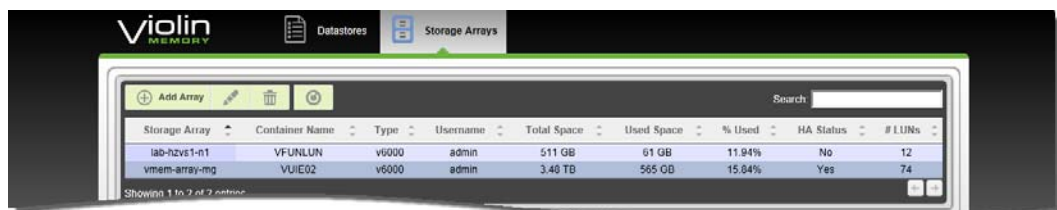
2. In the Edit Storage Array dialog, enter a new Name in the text field.

**Caution:** If you change the Gateway host, effectively connecting to a different storage array, you will cause data disruption. Instead, it is recommended that you add the storage array as described in [Adding a Storage Array](#) on page 14.

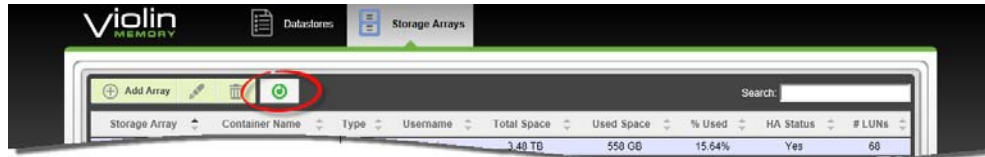


3. Re-enter your password and click **Save**. The change appears in the Storage Arrays panel.

**Note:** Storage arrays are listed in alphabetical order. The order in which they appear in the list changes accordingly when an array name is changed.



4. To update the screen display, click the **Refresh** icon.



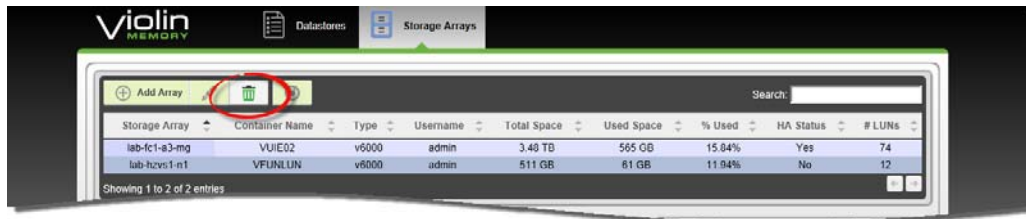
## Deleting a Storage Array

You can delete a storage array from the Violin Storage Management Plugin at any time. This action deletes the array from the plugin database only. Deleting a storage array from the plugin does not affect the physical storage array or the data it contains.

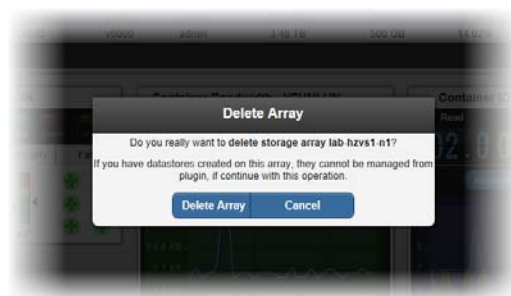
**Note:** Once a storage array is removed from the plugin, you will not see the datastores created on the array (prior to its deletion), if you add the array back in the plugin at a later time. Datastore information relating to the array is removed from the plugin database when the array is deleted.

To delete a storage array from the plugin, do the following:

1. In the storage array list, highlight the array that you want to edit.
2. Click the **Delete Array** icon.

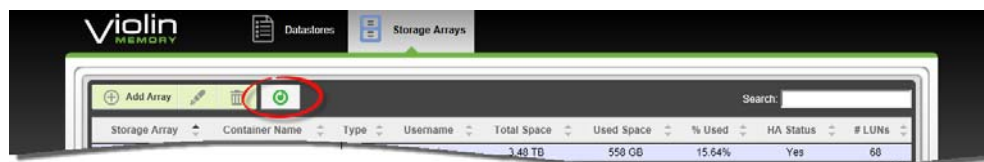


3. A dialog prompt appears asking you to confirm your action. Click **Delete Array** to continue with the removal, or **Cancel** to abort the action.



If you proceed with deleting the array, it is removed from the list and all information relating to that storage array is deleted from the plugin database.

4. To update the screen display, click the **Refresh** icon.



## Managing Datastores

A datastore is a storage location that is platform independent and host independent. In the Violin Storage Management Plugin, when you create a datastore a LUN of equal size is created on the storage array and mounted to the ESX server. The datastore is then created on top of the LUN, in a one-to-one relationship.

This section covers the following topics:

- [Creating a Datastore on this page](#)
- [Adding a Datastore to Multiple ESX Servers](#) on page 19
- [Unexporting a Datastore](#) on page 20

### Creating a Datastore

When you create a datastore, you choose the storage array the LUN will be created on and the ESX server that will mount the LUN. You also specify the datacenter and cluster, as well as providing a unique datastore name and the size of the datastore.

To create a datastore, do the following:

1. Click the **Datastores** tab at the top of the plugin window.
2. Click **Create Datastore** in the top panel. The Create Datastore dialog appears.



3. Select a **Storage Array** from the drop-down list, and enter a unique **Datastore Name** in the text field.
4. Make the following selections from the drop-down lists:
  - Datacenter
  - Cluster
  - ESX Server

**Note:** A functioning ESX server must be linked to the storage array in order for the datastore creation to succeed.

- 5. Enter a size for the datastore (GB) in the text field. The default is 10 Gigabytes.



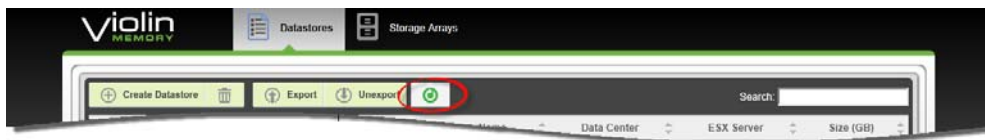
- 6. Click **Create datastore**.

It can take a couple of minutes to connect to the ESX server, depending on your network infrastructure. A dialog appears to verify the datastore was created.

- 7. Click **OK**. The datastore appears in the list. Statistics for the selected datastore are shown on the dashboard gadgets.



- 8. To update the screen display, click the **Refresh** icon.





## Adding a Datastore to Multiple ESX Servers

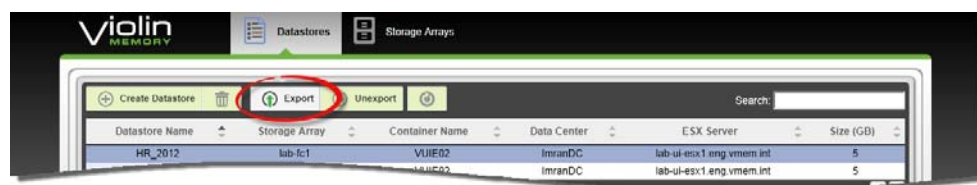
When you create a datastore with the Violin Storage Management Plugin, initially it is only visible to the ESX server you associated it with at the time of creation. To make the datastore visible to other ESX servers, you export the datastore.

### Prerequisite:

Create a datastore, as described in [Creating a Datastore](#) on page 17.

To export a datastore, do the following:

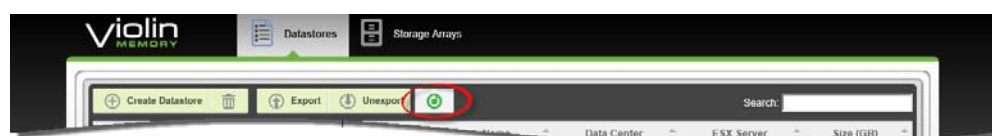
1. Click the **Datastores** tab at the top of the plugin window.
2. Select the datastore you want to export from the list, then click **Export**.



3. In the Export Datastore dialog, specify the following for the ESX server you want to which you want to export the datastore:
  - Datacenter: Select a datacenter from the drop-down list.
  - Cluster: Select a cluster from the drop-down list.
  - ESX Server: Select the ESX server from the drop-down list.



4. Click **Export datastore**.
5. To update the screen display, click the **Refresh** icon.



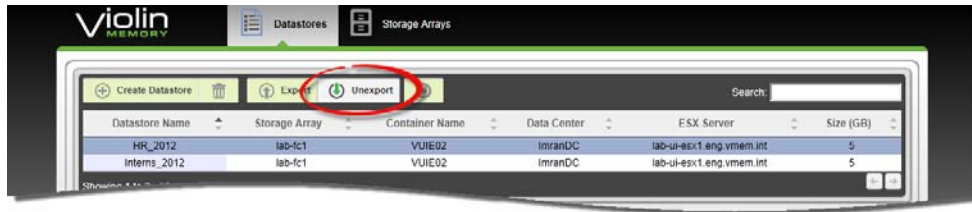
## Unexporting a Datastore

You can unexport a previously exported datastore at any time.

**Note:** You are not allowed to unexport a datastore from the root ESX server that the datastore was linked to when it was initially created.

To unexport a datastore, do the following:

1. Select the **Datastores** tab at the top of the plugin window.
2. In the datastore list, highlight the datastore you want to unexport, and then click **Unexport**.



3. In the Unexport Datastore dialog, select the **ESX Server** from which to unexport the datastore from the drop-down list, and then click **Unexport**.



The selected datastore is unexported from the selected ESX server.

## Monitoring Storage Arrays

The Storage Arrays dashboard in the bottom portion of the window displays metrics for tracking system health and performance. The following gadgets

- **Bandwidth**—Shows reads and writes performed in Kilobytes per second (KB/s) for the storage array.
- **IOPS**—Shows read, write, and total statistics in real-time, per hour, or per day values for the storage array.
- **Indicators**—Shows the LED, temperature and fan status for the storage array.

**Note:** The dashboard supports Internet Explorer 9 (IE 9) and higher. If you are using an earlier version of Internet Explorer, the dashboard does not display. For more information, see [System Requirements](#) on page 6.

This section covers the following topics:

- [Monitoring Storage Array Health](#) on page 21
- [Monitoring Storage Array Performance](#) on page 22
- [Filtering Storage Arrays](#) on page 24

## Monitoring Storage Array Health

You can easily monitor the health of the storage arrays you have added to the dashboard of the Violin Storage Management Plugin.

To monitor the health of a storage array, do the following:

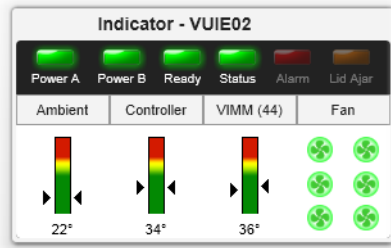
1. Click the **Storage Arrays** tab at the top of the window.
2. In the list in the top panel, highlight the storage array you want to monitor.

The container name for the selected storage array appears in the gadget title bars below.



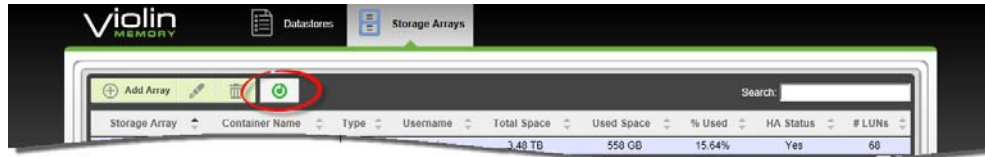
3. Go to the Indicator gadget to assess system health for the following:

- Power: Shows power supply status. Green signifies functional health, yellow is a warning, red signifies failure.
- Ready: Green signifies functional health, yellow is a warning, red signifies failure.
- Status: Green signifies functional health, yellow is a warning, red signifies failure.
- Lid Ajar: When the lid of the storage array is open, the Lid Ajar light turns on.
- Alarm: When an alarm is activated, the red light turns on.
- Temperature: The ambient temperature of the storage array is shown on the far left, followed by the controller and VIMM temperatures. Temperatures in the yellow bandwidth signify a warning condition. Temperatures in the red zone signify a critical condition.
- Fan: When operational, fans are shown as green and spinning. A fan appears yellow as a warning, and red when it fails completely.



**Note:** Should a problem occur with the storage array, see the appropriate product documentation, as described in [Reference Documents](#) on page 3. Or, contact Violin Memory Support, as described in [Contacting Violin Memory](#) on page 4.

4. To update the screen display at any time, click the **Refresh** icon.



## Monitoring Storage Array Performance

You can monitor a storage array performance in reads and writes performed in Kilobytes per second, as well as IOPs statistics for the storage array. You can view this data in real-time, or in per hour, or per day intervals.

**Note:** Reads are shown with in blue, and writes are shown in yellow.

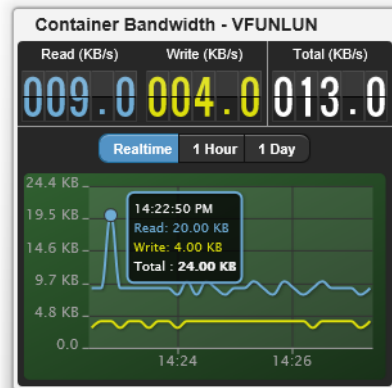
To monitor storage array performance, do the following:

1. Click the **Storage Arrays** tab at the top of the window.
2. In the Storage Array list in the top panel, highlight the storage array you want to monitor.

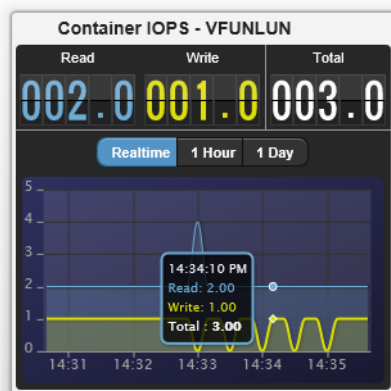
The container name for the selected storage array appears on the gadget title bars below.



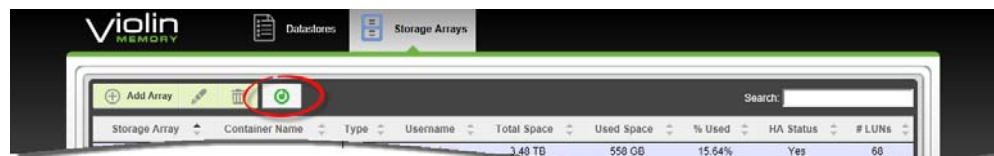
3. Go to the Bandwidth gadget to monitor the reads and writes performed in Kilobytes per second (KB/s), and click one of the following time intervals:
  - Realtime: Shows results in real time.
  - 1 Hour: Shows results over the last (one) hour.
  - 1 Day: Shows results averaged over the last (one) day.
4. To view detailed information on a particular part of the graph, hover the cursor of the area. A dot appears, and a pop-up dialog shows the details for that point on the graph.



5. Go to the IOPs gadget to monitor read, write and total statistics for the storage array, and click one of the following time intervals:
  - Realtime: Shows results in real time.
  - 1 Hour: Shows results over the last (one) hour.
  - 1 Day: Shows results averaged over the last (one) day.
6. To view detailed information on a particular part of the graph, hover the cursor of the area. A dot appears, and a pop-up dialog shows the details for that point on the graph.



7. To update the screen display at any time, click the **Refresh** icon.



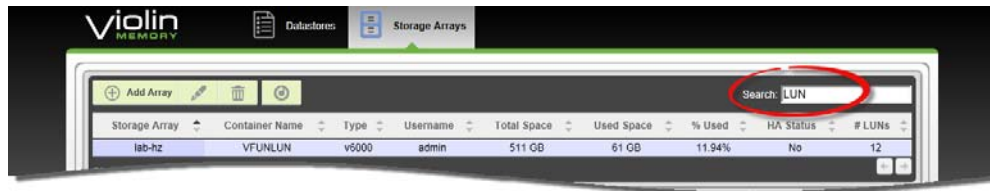
## Filtering Storage Arrays

You can filter for a storage array or set of storage arrays using the Search field.

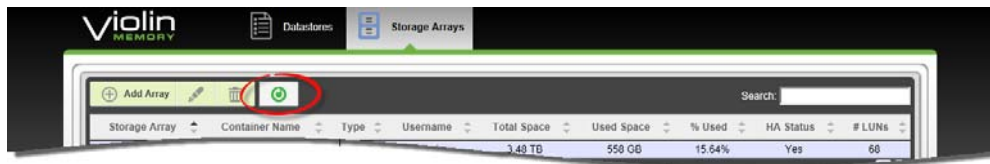
To filter for a specific storage array, do the following:

1. Click the **Storage Arrays** tab at the top of the window.
2. Go to the Search field in the upper right corner of the window, and enter a text string for the storage arrays you want to search for.

The list Storage Array list changes to display only the names matching the text string. In the following example, the filter was set for storage arrays with LUN in their names.



3. To update the screen display at any time, click the **Refresh** icon.



## Monitoring Datastores

You can monitor datastores in the Violin Storage Management Plugin using the following gadgets.

- Bandwidth—Shows reads and writes performed in Kilobytes per second (KB/s).
- IOPS—Shows read, write, and total statistics in real-time, per hour, or per day values.
- Latency—Shows read, write, and total latency in real-time, per hour, or per day values.

**Note:** The dashboard supports Internet Explorer 9 (IE 9) and higher. If you are using an earlier version of Internet Explorer, the dashboard does not display. For more information, see [System Requirements](#) on page 6.

This section covers the following topics:

- [Monitoring Datastore Performance](#) on page 25
- [Filtering Datastores](#) on page 26

## Monitoring Datastore Performance

You can monitor datastore performance in reads and writes performed in Kilobytes per second, as well as IOPs and Latency statistics for the storage array. You can view this data in real-time, or in per hour, or per day intervals.

**Note:** Reads are shown with in blue, and writes are shown in yellow.

To monitor storage array performance, do the following:

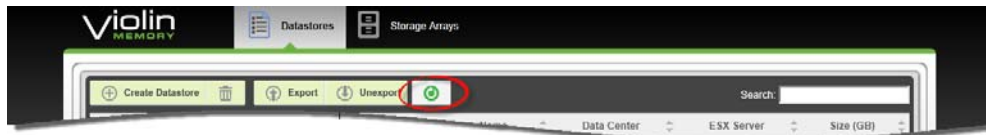
1. Click the **Storage Datastores** tab at the top of the window.
2. In the list in the top panel, highlight the name of datastore you want to monitor.

The selected datastore name appears in the gadget title bars below.



3. Go to the Bandwidth gadget to monitor the reads and writes performed in Kilobytes per second (KB/s), and click one of the following time intervals:
  - Realtime: Shows results in real time.
  - 1 Hour: Shows results over the last (one) hour.
  - 1 Day: Shows results averaged over the last (one) day.
4. To view detailed information on a particular part of the graph, hover the cursor of the area. A dot appears, and a pop-up dialog shows the details for that point on the graph.
5. Go to the IOPs gadget to monitor read, write and total statistics for the storage array, and click one of the following time intervals:
  - Realtime: Shows results in real time.
  - 1 Hour: Shows results over the last (one) hour.
  - 1 Day: Shows results averaged over the last (one) day.
6. To view detailed information on a particular part of the graph, hover the cursor of the area. A dot appears, and a pop-up dialog shows the details for that point on the graph.
7. Go to the Latency gadget to monitor read, write, and total latency and click one of the following time intervals:
  - Realtime: Shows results in real time.
  - 1 Hour: Shows results over the last (one) hour.
  - 1 Day: Shows results averaged over the last (one) day.

- 8. To view detailed information on a particular part of the graph, hover the cursor of the area. A dot appears, and a pop-up dialog shows the details for that point on the graph.
- 9. To update the screen display at any time, click the **Refresh** icon.



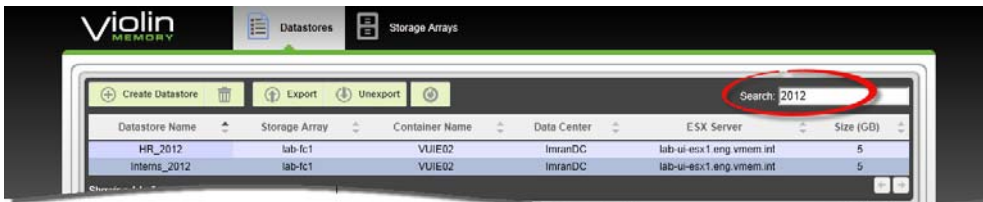
## Filtering Datastores

You can filter for a datastore or set of datasstores using the Search field.

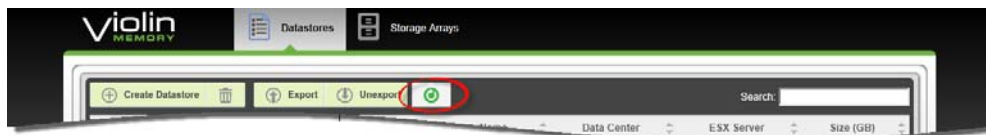
To filter for a specific set of datasstores, do the following:

- 1. Click the **Datasstores** tab at the top of the window.
- 2. Go to the Search field in the upper right corner of the window, and enter a text string that matches the datastore names you want to search for.

The list of datasstores changes to display only datasstores with names matching the text string. In the following example, the filter was set for datasstores with 2012 in their names.



- 3. To update the screen display at any time, click the **Refresh** icon.





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