

Table of Contents

Prerequisites.....	3
Oracle Environment Prerequisites	3
Oracle Enterprise Manager	3
Oracle Management Server (OMS)	3
Oracle Management Agent (OMA)	3
Pure Environment Prerequisites.....	3
Installing and Configuring the Pure Storage Flash Array Plug-in	4
Installation Overview	4
Download the plug-in	4
Import the plug-in OPAR	4
Deploy the plug-in on the Oracle Management Server (OMS)	4
Through the OEM Console	4
Through the emcli utility	5
Deploy the plug-in on the Oracle Management Agent (OMA)	6
Through the OEM Console	6
Through the emcli utility	7
Verify plug-in deployment	7
Create the Pure Storage Flash Array target	8
Using the plug-in.....	11
Pure Storage Flash Array Home Page	11

Table of Figures

Figure 1: Deploy On OMS	5
Figure 2: Deploy On OMA.....	6
Figure 3: Verify Plug-in Deployment.....	8
Figure 4: Add Target	9
Figure 5: Add Targets Manually	10
Figure 6: Add: Pure Storage Flash Array	10
Figure 7: Pure Storage Flash Array Home Page	11
Figure 8: Summary Pane	11
Figure 9: Capacity Pane.....	12
Figure 10: Latency Pane.....	12
Figure 11: IOPS pane	13
Figure 12: Bandwidth Pane	13
Figure 13: Job Activity Pane	13

Prerequisites

Oracle Environment Prerequisites

The following sections describe the supported software versions and operating systems for the various components of the Oracle Enterprise Manager system.

Oracle Enterprise Manager

The plug-in supports the following Oracle Enterprise Manager versions:

- Oracle Enterprise Manager Cloud Control 12c R2 (12.1.0.2.0)
- Oracle Enterprise Manager Cloud Control 12c R3 (12.1.0.3.0)
- Oracle Enterprise Manager Cloud Control 12c R4 (12.1.0.4.0)
- Oracle Enterprise Manager Cloud Control 12c R5 (12.1.0.5.0)

Oracle Management Server (OMS)

The plug-in is supported for all Oracle Management Server platforms.

Oracle Management Agent (OMA)

The plug-in is supported for the following Oracle Management Agent platforms:

- Linux x86
- Linux x86-64
- Microsoft Windows (32-bit)
- Microsoft Windows x64 (64-bit)
- Oracle Solaris on x86-64 (64-bit)

Pure Environment Prerequisites

The plug-in uses the Pure Storage REST API for data collection from the Pure Storage array. The following versions of the REST API are supported:

- Pure Storage REST API 1.4

Installing and Configuring the Pure Storage Flash Array Plug-in

Installation Overview

This chapter describes the installation and configuration steps in detail.

Ensure that the OEM environment is properly setup for plug-in deployment before beginning. The **emcli** utility must be configured and working locally on the Oracle Management Server to successfully complete the installation.

Download the plug-in

To download the plug-in, go to the Oracle Extensibility Exchange website (www.oracle.com/goto/extensibility), search for the Pure Storage Flash Array plugin. That website will redirect to the VLSS download page (www.vlss-llc.com/download-pureoem) where the plug-in Zip file can be downloaded. The Zip file contains the OPAR as well as a PDF copy of this document.

Transfer the OPAR to any accessible location on the Oracle Management Server host.

Import the plug-in OPAR

After the OPAR is located on the management server, it needs to be imported into the OEM environment. Use the **emcli** utility to import the OPAR.

Type the following command:

```
$ emcli import_update -file="<path to downloaded *.opar file>"  
-omslocal
```

The **-omslocal** flag indicates that the file is located on that same host as the Oracle Management Server. Please see the Oracle documentation for importing the OPAR from a remote host.

For example:

```
$ emcli import_update -file=/home/oracle/Downloads/  
12.1.0.1.0_vlss.pure.xvp1_2000_0.opar -omslocal  
Processing update: Plug-in – Pure Storage Flash Array. Operation  
completed successfully. Update has been uploaded to Enterprise  
Manager. Please use the Self Update Home to manage this update.
```

Deploy the plug-in on the Oracle Management Server (OMS)

After the OPAR is imported, it must be deployed on the OMS. There are two methods to deploy to the OMS:

Through the OEM Console

To deploy the plug-in through the console:

1. From the **Setup** menu, select **Extensibility** and then **Plug-ins**
2. From the Plug-ins page, select the **Pure Storage Flash Array** plug-in. Then select **Deploy On** and choose **Management Servers**

Plug-ins

This page lists the plug-ins available, downloaded, and deployed to the Enterprise Manager system. U

























Actions ▾ View ▾		Deploy On ▾	Undeploy From ▾	Check Updates	Deplo
Name	Management Servers...	Version			
	Management Agent...	able	Latest Downloaded		
 Oracle Key Manager	12.1.0.1.0				
 Oracle Ops Center Infrastructure	12.1.0.4.0				
 Oracle Secure Global Desktop	12.1.0.1.0				
 Oracle Secure Global Desktop C	12.1.0.1.0				
 Oracle Storage Management Fr	12.1.0.5.0		12.1.0.4.0		
 Oracle VDI	12.1.0.2.0				
 Oracle Virtual Infrastructure	12.1.0.1.0		12.1.0.1.0		
 Oracle Virtual Networking	12.1.0.2.0		12.1.0.2.0		
 Oracle Virtualization	12.1.0.7.0		12.1.0.6.0		
 Oracle ZFS Storage Appliances	12.1.0.5.0				
 Pure Storage Flash Array	12.1.0.1.0		12.1.0.1.0		

Figure 1: Deploy On OMS

3. In the **Deploy Plug-in on Management Servers: Plug-ins** page, click **Next**.
4. In the **Deploy Plug-in on Management Servers: Pre-requisite Checks** page, verify that the checks were successfully completed and click **Next**.
5. In the **Deploy Plug-in on Management Servers: Repository** page, enter the SYS credentials for the repository and click **Next**.
6. In the **Deploy Plug-in on Management Servers: Review** page, click **Deploy** to deploy the plug-in on the OMS.
7. In the **Deploy Plug-in on Management Servers: Confirmation** page, click **Show Status** to view the steps of the deployment.
8. In the **Deployment Activities** page, verify that the deployment was successful with a green checkmark in the Status column.

Through the emcli utility

1. Type the following command:

```
$ emcli deploy_plugin_on_server -sys_password=<Repository SYS password> -plugin=vlss.pure.xvp1:12.1.0.1.0
```

2. The deploy will run in the background after the following output:

Performing pre-requisites check... This will take a while.

Prerequisites check succeeded
Deployment of plug-in on the management servers is in progress
 Use "emcli get_plugin_deployment_status -plugin=vlss.pure.xvp1"
 to track the plug-in deployment status.

3. Verify the deployment is successful by running the status command:

```
$ emcli get_plugin_deployment_status -plugin=vlss.pure.xvp1
```

Deploy the plug-in on the Oracle Management Agent (OMA)

Now the plug-in must be deployed on at least one OMA which can connect to the Pure Storage REST API. Again, there are two methods of deploying to an OMA:

Through the OEM Console

To deploy the plug-in through the console:

1. From the **Setup** menu, select **Extensibility** and then **Plug-ins**
2. From the Plug-ins page, select the **Pure Storage Flash Array** plug-in. Then select **Deploy On** and choose **Management Agent**

Plug-ins				
This page lists the plug-ins available, downloaded, and deployed to the Enterprise Manager system. Use this page to deploy or				
Actions		View	Version	
Name	Management Servers...	Management Agent...	Latest Downloaded	On Management Server
Oracle Key Manager				
Oracle Ops Center Infrastructure	12.1.0.4.0			
Oracle Secure Global Desktop	12.1.0.1.0			
Oracle Secure Global Desktop C	12.1.0.1.0			
Oracle Storage Management Fr	12.1.0.5.0		12.1.0.4.0	
Oracle VDI	12.1.0.2.0			
Oracle Virtual Infrastructure	12.1.0.1.0		12.1.0.1.0	
Oracle Virtual Networking	12.1.0.2.0		12.1.0.2.0	
Oracle Virtualization	12.1.0.7.0		12.1.0.6.0	
Oracle ZFS Storage Appliances	12.1.0.5.0			
Pure Storage Flash Array	12.1.0.1.0		12.1.0.1.0	12.1.0.1.0

Figure 2: Deploy On OMA

3. In the **Deploy Plug-in on Management Agent** page, click **Continue**.
4. In the **Deploy Plug-in on Management Agent: Select Management Agent** page, select an OMA for deployment and click **Continue**.
5. In the **Deploy Plug-in on Management Agent: Pre-requisite Checks** page, verify that the checks were successfully completed and click **Next**.

6. In the **Deploy Plug-in on Management Agent: Review** page, click **Deploy** to deploy the plug-in on the OMA.
7. In the **Deploy Plug-in on Management Agent: Confirmation** page, click **Show Status** to view the steps of the deployment.
8. In the **Deployment Activities** page, verify that the deployment was successful with a green checkmark in the Status column.

Through the `emcli` utility

1. Type the following command:

```
$ emcli deploy_plugin_on_agent -agent_names=<Hostname of agent>:<Port> -plugin=vlss.pure.xvp1:12.1.0.1.0
```

2. The deploy will run in the background after the following output:

```
Performing pre-requisites check... This will take a while.  
Prerequisites check succeeded  
Deployment of plug-in on the management agent is in progress  
Use "emcli get_plugin_deployment_status -plugin=vlss.pure.xvp1"  
to track the plug-in deployment status.
```

3. Verify the deployment is successful by running the status command:

```
$ emcli get_plugin_deployment_status -plugin=vlss.pure.xvp1
```

Verify plug-in deployment

To verify that the plug-in deployment was successful, check the Extensibility page:

1. From the **Setup** menu, select **Extensibility** and then **Plug-ins**
2. From the Plug-ins page, select the **Pure Storage Flash Array** plug-in. Verify that the **On Management Server** column is populated and that the **Management Agent with Plug-in** column is greater than zero.

Plug-ins

This page lists the plug-ins available, downloaded, and deployed to the Enterprise Manager system. Use this page to deploy or undeploy plug-
























<div> Actions ▾ View ▾ Deploy On ▾ Undeploy From ▾ Check Updates Deployment Activities </div>				
Name	Version			Management Agent with Plug-in
	Latest Available	Latest Downloaded	On Management Server	
 Oracle Key Manager	12.1.0.4.0 			0
 Oracle Ops Center Infrastructure	12.1.0.4.0 			0
 Oracle Secure Global Desktop	12.1.0.1.0 			0
 Oracle Secure Global Desktop C	12.1.0.1.0 			0
 Oracle Storage Management Fr	12.1.0.5.0 	12.1.0.4.0 		N/A
 Oracle VDI	12.1.0.2.0 			0
 Oracle Virtual Infrastructure	12.1.0.1.0	12.1.0.1.0 		0
 Oracle Virtual Networking	12.1.0.2.0	12.1.0.2.0 		0
 Oracle Virtualization	12.1.0.7.0 	12.1.0.6.0 		0
 Oracle ZFS Storage Appliances	12.1.0.5.0 			0
 Pure Storage Flash Array	12.1.0.1.0	12.1.0.1.0	12.1.0.1.0	1

Figure 3: Verify Plug-in Deployment

Create the Pure Storage Flash Array target

The Pure Storage Flash Array target is the only target needed to monitor the storage system. It provides a dashboard for monitoring the system details, capacity, performance and historical metrics of the array.

To create the Pure Storage Flash Array target:

1. From the **Setup** menu, select **Add Target** and then **Add Targets Manually**

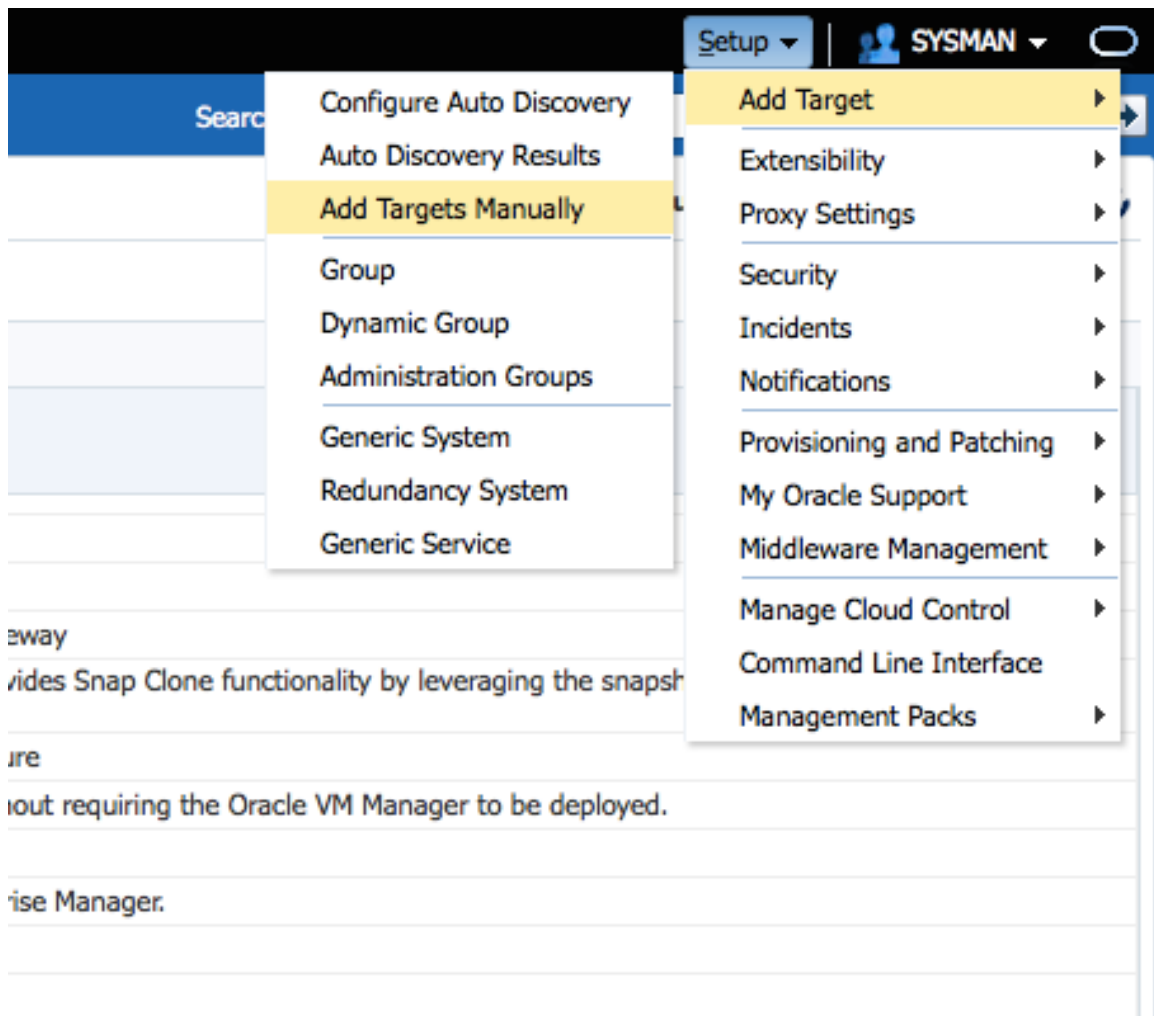


Figure 4: Add Target

2. Select **Add Targets Declaratively by Specifying Target Monitoring Properties**
3. Select **Pure Storage Flash Array** from the drop down and select a Monitoring Agent that has the Pure Storage Plug-in deployed on it. Then click **Add Manually ...**

Enterprise ▾ Targets ▾ Favorites ▾ History ▾

Add Targets Manually

▶ **Instruction**

☐ Add Host Targets

☐ Add Targets Using Guided Process

☒ Add Targets Declaratively by Specifying Target Monitoring Properties

Target Type: Pure Storage Flash Array

Monitoring Agent: lab.vlss-llc.com:3872

Add Manually ...

Figure 5: Add Targets Manually

- On the **Add: Pure Storage Flash Array** page, enter a **Target Name**. Then enter an **API Token** that has at least read privileges through the REST API. Finally, enter **Array Hostname / IP Address** for one of the virtual IPs on the array. Then click **OK**.

Add: Pure Storage Flash Array

Add a target to be monitored by Enterprise Manager by specifying target monitoring properties.

Target

* Target Name: PSFA 1

Target Type: Pure Storage Flash Array

Agent: https://lab.vlss-llc.com:3872/emd/main/

Properties

* API Token: 0f75aac2-44ba-506e-a1c1-c69c39aed239

* Array Hostname / IP Address (Use the hostname / IP of the virtua): purearray

▶ **Global Properties**

Figure 6: Add: Pure Storage Flash Array

- The **Add Target** popup should appear and shortly thereafter a confirmation message that the **Add Target – Completed Successfully**

Using the plug-in

Pure Storage Flash Array Home Page

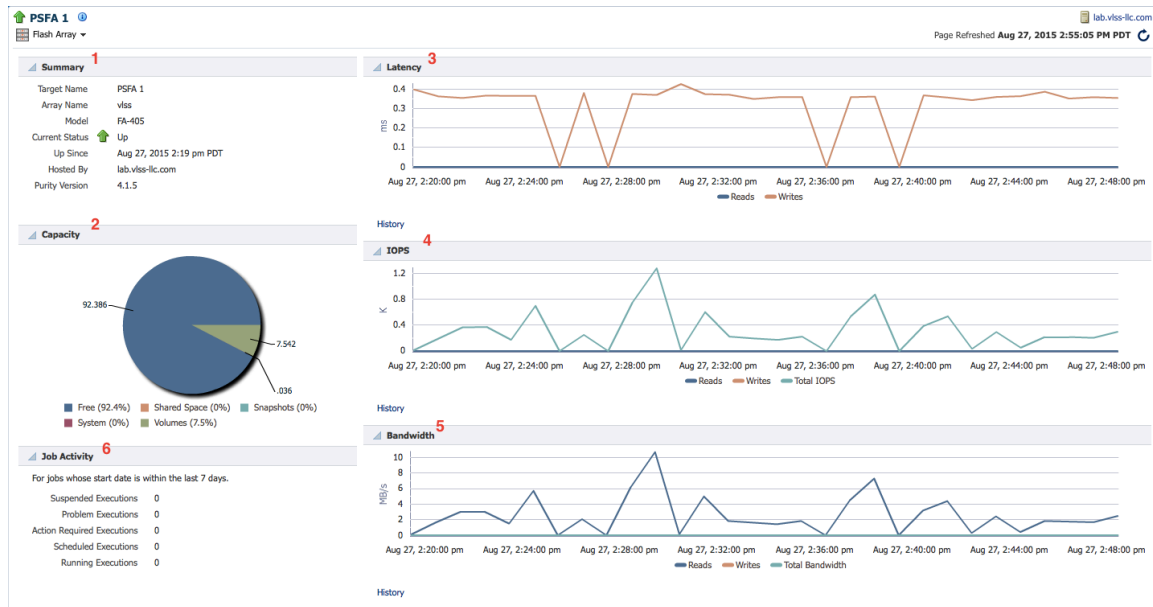


Figure 7: Pure Storage Flash Array Home Page

The Pure Storage Flash Array home page is a single-pane dashboard into the array. It contains the following sections:

1. The **Summary** pane – display the relevant system information of the array including array name, array model, uptime and Purity version.

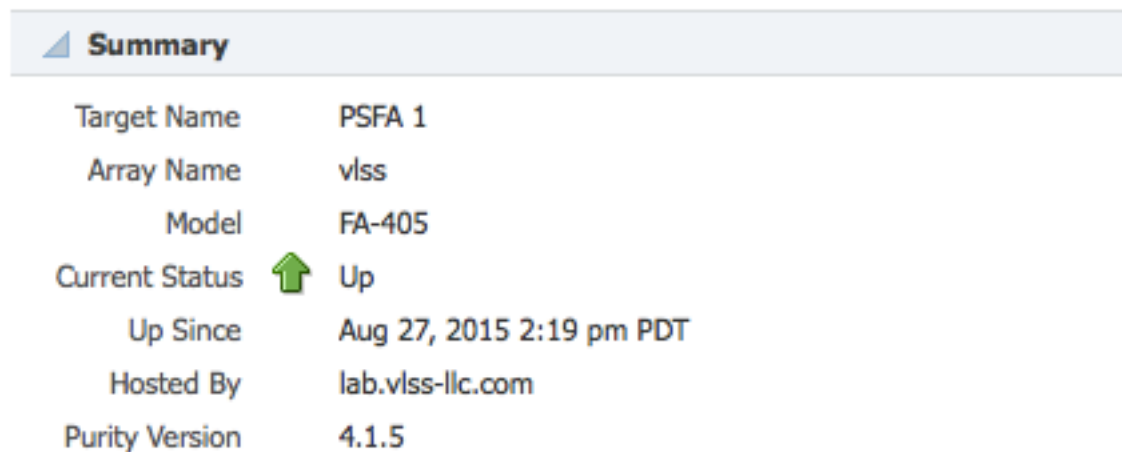


Figure 8: Summary Pane

2. The **Capacity** pane – displays the current usage of the storage array including volumes, shared space, snapshots, system and free space.

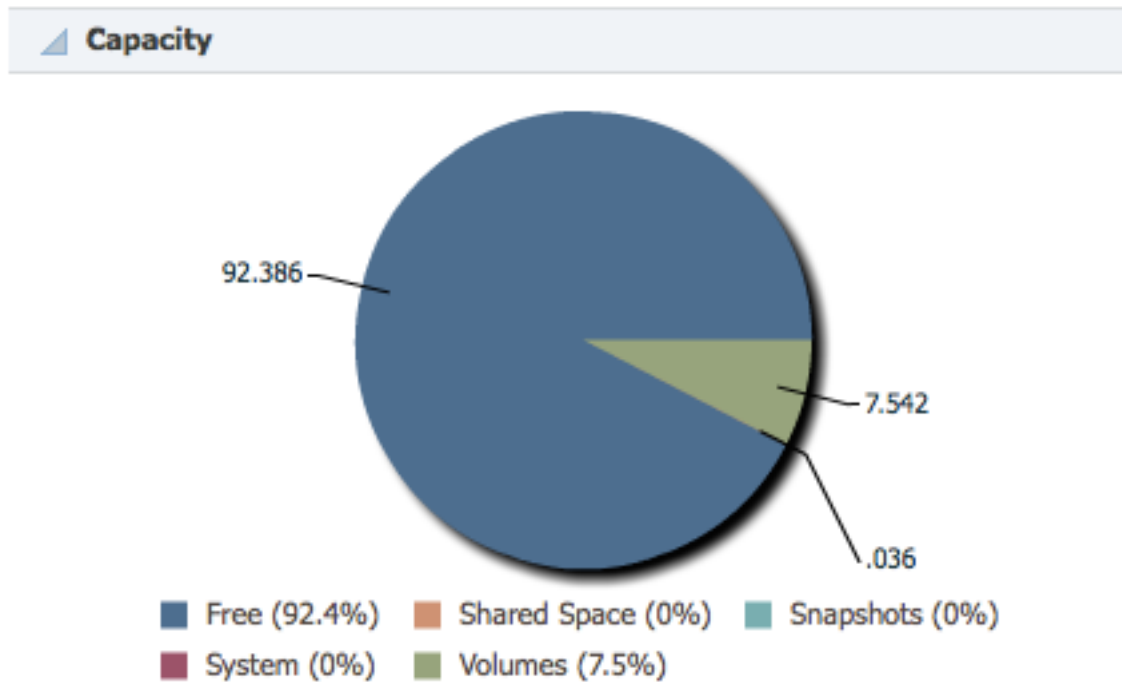


Figure 9: Capacity Pane

3. The **Latency** pane – displays the read and write latency of the array for the past hour in milliseconds. Also includes a **History** link that shows the latency for the past day in a pop-up window.

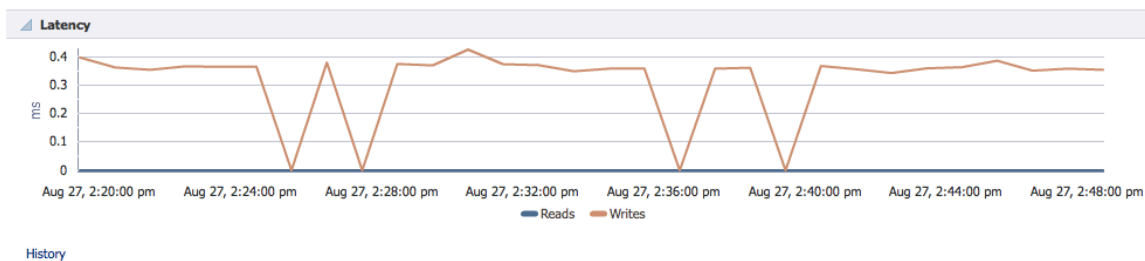
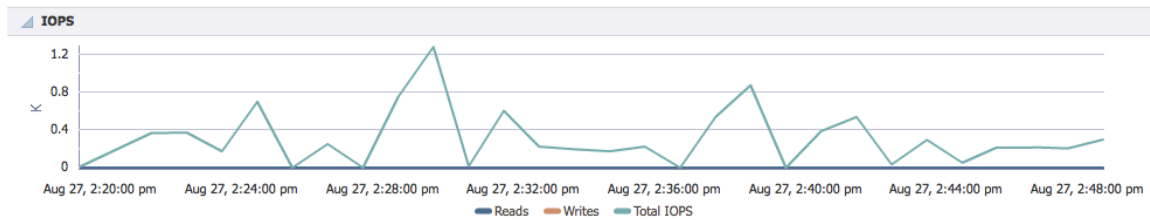


Figure 10: Latency Pane

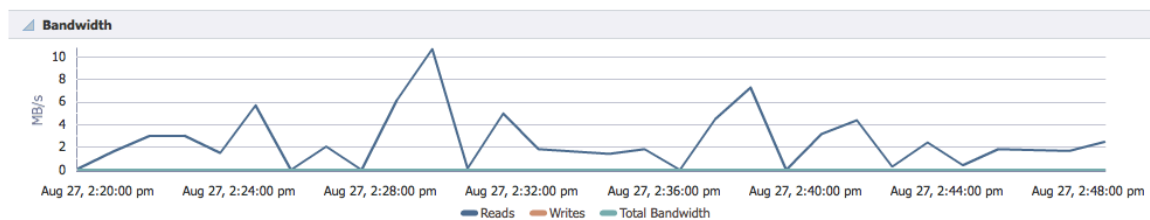
4. The **IOPS** pane – displays the read, write and total IOPS of the array for the past hour in KIOPS (or thousands of IOPS). Also includes a **History** link that shows the IOPS for the past day in a pop-up window.



[History](#)

Figure 11: IOPS pane

- The **Bandwidth** pane – displays the read, write and total bandwidth of the array for the past hour in MB/s. Also includes a **History** link that shows the bandwidth for the past day in a pop-up window.



[History](#)

Figure 12: Bandwidth Pane

- The **Job Activity** pane – displays the job activity against the target.

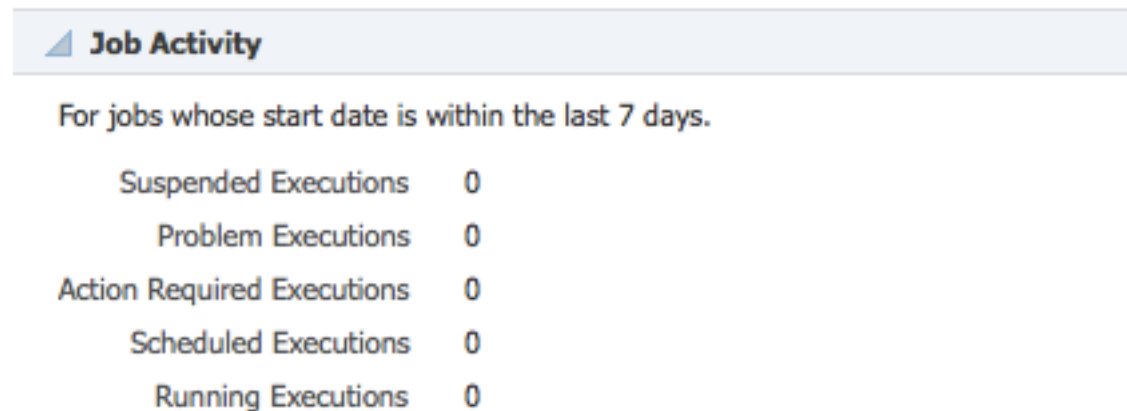


Figure 13: Job Activity Pane