



NetApp Element Plug-in for VMware vCenter Server 5.0 or later

VCP

NetApp
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NetApp Element Plug-in for VMware vCenter Server 5.0 or later

Remote plug-in architecture overview

Beginning with NetApp Element Plug-in for vCenter Server 5.0, the plug-in architecture changes from local to remote. With the introduction of the remote architecture, the plug-in is no longer deployed inside a vCenter server. For Element Plug-in for vCenter Server 4.10 or earlier, the plug-in deployment remains local to the vCenter server to which it is registered.

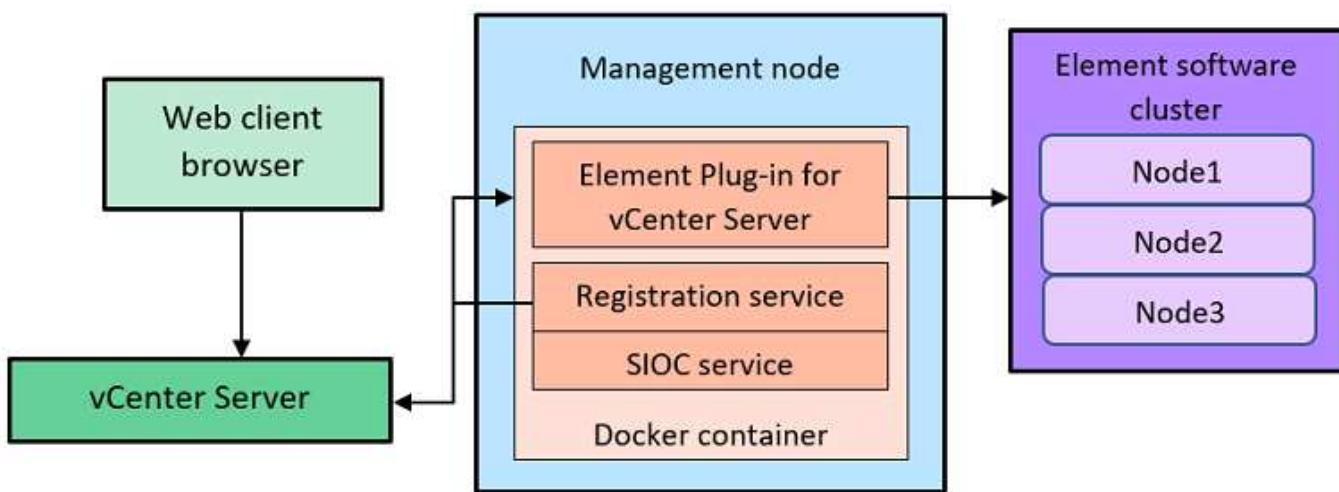
This page describes the implementation of the remote NetApp Element Plug-in for vCenter Server.

The vSphere Client remote plug-in architecture is designed to integrate plug-in functionality into the vSphere Client without having to run inside the vCenter Server. The remote plug-in architecture supports plug-in isolation, enables scale-out of plug-ins that operate in large vSphere environments, and provides the following benefits:

- The plug-in is protected from interference by unstable or compromised plug-ins loaded on the same vSphere Client.
- Plug-in compatibility is robust across vCenter Server upgrades.
- An incompatible plug-in does not interfere with vCenter Server operation.
- You can deploy a number of plug-in versions within the same vSphere environment.
- The remote plug-in user interface only needs to communicate with a single back-end server.
- Deployed plug-in topology is well defined and easy to understand which supports troubleshooting.

Remote Element Plug-in for vCenter Server high level architecture

Using NetApp Hybrid Cloud Control, the remote Element Plug-in is deployed in a docker container inside a management node along with management services.



The remote Element Plug-in vCenter Server, registration service, and storage I/O control (SIOC) service share the same docker service but listen on different ports.

Description	Port
Remote Element Plug-in vCenter Server	8333
Registration service	9443
SIOC Service	8443

Remote Element Plug-in communication paths overview

You must first register the remote plug-in with the vCenter Server using the registration service running on a management node (<https://<mnnode-ip>:9443/>). On the registration page, you can see the vCenter server username, password, and the `plugin.json` manifest file path.



The default path is populated in the UI. No action is required.

If the details provided are correct, the registration service registers the plug-in with vCenter Server and enters the vCenter details in the plug-in server database.

After registration completes, the plug-in server downloads the `plugin.json` manifest file and initiates the remote plug-in deployment which involves configuring the remote plug-in as an extension with the `vsphere-ui` client. After the deployment completes, you can access the **NetApp Element Remote Plugin** extension point from the `vsphere-ui` web client.

All communication from the plug-in UI occurs through the vCenter Server which runs a reverse proxy service using HTTPS protocol that is responsible for forwarding the requests for the remote plug-in service. The plug-in server interacts with the SIOC service using HTTPS basic authentication and an Element cluster using the Element Java software development kit (SDK).

Find more information

- [NetApp HCI Documentation](#)
- [SolidFire and Element Resources page](#)

NetApp Element Remote Plugin extension point

Beginning with NetApp Element vCenter plug-in 5.0, you can access the remote Element Plug-in by using the NetApp Element Remote Plugin extension point, which enables you to configure and manage clusters, nodes, and drives and view cluster information.

The following tabs are available from the NetApp Element Remote Plugin extension point:

- [Getting Started](#)
- [Configuration](#)
- [Management](#)
- [About](#)

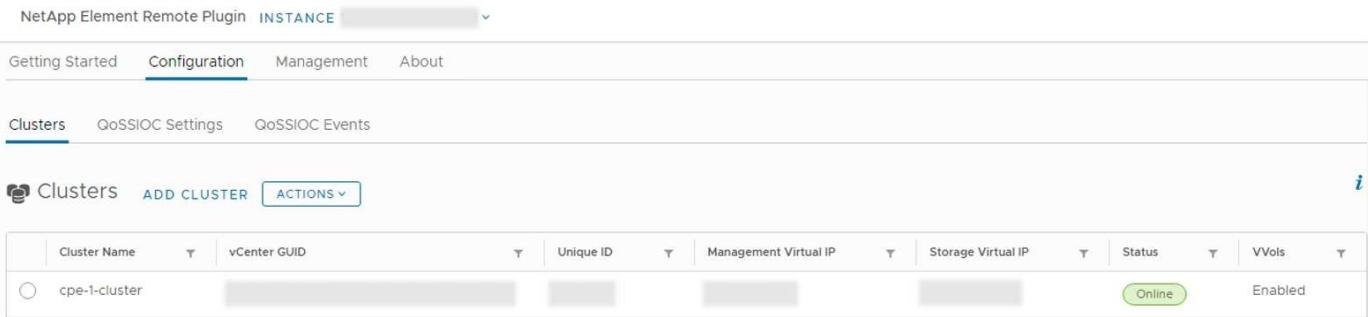
Getting Started

The Getting Started tab introduces the extension points for the plug-in and the actions that can be performed. You can hide the Getting Started pages from each page or restore them from the **About** tab.

Configuration

The **Configuration** tab allows you to add and manage clusters, and configure management node settings for QoSSIOC.

 Your vSphere Web Client might differ slightly from what is shown in the following image depending on the version of vSphere installed.



The screenshot shows the 'Clusters' section of the Configuration tab. It includes a table with columns: Cluster Name, vCenter GUID, Unique ID, Management Virtual IP, Storage Virtual IP, Status, and VVols. A single cluster named 'cpe-1-cluster' is listed, showing 'Online' status and 'Enabled' VVols. There are 'ADD CLUSTER' and 'ACTIONS' buttons at the top of the table.

Cluster Name	vCenter GUID	Unique ID	Management Virtual IP	Storage Virtual IP	Status	VVols
cpe-1-cluster					Online	Enabled

The following tabs are available from the **Configuration** tab:

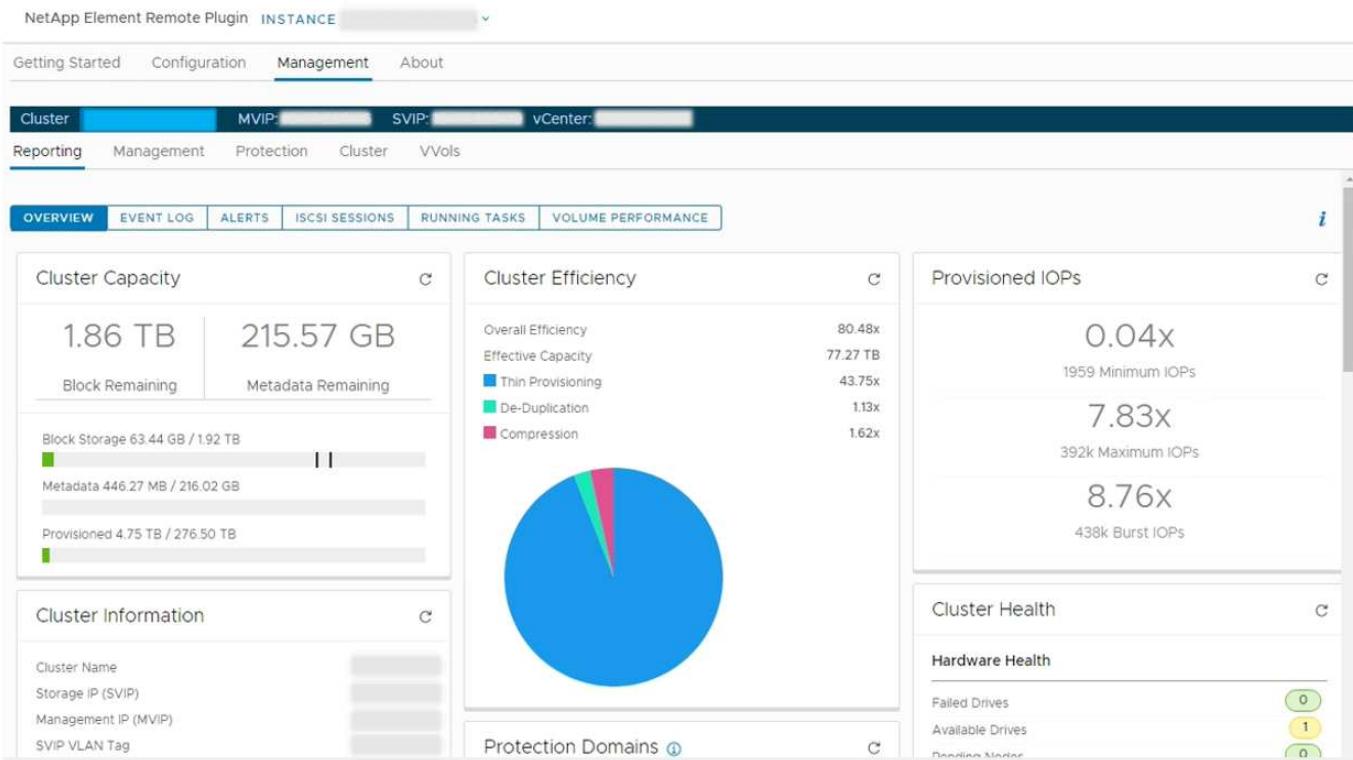
- **Clusters:** Manages the NetApp Element clusters controlled by the plug-in. You can also enable, disable, or configure cluster-specific features.
- **QoSSIOC Settings:** Configures your credentials for the QoSSIOC service on the management node to communicate with vCenter.
- **QoSSIOC Events:** Displays information about all detected QoSSIOC events.

Management

Using the **Management** tab, you can perform the following activities:

- View cluster information
- Manage datastores, volumes, user accounts, access groups, and initiators
- Manage individual group snapshots and add and manage drives and nodes

 Your vSphere Web Client might differ slightly from what is shown in the following image depending on the version of vSphere installed.



The cluster navigation bar allows you to quickly switch between clusters that have been added to the plug-in:

- **Cluster:** If two or more clusters are added, ensure that the cluster you intend to use for management tasks is selected in the navigation bar. Select other added clusters from the drop-down list.
- **MVIP:** The management virtual IP address of the selected cluster.
- **SVIP:** The storage virtual IP address of the selected cluster.
- **vCenter:** The vCenter Server which the selected cluster can access. The cluster is assigned access to a vCenter Server when the cluster is added to the plug-in.

The following tabs are available from the **Management** tab:

- **Reporting:** Displays information about cluster components and provides a cluster performance overview. You can also find information about events, alerts, iSCSI sessions, running tasks, and performance volumes from the tab.
- **Management:** Create and manage datastores, volumes, user accounts, access groups, and initiators. You can also perform backup operations, clones, and snapshots. QoS policies are available to be created and managed using NetApp Element software 10 or later.
- **Protection:** Manage individual and group snapshots. You can also create schedules for snapshot creation, pair clusters for real-time replication, and manage volume pairs.
- **Cluster:** Add and manage drives and nodes. You can also create and manage VLANs.
- **VVols:** Manage virtual volumes and their associated storage containers, protocol endpoints, and bindings.

About

Displays plug-in version information and provides a service bundle download option.

Find more information

- [NetApp Element Plug-in for vCenter Server overview](#)
- [NetApp HCI Documentation](#)
- [SolidFire and Element Resources page](#)

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