



HOW TO SETUP ACTIVE-ACTIVE CLUSTERING WITH PURESTORAGE TECHNOLOGY

Active-active clustering is a data resiliency architecture in which client workloads are distributed across two or more nodes in a cluster to keep your data safe and available in the event of an unexpected component failure.

The key difference between active-passive and active-active architectures is performance. Active-passive clusters have client machines connect to the main server, which handles the full workload, while a backup server remains on standby, only activating in the event of a failure.

Active-active clusters are where client machines connect to a load balancer that distributes their workloads across multiple active servers. Active-active clusters give you access to the resources of all your servers during normal operation. In an active-passive cluster, the backup server only sees action during failover.

Common benefits of active-active clusters include:

- High availability of mission-critical apps across data centers, campuses, and metros
- Load balancing across a cluster of servers
- Data redundancy and resiliency (maintain uptime even when one site fails)

1 PURE STORAGE ACTIVE/ACTIVE CLUSTERING SETUP

The following steps are required to enable Active/Active Clustering on PureStorage:

2. Connect the Arrays
3. Create a Stretched POD
4. Create a Volume
5. Connect Hosts

Purity ActiveCluster uses the same simple and easy storage management model as the rest of FlashArray. To enable ActiveCluster, PureStorage added one new command. It takes only four short steps to setup: Connect the arrays, create a stretched pod, create a volume, and connect the hosts.

2 CONNECT THE ARRAYS

This section describes how to Connect the Arrays.

1. Go to PureStorage CLI.
2. The following command:



a. Purearray connect –type sync-replication.

Or

1. From the GUI on one FlashArray go to first get a connection key (doesn't matter which array):

PURESTORAGE Storage

Array Hosts Volumes Protection Groups Pods

> Array

Size	Data Reduction	Volumes	Snapshots	Shared	System	Total
20484 G	2.8 to 1	1.12 T	0.00	79.53 G	0.00	1.20 T

sn1-x70-b05-33

Hosts
38

Host Groups
2

Volumes
13

Volume Snapshots
0

Volume Groups
0

Protection Groups
0

Protection Group Snapshots
0

Pods
1

Connected Arrays

Name	Connected	Type	Version	Management Address	Replication Address	Throttled
No arrays found.						

2. Click on the hamburger and click "Get Connection Key"

Connected Arrays

Name	Connected	Type	Version	Management Address	Replication Address	Throttled
No arrays found.						

Connect Array
Get Connection Key

3. Click Copy:

Connection Key

Use the following key to connect to this array.

0510f835-e3d6-d457-30de-eea60ba...

Copy

OK



4. Now go to the other array: Repeat the steps above except this time you chose “Connect Array” and enter in the connection key and management address of the array you got the key from and choose “Sync Replication”.

The image shows a 'Connect Array' dialog box with a close button (X) in the top right corner. It contains four input fields: 'Management Address' with the value '10.21.149.21', 'Type' with a dropdown menu showing 'Sync Replication', 'Connection Key' with a masked field of dots, and 'Replication Address' with the text 'Auto discovered unless using NAT'. At the bottom right are 'Cancel' and 'Connect' buttons.

3 CREATE A STRETCHED POD

What the HECK is POD? Well, a pod is a namespace, but also a replication group. A pod is first created on a FlashArray, then a second FlashArray is added to it. This is called “stretching a pod”. When a pod is first stretched the initial synchronization of the data starts. When everything is in sync, the volumes are now available on both sides. They can be read from or written to on either array at the same time.

1. Go to the CLI and Type:

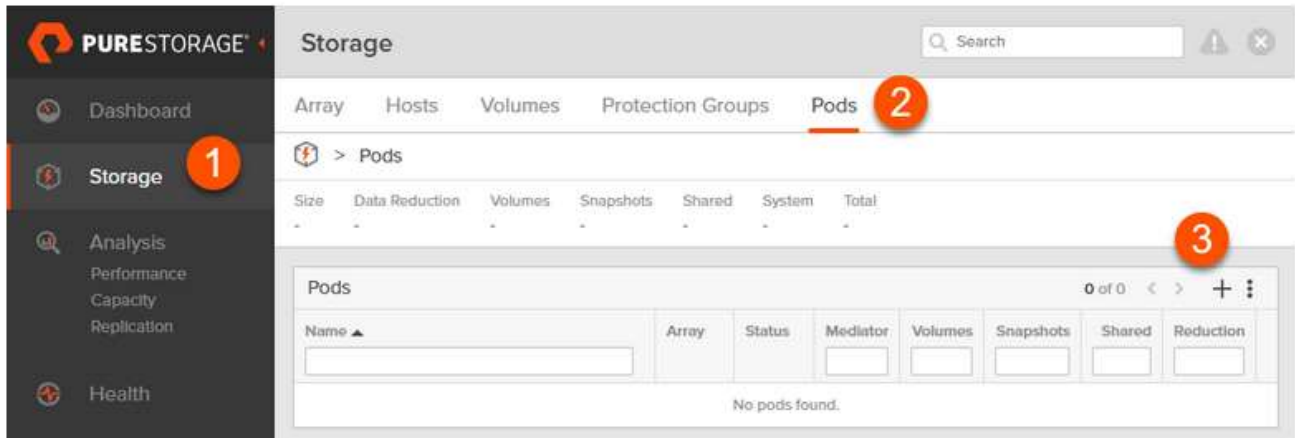
a. >purepod create pod1

b. >purepod add –array vMSC- pod01

Or

1. Within the GUI Go to the Pods tab and create a new one and name it something that makes sense:

a. Go to the Storage section, choose Pods and then click the Plus sign



Create Pod

Name

vMSC-pod01

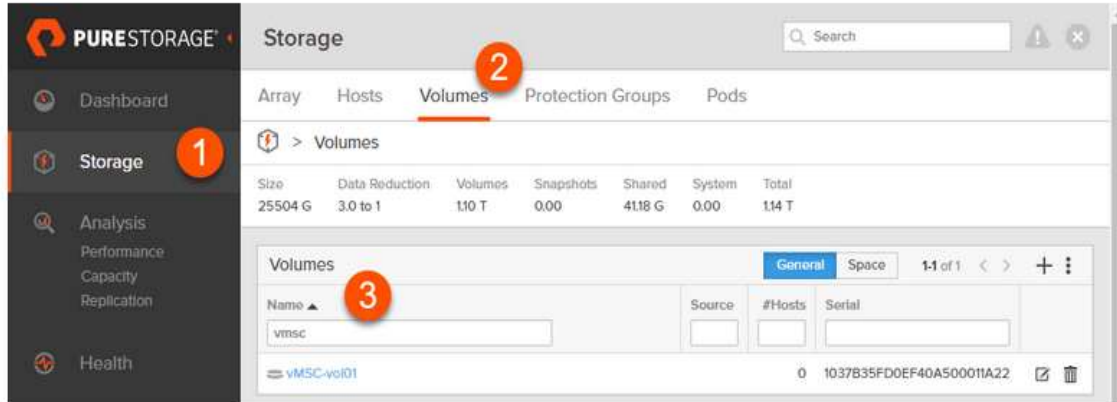
Cancel

Create

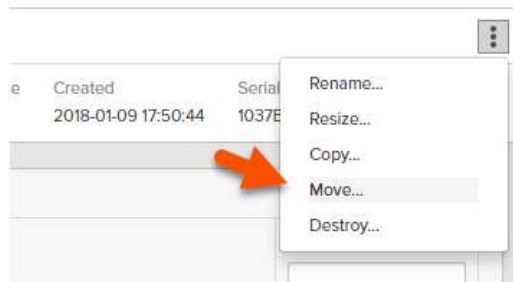
2. At this point add any pre-existing volumes you would like to add to the pod. This is called a volume “move”. The volume is not literally moved, nor is any data copied. **The volume is simply moved into the pod namespace.** So if my pod is named “codypod” and my volume is currently called “codyvolume”, when the volume is moved into the pod, it will be called “codypod::codyvolume”.



Choose a volume:



Choose move:



Chose where to move it to (the pod):



Confirm:



This process is of course non-disruptive to any host I/O to that volume.



When you have finished adding any volumes, you can now stretch the pod to the second FlashArray.

4 CREATE A VOLUME

1. From the CLI: Type: >purevol create --size 1T pod::vMsc-vol01

Or

2. See above in step 3 the volume is created when copying the volume into the POD

5 CONNECT HOSTS

1. From the CLI: >purehost connect -vol vMSC-pod01::vMSC-vol01

Or

This process is of course non-disruptive to any host I/O to that volume.

When you have finished adding any volumes, you can now stretch the pod to the second FlashArray.

2. From the GUI:

Go to add a FlashArray:

Size	Data Reduction	Volumes	Snapshots	Shared	System	Total	Source	Mediator
8 T	1.0 to 1	0.00	0.00	0.00	-	0.00	-	purestorage

Arrays			
Name	Status	Frozen At	Mediator Status
sn1-x70-b05-33	✓ online	-	online

Choose a FlashArray that is synchronously connected:

Add Array

Array: -- Select an array --

sn1-x70-c05-33

Cancel Add

It syncs:

Arrays				
Name	Status	Frozen At	Mediator Status	
sn1-x70-b05-33	✓ online	-	online	🗑
sn1-x70-c05-33	⚠ resyncing	-	online	🗑



The volume is now available on both FlashArrays!

Navigation: > Pods > vMSC-pod01

Size	Data Reduction	Volumes	Snapshots	Shared	System	Total	Source	Mediator
8 T	1.0 to 1	0.00	0.00	0.00	-	0.00	-	purestorage

Arrays

Name	Status	Frozen At	Mediator Status
sn1-x70-b05-33	online	-	online
sn1-x70-c05-33	online	-	online

Volumes

General | Space | 1-2 of 2

Name	Source	#Hosts	Serial
vMSC-pod01::vMSC-vol01		0	1037B35FD0EF40A500011A22
vMSC-pod01::vMSC-vol02		0	1037B35FD0EF40A500011A24


There are a few other option:

1. Use cloud mediator or deploy and internal one. The default behavior is for the FlashArrays to use the cloud mediator. This is the preferred option in general (it ensures it is on a third site for instance). But if you want to deploy an internal mediator, we do offer a vApp.

Navigation: Array | Hosts | Volumes | Protection Groups | Pods

Navigation: > Pods > vMSC-pod01

Size	Data Reduction	Volumes	Snapshots	Shared	System	Total	Source	Mediator
0	1.0 to 1	0.00	0.00	0.00	-	0.00	-	purestorage





2. Set an array as preferred for a host. If hosts only have access to the volume through one FlashArray, there is no need for this (called non-uniform configuration). If hosts in both sides have storage access to a volume through both FlashArrays, you might want to set a preferred array. When you set a preferred array for a host, Purity automatically tells the host that its paths are optimized or not optimized. The preferred array paths will be marked optimized and therefore a host will only use those paths. If you do not set this, and there is a latency difference across sites, reads and writes might go to the remote FlashArray instead of the local one, which will add unnecessary latency. I will go more into this in another blog post.

Add Preferred Arrays

Available Arrays

☐

☒

sn1-x70-b05-33

☐

sn1-x70-c05-33

Selected Arrays

1 selected Clear all

☒

sn1-x70-b05-33

X

Cancel

Add

VMSC:VMware:Uniform-FlashArray:VMS

Setting Started Summary Monitor

Configure Permissions Files Hosts VMs FlashArray Snapshot Objects Pure Storage

General

Capability sets

Device Backing

Connectivity and Multipathing

Connectivity and Multipathing

Select a host to view the multipathing details for its devices.

Mount

Unmount

Host	Datstore Mounted	Datstore Connectivity	Mount Point
ac-esxi-a-07.purecloud.com	Mounted	Connected	/vmfs/volumes/5a692ce0-6559873e-7a23-90b11c3f9c18
ac-esxi-a-08.purecloud.com	Mounted	Connected	/vmfs/volumes/5a692ce0-6559873e-7a23-90b11c3f9c18
ac-esxi-a-06.purecloud.com	Mounted	Connected	/vmfs/volumes/5a692ce0-6559873e-7a23-90b11c3f9c18

Multipathing Details

Device: PURE Fibre Channel Disk (naa.624a93701037b35f0ef40a500017885)

Multipathing Policies

Path Selection Policy

Round Robin (VMware)

Storage Array Type Policy

VMW_SATP_ALUA

Paths

Owner Plugin

NMP

Refresh

Enable

Disable

Runtime Name	Status	Target
vmhba2:C0:T7:L244	Active (I/O)	52:4a:93:75:15:74:75:16 52:4a:93:75:15:74:75:16
vmhba2:C0:T12:L253	Active	52:4a:93:72:e3:85:21:02 52:4a:93:72:e3:85:21:02
vmhba1:C0:T12:L253	Active	52:4a:93:72:e3:85:21:03 52:4a:93:72:e3:85:21:03
vmhba1:C0:T4:L244	Active (I/O)	52:4a:93:75:15:74:75:13 52:4a:93:75:15:74:75:13
vmhba2:C0:T15:L253	Active	52:4a:93:72:e3:85:21:16 52:4a:93:72:e3:85:21:16
vmhba1:C0:T15:L253	Active	52:4a:93:72:e3:85:21:17 52:4a:93:72:e3:85:21:17



sun mgt
Rising Technologies



PURESTORAGE

Note: Once a pod is created, you can control the pod and volumes from either FlashArray. If you create a snapshot, that snapshot is created on both sides. If you have snapshots before putting a volume in a pod, then you put the volume in, those snapshots will be copied over too.

If you create a new volume in a stretched pod, it is immediately available in both sides.

So ActiveCluster is not just an active-active solution, it can also be a very simple means to move a volume and its snapshots over to a different array, Put a volume in a pod, stretch it, let it sync, then unstretch it.

Sun Management

Sun Management is a Value Added Reseller (VAR) focusing on Network and Internetwork Security Requirements. We work primarily in the Mid Atlantic area: Maryland (MD), Virginia (VA), District of Columbia (DC), West Virginia (WV), Delaware (DE) and Pennsylvania (PA). Our credentials include Palo Alto Networks Services Provider, Palo Alto Networks Certified Training Partner, and Palo Alto Networks Certified Managed Security Service Provider (**MSSP**) using CORTEX XSOAR in a multi-tenant environment.

We address requirements concerning Network Detection and Response (NDR); internal and external TLS and SSL requirements for complete data visibility; End Point Detection and Response (EDR); Gramm Leach Bliley Act, HIPPA, Sarbanes Oaxley and PCI DSS; **penetration testing** and firewall optimization; and Data Protection by tracking all Data Flows within the network, across applications, between users/servers and in the cloud. Contact us at (888) 773-9422 to setup a POC or if you just want more information.