Set up SnapMirror active sync

ASA r2

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Set up SnapMirror active sync

SnapMirror active sync setup workflow

ONTAP SnapMirror active sync data protection enables business services to continue operating even through a complete site failure, supporting applications to fail over transparently using a secondary copy. There is no manual intervention or custom scripting required to trigger a failover with SnapMirror active sync.

While the System Manager procedures for configuring SnapMirror active sync are different on ASA r2 systems than NetApp FAS, AFF, and ASA systems running the unified ONTAP personality, the requirements, architecture and operation of SnapMirror active sync is the same.

Learn more about ONTAP personalities.

> Beginning with ONTAP 9.18.1, SnapMirror active sync is supported on four-node configurations. In ONTAP 9.17.1, SnapMirror active sync is supported on two-node configurations only.

Learn more about SnapMirror active sync.

Learn more about disaster recovery with SnapMirror active sync on your ASA r2 system

On ASA r2 systems, SnapMirror active sync supports symmetric active/active configurations. In a symmetric active/active configuration, both sites can access local storage for active I/O.

Learn more about symmetric active/active configurations.

1. **Prepare to configure SnapMirror active sync.**

To prepare to configure SnapMirror active sync on your ASA r2 system you should review the configuration prerequisites, confirm support for your host operating systems, and be aware of object limits that might impact specific configuration.

2. **Confirm your cluster configuration.**

Before you configure SnapMirror active sync, you should confirm that your ASA r2 clusters are in the proper peering relationships and meet other configuration requirements.

3. **Install ONTAP Mediator.**

You can use ONTAP Mediator or ONTAP Cloud Mediator to monitor the health of your cluster and enable business continuity. If you are using ONTAP Mediator, you must install it on your host. If you are using ONTAP Cloud Mediator, you can skip this step.

4. **Configure ONTAP Mediator or ONTAP Cloud Mediator using self-signed certificates.**

You must configure ONTAP mediator or ONTAP cloud mediator before you can begin using it with SnapMirror active sync for cluster monitoring.

5 **Configure SnapMirror active sync.**

Configure SnapMirror active sync to create a copy of your data at a secondary site and enable your host applications to automatically and transparently fail over in the event of a disaster.

Prepare to configure SnapMirror active sync on ASA r2 systems

To prepare to configure SnapMirror active sync on your ASA r2 system you should review the configuration prerequisites, confirm support for your hosts operating systems, and be aware of object limits that might impact specific configuration.

Steps

1. Review the SnapMirror active sync prerequisites.
2. Confirm that your host operating systems are supported for SnapMirror active sync.
3. Review the object limits that might impact your configuration.
4. Verify host protocol support for SnapMirror active sync on your ASA r2 system.

   Support for SnapMirror active sync on ASA r2 systems varies based upon ONTAP version and host protocol.

Beginning with ONTAP…	SnapMirror active sync supports…
9.17.1	• iSCSI • FC • NVMe/FC • NVMe/TCP
9.16.0	• iSCSI • FC

NVMe protocol limitations with SnapMirror active sync on ASA r2 systems

Before you configure SnapMirror active sync on an ASA r2 system with NVMe hosts, you should be aware of certain NVMe protocol limitations.

All NVMe storage units in the NVMe subsystem must be members of the same consistency group and must all be part of the same SnapMirror active sync relationship.

The NVMe/FC and NVMe/TCP protocols are supported with SnapMirror active sync as follows:

- Only on 2-node clusters
- Only on ESXi hosts
- Only with symmetric active/active configurations

Asymmetric active/active configurations are not supported with NVMe hosts.

SnapMirror active sync with NVMe does not support the following:

- Subsystems mapped to more than one consistency group

  A consistency group can be mapped with multiple subsystems, but each subsystem can be mapped to only one consistency group.

- Expansion of consistency groups in a SnapMirror active sync relationship
- Mapping NVMe storage units that are not in a SnapMirror active sync relationship to replicated subsystems
- Removing a storage unit from a consistency group
- Consistency group geometry change
- Microsoft Offloaded Data Transfer (ODX)

What's next?

After you have completed the preparation necessary to enable SnapMirror active sync, you should confirm your cluster configuration.

Confirm your ASA r2 cluster configuration before configuring SnapMirror active sync

SnapMirror active sync relies on peered clusters to protect your data in the event of a failover. Before you configure SnapMirror active sync, you should confirm that your ASA r2 clusters are in a supported peering relationship and meet other configuration requirements.

Steps

1. Confirm that a cluster peering relationship exists between the clusters.

   > The default IPspace is required by SnapMirror active sync for cluster peer relationships. A custom IPspace isn't supported.

   Create a cluster peer relationship.

2. Confirm that a peer relationship exists between the storage virtual machines (VMs) on each cluster.

   Create an intercluster storage VM peer relationship.

3. Confirm that at least one LIF is created on each node in the cluster.

   Create a LIF

4. Confirm that the necessary storage units are created and mapped to host groups.

   Create a storage unit and map the storage unit to a host group.

5. Rescan the application host to discover any new storage units.

What's next?

After you have confirmed your cluster configuration, you are ready to install ONTAP Mediator.

Install ONTAP Mediator on ASA r2 systems

To install ONTAP Mediator for your ASA r2 system, you should follow the same procedure used to install ONTAP Mediator for all other ONTAP systems.

Installing ONTAP Mediator includes preparing for installation, enabling access to repositories, downloading the ONTAP Mediator package, verifying the code signature, installing the package on the host and performing post-installation tasks.

To install ONTAP Mediator, follow this workflow

What's next

After ONTAP Mediator is installed you should configure ONTAP Mediator using self-signed certificates.

Configure ONTAP Mediator or ONTAP Cloud Mediatior on ASA r2 systems

You must configure ONTAP Mediator or ONTAP Cloud Mediator before you can begin using SnapMirror active sync for cluster monitoring. ONTAP Mediator and ONTAP Cloud Mediator both provide a persistent and fenced store for high availability (HA) metadata used by the ONTAP clusters in a SnapMirror active sync relationship. Additionally, both mediators provide a synchronous node health query functionality to aid in quorum determination and serves as a ping proxy for controller liveliness detection.

Before you begin

If you are using ONTAP Cloud Mediator, verify that your ASA r2 system meets the necessary prerequisites.

Steps

1. In System Manager, select **Protection > Overview**.
2. In the right pane under **Mediators**, select **Add a mediator**.
3. Select the **Mediator type**.
4. For a **Cloud** mediator enter the organization ID, client ID and client secret. For an **On-premises** mediator enter the IP address, port, mediator user name and mediator password.
5. Select the cluster peer from the list of eligible cluster peers or select **Add a cluster peer** to add a new one.
6. Add the certificate information
    - If you are using a self signed certificate, copy the content of the `intermediate.crt` file and paste it into the **Certificate** field, or select **Import** to navigate to the `intermediate.crt` file and import the certificate information.
    - If you are using a third-party certificate, enter the certificate information into the **Certificate** field.
7. Select **Add**.

What's next?

After you have initialized the mediator, you can configure SnapMirror active sync to create a copy of your data at a secondary site and enable your host applications to automatically and transparently failover in the event of

a disaster.

Configure SnapMirror active sync on ASA r2 systems

Configure SnapMirror active sync to create a copy of your data at a secondary site and enable your host applications to automatically and transparently failover in the event of a disaster.

On ASA r2 systems, SnapMirror active sync supports symmetric active/active configurations. In a symmetric active/active configuration, both sites can access local storage for active I/O.

If you are using the iSCSI or FC protocol and use ONTAP tools for VMware Sphere, you can optionally use ONTAP Tools for VM ware to configure SnapMirror active sync.

Before you begin

Create a consistency group on the primary site with new storage units. If you want to create a non-uniform symmetric active/active configuration, also create a consistency group on the secondary site with new storage units.

Learn more about non-uniform symmetric active/active configurations.

Steps

1. In System Manager, select **Protection > Consistency groups**.
2. Hover over the name of the consistency group you want to protect with SnapMirror active sync.
3. Select and then select **Protect**.
4. Under **Remote protection**, select **Replicate to a remote cluster**.
5. Select an existing cluster peer or choose to **Add a new one**.
6. Select the storage VM.
7. For the replication policy, select **AutomatedFailOverDuplex**.
8. If you are creating a non-uniform symmetric active/active configuration, select **Destination settings**; then input the name of the new destination consistency group you create before beginning this procedure.
9. Select **Save**.

Result

SnapMirror active sync is configured to protect your data so that you can continue operations with near zero recovery point objective (RPO) and near zero recovery time objective (RTO) in the event of a disaster.

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