3PAR storage arrays

ONTAP FlexArray

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3PAR storage arrays

You must meet certain requirements when configuring storage arrays to work with ONTAP systems that use array LUNs. These requirements include setting configuration parameters on storage arrays and deploying only supported configurations.

Required parameters for 3PAR arrays with ONTAP systems

Certain parameter settings are required on the storage array for the storage array to work successfully with ONTAP systems.

Host persona settings

For 3PAR arrays with firmware 2.3.1 and later, the required host persona values must be set as shown in the following table:

Connection type	Host persona
Direct connect	10
Fabric attached	10

The host definition, with the required host persona, should be created on a 3PAR storage array before the switch is zoned to connect the ONTAP system to a 3PAR storage array. If zoning is configured before the host definition, ONTAP discovers a 3PAR LUN as LUN 254 and product type SES, which ONTAP cannot use. The result is that newly mapped 3PAR LUNs cannot be assigned to ONTAP system and some 3PAR LUNs that might have already been added to an aggregate cannot be used because ONTAP sees a LUN 254 instead of a 3PAR LUN. If this problem occurs, ONTAP generates the following EMS message:

```
mlm.array.unknown:warning - Array LUN XXXXXXXX.126L254 [S/N 'XXXXXXX'
vendor '3PARdata' product 'SES'] is unknown and is not supported in this
version of Data ONTAP.
```

If zoning was configured prior to the host definition, you can resolve the problem by doing path re-initialization to force a rediscovery of the array LUNs that are mapped from the 3PAR storage array. See the Workaround for the unknown device (L254/SES) problem with 3PAR storage arrays section for the workaround for this problem.

Workaround for the unknown device (L254/SES) problem with 3PAR storage arrays

Port persona settings

For 3PAR arrays with firmware 2.2.x, the required port persona values must be set as shown in the following table:

Connection type	Port persona
Direct connect	18
Fabric attached	19

Workaround for the unknown device (L254/SES) problem with 3PAR storage arrays

The host definition, with the host persona specified in the required parameters for 3PAR arrays with ONTAP systems section, should be created on a 3PAR storage array before the switch is zoned to connect the ONTAP system to a 3PAR storage array. If zoning is configured before the host definition, ONTAP discovers a 3PAR array LUN as LUN 254 and product type SES, which ONTAP cannot use.

Required parameters for 3PAR arrays with ONTAP systems

When ONTAP discovers 3PAR array LUNs as LUN 254 and product type SES, newly mapped 3PAR LUNs cannot be assigned to ONTAP systems and some 3PAR LUNs that might have already been added to an aggregate cannot be used because ONTAP sees a LUN 254. ONTAP generates EMS messages for the LUN it discovered as LUN 254 and product type SES, reporting some LUNs as unknown devices.

If zoning was configured before the host definition, you can resolve the LUN 254/SES unknown device problem by forcing a rediscovery of the array LUNs that are mapped from the 3PAR storage array. The procedure you use depends on whether aggregates with 3PAR array LUNs have already been configured on the ONTAP system. (In the following procedures, assume that Node-1 and Node-2 are the names of the ONTAP nodes.)

If aggregates with 3PAR array LUNs were already created on an ONTAP system

1. Run the following command to ensure that an HA configuration is enabled on your ONTAP systems:
   `cluster ha show`

   The following output is displayed:

   ```
   High Availability Configured: true
   ```

2. Run the following command to ensure that storage failover is configured on your ONTAP systems:
   `storage failover show`

   The following output is displayed:

   ```
            Takeover
   Node           Partner        Possible State Description
   -------------- -------------- --------
   -------------------------------------
   Node-1    Node-2    true     Connected to Node-2
   Node-2    Node-1    true     Connected to Node-1
   2 entries were displayed.
   ```

3. Perform a takeover operation on Node-1 by running the following command: **storage failover takeover -ofnode Node-1**
4. Run the following command again to verify that Node-2 is ready for a giveback operation: **storage failover show**

   The following output is displayed:

```
          Takeover
Node           Partner        Possible State Description
-------------- -------------- --------
-------------------------------------
Node-2    Node-1    false    In takeover, Auto giveback will be
                                    initiated in 348 seconds
Node-1    Node-2    -        Waiting for giveback (HA mailboxes)
2 entries were displayed.
```

5. Perform a giveback operation on Node-1 by running the following command: **storage failover giveback -ofnode Node-1 -require-partner-waiting true**
6. From other nodes in the cluster, repeat Step 3 through Step 5.

If aggregates with 3PAR array LUNs have not been created on an ONTAP system

1. Run the following command to list all of the ONTAP FC initiator ports that are connected to the 3PAR storage array: **system node run -node <node name> -command "sysconfig -v"**

   The following example shows the command with a specific node name included: **system node run -node Node-1 -command "sysconfig -v"**

2. Run the following command to take all of the listed ports offline: **system node run -node <node name> -command "priv set advanced;fcadmin offline <adapter>"**

   The following example shows the command with a specific node name and adapter included: **system node run -node Node-1 -command "priv set advanced;fcadmin offline 0a"**

3. Run the following command to bring all of the listed ports online: **system node run -node <node name> -command "priv set advanced;fcadmin online <adapter>"**

   The following example shows the command with a specific node name and adapter included: **system node run -node Node-1 -command "priv set advanced;fcadmin online 0a"**

3PAR storage array families

ONTAP does not support mixing some types of storage in aggregates. To help you determine the array LUNs that can be mixed in an aggregate, the storage arrays from each vendor are grouped into families. When you create aggregates, you cannot mix array LUNs from different vendors and from different storage array families in the same aggregate.

Storage arrays in the same family share the same performance and failover characteristics. For example, members of the same family all perform active-active failover, or they all perform active-passive failover. More than one factor might be used to determine storage array families. For example, storage arrays with different architectures would be in different families even though other characteristics might be the same.

The following list shows the supported 3PAR storage arrays organized by different families:

- Family 1: 3PAR InServ Storage
  - Tx00
- Family 2: 3PAR InServ Storage
  - Fx00
- Family 3: 3PAR StoreServ Storage
  - 20000
  - 208xx

The Interoperability Matrix is the final authority for information about the storage arrays supported for each vendor.

Related information

NetApp Interoperability Matrix Tool

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