



Commands for checking back-end configuration

ONTAP FlexArray

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Commands for checking back-end configuration


Several ONTAP commands provide information about the storage array configuration, including back-end configuration errors. These commands are particularly useful during installation verification and troubleshooting.

The `storage array config show` command is the first command to use during installation verification. It is also the first command to use if you notice that your system is not working as you expect, or if you receive an error message.

Commands that are particularly useful for installation verification and troubleshooting are shown in the following table:

Command	Description
<code>storage array config show</code>	<p>Provides information, at the storage array level, about the configuration of the back-end devices in a deployment with ONTAP systems using array LUNs. This command shows how storage arrays connect to the cluster. If ONTAP detects an issue that would prevent the ONTAP systems using array LUNs and storage arrays from operating properly together, <code>storage array config show</code> instructs you to run <code>storage errors show</code> to obtain details about the error.</p> <p>This command is also useful for verifying that the configuration is set up as you intended. For example, you can look at the output to confirm that the number of array LUN groups that you intended were created.</p>
<code>storage array show -name array_name</code>	<p>Displays information about all storage arrays visible to the cluster or about the storage array that you specify. If the number of array LUNs presented exceeds the capacity of the system, the Error text field shows you the number of LUNs that ONTAP could not discover. You should watch for this issue on low memory systems in particular.</p>
<code>storage path quiesce</code>	<p>Temporarily suspends I/O to a specific array LUN on a specific path. The path becomes active again on reboot or by running <code>storage path resume</code>. Some storage arrays require ceasing I/O for a period of time to remove or move an array LUN.</p> <div data-bbox="847 1732 906 1789"></div> <p>The <code>storage path quiesce</code> command cannot be used with IBM DS storage arrays.</p>

Command	Description
<code>storage path resume</code>	Allows I/O to start flowing again; this is the inverse of quiesce. The <code>storage path resume</code> command is used primarily for hardware maintenance (for example, cable or GBIC pulls) or after an accidental quiescence of a path to an array LUN occurs. It is not always necessary to run this command after quiescing a path. For example, ONTAP can discover a newly mapped array LUN.
<code>storage array show</code>	Displays information about the storage arrays that are visible to the cluster, for example, name, vendor, model, and failover type.
<code>storage disk show</code>	Entering <code>storage disk show</code> without parameters shows the following for all disks and array LUNs: the name, usable size, container type, position, aggregate, and owner. Entering <code>storage disk show</code> with a disk name or an array LUN name as a parameter shows details about an individual disk or array LUN, for example, the status (assigned or unassigned), the owner, and the paths for the array LUN. The output is broken into three sections: information about the array LUN, information about the paths to the array LUN, and any errors associated with the array LUN.
<code>storage disk show -errors **</code>	Entering <code>storage disk show</code> with the <code>-errors</code> parameter provides details of configuration errors at the disk and array LUN levels. Although the command output is similar to that of the <code>storage disk error show</code> command, <code>storage disk show -errors</code> provides additional options to filter the output by parameters such as node, cluster, and bay position.
<code>storage disk error show</code>	Provides details about back-end configuration errors at the disk and array LUN levels. Entering <code>storage disk error show</code> with an array LUN name as a parameter shows details about configuration errors related to the specified array LUN. You must fix these errors before configuring ONTAP to work with storage arrays.

Command	Description
<pre>storage errors show</pre>	<p>Provides details, at the array LUN level, about back-end configuration errors that prevent the ONTAP system and the storage array from operating together. You must fix errors identified by <code>storage errors show</code> before you configure ONTAP to work with storage arrays.</p> <div style="border: 1px solid #ccc; padding: 10px; margin-top: 10px;"> <p> The <code>storage errors show</code> command does not provide information about disk configuration errors. To view information about both disk and array LUN configuration errors, you can use either the <code>storage disk show -errors</code> command or the <code>storage disk error show</code> command.</p> </div>

Back-end configuration errors detected by ONTAP commands

The `storage errors show` command provides details, at the array LUN level, about common back-end configuration errors. You can also use the `storage disk error show` and the `storage disk show -errors` commands to view the errors.

You must fix the back-end configuration errors identified by these commands before you can configure ONTAP to work with array LUNs.



While the `storage errors show` command provides error details pertaining to only array LUNs, the `storage disk error show` and the `storage disk show -errors` commands can provide error details related to array LUNs as well as disks.

When there is a back-end configuration error that would prevent the devices in your configuration from working together, the `storage array config show` command instructs you to run `storage errors show` to obtain the details of the error.

List of back-end configuration errors

The `storage errors show`, `storage disk error show`, and `storage disk show -errors` commands can help identify back-end configuration errors such as the following:

- There are fewer than two paths to an array LUN.
- All paths to an array LUN are to the same storage array controller.
- Two array LUNs are presented with the same LUN ID.
- The LUN IDs for the same LDEV do not match on all target ports over which the LDEV will be visible.
- The array LUN exceeds the ONTAP maximum LUN size.
- The array LUN does not meet the ONTAP minimum LUN size.

- The block size of an array LUN is invalid.
- An access LUN is presented to ONTAP.

Output examples displaying the back-end configuration errors

The `storage errors show` output is grouped by storage array (if there is more than one storage array behind the ONTAP system). The name and unique identifier (UID) of an array LUN are shown, when applicable.

The following output example shows one type of error—only one path to an array LUN. This is an error because ONTAP requires two paths to an array LUN.



Four paths to an array LUN are supported for clustered configurations.

The following example shows the errors returned by the `storage errors show` command because of only a single path configured to an array LUN:

```
systemf47ab::*> storage errors show
DGC-1.51          onepath          DGC-1.51
(6006016044d03500ae553e55b09fe311): This array LUN is only available on
one path. Proper configuration requires two paths.
DGC-1.54          onepath          DGC-1.54
(6006016044d03500b4553e55b09fe311): This array LUN is only available on
one path. Proper configuration requires two paths.
DGC-1.55          onepath          DGC-1.55
(6006016044d03500b6553e55b09fe311): This array LUN is only available on
one path. Proper configuration requires two paths.
DGC-1.56          onepath          DGC-1.56
(6006016044d03500b8553e55b09fe311): This array LUN is only available on
one path. Proper configuration requires two paths.
DGC-1.57          onepath          DGC-1.57
(6006016044d03500ba553e55b09fe311): This array LUN is only available on
one path. Proper configuration requires two paths.
DGC-1.58          onepath          DGC-1.58
(6006016044d03500bc553e55b09fe311): This array LUN is only available on
one path. Proper configuration requires two paths.
```

The following example shows similar errors returned by the `storage disk show -errors` command:

```
systemf47ab::*> storage disk show -errors
DGC-1.2          onepath          DGC-1.2
(6006016044d03500e0720e22b59fe311): This array LUN is only available on
one path. Proper configuration requires two paths.
DGC-1.3          onepath          DGC-1.3
(6006016044d03500e2720e22b59fe311): This array LUN is only available on
one path. Proper configuration requires two paths.
DGC-1.4          onepath          DGC-1.4
(6006016044d03500e3720e22b59fe311): This array LUN is only available on
one path. Proper configuration requires two paths.
DGC-1.5          onepath          DGC-1.5
(6006016044d03500e4720e22b59fe311): This array LUN is only available on
one path. Proper configuration requires two paths.
DGC-1.6          onepath          DGC-1.6
(6006016044d03500e5720e22b59fe311): This array LUN is only available on
one path. Proper configuration requires two paths.
DGC-1.7          onepath          DGC-1.7
(6006016044d03500e6720e22b59fe311): This array LUN is only available on
one path. Proper configuration requires two paths.
```

Situations not identified by commands that check back-end configuration

There might be situations that you consider to be an issue but are not errors from the perspective of ONTAP because the situation does not prevent the system from operating. The ONTAP commands that check the back-end configuration do not identify configurations that do not prevent system operation.

Commands such as `storage errors show`, `storage disk error show`, and `storage disk show -errors` do not alert you to situations such as the following:

- Configurations that do not conform to best practice recommendations; that is, they are not required
- Conditions that can occur during transitional states

For example, you might see more LUN groups than you intended in `storage array config show` output until migration of LUNs from one LUN group to another is complete.

- Conditions that do not match the intended configurations

For example, if you wanted to configure multiple LUN groups and only one was configured, ONTAP does not identify that as an error because a single LUN group is supported.

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