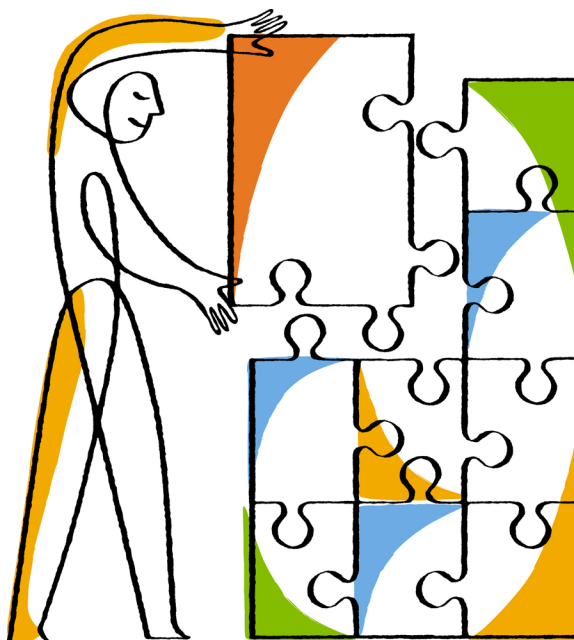




## SnapDrive<sup>®</sup> 5.2.2 for UNIX<sup>®</sup>

### Release Notes

AIX<sup>®</sup>, Linux<sup>®</sup>, and Solaris<sup>®</sup>



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## Product overview

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SnapDrive for UNIX simplifies data management and increases the availability and reliability of application data through simplified storage provisioning and file system consistent Snapshot copies.

SnapDrive for UNIX simplifies data backup so that you can recover data even if it is deleted or modified. SnapDrive for UNIX uses Snapshot technology to create an image of the data on a shared or unshared storage system attached to a UNIX host. When you restore a Snapshot copy, it replaces the current data on the storage system with the data from the Snapshot copy.

SnapDrive for UNIX provides storage features that enable you to manage the entire storage hierarchy, such as the host-side application-visible file, the volume manager, and the storage system-side logical unit number (LUN).

### Related information

*[SnapDrive 5.2.2 for UNIX Installation and Administration Guide for Linux](#)*

*[SnapDrive 5.2.2 for UNIX Installation and Administration Guide for Solaris](#)*

*[SnapDrive 5.2.2 for UNIX Installation and Administration Guide for IBM AIX](#)*

## New in this release

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SnapDrive 5.2.2 for UNIX includes several new features and enhancements.

- Supports clustered Data ONTAP 8.3
- Supports the following clustered Data ONTAP features:
  - Load-sharing mirror (LSM)

A load-sharing mirror reduces the network traffic to a FlexVol volume by providing additional read-only access to clients. You can create and manage load-sharing mirrors to distribute read-only traffic away from a FlexVol volume. Load-sharing mirrors do not support Infinite Volumes. A set of load-sharing mirrors consists of a source volume that can connect with one or more destination volumes. Each load-sharing mirror in the set must belong to the same Storage Virtual Machine (SVM) as the source volume of the set. The load-sharing mirrors should also be created on different aggregates and accessed by different nodes in the cluster to achieve proper load balancing of client requests. For more information, see the *Clustered Data ONTAP Logical Storage Management Guide*.

**Note:** If you are using clustered Data ONTAP 8.2, 8.2.1, or 8.2.2, the load-sharing mirror update fails if the cluster administrator is not configured. You must configure the cluster administrator using the `snapdrive config set -cserver` command.
  - Selective LUN Map (SLM)

Beginning with clustered Data ONTAP 8.3, the Selective LUN Map (SLM) feature is enabled by default on all new LUN maps. When a new LUN map is created, the LUN is accessible only through paths on the node that owns the LUN and its HA partner. For more information, see the *Clustered Data ONTAP SAN Administration Guide*.

**Note:** This feature is supported only if you are using clustered Data ONTAP 8.3.
  - IPspaces

An IPspace defines a distinct IP address space in which Storage Virtual Machines (SVMs) can be created. A routing table is maintained for each SVM within an IPspace; no cross-SVM or cross-IPspace traffic routing occurs. For more information, see the *Clustered Data ONTAP Network Management Guide*.

**Note:** This feature is supported only if you are using clustered Data ONTAP 8.3.
  - MetroCluster setup

This feature is supported only if you are using clustered Data ONTAP 8.3. For information about MetroCluster setup, see the *Clustered Data ONTAP MetroCluster Installation and Configuration Guide*.
  - Tokens to reserve space on node to create FlexClone files and FlexClone LUNs

You must have the FlexClone license if you want to use this feature. For more information, see the *Clustered Data ONTAP Logical Storage Management Guide*.

- Custom qtree exports

The qtree can have different exportfs policy than the parent volume.

**Note:** This feature is supported only if you are using clustered Data ONTAP 8.2.1 and later.

- Supports Federal Information Processing Standard (FIPS) compliance

**Note:** For updated information about SnapDrive for UNIX and its requirements, see the Interoperability Matrix.

### Related information

[NetApp Interoperability](#)

[Clustered Data ONTAP 8.3 Logical Storage Management Guide](#)

[Clustered Data ONTAP 8.3 SAN Administration Guide](#)

[Clustered Data ONTAP 8.3 Network Management Guide](#)

[Clustered Data ONTAP 8.3 MetroCluster Installation and Configuration Guide](#)

## Verifying support for your configuration in the IMT

You can use the NetApp Interoperability Matrix (IMT) to verify product support for your configuration: Data ONTAP software, host operating system, and so on. Verify support for your configuration before you install or upgrade to the new release.

### Steps

1. Access the IMT.

[NetApp Interoperability Matrix Tool](#)

2. If SnapDrive for UNIX is not the selected Storage Solution, click **Change** and select it under the Application Suite category.



3. In the **Component Explorer** pane, select each component you want to verify and click **Add** when prompted.

When you add an item, incompatible items are grayed out.

**Tip:** Select the parent of a set of components to select all of its children.

4. When you are satisfied with your choices, click **Show Results**.

The IMT lists each supported configuration.

5. You can:

- Scroll across a configuration to view the supported components and any notes or alerts for the configuration.
- Click the configuration name to display complete information for supported components, including support history and NetApp policies and guidelines for the selected Storage Solution category.

6. If no results are returned for your configuration, use the feedback wizard to report the problem to NetApp:

- a. Click **Feedback** in the upper right corner of the IMT.
- b. Select **I cannot find my configuration**, then click **Next**.
- c. Choose SnapDrive for UNIX in the **Solution** drop-down list, then type your comments and click **Submit**.

## Fixed issues

It is a good practice to review the known issues fixed in a new release before upgrading to it.

Bugs Online provides detailed information about issues that have been fixed. The bug ID contains a hyperlink to the Bugs Online report. Click the hyperlink to view the report.

| Bug ID                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">566690</a> | SnapDrive for UNIX might search a list of interfaces to determine if the interface can ping. If the interface fails to ping, SnapDrive for UNIX tries five times before checking the next interface. These additional attempts cause the operation takes additional time to execute.                                                                                                                                                                               |
| <a href="#">711746</a> | <p>If you are using clustered Data ONTAP 8.2 or later in a SAN environment and perform clone deletion or backup deletion operations, SnapDrive for UNIX deletes active LUNs without displaying the appropriate warning message.</p> <p>When you perform clone deletion or backup deletion operations, SnapDrive for UNIX fails to distinguish between a provisioned LUN and cloned LUN. SnapDrive for UNIX then deletes entities without any warning messages.</p> |

| Bug ID                 | Description                                                                                                                                                                                                                                                                                                                                                |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">678909</a> | <p>SnapDrive for UNIX operations might hang intermittently if you are using Red Hat Enterprise Linux or Oracle Linux 5.9 and 5.10.</p> <p>This issue occurs when <code>kpartx</code> and <code>vgdisplay</code> commands hang intermittently. You must perform a proper manual cleanup followed by a restart to bring the system back to normal state.</p> |
| <a href="#">668199</a> | <p>The SnapDrive for UNIX daemon fails to start when you use Emulex OneCommand Manager 6.1 or later with Emulex LightPulse host bus adapters (HBAs). The following error message is displayed: <code>Unable to start daemon...check daemon log file for more details.</code></p>                                                                           |

## Important cautions

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Important cautions identify issues that might cause data loss or system failure. You should review these cautions carefully.

### 7-Mode to clustered Data ONTAP post-migration limitations

If you are planning to use 7-Mode Transition Tool to transition any volume from a 7-Mode environment to clustered Data ONTAP, you must take certain precautions and be aware of certain limitations.

After transitioning volumes from a 7-Mode environment to clustered Data ONTAP, you cannot clone any Snapshot copies that existed before the transition. The command `Snapdrive snap connect -fs <mntpoint> -snapname <long snapname> -clone unrestricted -autorename` does not work with existing Snapshot copies after the volume transition. However, any Snapshot copies that you make on the transitioned volume continue to work with SnapDrive for UNIX as expected.

### 7-Mode to clustered Data ONTAP post-migration steps

After you have used 7-Mode Transition Tool to transition from a 7-Mode environment to clustered Data ONTAP, you must configure the new storage system name in SnapDrive for UNIX.

For more information, see the “Support for storage system rename” section in *SnapDrive for UNIX Installation and Administration Guide*.

## Known limitations

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Known limitations identify platforms, devices, or functions that are not supported by this release of the product, or that do not interoperate correctly with it. Review these limitations carefully.

### General limitations

- SnapDrive for UNIX does not support Snapshot operations on an NFS mount point when the volume is exported with Kerberos security authentication types `krb5`, `krb5i`, or `krb5p`.
- In clustered Data ONTAP, SnapDrive for UNIX does not support symbolic links for any mount points.
- SnapDrive for UNIX does not support operations on file specifications or LUNs if they are located across Data ONTAP operating in 7-Mode and clustered Data ONTAP storage systems.

- If you are using clustered DATA ONTAP to configure a Vserver with SnapDrive for UNIX, ensure that the IP address of the Vserver LIF is mapped to the Vserver name, either in DNS or in `/etc/hosts`.

You must also ensure that the Vserver name is configured in SnapDrive for UNIX by using the `snapdrive config set vsadmin Vserver name` command.

- You must assign the aggregates that contain Vserver volumes to the Vserver aggregate list to configure the Vserver and execute SnapDrive for UNIX operations.
- Snapshot operations might be inconsistent if you perform a `snap restore` operation on a mount point where an entity other than the one created in the Snapshot copy is mounted.
- SnapDrive for UNIX modifies the mount point permissions from nonroot user to root user for a `qtree` after volume-based SnapRestore (VBSR) operations.
- Starting with SnapDrive 5.1 for UNIX, only asynchronous mode is supported for clone-split operations.  
The `split-clone-async` configuration variable and `-splitmode` command-line options are removed.
- The clone-split operation is not supported on a `filespec`, which is a combination of a volume clone and LUN clone, LUN clone and LUN, or volume clone and LUN.
- Restoring the storage stack on the host fails if you remove a LUN by using an external command.
- SnapDrive for UNIX does not allow you to restore a Snapshot copy of a `qtree` if the Snapshot copy is mounted on an NFS in the SnapMirror destination.
- SnapDrive for UNIX does not support Broadcom Converged Network Adapters (CNA).

- In clustered Data ONTAP, aggregates that contain data Vserver volumes must be assigned to the data Vserver aggregate list to configure the data Vserver and perform SnapDrive operations.
- In clustered Data ONTAP, SnapDrive for UNIX does not support the snap connect operation with the `-readonly` option from the secondary host, which does not have export permissions on the parent volume.  
In clustered Data ONTAP, the export policy is defined only at the volume level. Therefore, the `.snapshot` directory cannot be exported to the secondary host, which does not have export permission on the parent volume.
- SnapDrive for UNIX does not support non-English language environments.
- The snap restore operation fails if it is attempted from the Snapshot copy that was created before the LUNs were moved to another volume.
- If you are using clustered Data ONTAP 8.2 or later, the Snapshot operations on a Snapshot copy might fail if a cloning operation that is in progress uses the same Snapshot copy.  
You must retry the operation later.
- OnCommand Unified Manager 6.0 or later does not support Protection Manager on clustered Data ONTAP; therefore, integration between OnCommand Unified Manager 6.0 or later and Snapdrive for UNIX is not supported. Due to this, the following SnapDrive for UNIX features are not supported:
  - Role-based access control (RBAC) integration with Unified Manager 6.0 or later on clustered Data ONTAP
  - Protection Manager integration with Unified Manager 6.0 or later on clustered Data ONTAP

### Limitations of SnapDrive for UNIX on Linux

- The `snapdrive config prepare luns` command is not supported in the RDM LUN environment.
- The `snapdrive lun fixpaths` command is not supported in a guest operating system.

### Limitations of SnapDrive for UNIX on Solaris

- LUNs greater than 1 TB with the Storage Management Initiative (SMI) label are not supported.
- Extensible Firmware Interface (EFI) and SMI LUNs in the same disk group are not supported.
- The `snapdrive lun fixpaths` command is not supported in a guest operating system.

### Limitations of SnapDrive for UNIX on AIX

- The SnapDrive for UNIX daemon takes longer to restart if one or more FC port links are down or unavailable.  
However, the SnapDrive for UNIX daemon can start regardless of the state of the FC ports.

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- By default, SnapDrive for UNIX creates disk groups with nonconcurrent settings; you need to manually change or perform storage provisioning operations.

## Known issues

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Known issues identify problems that might prevent you from using this release of the product successfully. NetApp Bugs Online provides complete information for most known issues, including any workarounds.

[NetApp Bugs Online](#)

If a Bugs Online report is available, the bug ID contains a hyperlink to the report.

### Known issues identified in this release

The following issues have been added to the release notes since the last release:

| Bug ID                 | Description                                                                     |
|------------------------|---------------------------------------------------------------------------------|
| <a href="#">656621</a> | SnapDrive for UNIX operations might fail if multiple IP address mappings exist. |

### Known issues identified in previous releases

The following issues were reported in previous editions of the release notes:

### Known issues for all hosts

| Bug ID                 | Description                                                                                                                                                                                                                        |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">682608</a> | Dataset operations, such as restore and cloning, fail from tertiary storage if the protection policy is set to “Mirror, then Back up.” This issue occurs if you are using either SnapDrive 5.1 for UNIX or SnapDrive 5.2 for UNIX. |

| Bug ID                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">540314</a> | <p>If you delete more than one LUN in a secondary volume and run the <code>snapdrive storage delete</code> command, SnapDrive for UNIX displays the following error message: <code>Could not detect type of the entity.....</code></p> <p>The <code>snapdrive storage delete</code> command deletes only the first LUN in the secondary volume.</p> <pre># snapdrive storage delete storagesystem:/vol/user/test1 test2 /vol/user/test3 test4 Auto detection of file_spec(s) in progress ... - 'storagesystem:/vol/user/test1' detected as LUN - 'test2' detected as LUN - '/vol/user/test3' detected as LUN 9000-305 Command error: Could not detect type of the entity test4. Provide a specific option (-lun, -dg, -fs or -lvol) if you know the type of the entity.</pre> |
| <a href="#">304724</a> | <p>SnapDrive for UNIX commands fail if the Operations Manager server fails to discover the LUNs.</p> <p>The following error message is displayed: <code>0002-332 Admin error: Could not check SD.Storage.Write access on lun storage_array1:/vol/vol1/lun1 for user unixhost\root on Operations Manager server(s) ops-mngr-server1.</code></p>                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <a href="#">161689</a> | <p>The local access control mechanism does not work as intended when the storage system does not have a <code>vol0</code> volume.</p> <p>By default, SnapDrive for UNIX can find the permissions file for local access control at <code>/vol/vol0/sdprbac/sdhostname.prbac</code>, where <i>hostname</i> is the name of the local host. This issue does not occur if the <code>vol0</code> volume is on the storage system.</p>                                                                                                                                                                                                                                                                                                                                               |
| <a href="#">773433</a> | <p>A new <code>exportfs</code> policy is created when a clone is created on a host, where it does not have <code>exportfs</code> permission.</p> <p><b>Note:</b> If you are using clustered Data ONTAP 8.2.1, the newly created <code>exportfs</code> policy cannot be cleared even if you delete the clone.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <a href="#">778241</a> | <p>SnapDrive for UNIX leverages Virtual Storage Control (VSC) for storage provisioning on the guest operating system (OS). Storage provisioning and snap management operations might fail intermittently on the guest OS because of VSC scalability limitations.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <a href="#">725028</a> | <p>When using SnapDrive for UNIX in the Symantec Storage Foundation for Oracle RAC (SFRAC) environment, you cannot use Telnet or Secure Shell (SSH) on the host if you restart the host after performing a clone operation.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

## Known issues for Linux

| Bug ID                                             | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|----------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">720020</a> ,<br><a href="#">782857</a> | SnapDrive for UNIX does not work as expected if the 32-bit versions of the required libraries are not installed. This limitation persists because SnapDrive for UNIX is a 32-bit binary.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <a href="#">573044</a>                             | In clustered Data ONTAP, if you use SnapDrive for UNIX to restore an NFS directory that contains symbolic links, the operation fails.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <a href="#">689501</a> ,<br>521233, and<br>554518  | SnapDrive for UNIX operations in Linux might fail, when <code>sg_*</code> commands that run against Device Mapper (DM) multipath devices fail, due to a path group switch with insufficient input or output operations to activate the path group.<br><br>The failure might occur in SnapDrive 5.0 for UNIX and later versions, for the hosts on Red Hat Enterprise Linux 5.6 and later, using Qlogic Fibre Channel adapters.                                                                                                                                                                                                                                                                                                                                                                            |
| <a href="#">601895</a>                             | When you perform the <code>snap connect</code> operation on the Network File System (NFS) file specification from the secondary host, which does not have export permissions on the parent volume in clustered Data ONTAP, SnapDrive creates a new export policy. In the newly created export policy, SnapDrive inherits the parent export policy rules and also appends the rules for the secondary host if it does not have the export permission on the parent volume.<br><br>When you perform the <code>snap disconnect</code> operation on the NFS file specification from the secondary host, clustered Data ONTAP deletes the newly created export policy and creates <code>unexport_policy</code> , which is a stale export policy. The <code>unexport_policy</code> does not contain any rules. |

## Known issues for AIX

| Bug ID                 | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">161395</a> | On AIX hosts, the <code>snapdrive storage show-lun lun_name</code> and <code>snapdrive storage show -all</code> commands fail if any volume group on the system is varied off.<br><br>SnapDrive for UNIX cannot determine the volume groups to which the LUNs belong. This issue might occur because the storage show commands specify one or more LUNs using the options <code>-lun</code> and <code>-all</code> , and the volume to which the LUN belongs may be inactive. If you use one of the other command options such as, <code>-dg</code> , <code>-hostvol</code> , or <code>-fs</code> , the command captures the information for that entity. Other forms of the <code>snapdrive storage show</code> command work without issues if you do not specify an inactive or varied-off volume group. |

**Known issues for Solaris**

| Bug ID                 | Description                                                                                                                                  |
|------------------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| <a href="#">756309</a> | SnapDrive for UNIX delete and disconnect of disk groups operations fail because the host volumes are not completely disconnected or deleted. |

## Where to get help and find more information

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The NetApp Support Site provides access to troubleshooting tools, product documentation, and technical assistance. You can use NetApp Community forums to connect with peers, and the NetApp Library to access technical reports and white papers.

| Resource                                                                    | Description                                                                                  |
|-----------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| <a href="#"><i>NetApp Support</i></a>                                       | Access troubleshooting tools, product documentation, and technical support assistance.       |
| <a href="#"><i>NetApp Communities</i></a>                                   | Connect with peers, ask questions, exchange ideas, find resources, and share best practices. |
| <a href="#"><i>NetApp library of technical reports and white papers</i></a> | Access technical reports, white papers, and other documents.                                 |

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## How to send your comments

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Your feedback is important in helping us to provide the most accurate and high-quality information. If you have suggestions for improving this document, send us your comments by email to [doccomments@netapp.com](mailto:doccomments@netapp.com). To help us direct your comments to the correct division, include in the subject line the product name, version, and operating system.

You can also contact us in the following ways:

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