

NAME

vdevprops - native and user-defined properties of ZFS vdevs

DESCRIPTION

Properties are divided into two types, native properties and user-defined (or "user") properties. Native properties either export internal statistics or control ZFS behavior. In addition, native properties are either editable or read-only. User properties have no effect on ZFS behavior, but you can use them to annotate vdevs in a way that is meaningful in your environment. For more information about user properties, see the *User Properties* section, below.

Native Properties

Every vdev has a set of properties that export statistics about the vdev as well as control various behaviors. Properties are not inherited from top-level vdevs, with the exception of `checksum_n`, `checksum_t`, `io_n`, and `io_t`.

The values of numeric properties can be specified using human-readable suffixes (for example, **k**, **KB**, **M**, **Gb**, and so forth, up to **Z** for zettabyte). The following are all valid (and equal) specifications: 1536M, 1.5g, 1.50GB.

The values of non-numeric properties are case sensitive and must be lowercase.

The following native properties consist of read-only statistics about the vdev. These properties can not be changed.

capacity	Percentage of vdev space used
state	state of this vdev such as online, faulted, or offline
guid	globally unique id of this vdev
asize	The allocable size of this vdev
psize	The physical size of this vdev
ashift	The physical sector size of this vdev expressed as the power of two
size	The total size of this vdev
free	The amount of remaining free space on this vdev

- allocated** The amount of allocated space on this vdev
- expandsize** How much this vdev can expand by
- fragmentation** Percent of fragmentation in this vdev
- parity** The level of parity for this vdev
- devid** The device id for this vdev
- physpath** The physical path to the device
- encpath** The enclosure path to the device
- fru** Field Replacable Unit, usually a model number
- parent** Parent of this vdev
- children** Comma separated list of children of this vdev
- numchildren** The number of children belonging to this vdev
- read_errors, write_errors, checksum_errors, initialize_errors**
The number of errors of each type encountered by this vdev
- null_ops, read_ops, write_ops, free_ops, claim_ops, trim_ops**
The number of I/O operations of each type performed by this vdev
- null_bytes, read_bytes, write_bytes, free_bytes, claim_bytes, trim_bytes**
The cumulative size of all operations of each type performed by this vdev
- removing** If this device is currently being removed from the pool

The following native properties can be used to change the behavior of a vdev.

checksum_n, checksum_t, io_n, io_t

Tune the fault management daemon by specifying checksum/io thresholds of <N> errors in <T> seconds, respectively. These properties can be set on leaf and top-level vdevs. When the property is set on the leaf and top-level vdev, the value of the leaf vdev will be used. If the property is only set on the top-level vdev, this value will be used. The value of these

properties do not persist across vdev replacement. For this reason, it is advisable to set the property on the top-level vdev - not on the leaf vdev itself. The default values are 10 errors in 600 seconds.

comment A text comment up to 8192 characters long

bootsize The amount of space to reserve for the EFI system partition

failfast If this device should propage BIO errors back to ZFS, used to disable failfast.

path The path to the device for this vdev

allocating If this device should perform new allocations, used to disable a device when it is scheduled for later removal. See `zpool-remove(8)`.

User Properties

In addition to the standard native properties, ZFS supports arbitrary user properties. User properties have no effect on ZFS behavior, but applications or administrators can use them to annotate vdevs.

User property names must contain a colon (":") character to distinguish them from native properties. They may contain lowercase letters, numbers, and the following punctuation characters: colon (":"), dash ("-"), period ("."), and underscore ("_"). The expected convention is that the property name is divided into two portions such as *module:property*, but this namespace is not enforced by ZFS. User property names can be at most 256 characters, and cannot begin with a dash ("-").

When making programmatic use of user properties, it is strongly suggested to use a reversed DNS domain name for the *module* component of property names to reduce the chance that two independently-developed packages use the same property name for different purposes.

The values of user properties are arbitrary strings and are never validated. Use the **zpool set** command with a blank value to clear a user property. Property values are limited to 8192 bytes.

SEE ALSO

`zpoolprops(7)`, `zpool-set(8)`