



## **vserver locks commands**

### ONTAP commands

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# vserver locks commands

## vserver locks break

Break file locks based on a set of criteria

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *advanced* privilege level.

### Description

The `vserver locks break` command breaks one or more locks.

### Parameters

**{ -vserver <vserver name> - Vserver (privilege: advanced)**

This parameter specifies the Vserver containing the lock.

**-volume <volume name> - Volume (privilege: advanced)**

This parameter specifies the name of the volume containing the lock.

**-lif <lif-name> - Logical Interface (privilege: advanced)**

This parameter specifies the logical interface through which the lock was established.

**-path <text> - Object Path (privilege: advanced)**

This parameter specifies a path to the lock.

**| -lockid <UUID> - Lock UUID (privilege: advanced) }**

This parameter specifies the universally unique identifier (UUID) for the lock. Queries and wildcard characters are not supported.

**-owner-id <text> - Owner ID (privilege: advanced)**

This parameter specifies an owner ID for a lock. This parameter must be used with the query notation { } exhibited in the second example.

**-protocol <lock protocol> - Lock Protocol (privilege: advanced)**

This parameter specifies the protocol that was used to establish a lock. This parameter must be used with the query notation { } exhibited in the second example.

**-client-address <IP Address> - Client Address (privilege: advanced)**

This parameter specifies a client address associated with a lock. This parameter must be used with the query notation { } exhibited in the second example.

**-client-address-type { ipv4 | ipv6 | ipv6z } - Client Address Type (privilege: advanced)**

This parameter specifies the type of ip address a client used to create its lock (ipv4, ipv6). This parameter must be used with the query notation { } exhibited in the second example.

### Examples

The following example breaks the locks on all objects on the Vserver named vs0 in the volume named vol0,

regardless of the paths to the locked objects and the logical interface through which the locks were established.

```
cluster1::*> vserver locks break -vserver vs0 -volume vol0 -path * -lif *
WARNING: Breaking file locks can cause applications to become
unsynchronized
          and may lead to data corruption.
Do you want to continue? {y|n}: y
1 entry was acted on.
```

The `vserver locks break` command can also be issued using a query on the parameters available to the `vserver locks show` command. The following example breaks all NLM protocol lock objects locked by the client at address 12.34.56.78.

```
cluster1::*> vserver locks break { -protocol nlm -client-address
12.34.56.78 }
Warning: Breaking file locks can cause applications to become
unsynchronized
          and may lead to data corruption.
Do you want to continue? {y|n}: y
1 entry was acted on.
```

## vserver locks show

Display current list of locks

**Availability:** This command is available to *cluster* and *Vserver* administrators at the *admin* privilege level.

### Description

The `vserver locks show` command displays information about locks. A lock is a synchronization mechanism for enforcing limits on concurrent access to files where many clients can be accessing the same file at the same time. The command output depends on the parameter or parameters specified with the command. If you do not specify any parameters, the command displays the following information about locks:

- Vserver name
- Volume name
- Object path
- Logical interface name
- Lock protocol
- Lock type
- Client

## Parameters

**{ [-fields <fieldname>,...]**

If you specify the `-fields <fieldname>`, ... parameter, the command output also includes the specified field or fields. You can use `-fields ?` to display the fields to specify.

**| [-smb-attrs ]**

If you specify the `-smb-attrs` parameter, the command displays information related to SMB2 and higher.

**| [-instance ] }**

If you specify the `-instance` parameter, the command displays detailed information about all fields.

**{ [-vserver <vserver name>] - Vserver**

If you specify this parameter, the command displays information about locks on the specified Vserver.

**[-volume <volume name>] - Volume**

If you specify this parameter, the command displays information about locks on the specified volume.

**[-lif <lif-name>] - Logical Interface**

If you specify this parameter, the command displays information about locks established through the specified logical interface.

**[-path <text>] - Object Path**

If you specify this parameter, the command displays information about locks at the specified path name.

**| [-lockid <UUID>] - Lock UUID }**

If you specify this parameter, the command displays information about the lock with the specified universally unique identifier (UUID).

**[-is-constituent {true|false}] - Is Constituent Volume**

If you specify this parameter, the command displays information only about volumes that either are or are not constituents of a FlexGroup, depending on the value provided. This field is *false* for constituents of an Infinite Volume.

**[-protocol <lock protocol>] - Lock Protocol**

If you specify this parameter, the command displays information about locks established through the specified protocol. Some of the valid protocols are:

- *cifs*: SMB locks
- *nlm*: NFS3 locks
- *nfsv4*: NFS4.0 locks
- *nfsv4.1*: NFS4.1 locks
- *crposix*: CrPosix locks for CREATE and LINK
- *fcache*: Delegations for 7-mode destination FlexCache volumes

**[-type {byte-range|share-level|op-lock|delegation}] - Lock Type**

If you specify this parameter, the command displays information about locks of the specified lock type. The

four types of locks are:

- Byte-range locks: Lock only a portion of a file.
- Share locks: Represent opened files.
- Opportunistic locks: Control client-side caching over SMB.
- Delegations: Control client-side caching over NFSv4.

#### **[`-node <nodename>`] - Node Holding Lock State**

If you specify this parameter, the command displays information about all locks on the specified node.

#### **[`-lock-state <lock_state>`] - Lock State**

If you specify this parameter, the command displays information about the state of the lock. Some of the valid states are:

- *granted*: The lock is established.
- *revoking*: The server is currently coordinating with the client to change the state of this lock.
- *revoked*: The lock is undergoing revocation to be downgraded or released.
- *adjusted*: The lock is undergoing revocation to be replaced by a lock equal to or weaker than the current lock.
- *subsumed*: The lock is one of a set of locks that will replace a lock that is being revoked.
- *waiting*: The lock is waiting to be granted, because it conflicts with another lock.
- *denied*: The lock has been denied.
- *timeout*: The lock was waiting and has now timed out.
- *gone*: The lock is about to be released.
- *unused*: The lock is allocated but has not been processed into any state.

#### **[`-bytelock-offset <integer>`] - Bytelock Starting Offset**

If you specify this parameter, the command displays information about bytelocks with the specified offset value. This is the index in the file (in bytes) where the lock begins.

#### **[`-bytelock-length <integer>`] - Number of Bytes Locked**

If you specify this parameter, the command displays information about bytelocks with the specified length. This is the number of bytes that are locked by this particular lock.

#### **[`-bytelock-mandatory {true|false}`] - Bytelock is Mandatory**

If you specify this parameter, the command displays information only about mandatory bytelocks. A mandatory bytelock enforces the requirement of byte range locking on clients before accessing the associated range.

#### **[`-bytelock-exclusive {true|false}`] - Bytelock is Exclusive**

If you specify this parameter, the command displays information only about exclusive bytelocks. When an exclusive bytelock is granted, no other bytelock may be granted whose range overlaps it.

#### **[`-bytelock-super {true|false}`] - Bytelock is Superlock**

If you specify this parameter, the command displays information only about super-bytelocks. When a super-

bytelock is granted, all other locks on that file are released, and no other operations will be allowed on that file.

#### **`[-bytelock-soft {true|false}] - Bytelock is Soft`**

If you specify this parameter, the command displays information only about softened bytelocks. An NFSv4 bytelock might become softened if the connection to the client is interrupted. Soft locks might be reclaimed if the client reconnects. However if another client requests a lock that conflicts with a soft lock, then the soft lock will be released.

#### **`[-oplock-level {exclusive|level2|batch|null|read-batch}] - Oplock Level`**

If you specify this parameter, the command displays information about locks with the specified oplock level. The oplock level determines which operations the client may cache locally. Those operations include opening, reading, writing, closing, and creating and destroying bytelocks on a file. The five valid oplock levels are:

- *batch* : The client may cache all operations on the file.
- *exclusive* : The client may cache reads and writes on the file.
- *read-batch* : The client may cache reads and opens on the file.
- *level2* : The client may cache reads on the file.
- *null* : The client may not cache any operations on the file.

#### **`[-sharelock-mode <share lock mode>] - Shared Lock Access Mode`**

If you specify this parameter, the command displays information about locks with the specified sharelock mode. The parameter has two components separated by a hyphen: the access mode followed by the share mode. The access mode specifies which operations the client is allowed to perform on the file. The share mode specifies which operations other clients are disallowed to perform. The two modes are a combination of one or more of these permissions:

- *read*
- *write*
- *delete*
- *all*
- *none*

For example, the sharelock mode *read\_write-deny\_delete* allows the client to read and write the file, and disallows other clients to delete the file. A special mode is *delete-on-close*, which specifies that the server will delete the file as soon as it is closed.

#### **`[-sharelock-soft {true|false}] - Shared Lock is Soft`**

If you specify this parameter, the command displays information only about softened sharelocks. A NFSv4 sharelock can become softened when the connection to the client is interrupted. If the client reconnects, it might reclaim the sharelock. However, if another client creates a sharelock that conflicts with the softened sharelock, the softened sharelock will be released.

#### **`[-delegation-type {read|write}] - Delegation Type`**

If you specify this parameter, the command displays information only about locks with the specified delegation-type setting. The delegation type determines which operations the client may cache locally. The two valid delegation types are:

- *read*: The client may cache reads on the file.
- *write*: The client may cache reads and writes on the file.

**[-owner-id <text>] - Owner ID**

If you specify this parameter, the command displays information only about locks with the specified owner ID. The owner ID is an opaque byte string generated by the server for each file lock request.

**[-client-address <IP Address>] - Client Address**

If you specify this parameter, the command displays information only about locks from the specified client IP address.

**[-client-address-type {ipv4|ipv6|ipv6z}] - Client Address Type**

If you specify this parameter, the command displays information only about locks corresponding to a certain IP address type. Please note that locks created over the NFSv4 or NFSv4.1 protocol cannot have their address types resolved. Valid options are:

- *ipv4*: Clients operating over an IPv4 interface.
- *ipv6*: Clients operating over an IPv6 interface.

**[-smb-open-type {none|durable|persistent}] - SMB Open Type**

If you specify this parameter, the command displays information only about locks with the specified SMB open type. Valid open types are

- *durable*: Durability is a feature of SMB2. A durable lock might become "disconnected" if the connection between the client and server is disrupted. A disconnected durable lock might be reconnected if the connection is reestablished.
- *persistent*: Persistence is a feature of SMB3. Persistent locks can become disconnected and later reconnected, like durable locks. Persistent locks are used to facilitate continuously available shares.
- *none*: The lock is neither durable nor persistent.

**[-smb-connect-state <Lock Connect State>] - SMB Connect State**

If you specify this parameter, the command displays information only about locks with the specified SMB connection state. Some of the valid states are:

- *connected*: This is the normal state of a SMB lock when the server and client are connected.
- *disconnected*: If a lock is durable or persistent, it might become disconnected if the connection between the server and its client is interrupted. Disconnected locks may later be reconnected if the connection is reestablished.

**[-smb-expiration-time <integer>] - SMB Expiration Time (Secs)**

If you specify this parameter, the command displays information only about locks with the specified SMB lock expiration time. When a lock is disconnected, `-smb-expiration-time` shows the time remaining until the lock expires. The server releases the lock after it expires.

**[-smb-open-group-id <text>] - SMB Open Group ID**

If you specify this parameter, the command displays information only about locks with the specified SMB open group identifier. This is an opaque byte string provided by the client as the SMB lease key when the lock is first established.



## Examples

The following example displays default information about all locks:

```
cluster1::> vsriver locks show

Vserver: vs0
Volume   Object Path          LIF          Protocol  Lock Type
Client
-----
-----
vol1      /vol1/notes.txt        node1_data1
192.168.1.5                                cifs      share-level
Sharelock Mode: read_write-deny_delete
op-lock
192.168.1.5
Oplock Level: read-batch
/vol1/notes1.txt        node1_data1
192.168.1.5                                cifs      share-level
Sharelock Mode: read_write-deny_delete
op-lock
192.168.1.5
Oplock Level: batch
/vol1                    node1_data2
192.168.1.5                                cifs      share-level
Sharelock Mode: read-deny_delete
/vol1/notes.txt        node1_data2
192.168.1.5                                cifs      share-level
Sharelock Mode: read_write-deny_delete
op-lock
192.168.1.5
Oplock Level: read-batch
7 entries were displayed.
```

The following example displays the SMB related information about all locks:

```
cluster1::> vsriver locks show -smb-attrs

Vserver: vs0
Volume   Object Path          LIF          Protocol  Lock Type
Client
-----
```

```

-----
vol1      /vol1/notes.txt      node1_data1
                                     cifs      share-level
192.168.1.5
  Sharelock Mode: read_write-deny_delete
  Open Type: durable      Connect State: connected      Expiration Time
  (Secs): -
  Open Group ID:
625e2ff46ee5df1194ba0050569d37047058909c00000000873d210700000000
op-lock      192.168.1.5
  Oplock Level: read-batch
  Open Type: -      Connect State: connected      Expiration Time
  (Secs): -
  Open Group ID:
625e2ff46ee5df1194ba0050569d37047058909c00000000873d210700000000
/vol1/notes1.txt      node1_data1
                                     cifs      share-level
192.168.1.5
  Sharelock Mode: read_write-deny_delete
  Open Type: durable      Connect State: connected      Expiration Time
  (Secs): -
  Open Group ID:
625e2ff46ee5df1194ba0050569d370440fc8891000000005a3f210700000000
op-lock      192.168.1.5
  Oplock Level: batch
  Open Type: -      Connect State: connected      Expiration Time
  (Secs): -
  Open Group ID:
625e2ff46ee5df1194ba0050569d370440fc8891000000005a3f210700000000
/vol1      node1_data2
                                     cifs      share-level
192.168.1.5
  Sharelock Mode: read-deny_delete
  Open Type: none      Connect State: connected      Expiration Time
  (Secs): -
  Open Group ID: -
/vol1/notes.txt      node1_data2
                                     cifs      share-level
192.168.1.5
  Sharelock Mode: read_write-deny_delete
  Open Type: durable      Connect State: connected      Expiration Time
  (Secs): -
  Open Group ID:
625e2ff46ee5df1194ba0050569d370408e08d9c00000000da40210700000000
op-lock      192.168.1.5

```

```
Oplock Level: read-batch
Open Type: -          Connect State: connected      Expiration Time
(Secs): -
Open Group ID:
625e2ff46ee5df1194ba0050569d370408e08d9c00000000da40210700000000

7 entries were displayed.
```

The following example displays default information about all locks in list form:

```
cluster1::> vservers locks show -instance
Vserver: vs0
    Volume: vol1
    Logical Interface: node1_data1
    Object Path: /vol1/notes.txt
    Lock UUID: 447db184-f801-11df-8bb5-00a098000e34
    Lock Protocol: cifs
    Lock Type: share-level
Node Holding Lock State: node1
    Lock State: granted
Bytelock Starting Offset: -
Number of Bytes Locked: -
Bytelock is Mandatory: -
Bytelock is Exclusive: -
Bytelock is Superlock: -
    Bytelock is Soft: -
    Oplock Level: -
Shared Lock Access Mode: read_write-deny_delete
Shared Lock is Soft: false
    Delegation Type: -
    Client Address: 192.168.1.5
Client Address Type: ipv4
    SMB Open Type: durable
    SMB Connect State: connected
SMB Expiration Time (Secs): -
    SMB Open Group ID:
625e2ff46ee5df1194ba0050569d37047058909c00000000873d2107000000004
Vserver: vs0
    Volume: vol1
    Logical Interface: node1_data1
    Object Path: /vol1/notes.txt
    Lock UUID: 447db185-f801-11df-8bb5-00a098000e34
    Lock Protocol: cifs
    Lock Type: op-lock
Node Holding Lock State: node1
```

```

        Lock State: granted
Bytelock Starting Offset: -
    Number of Bytes Locked: -
        Bytelock is Mandatory: -
        Bytelock is Exclusive: -
        Bytelock is Superlock: -
            Bytelock is Soft: -
                Oplock Level: read-batch
Shared Lock Access Mode: -
    Shared Lock is Soft: -
        Delegation Type: -
            Client Address: 192.168.1.5
            Client Address Type: ipv4
                SMB Open Type: -
                    SMB Connect State: connected
SMB Expiration Time (Secs): -
    SMB Open Group ID:
625e2ff46ee5df1194ba0050569d37047058909c00000000873d210700000000
Vserver: vs0
        Volume: vol1
        Logical Interface: node1_data1
            Object Path: /vol1/notes1.txt
                Lock UUID: 48cee334-f801-11df-8bb5-00a098000e34
                Lock Protocol: cifs
                    Lock Type: share-level
Node Holding Lock State: node1
    Lock State: granted
Bytelock Starting Offset: -
    Number of Bytes Locked: -
        Bytelock is Mandatory: -
        Bytelock is Exclusive: -
        Bytelock is Superlock: -
            Bytelock is Soft: -
                Oplock Level: -
Shared Lock Access Mode: read_write-deny_delete
    Shared Lock is Soft: false
        Delegation Type: -
            Client Address: 192.168.1.5
            Client Address Type: ipv4
                SMB Open Type: durable
                    SMB Connect State: connected
SMB Expiration Time (Secs): -
    SMB Open Group ID:
625e2ff46ee5df1194ba0050569d370440fc8891000000005a3f210700000000
3 entries were displayed.

```

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