autobalance commands

ONTAP commands

NetApp
February 04, 2026

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autobalance aggregate show-aggregate-state

Display the Auto Balance Aggregate state for an aggregate

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

Description

The `autobalance aggregate show-aggregate-state` command displays information about an aggregate state that is considered by the Auto Balance Aggregate feature.

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.

| [-instance] }

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

[-node {<nodename>|local}] - Node Name (privilege: advanced)

If this parameter is specified, the display will be limited to only those aggregates with a node that matches the specified value.

[-aggregate <aggregate name>] - Name of the Aggregate (privilege: advanced)

If this parameter is specified, the display will be limited to only that aggregate with a name that matches the specified value.

[-total-size {<integer>[KB|MB|GB|TB|PB]}] - Total Size of the Aggregate (privilege: advanced)

If this parameter is specified, the display will be limited to only those aggregates with a total-size that matches the specified value.

[-used-size {<integer>[KB|MB|GB|TB|PB]}] - Used Size of the Aggregate (privilege: advanced)

If this parameter is specified, the display will be limited to only those aggregates with a used-size that matches the specified value.

[-aggregate-unbalanced-threshold {<integer>[KB|MB|GB|TB|PB]}] - Threshold When Aggregate Is Considered Unbalanced (privilege: advanced)

If this parameter is specified, the display will be limited to only those aggregates with a threshold that matches the specified value.

[-outgoing-size {<integer>[KB|MB|GB|TB|PB]}] - Size of Outgoing Volumes in the Aggregate (privilege: advanced)

If this parameter is specified, the display will be limited to only those aggregates with an outgoing-size that matches the specified value. Outgoing size will be equal to the total size of the volumes that move away from each one of those aggregate.

[-incoming-size {<integer>[KB|MB|GB|TB|PB]}] - Size of Incoming Volumes in the Aggregate (privilege: advanced)

If this parameter is specified, the display will be limited to only those aggregates with an incoming-size that matches the specified value. Incoming size will be equal to the total size of the volumes that move towards to each one of those aggregates.

[-raidtype {raid_tec|raid_dp|raid4}] - RAID Type (privilege: advanced)

If this parameter is specified, the display will be limited to only those aggregates with a raidtype that matches the specified value.

[-home-cluster <UUID>] - Home Cluster ID (privilege: advanced)

If this parameter is specified, the display will be limited to only those aggregates with a home-cluster ID that matches the specified value.

[-is-hybrid {true|false}] - Aggregate Is a Hybrid (privilege: advanced)

If this parameter is specified as true, the display will be limited to only hybrid aggregates. If the parameter is specified as false, the display will be limited to only non-hybrid aggregates.

[-is-incoming-volume-thin {true|false}] - An Incoming Volume Is Thin (privilege: advanced)

When you use thin provisioning for a volume, it can run out of space even if it has not yet consumed its nominal size and you should carefully monitor space utilization to avoid unexpected errors due to the volume running out of space. If this parameter is specified as true, the display will be limited to only those aggregates which are the target of a move of thin volume. If the parameter is specified as false, the display will be limited to only those aggregates which are not the target of a move of thin volume.

[-is-balanceable {true|false}] - Is Balanceable (privilege: advanced)

If this parameter is specified as true, the display will be limited to only balanceable aggregates. If the parameter is specified as false, the display will be limited to only non-balanceable aggregates.

[-is-move-target {true|false}] - Aggregate Is a Volume Move Target (privilege: advanced)

If this parameter is specified as true, the display will be limited to only those aggregates which are target of a volume move. If the parameter is specified as false, the display will be limited to only those aggregates which are not the target of a volume move.

[-attributes <text>,…] - Aggregate Attributes (privilege: advanced)

If this parameter is specified, the display will be limited to only those aggregates with attributes that matches the specified values.

[-aggregate-available-threshold {<integer>[KB|MB|GB|TB|PB]}] - Threshold When Aggregate Is Considered Balanced (privilege: advanced)

If this parameter is specified, the display will be limited to only those aggregates which meet the specified threshold to be considered as balanced.

Examples

The following example displays information about the state for all aggregates in the cluster.

```
cluster1::*> autobalance aggregate show-aggregate-state
                          Aggregate: aggr0
                         Total Size: 4.78GB
                          Used Size: 4.56GB
                      Outgoing Size: 0B
                      Incoming Size: 0B
     Aggregate Used Space Threshold: 3.34GB
Aggregate Available Space Threshold: 1.91GB
                          RAID Type: raid_dp
                    Home Cluster ID: edf0379b-16da-11e6-aa3c-0050568558c2
                         Attributes: CFO
                                     Excluded
                                     Mroot
Aggregate: aggr_1
                         Total Size: 12.61GB
                          Used Size: 111.6MB
                      Outgoing Size: 0B
                      Incoming Size: 0B
     Aggregate Used Space Threshold: 8.83GB
Aggregate Available Space Threshold: 5.04GB
                          RAID Type: raid4
                    Home Cluster ID: edf0379b-16da-11e6-aa3c-0050568558c2
                         Attributes: Excluded
```

The following example displays information about all entries of the aggregate state, for all aggregates in the cluster.

```
cluster1::*> autobalance aggregate show-aggregate-state -instance
                                        Node Name: cluster-1-01
                              Name of the Aggregate: aggr0
                         Total Size of the Aggregate: 4.78GB
                          Used Size of the Aggregate: 4.56GB
Threshold When Aggregate Is Considered Unbalanced: 3.34GB
        Size of Outgoing Volumes in the Aggregate: 0B
        Size of Incoming Volumes in the Aggregate: 0B
                                        RAID Type: raid_dp
                                   Home Cluster ID: edf0379b-16da-11e6-
aa3c-0050568558c2
                              Aggregate Is a Hybrid: false
                       An Incoming Volume Is Thin: false
                                   Is Balanceable: false
                  Aggregate Is a Volume Move Target: false
                               Aggregate Attributes: CFO
                                                     Excluded
                                                     Mroot
  Threshold When Aggregate Is Considered Balanced: 1.91GB
Node Name: cluster-1-01
                              Name of the Aggregate: aggr_1
                         Total Size of the Aggregate: 12.61GB
                          Used Size of the Aggregate: 111.6MB
Threshold When Aggregate Is Considered Unbalanced: 8.83GB
        Size of Outgoing Volumes in the Aggregate: 0B
        Size of Incoming Volumes in the Aggregate: 0B
                                        RAID Type: raid4
                                   Home Cluster ID: edf0379b-16da-11e6-
aa3c-0050568558c2
                              Aggregate Is a Hybrid: false
                       An Incoming Volume Is Thin: false
                                   Is Balanceable: false
                  Aggregate Is a Volume Move Target: false
                               Aggregate Attributes: Excluded
  Threshold When Aggregate Is Considered Balanced: 5.04GB
```

autobalance aggregate show-unbalanced-volume-state

Display the Auto Balance Aggregate state for a volume

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

Description

The `autobalance aggregate show-unbalanced-volume-state` command displays information about a volume that is considered by the Auto Balance Aggregate feature.

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.

| [-instance] }

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

[-node {<nodename>|local}] - Node Name (privilege: advanced)

If this parameter is specified, the display will be limited to only those volumes with a node that matches the specified value.

[-DSID <integer>] - DSID of the Last Volume Queried (privilege: advanced)

If this parameter is specified, the display will be limited to only those volumes with a DSID that matches the specified value.

[-aggregate <aggregate name>] - Aggregate (privilege: advanced)

If this parameter is specified, the display will be limited to only those volumes with an aggregate name that matches the specified value.

[-volume-name <text>] - Name of the Volume (privilege: advanced)

If this parameter is specified, the display will be limited to only that volume with a name that matches the specified value.

[-last-threshold-crossed-time <MM/DD/YYYY HH:MM:SS>] - Last Time Threshold Crossed (privilege: advanced)

If this parameter is specified, the display will be limited to only those volumes with a threshold crossing time that matches the specified value.

[-last-placed-time <MM/DD/YYYY HH:MM:SS>] - Last Time Volume Was Moved (privilege: advanced)

If this parameter is specified, the display will be limited to only those volumes with a last time they have been moved that matches the specified value.

[-is-moving {true|false}] - Is Volume Currently Moving (privilege: advanced)

If this parameter is specified as true, the display will be limited to only the moving volumes. If the parameter is specified as false, the display will be limited to only the non-moving volumes.

[-is-quiesced {true|false}] - Is Volume Quiesced (privilege: advanced)

If this parameter is specified as true, the display will be limited to only the quiesced volumes. If the parameter is specified as false, the display will be limited to only the non-quiesced volumes.

[-total-footprint {<integer>[KB|MB|GB|TB|PB]}] - Total Size of the Volume (privilege: advanced)

If this parameter is specified, the display will be limited to only those volumes with a total footprint that matches the specified value.

[-attributes <text>,…] - Volume's Attributes (privilege: advanced)

If this parameter is specified, the display will be limited to only those volumes with attributes that matches the specified value.

[-last-checked <MM/DD/YYYY HH:MM:SS>] - Last Time Volume State Was Checked (privilege: advanced)

If this parameter is specified, the display will be limited to only those volumes with a last time their state was checked that matches the specified value.

Examples

The following example display information about all of the unbalanced volumes that the Auto Balance Aggregate feature is aware of.

```
cluster1::*> autobalance aggregate show-unbalanced-volume-state
              Last Checked On: 3/13/2014 14:32:01
Volume: ro10
                    Footprint: 20.20MB
Last Time Over IOPS Threshold: 3/12/2014 16:20:18
                  Last Placed: 3/11/2014 10:16:04
                   Attributes: Over IOPS Threshold
                               Stabilizing
Volume: test
                    Footprint: 20.20MB
Last Time Over IOPS Threshold: 3/12/2014 16:20:18
                  Last Placed: 3/11/2014 10:16:42
                   Attributes: Over IOPS Threshold
                               In Mirror
                               Stabilizing
```

The following example displays all of the information that the Auto Balance Aggregate feature has collected for all of the unbalanced volumes it is aware of.

```
cluster1::*> autobalance aggregate show-unbalanced-volume-state -instance
                          Node Name: cluster-1-01
   DSID of the Last Volume Queried: 1025
                          Aggregate: aggr_1
                Name of the Volume: ro10
       Last Time Threshold Crossed: 3/12/2014 16:20:18
        Last Time Volume Was Moved: 3/11/2014 10:16:04
        Is Volume Currently Moving: false
                Is Volume Quiesced: false
          Total Size of the Volume: 20.20MB
               Volume's Attributes: Over IOPS Threshold
                                    Stabilizing
Last Time Volume State Was Checked: 3/13/2014 08:20:18
Node Name: cluster-1-01
   DSID of the Last Volume Queried: 1026
                          Aggregate: aggr_1
                Name of the Volume: test
       Last Time Threshold Crossed: 3/12/2014 16:20:18
        Last Time Volume Was Moved: 3/11/2014 10:16:42
        Is Volume Currently Moving: false
                Is Volume Quiesced: false
          Total Size of the Volume: 20.20MB
               Volume's Attributes: Over IOPS Threshold
                                    In Mirror
                                    Stabilizing
Last Time Volume State Was Checked: 3/13/2014 08:20:18
```

autobalance aggregate config modify

Modify the Auto Balance Aggregate feature configuration

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

Description

The `autobalance aggregate config modify` command allows the user to customize the parameters that determine when volumes should be considered for automatic move or recommendation by the Auto Balance Aggregate feature.

Parameters

`[-is-enabled {true|false}]` - Is the Auto Balance Aggregate Feature Enabled (privilege: advanced)

This specifies whether the Auto Balance Aggregate feature is enabled and running.

[-aggregate-unbalanced-threshold-percent <integer>] - Threshold When Aggregate Is Considered Unbalanced (%) (privilege: advanced)

This specifies the space used threshold percentage that will cause the Auto Balance Aggregate feature to consider an aggregate as unbalanced.

[-aggregate-available-threshold-percent <integer>] - Threshold When Aggregate Is Considered Balanced (%) (privilege: advanced)

This specifies the threshold percentage which will determine if an aggregate is a target destination for a move. The Auto Balance Aggregate feature will attempt to move volumes from an unbalanced aggregate until it is under this percentage.

Examples

The following example displays a modification for the default configuration of the Auto Balance Aggregate feature

```
cluster1::*> autobalance aggregate config show
                  Is the Auto Balance Aggregate Feature Enabled: false
          Threshold When Aggregate Is Considered Unbalanced (%): 70
            Threshold When Aggregate Is Considered Balanced (%): 40
cluster1::*> autobalance aggregate config modify -is-enabled true
cluster1::*> autobalance aggregate config show
                  Is the Auto Balance Aggregate Feature Enabled: true
          Threshold When Aggregate Is Considered Unbalanced (%): 70
            Threshold When Aggregate Is Considered Balanced (%): 40
```

autobalance aggregate config show

Display the Auto Balance Aggregate feature configuration

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

Description

The `autobalance aggregate config show` command displays information about parameters that determine when volumes should be considered for automatic move or recommendation by the Auto Balance Aggregate feature.

Examples

The following example displays the default configuration for the Auto Balance Aggregate feature

```
cluster1::*> autobalance aggregate config show
              Is the Auto Balance Aggregate Feature Enabled: false
      Threshold When Aggregate Is Considered Unbalanced (%): 70
        Threshold When Aggregate Is Considered Balanced (%): 40
```

autobalance volume commands

autobalance volume rebalance show

Display Auto Balance Volume progress for an Infinite Volume

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

Description

The `autobalance volume rebalance show` command displays information about Auto Balance Volume operations for an Infinite Volume. The command output depends on the parameter or parameters specified with the command. The `autobalance volume rebalance show` command is only supported for Infinite Volumes.

Parameters

{ [-fields <fieldname>,…]

This specifies the fields that need to be displayed.

| [-instance] }

If this parameter is specified, the command displays information about all entries.

[-vserver <vserver name>] - Vserver (privilege: advanced)

If this parameter is specified, the command displays information about capacity balancing for each Infinite Volume and storage service on the specified Vserver.

[-volume <volume name>] - Volume Name (privilege: advanced)

If this parameter is specified, the command displays information about capacity balancing for each storage service on the specified Infinite Volume.

[-storage-service <storage service name>] - Storage Service (privilege: advanced)

If this parameter is specified, the command displays information about capacity balancing for the specified storage-service.

[-state <Auto Balance Volume state>] - State (privilege: advanced)

If this parameter is specified, the command displays information about operations in the specified state.

[-progress <text>] - Progress (privilege: advanced)

If this parameter is specified, the command displays information about operations with the specified progress.

[-transferred {<integer>[KB|MB|GB|TB|PB]}] - Amount Transferred (privilege: advanced)

If this parameter is specified, the command displays information about operations with the specified amount already transferred.

[-target {<integer>[KB|MB|GB|TB|PB]}] - Target Amount (privilege: advanced)

If this parameter is specified, the command displays information about operations with the specified target amount of data to transfer.

[-transferred-percent <percent_no_limit>] - Percentage Transferred (privilege: advanced)

If this parameter is specified, the command displays information about operations with the specified percentage of the transfer complete.

Examples

The following example displays information about all operations on the Vserver named vs0:

```
cluster1::*> autobalance volume rebalance show -vserver vs1
Storage                      Percent
Vserver          Volume        Service    State     Target  Transferred
---------------- ------------ ----------- --------- ------- -----------
vs0              repo_vol     -           running   36.44TB          8%
```

The following example displays information about all operations on the *gold* storage service on the Infinite Volume named *repo_vol* on the Vserver named vs1:

```
cluster1::*> autobalance volume show rebalance -vserver vs1 -volume
repo_vol -storage-service gold
Storage                      Percent
Vserver          Volume        Service    State     Target  Transferred
---------------- ------------ ----------- --------- ------- -----------
vs1              repo_managed gold        running   17.22TB         18%
vs1              repo_managed silver      complete  19.25TB        100%
```

autobalance volume rebalance start

Start Auto Balance Volume for an Infinite Volume

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

Description

The `autobalance volume rebalance start` command allows the user to start Auto Balance Volume and rebalance the used data capacity in an Infinite Volume after files are created. Auto Balance Volume moves data between data constituents of an Infinite Volume. If the Infinite Volume uses storage services, Auto Balance Volume moves data between data constituents of a storage service in an Infinite Volume. Auto Balance Volume ensures that all data constituents in an Infinite Volume or all data constituents in a storage service of an Infinite Volume have similar amounts of used data capacity. The `autobalance volume rebalance start` command is only supported for Infinite Volumes.

Parameters

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

This specifies the Vserver on which the Infinite Volume to be rebalanced is located.

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

This specifies the Infinite Volume to be rebalanced.

-storage-service <storage service name> - Storage Service (privilege: advanced)

If the Infinite Volume uses storage services, the ` storage-service` parameter is required to specify the storage service to be rebalanced. If the Infinite Volume does not use storage services, the ` storage-service` parameter cannot be specified, and the entire Infinite Volume will be rebalanced.

[-timeout <integer>] - Requisition Timeout (seconds) (privilege: advanced)

The maximum number of seconds Auto Balance Volume will permit an operation to continue without moving files, before moving the operation to the *complete* state.

Examples

The following example starts rebalancing used capacity in the gold storage service for an Infinite Volume named vol:

```
cluster1::*> autobalance volume rebalance start
            -vserver vs0 -volume vol -storage-service gold
```

The following example starts rebalancing used capacity in an Infinite Volume named vol:

```
cluster1::*> autobalance volume rebalance start
            -vserver vs1 -volume vol
```

autobalance volume rebalance stop

Stop Auto Balance Volume for an Infinite Volume

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

Description

The `autobalance volume rebalance stop` command allows the user to stop Auto Balance Volume. The `autobalance volume rebalance stop` command is only supported for Infinite Volumes.

Parameters

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

This specifies the Vserver on which the Infinite Volume being rebalanced is located.

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

This specifies the Infinite Volume being rebalanced.

-storage-service <storage service name> - Storage Service (privilege: advanced)

If the Infinite Volume being rebalanced uses storage services, the ` storage-service` parameter is required to specify the storage service being rebalanced. If the Infinite Volume being rebalanced does not use storage services, the ` storage-service` parameter cannot be specified because the entire Infinite Volume is

being rebalanced.

Examples

The following example stops rebalancing used capacity for the gold storage service for an Infinite Volume named vol:

```
cluster1::*> autobalance volume rebalance stop
            -vserver vs0 -volume vol -storage-service gold
```

The following example stops rebalancing used capacity for an Infinite Volume named vol:

```
cluster1::*> autobalance volume rebalance stop
            -vserver vs1 -volume vol
```

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