qos adaptive-policy-group commands

ONTAP commands

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qos adaptive-policy-group commands

qos adaptive-policy-group create

Create an adaptive policy group

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

Description

The `qos adaptive-policy-group create` command creates a new adaptive policy group. After the adaptive policy group is created, you can assign one or more storage objects to the policy. When a storage object is assigned to an adaptive policy group, the maximum throughput QoS setting automatically adjusts based on the storage object used space or the storage object allocated space. QoS minimum throughput setting is calculated from the expected-iops parameter and the storage object allocated size. It is set only for the storage objects that reside on AFF platforms.

After you create an adaptive policy group, use the storage object create command or storage object modify command to apply the adaptive policy group to a storage object.

Parameters

`-policy-group <text>` - Name

Specifies the name of the adaptive policy group. Adaptive policy group names must be unique and are restricted to 127 alphanumeric characters including underscores "_" and hyphens "-". Adaptive policy group names must start with an alphanumeric character. Use the qos adaptive-policy-group rename command to change the adaptive policy group name.

`-vserver <vserver name>` - Vserver

Specifies the data Vserver to which this adaptive policy group belongs to. You can apply this adaptive policy group to only the storage objects contained in the specified Vserver. If the system has only one Vserver, then the command uses that Vserver by default.

`-expected-iops {<integer>[IOPS[/{GB|TB}]] (default: TB)}` - Expected IOPS

Specifies the minimum expected IOPS per TB or GB allocated based on the storage object allocated size.

`-peak-iops {<integer>[IOPS[/{GB|TB}]] (default: TB)}` - Peak IOPS

Specifies the maximum possible IOPS per TB or GB allocated based on the storage object allocated size or the storage object used size.

`[-absolute-min-iops <qos_tput>]` - Absolute Minimum IOPS

Specifies the absolute minimum IOPS which is used as an override when the expected IOPS is less than this value. The default value is computed as follows:

if expected-iops >= 6144/TB, then absolute-min-iops = 1000IOPS; if expected-iops >= 2048/TB and expected-iops < 6144/TB, then absolute-min-iops = 500IOPS; if expected-iops >= 1/MB and expected-iops < 2048/TB, then absolute-min-iops = 75IOPS.

`[-expected-iops-allocation {used-space|allocated-space}]` - Expected IOPS Allocation

Specifies the expected IOPS allocation policy. The allocation policy is either *`allocated-space`* or *`used-`*

space . When the expected-iops-allocation policy is set to *allocated-space* , the expected IOPS is calculated based on the size of the storage object. When the expected-iops-allocation policy is set to *used-space* , the expected IOPS is calculated based on the amount of data stored in the storage object taking into account storage efficiencies. The default value is *allocated-space* .

[-peak-iops-allocation {used-space|allocated-space}] - Peak IOPS Allocation

Specifies the peak IOPS allocation policy. The allocation policy is either *allocated-space* or *used-space* . When the peak-iops-allocation policy is set to *allocated-space* , the peak IOPS is calculated based on the size of the storage object. When the peak-iops-allocation policy is set to *used-space* , the peak IOPS is calculated based on the amount of data stored in the storage object taking into account storage efficiencies. The default value is *used-space* .

[-block-size {ANY|4K|8K|16K|32K|64K|128K}] - Block Size

Specifies the I/O block size for the QoS adaptive policy group. The default value is "ANY". When block-size of "ANY" is specified, then control is by IOPS. When block-size other than "ANY" is specified, then control is by IOPS and bytes per second(bps). bps is the product of IOPS and block-size.

Examples

```
cluster1::> qos adaptive-policy-group create p1 -vserver vs1
            -expected-iops 100IOPS/TB -peak-iops 1000/TB
```

Creates the "p1" adaptive policy group which belongs to Vserver "vs1" with expected-iops of 100IOPS/TB and peak-iops of 1000IOPS/TB with default value for absolute-min-iops

```
cluster1::> qos adaptive-policy-group create p2 -vserver vs1
        -expected-iops 100IOPS/GB -peak-iops 1000IOPS/GB
        -absolute-min-iops 200IOPS
```

Creates the "p1" adaptive policy group which belongs to Vserver "vs1" with expected-iops of 100IOPS/TB and peak-iops of 1000IOPS/TB with the absolute-min-iops set to 200IOPS.

Related Links

- qos adaptive-policy-group rename

qos adaptive-policy-group delete

Delete an adaptive policy group

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

Description

The `qos adaptive-policy-group delete` command deletes an adaptive policy group from a cluster. You cannot delete a policy group if a QoS workload associated with a storage object is assigned to it .

Only user created adaptive policy groups can be deleted. Default adaptive policy groups are read only and

cannot be deleted.

Parameters

`-policy-group <text>` - Name

Specifies the name of the adaptive policy group that you want to delete.

`[-force <true>]` - Force Delete Workloads for the QoS adaptive policy group (privilege: advanced)

Specifies whether to delete an adaptive policy group along with any underlying workloads.

Examples

```
The following example deletes "p1" adaptive policy group:
```

```
cluster1::> qos adaptive-policy-group delete p1
```

qos adaptive-policy-group modify

Modify an adaptive policy group

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

Description

The `qos adaptive-policy-group modify` command modifies an adaptive policy group.

Only user-created adaptive policy groups can be modified. Default adaptive policy groups are read-only and cannot be modified.

Parameters

`-policy-group <text>` - Name

Specifies the name of the adaptive policy group. Adaptive policy group names must be unique and are restricted to 127 alphanumeric characters including underscores "_" and hyphens "-". Adaptive policy group names must start with an alphanumeric character. Use the qos adaptive-policy-group rename command to change the adaptive policy group name.

`[-expected-iops {<integer>[IOPS[/{GB|TB}]] (default: TB)}]` - Expected IOPS

Specifies the minimum expected IOPS per TB or GB allocated based on the storage object allocated size. QoS minimum throughput setting is calculated from the expected-iops parameter. It is set only for the storage objects that reside on AFF platforms.

`[-peak-iops {<integer>[IOPS[/{GB|TB}]] (default: TB)}]` - Peak IOPS

Specifies the maximum possible IOPS per TB or GB allocated based on the storage object allocated size or the storage object used size.

[-absolute-min-iops <qos_tput>] - Absolute Minimum IOPS

Specifies the absolute minimum IOPS which is used as an override when the expected IOPS is less than this value. The default value is computed as follows:

if expected-iops >= 6144/TB, then absolute-min-iops = 1000IOPS; if expected-iops >= 2048/TB and expected-iops < 6144/TB, then absolute-min-iops = 500IOPS; if expected-iops >= 1/MB and expected-iops < 2048/TB, then absolute-min-iops = 75IOPS.

[-expected-iops-allocation {used-space|allocated-space}] - Expected IOPS Allocation

Specifies the expected IOPS allocation policy. The allocation policy is either *allocated-space* or *used-space* . When the expected-iops-allocation policy is set to *allocated-space* , the expected IOPS is calculated based on the size of the storage object. When the expected-iops-allocation policy is set to *used-space* , the expected IOPS is calculated based on the amount of data stored in the storage object taking into account storage efficiencies. The default value is *allocated-space* .

[-peak-iops-allocation {used-space|allocated-space}] - Peak IOPS Allocation

Specifies the peak IOPS allocation policy. The allocation policy is either *allocated-space* or *used-space* . When the peak-iops-allocation policy is set to *allocated-space* , the peak IOPS is calculated based on the size of the storage object. When the peak-iops-allocation policy is set to *used-space* , the peak IOPS is calculated based on the amount of data stored in the storage object taking into account storage efficiencies. The default value is *used-space* .

[-block-size {ANY|4K|8K|16K|32K|64K|128K}] - Block Size

Specifies the I/O block size for the QoS adaptive policy group. The default value is "ANY". When block-size of "ANY" is specified, then control is by IOPS. When block-size other than "ANY" is specified, then control is by IOPS and bytes per second(bps). bps is the product of IOPS and block-size.

Examples

```
The following example modifies the "p1" adaptive policy group with
specified values.
```

```
cluster1::> qos adaptive-policy-group modify -policy-group p1
            -expected-iops 200IOPS/TB -peak-iops 2000IOPS/TB
            -absolute-min-iops 100IOPS
```

Related Links

- qos adaptive-policy-group rename

qos adaptive-policy-group rename

Rename an adaptive policy group

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

Description

The `qos adaptive-policy-group rename` command changes the name of an existing adaptive policy group.

Parameters

`-policy-group <text>` - Name

Specifies the existing name of the adaptive policy group that you want to rename.

`-new-name <text>` - New adaptive policy group name

Specifies the new name of the adaptive policy group. Adaptive policy group names must be unique and are restricted to 127 alphanumeric characters including underscores "_" and hyphens "-". Adaptive policy group names must start with an alphanumeric character.

Examples

```
cluster1::> qos adaptive-policy-group rename -policy-group p1 -new-name
p1_new
```

Renames the adaptive policy group from "p1" to "p1_new".

qos adaptive-policy-group show

Display a list of adaptive policy groups

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

Description

The `qos adaptive-policy-group show` command shows the current settings of the adaptive policy groups on a cluster. You can view the list of adaptive policy groups and also the detailed information about a specific adaptive policy group.

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.

`[-policy-group <text>]` - Name

Selects the adaptive policy groups that match this parameter value.

Adaptive policy groups define measurable service level objectives (SLOs) that adjust based on the storage object used space or the storage object allocated space.

[-vserver <vserver name>] - Vserver

If this parameter is specified, the command displays information only about the adaptive policy groups with a matching vserver.

[-uuid <UUID>] - Uuid

If this parameter is specified, the command displays information only about the adaptive policy groups with the specified UUID.

[-pgid <integer>] - ID

If this parameter is specified, the command displays information only about the adaptive policy groups that match the given policy group ID, which is an integer that uniquely identifies the adaptive policy group.

[-expected-iops {<integer>[IOPS[/{GB|TB}]] (default: TB)}] - Expected IOPS

If this parameter is specified, the command displays information only about the adaptive policy groups with the specified minimum expected IOPS per TB or GB.

[-peak-iops {<integer>[IOPS[/{GB|TB}]] (default: TB)}] - Peak IOPS

If this parameter is specified, the command displays information only about the adaptive policy groups with the specified maximum possible IOPS per TB or GB.

[-absolute-min-iops <qos_tput>] - Absolute Minimum IOPS

If this parameter is specified, the command displays information only about the adaptive policy groups with the specified absolute minimum IOPS.

[-expected-iops-allocation {used-space|allocated-space}] - Expected IOPS Allocation

If this parameter is specified, the command displays information only about the adaptive policy groups with the specified expected IOPS allocation policy used to compute the expected IOPS per TB or GB.

[-peak-iops-allocation {used-space|allocated-space}] - Peak IOPS Allocation

If this parameter is specified, the command displays information only about the adaptive policy groups with the specified peak IOPS allocation policy used to compute the maximum possible IOPS per TB or GB.

[-block-size {ANY|4K|8K|16K|32K|64K|128K}] - Block Size

Specifies the I/O block size for the QoS adaptive policy group. The default value is "ANY". When block-size of "ANY" is specified, then control is by IOPS. When block-size other than "ANY" is specified, then control is by IOPS and bytes per second(bps). bps is the product of IOPS and block-size.

[-num-workloads <integer>] - Number of Workloads

If this parameter is specified, the command displays information only about the adaptive policy groups with the specified number of workloads.

Examples

The example above displays all adaptive policy groups on the cluster.

```
cluster1::> qos adaptive-policy-group show
 qos adaptive-policy-group show
Expected    Peak         Minimum  Block
Name         Vserver Wklds  IOPS        IOPS         IOPS     Size
------------ ------- ------ ----------- ------------ -------- -----
apg1         vs1     1      100IOPS/MB  1000IOPS/MB  75IOPS   8K
apg2         vs1     1      100IOPS/MB  1000IOPS/MB  75IOPS   4K
extreme      clus-1  0      6144IOPS/TB 12288IOPS/TB 1000IOPS ANY
performance  clus-1  0      2048IOPS/TB 4096IOPS/TB  500IOPS  ANY
value        clus-1  0      128IOPS/TB  512IOPS/TB   75IOPS   ANY
5 entries were displayed.
```

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