NetApp

statistics commands

ONTAP commands

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statistics commands

statistics show-periodic

Continuously display current performance data at regular interval

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

Description

This command continuously displays specified performance data at a regular interval. The command output displays data in the following columns:

> ⓘ This command has been deprecated and may be removed from a future version of Data ONTAP. Use the "statistics show" command with the tabular format instead.

- cpu avg: Average processor utilization across all processors in the system.
- cpu busy: Overall system utilization based on CPU utilization and subsystem utilization. Examples of subsystems include the storage subsystem and RAID subsystem.
- total ops: Number of total operations per second.
- nfs-ops: Number of NFS operations per second.
- cifs-ops: Number of CIFS operations per second.
- fcache ops: Number of 7M flexcache operations per second.
- pkts recv: Number of packets received over physical ports per second.
- pkts sent: Number of packets sent over physical ports per second.
- total recv: Total network traffic received over physical ports per second (KBps).
- total sent: Total network traffic sent over physical ports per second (KBps).
- data busy: The percentage of time that data ports sent or received data.
- data recv: Network traffic received on data ports (KBps).
- data sent: Network traffic sent on data ports (KBps).
- cluster busy: The percentage of time that cluster ports sent or received data.
- cluster recv: Network traffic received on cluster ports (KBps).
- cluster sent: Network traffic sent on cluster ports (KBps).
- disk read: Data read from disk (KBps).
- disk write: Data written to disk (KBps).

Parameters

`[-object <text>]` - Object (privilege: advanced)

Selects the object for which you want to display performance data. The default object is "*cluster*".

[-instance <text>] - Instance (privilege: advanced)

Selects the instance for which you want to display performance data. This parameter is required if you specify the `-object` parameter and enter any object other than "*cluster*". Multiple values for this parameter are not supported.

For example, if you want to display disk object statistics, you can use this parameter to specify the name of a specific disk whose statistics you want to view.

[-counter <text>] - Counter (privilege: advanced)

Selects the counters for which you want to display performance data. If you do not specify this parameter, the command displays statistics for all of the counters in the specified objects. To specify multiple counters, use "|" between each counter.

[-preset <text>] - Preset (privilege: advanced)

If this parameter is specified, the command displays statistics for the specified preset.

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

Selects the nodes for which you want to display performance data. The default node is "*cluster:summary*".

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

Selects the Vserver for which you want to display performance data. If you do not specify this parameter, the command displays statistics for all of the Vservers in the cluster.

[-interval <integer>] - Interval in Seconds (privilege: advanced)

Specifies, in seconds, the interval between statistics updates. The default setting is 1 second.

[-iterations <integer>] - Number of Iterations (privilege: advanced)

Specifies the number of iterations the command runs before terminating. The default setting is 0 (zero); this means that the command continues to run until you interrupt it by pressing Ctrl-C.

[-summary {true|false}] - Print Summary (privilege: advanced)

Specifies whether the command prints a final summary of statistics after the command has gone through all of its iterations. The default setting is `true`.

[-filter <text>] - Filter Data (privilege: advanced)

Selects instances that match the specified filter criteria. For example, to display instances from node1, specify `-filter "node_name=node1"`.

Examples

The following example displays the "cluster" statistics for a node named node1. Because no number of iterations is specified, this command will continue to run until you interrupt it by pressing Ctrl-C.

```
cluster1::*> statistics show-periodic -node node1
 cpu  cpu   cpu    total                        fcache     pkts     pkts
total     total data      data      data cluster  cluster  cluster     disk
disk
 avg busy total     ops nfs-ops cifs-ops    ops     recv     sent
recv     sent busy    recv     sent    busy     recv     sent    read
write
---- ---- ----- -------- -------- -------- -------- -------- --------
-------- -------- ---- -------- -------- ------- -------- --------
-------- --------
   6%   6%   26%        0        0        0        0      641       39
126KB   4.68KB   0%   7.33KB       0B       0%   111KB   4.68KB      0B
0B
   5%   5%   21%        0        0        0        0      254        7
16.7KB   1.75KB   0%   5.60KB       0B       0%   5.48KB   1.75KB      0B
0B
   6%   6%   24%        0        0        0        0      307       41
21.2KB   5.32KB   0%   6.13KB       0B       0%   8.99KB   5.32KB      0B
0B
   4%   4%   17%        0        0        0        0      364       16
23.8KB   2.58KB   0%   8.88KB       0B       0%   6.05KB   2.58KB      0B
0B
  10%  10%   42%        0        0        0        0      673        7
124KB   1.92KB   0%   9.82KB       0B       0%   104KB   1.92KB      0B
0B
   7%   7%   28%        0        0        0        0      407       38
28.1KB   4.38KB   0%   8.79KB       0B       0%   10.5KB   4.38KB   106KB
528KB
   4%   4%   19%        0        0        0        0      328       16
21.6KB   2.58KB   0%   7.27KB       0B       0%   7.02KB   2.58KB      0B
0B
   5%   5%   22%        0        0        0        0      324       31
21.9KB   4.35KB   0%   6.99KB       0B       0%   7.95KB   4.35KB      0B
0B
   5%   5%   21%        0        0        0        0      242       16
16.1KB   2.60KB   0%   5.10KB       0B       0%   5.89KB   2.60KB      0B
0B
   4%   4%   17%        0        0        0        0      273       16
18.0KB   2.60KB   0%   5.91KB       0B       0%   6.20KB   2.60KB      0B
0B
```

The following example displays the "processor" statistics for an instance named processor1. This command will display only five iterations.

```
cluster1::*> statistics show-periodic -object processor -instance
processor1 -iteration 5
 instance processor          sk
     name       busy switches
 -------- --------- --------
 processor1        8%      1722
 processor1        6%      1234
 processor1        5%      1680
 processor1        4%      1336
 processor1        7%      1801
 [...]
```

The following example displays the processor statistics for an instance named processor1 and counters "processor_busy" and "sk_switches". This command will display only five iterations.

```
cluster1::*> statistics show-periodic -object processor -instance
processor1 -iteration 5 -counter processor_busy|sk_switches
 processor        sk
      busy switches
 --------- --------
        5%      1267
        4%      1163
        7%      1512
        5%      1245
        4%      1128
 [...]
```

statistics show

Display performance data for a time interval

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

Description

This command displays performance data for a period of time .

To display data for a period of time, collect a sample using the statistics start and statistics stop commands. The data that displays is calculated data based on the samples the cluster collects. To view the sample, specify the -sample-id parameter.

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.

| [-tab] (privilege: advanced) }

    If this parameter is specified, the command displays performance data in tabular format.

[-object <text>] - Object (privilege: advanced)

    Selects the objects for which you want to display performance data. To view a list of valid object names, type `statistics show-object ?`` or statistics catalog object show . To specify multiple objects, use "|" between each object.

> (i) You should limit the scope of this command to only a few objects at a time to avoid a potentially significant impact on the performance of the system.

[-instance <text>] - Instance (privilege: advanced)

    Selects the instances for which you want to display performance data. If you do not specify this parameter, the command displays statistics for all of the instances associated with the specified objects. To specify multiple instances, use "|" between each instance.

    For example, if you want to display disk object statistics, you can use this parameter to specify the name of a specific disk whose statistics you want to view. If you do not specify this parameter, the command displays statistics for all disks in the system.

[-counter <text>] - Counter (privilege: advanced)

    Selects the counters for which you want to display performance data. To specify multiple counters, use "|" between each counter.

[-preset <text>] - Preset (privilege: advanced)

    If this parameter is specified, the command displays statistics for the specified preset.

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

    Selects the nodes for which you want to display performance data.

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

    Selects the Vserver for which you want to display performance data.

[-value <text>] - Text Value (privilege: advanced)

    Selects the performance data that matches the specified counter value.

[-labels <text>,…] - List of Labels (privilege: advanced)

    Selects the performance data that matches the specified label.

[-values <text>,…] - List of Values (privilege: advanced)

    Displays only the statistics that have the specified values.

[-filter <text>] - Filter Data (privilege: advanced)

    Selects performance data for the instance that matches the specified filter criteria. For example, to display the instances that match a value of greater than 50 for the total_ops counter, specify `-filter "total_ops>50"` .

[-sample-id <text>] - Sample Identifier (privilege: advanced)

    Displays performance data for the specified sample. You collect a sample by using the statistics start and statistics stop commands.

[-interval <integer>] - Interval (privilege: advanced)

Specifies, in seconds, the interval between statistics updates. The default setting is 5 seconds.

[-iterations <integer>] - Iterations (privilege: advanced)

Specifies the number of iterations the command runs before terminating. The default setting is 1. If the number is 0 (zero), the command continues to run until you interrupt it by pressing Ctrl-C.

[-sort-key <text>] - Counter Used For Sorting (privilege: advanced)

If this parameter is specified, the command displays statistics sorted by the specified counter. Only one counter can be specified.

[-sort-order {ascending|descending}] - Sort Order (privilege: advanced)

This parameter may be used in conjunction with the -sort-key parameter. This parameter changes the order in which statistics are sorted. Possible values are *ascending* and *descending* . The default setting is *descending* .

[-max <integer>] - Tracker Size (privilege: advanced)

Specifies the number of most active instances of an active object to display. The default setting is to display all of the instances.

Examples

The following example starts collecting statistics and displays statistics for the sample named smpl_1 for counters: avg_processor_busy and cpu_busy

```
cluster1::*> statistics start -object system -counter
avg_processor_busy|cpu_busy -sample-id smpl_1
Statistics collection is being started for Sample-id: smpl_1

cluster1::*> statistics show -sample-id smpl_1
Object: system
Instance: cluster
Start-time: 8/2/2012 18:27:53
End-time: 8/2/2012 18:27:56
Cluster: cluster1
    Counter                                                       Value
    ------------------------------ ------------------------------
    avg_processor_busy                                               6%
    cpu_busy                                                         6%
```

The following example starts and stops data collection and displays statistics for the sample named smpl_1 for counters: avg_processor_busy and cpu_busy

```
cluster1::*> statistics start -object system -counter
avg_processor_busy|cpu_busy -sample-id smpl_1
Statistics collection is being started for Sample-id: smpl_1

cluster1::*> statistics stop -sample-id smpl_1
Statistics collection is being stopped for Sample-id: smpl_1

cluster1::*> statistics show -sample-id smpl_1
Object: system
Instance: cluster
Start-time: 8/2/2012 18:27:53
End-time: 8/2/2012 18:27:56
Cluster: cluster1
    Counter                                                      Value
    ------------------------------- -------------------------------
    avg_processor_busy                                              6%
    cpu_busy                                                        6%
```

Related Links

- statistics start
- statistics stop
- statistics catalog object show

statistics start

Start data collection for a sample

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

Description

This command starts the collection of performance data. Use the statistics stop command to stop the collection. You view the sample of performance data by using the statistics show command. You can collect more than one sample at a time.

Parameters

`[-object <text>]` - Object (privilege: advanced)

Selects the objects for which you want to collect performance data. This parameter is required. To view a list of valid object names, type statistics catalog object show at the command prompt. To specify multiple objects, use "|" between each object.

> (i) You should limit the scope of this command to only a few objects at a time to avoid a potentially significant impact on the performance of the system.

[-instance <text>] - Instance (privilege: advanced)

Selects the instances for which you want to collect performance data. If you do not specify this parameter, the command collects statistics for all of the instances associated with the specified objects. To specify multiple instances, use "|" between each instance.

For example, if you want to collect disk object statistics, you can use this parameter to specify the name of a specific disk whose statistics you want to view. If you do not specify this parameter, the command will collect statistics for all disks in the system.

[-counter <text>] - Counter (privilege: advanced)

Selects the counters for which you want to collect performance data. If you do not specify this parameter, the command collects statistics for all of the counters in the specified objects. To specify multiple counters, use "|" between each counter.

[-preset <text>] - Preset (privilege: advanced)

If this parameter is specified, the command displays statistics for the specified preset.

[-sample-id <text>] - Sample Identifier (privilege: advanced)

Specifies an identifier for the sample. Identifiers must be unique and are restricted to the characters 0-9, a-z, A-Z, and "_". If you do not specify this parameter, the command generates a sample identifier for you and defines this sample as the default sample for the CLI session. When you run the statistics show command without specifying the `-sample-id` parameter, data from the default sample displays. If you run this command during the same CLI session and do not specify the `-sample-id` parameter, the command overwrites the previous sample. The command does not delete the default sample when you close your session.

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

Selects the vserver for which you want to collect performance data. If you do not specify this parameter, the command collects statistics for all of the Vservers in the cluster.

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

Selects the node for which you want to collect performance data. If you do not specify this parameter, the command collects statistics for all of the nodes in the cluster.

[-filter <text>] - Filter (privilege: advanced)

Selects performance data for the instance that matches the specified filter criteria. For example, to display the instances from node1, specify `-filter "node_name=node1"` .

[-duration <integer>] - Sample Duration in Minutes (privilege: advanced)

If this parameter is specified, the command will collect the closing sample after the time specified. Duration can be specified in minutes.

[-max <integer>] - Tracker Size (privilege: advanced)

Specifies the number of most active instances of an active object to display. The default setting is to display all of the instances.

[-sort-key <text>] - Counter Used For Sorting (privilege: advanced)

If this parameter is specified, the command displays statistics sorted by the specified counter. Only one counter can be specified.

`[-sort-order {ascending|descending}]` - Sort Order (privilege: advanced)

This parameter may be used in conjunction with the -sort-key parameter. This parameter changes the order in which statistics are sorted. Possible values are ascending and descending. The default setting is descending.

Examples

The following example starts statistics collection for sample "smpl_1":

```
cluster1::*> statistics start -object system -sample-id smpl_1
Statistics collection is being started for Sample-id: smpl_1
```

The following example starts collecting statistics for the sample named smpl_1 for counters: avg_processor_busy and cpu_busy

```
cluster1::*> statistics start -object system -counter
avg_processor_busy|cpu_busy -sample-id smpl_1
Statistics collection is being started for Sample-id: smpl_1
```

Related Links

- statistics stop
- statistics show
- statistics catalog object show

statistics stop

Stop data collection for a sample

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

Description

This command stops the collection of performance data. You view the sample of performance data by using the statistics show command.

Parameters

`[-sample-id <text>]` - Sample Identifier (privilege: advanced)

Specifies the identifier of the sample for which you want to stop data collection. If you do not specify this parameter, the command stops data collection for the last sample that you started by running the statistics start command without the `-sample-id` parameter.

Examples

The following example stops data collection for sample "smpl_1":

```
cluster1::*> statistics stop -sample-id smpl_1
Statistics collection is being stopped for Sample-id: smpl_1
```

Related Links

- statistics show
- statistics start

statistics aggregate commands

statistics aggregate show

Aggregate throughput and latency metrics

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

Description

This command continuously displays performance data for aggregates at a regular interval. The command output displays data in the following columns:

- Aggregate - aggregate name.
- Node - node name.
- Total Ops - total number of operations per second.
- Read Ops - read operations per second.
- Write Ops - write operations per second.

Parameters

[-aggregate <text>] - Aggregate

Selects the aggregate for which you want to display performance data.

[-node {<nodename>|local}] - Node

Selects the node for which you want to display performance data.

[-sort-key <text>] - Column to Sort By

If this parameter is specified, the command displays statistics sorted by the specified column.

-interval <integer> - Interval

Specifies, in seconds, the interval between statistics updates. The default setting is 5 seconds.

-iterations <integer> - Iterations

Specifies the number of iterations the command runs before terminating. The default setting is 1. If the number is 0 (zero), the command continues to run until you interrupt it by pressing Ctrl-C.

`-max <integer>` - Maximum Number of Instances
  Specifies maximum number of aggregates to display. The default setting is 25.

Examples

The following example displays aggregate statistics:

```
cluster1::> statistics aggregate show
cluster-1 : 12/31/1969 16:00:04

                                *Total Read Write
          Aggregate          Node    Ops  Ops   Ops
-------------------- ------------- ------ ---- -----
aggr0_cluster_node2_0 cluster-node2      9    0     8
              aggr0 cluster-node1      6    0     5

[...]
```

statistics cache commands

statistics cache flash-pool show

Flash pool throughput metrics

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

Description

This command continuously displays performance data for flash pool caches at a regular interval. The command output displays data in the following columns:

* Aggregate - aggregate name.
* Vserver - vserver name.
* Volume - volume name.
* Read Hit - percent of IOs serviced from a cache level.
* Write Hit - percent of IOs serviced from a cache level.
* Cache Used - percent of cache used.
* Read Blocks - read blocks.
* Write Blocks - write blocks.
* Rejects - cache rejects.

Parameters

`[-aggregate <text>]` - Aggregate
  Selects the aggregate for which you want to display performance data.

`[-vserver <vserver name>]` - Vserver

Selects the vserver for which you want to display performance data.

`[-volume <text>]` - Volume

Selects the volume for which you want to display performance data.

`[-sort-key <text>]` - Column to Sort By

If this parameter is specified, the command displays statistics sorted by the specified column.

`-interval <integer>` - Interval

Specifies, in seconds, the interval between statistics updates. The default setting is 5 seconds.

`-iterations <integer>` - Iterations

Specifies the number of iterations the command runs before terminating. The default setting is 1. If the number is 0 (zero), the command continues to run until you interrupt it by pressing Ctrl-C.

`-max <integer>` - Maximum Number of Instances

Specifies the maximum number of flash pools to display. The default setting is 25.

Examples

The following example displays flash pool statistics:

```
cluster1::> statistics cache flash-pool show
cluster1 : 12/31/2013 16:00:04
Read Write       Cache
                                Hit   Hit         Used   Read   Write
   Aggregate  Vserver  Volume  (%)   (%)         (%)  Blocks  Blocks
Rejects
 ----------- -------- ------- ---- ----- ----------- ------- -------
-------
     aggr1         - -total-    0     0           0      0       0
0
     aggr2       vs1    vol1    0     0           0      0       0
0
[...]
```

statistics catalog commands

statistics catalog counter show

Display the list of counters in an object

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

Description

This command displays the names and descriptions of counters. The displayed data is either node-specific or cluster-wide, depending on the objects specified.

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.

`| [-describe ]` (privilege: advanced) `}`

Displays detailed information about each counter, including privilege level, label, and whether the counter is a key counter.

`-object <text>` - Object (privilege: advanced)

Selects the object for which you want to display the list of counters. This parameter is required. To view a list of valid object names, type `statistics catalog counter show-object ?`` or statistics catalog object show .

`[-counter <text>]` - Counter (privilege: advanced)

Selects the counters that match this parameter value. If you do not specify this parameter, the command displays details for all counters.

`[-filter <text>]` - Filter Data (privilege: advanced)

Selects the counters that match this parameter value. For example, to display counters from node1, specify `-filter "node_name=node1"` .

`[-label <text>,…]` - Labels for Array Counters (privilege: advanced)

Selects the counters that match this parameter value. A label is the name of the bucket to which an array counter belongs.

`[-description <text>]` - Description (privilege: advanced)

Selects the counters that match this parameter value.

`[-privilege <text>]` - Privilegel Level (privilege: advanced)

Selects the counters that match this parameter value.

`[-is-key-counter {true|false}]` - Is Key Counter (privilege: advanced)

Selects the counters that are key counters (true) or are not key counters (false). A key counter is a counter that uniquely identifies an instance across the cluster. The default setting is false. For example, "vserver_name" and "node_name" are key counters because they identify the specific Vserver or node to which the instance belongs.

`[-is-deprecated {true|false}]` - Is Counter Deprecated (privilege: advanced)

Selects the counters that are deprecated (true) or are not deprecated (false).

`[-replaced-by <text>]` - Replaced By Counter If Deprecated (privilege: advanced)

Selects all deprecated counters that are replaced by the counter provided to this parameter.

Examples

The following example displays the list of counters in the processor object.

```
cluster1::> statistics catalog counter show -object processor
Object: processor
    Counter                       Description
    --------------------------
--------------------------------------------------
    instance_name                 Instance Name
    instance_uuid                 Instance UUID
    node_name                     System node name
    node_uuid                     System node id
    process_name                  Ontap process that provided this instance
    processor_busy                Percentage of elapsed time that the
processor
                                  is executing non-idle processes
    processor_elapsed_time        Wall-clock time since boot used for
                                  calculating processor utilization
    sk_switches                   Number of sk switches per second
8 entries were displayed.
```

Related Links

- statistics catalog object show

statistics catalog instance show

Display the list of instances associated with an object

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

Description

This command displays the names of instances associated with the specified object. The displayed data is either node-specific or cluster-wide, depending on the objects specified.

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.

-object <text> - Object (privilege: advanced)

Selects the object for which you want to display the list of instances. This parameter is required. To view a list of valid object names, type `statistics catalog instance show-object ?`` or statistics catalog object show .

[-instance <text>] - Instance Name (privilege: advanced)

Selects the instances that match this parameter value. If you do not specify this parameter, the command displays all the instances.

[-filter <text>] - Filter Data (privilege: advanced)

Selects the instances that match this parameter value. For example, to display instances from vserver1, specify `-filter "vserver_name=vserver1"`.

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

Selects the instances that match this parameter value. If you do not specify this parameter, the command displays instances for all of the Vservers in the cluster.

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

Selects the instances that match this parameter value. If you do not specify this parameter, the command displays instances for all of the nodes in the cluster.

Examples

The following example displays the list of instances associated with the processor object.

```
cluster1::> statistics catalog instance show -object processor
Object: processor
  processor0
  processor0
  processor1
  processor1
4 entries were displayed.
```

Related Links

- statistics catalog object show

statistics catalog object show

Display the list of objects

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

Description

This command displays the names and descriptions of objects from which you can obtain performance data. The displayed data is either node-specific or cluster-wide, depending on the objects specified.

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.

| [-describe] (privilege: advanced) }

    Displays detailed information about each object, including privilege level.

[-object <text>] - Object (privilege: advanced)

    Selects the objects for which you want to display information. If you do not specify this parameter, the command displays details for all of the objects.

[-privilege <text>] - Privilege Level (privilege: advanced)

    Selects the objects that match this parameter value.

[-is-deprecated {true|false}] - Is Object Deprecated (privilege: advanced)

    Selects the objects that are deprecated (true) or are not deprecated (false).

[-replaced-by <text>] - Replaced By Object If Deprecated (privilege: advanced)

    Selects all deprecated objects that are replaced by the object provided to this parameter.

[-is-statistically-tracked {true|false}] - Is Object Statistically Tracked (privilege: advanced)

    Specifies if the object is statistically tracked

[-description <text>] - Description (privilege: advanced)

    Selects the objects that match this parameter value.

Examples

The following example displays descriptions of all objects in the cluster:

```
cluster1::> statistics catalog object show
    aggregate                       CM object for exporting aggregate
performance
                                    counters
    audit_ng                        CM object for exporting audit_ng
performance
                                    counters
    cifs                            These counters report activity from both
SMB
                                    and SMB2 revisions of the CIFS protocol.
For
                                    information isolated to SMB, see the
'smb1'
                                    object. For SMB2, see the 'smb2' object.
    cifs:node                       These counters report activity from both
SMB
                                    and SMB2 revisions of the CIFS protocol.
For
                                    information isolated to SMB, see the
'smb1'
                                    object. For SMB2, see the 'smb2' object.
    cifs:vserver                    These counters report activity from both
SMB
                                    and SMB2 revisions of the CIFS protocol.
For
                                    information isolated to SMB, see the
'smb1'
                                    object. For SMB2, see the 'smb2' object.
    cluster_peer                    The cluster peer object contains peer
                                    counters.
[...]
```

statistics disk commands

statistics disk show

Disk throughput and latency metrics

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

Description

This command continuously displays performance data for disks at a regular interval. The command output displays data in the following columns:

- Disk - disk name.

- Node - node name.
- Busy (%) - percentage of time there was at least one outstanding request to the disk.
- Total Ops - total operations per second.
- Read Ops - read operations per second.
- Write Ops - write operations per second.

Parameters

[-disk <text>] - Disk (privilege: advanced)
  Selects the disk for which you want to display performance data.

[-node {<nodename>|local}] - Node (privilege: advanced)
  Selects the node for which you want to display performance data.

[-sort-key <text>] - Column to Sort By (privilege: advanced)
  If this parameter is specified, the command displays statistics sorted by the specified column.

-interval <integer> - Interval (privilege: advanced)
  Specifies, in seconds, the interval between statistics updates. The default setting is 5 seconds.

-iterations <integer> - Iterations (privilege: advanced)
  Specifies the number of iterations the command runs before terminating. The default setting is 1. If the number is 0 (zero), the command continues to run until you interrupt it by pressing Ctrl-C.

-max <integer> - Maximum Number of Instances (privilege: advanced)
  Specifies the maximum number of disks to display. The default setting is 25.

Examples

The following example displays disk statistics:

```
cluster1::> statistics disk show
cluster1 : 12/31/1969 16:00:04

                    Busy *Total Read Write
 Disk          Node  (%)    Ops  Ops   Ops
 --------  --------  ----  ------ ---- -----
 VMw-1.31    node2    0      2     2     0
 VMw-1.30    node2    0      3     0     3
 VMw-1.3     node1    0      0     0     0
 VMw-1.29    node2    0      1     0     1


 [...]
```

statistics lif commands

statistics lif show

Logical network interface throughput and latency metrics

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

Description

This command continuously displays performance data for LIFs at a regular interval. The command output displays data in the following columns:

- LIF - logical interface name.
- Vserver - vserver name.
- Recv Packet - packets received per second.
- Recv Data (Bps) - bytes received per second.
- Recv Errors - receive errors per second.
- Sent Packet - packets sent per second.
- Sent Data (Bps) - bytes sent per second.
- Sent Errors - transfer errors per second.
- Current Port - current use port.

Parameters

`[-lif <text>]` - LIF

    Selects the LIF for which you want to display performance data.

`[-vserver <vserver name>]` - Vserver

    Selects the vserver for which you want to display performance data.

`[-sort-key <text>]` - Column to Sort By

    If this parameter is specified, the command displays statistics sorted by the specified column.

`-interval <integer>` - Interval

    Specifies, in seconds, the interval between statistics updates. The default setting is 5 seconds.

`-iterations <integer>` - Iterations

    Specifies the number of iterations the command runs before terminating. The default setting is 1. If the number is 0 (zero), the command continues to run until you interrupt it by pressing Ctrl-C.

`-max <integer>` - Maximum Number of Instances

    Specifies the maximum number of LIFs to display. The default setting is 25.

Examples

The following example displays LIFs statistics:

```
cluster1::> statistics lif show
cluster1 : 12/31/1969 16:00:04
                                 Recv                 Sent
                          Recv   Data   Recv   Sent   Data   Sent Current
          LIF    Vserver Packet  (Bps) Errors Packet  (Bps) Errors    Port
------------ ---------- ------ ----- ------ ------ ----- ------ -------
node2_clus_1    Cluster      3    536      0      3    338      0     e0a
node2_clus_2    Cluster      3    398      0      3    287      0     e0b
node1_clus_2    Cluster      3    338      0      3    536      0     e0b
node1_clus_1    Cluster      3    287      0      3    398      0     e0a
 node2_mgmt1 ncluster-1      0      0      0      0      0      0     e0c
 node1_mgmt1 ncluster-1      0      0      0      0      0      0     e0c

[...]
```

statistics lun commands

statistics lun show

LUN throughput and latency metrics

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

Description

This command continuously displays performance data for LUNs at a regular interval. The command output displays data in the following columns:

- Lun - LUN name.
- Vserver - vserver name.
- Total Ops - total number of operations per second.
- Read Ops - read operations per second.
- Write Ops - write operations per second.
- Other Ops - other operations per second.
- Read (Bps) - read throughput in bytes per second.
- Write (Bps) - write throughput in bytes per second.
- Latency(ms) - average latency for an operation in milliseconds.

Parameters

`[-lun <text>]` - **Lun**

   Selects the LUN for which you want to display performance data.

[-vserver <vserver name>] - Vserver

 Selects the vserver for which you want to display performance data.

[-sort-key <text>] - Column to Sort By

 If this parameter is specified, the command displays statistics sorted by the specified column.

-interval <integer> - Interval

 Specifies, in seconds, the interval between statistics updates. The default setting is 5 seconds.

-iterations <integer> - Iterations

 Specifies the number of iterations the command runs before terminating. The default setting is 1. If the number is 0 (zero), the command continues to run until you interrupt it by pressing Ctrl-C.

-max <integer> - Maximum Number of Instances

 Specifies the maximum number of LUNs to display. The default setting is 25.

Examples

The following example displays LUN statistics:

```
cluster1::> statistics lun show
cluster1 : 12/31/2013 16:00:04
*Total Read Write Other   Read Write Latency
  Lun Vserver      Ops  Ops   Ops   Ops  (Bps) (Bps)    (ms)
  ---- ------- ------ ---- ----- ----- ------ ----- -------
  lun1     vs1    58   13    15    29 310585  3014      39
  lun0     vs2    56    0    11    45   8192 28826      47
[...]
```

statistics namespace commands

statistics namespace show

Namespace throughput and latency metrics

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

Description

This command continuously displays performance data for Namespaces at a regular interval. The command output displays data in the following columns:

 • Namespace - Namespace name.

 • Vserver - vserver name.

 • Total Ops - total number of operations per second.

 • Read Ops - read operations per second.

- Write Ops - write operations per second.
- Other Ops - other operations per second.
- Read (Bps) - read throughput in bytes per second.
- Write (Bps) - write throughput in bytes per second.
- Latency(ms) - average latency for an operation in milliseconds.

Parameters

[-namespace <text>] - Namespace

Selects the Namespace for which you want to display performance data.

[-vserver <vserver name>] - Vserver

Selects the vserver for which you want to display performance data.

[-sort-key <text>] - Column to Sort By

If this parameter is specified, the command displays statistics sorted by the specified column.

-interval <integer> - Interval

Specifies, in seconds, the interval between statistics updates. The default setting is 5 seconds.

-iterations <integer> - Iterations

Specifies the number of iterations the command runs before terminating. The default setting is 1. If the number is 0 (zero), the command continues to run until you interrupt it by pressing Ctrl-C.

-max <integer> - Maximum Number of Instances

Specifies the maximum number of Namespaces to display. The default setting is 25.

Examples

The following example displays Namespace statistics:

```
cluster1::> statistics namespace show
cluster1 : 12/31/2017 16:00:04
*Total Read Write Other   Read Write Latency
  Namespace Vserver    Ops  Ops   Ops   Ops  (Bps) (Bps)    (ms)
  ---------- ------- ------ ---- ----- ----- ------ ----- -------
  ns1           vs1     58   13    15    29 310585  3014      39
  ns0           vs2     56    0    11    45   8192 28826      47
[...]
```

statistics nfs commands

statistics nfs show-mount

Display mount statistics

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

Description

The `statistics nfs show-mount` command displays the following statistics about the NFS mounts on each node in the cluster:

- Result of the operations (success or failure)
- Total number of null operations
- Total number of mount operations
- Total number of dump operations
- Total number of unmount operations
- Total number of unmountall operations
- Total number of export operations
- Total number of exportall operations
- Total number of pathconf operations
- Total number of all the above operations

This command is designed to be used to analyze performance characteristics and to help diagnose issues.

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 (privilege: advanced)

If you specify this parameter, the command displays statistics only for the specified node.

[-result {success|failure|all}] - Result (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified result (success/failure/all).

[-null <Counter with Delta>] - Null Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of null operations.

[-mount <Counter with Delta>] - Mount Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of mount operations.

[-dump <Counter with Delta>] - Dump Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of dump operations.

`[-unmnt <Counter with Delta>]` - UnMount Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of unmount operations.

`[-unmntall <Counter with Delta>]` - UnMountAll Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of unmountall operations.

`[-export <Counter with Delta>]` - Export Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of export operations.

`[-exportall <Counter with Delta>]` - ExportAll Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of exportall operations.

`[-pathconf <Counter with Delta>]` - PathConf Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of pathconf operations.

`[-total <Counter64 with Delta>]` - Total Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of total operations.

Examples

The following example displays statistics about the NFS mounts for a node named node1:

```
cluster1::*> statistics nfs show-mount -node node1

Node                    Value          Delta
node1            ----------success-------
Null Ops:                    2        0/s:16s
Mount Ops:                   1        0/s:16s
Dump Ops:                    0          -
Unmount Ops:                 1        0/s:16s
Unmount All Ops:             0          -
Export Ops:                  0          -
ExportAll Ops                0          -
PathConf Ops:                0          -
Total Ops:                   4        0/s:16s

Node                    Value          Delta
node1            ----------failure-------
Null Ops:                    0          -
Mount Ops:                   0          -
Dump Ops:                    0          -
Unmount Ops:                 0          -
Unmount All Ops:             0          -
Export Ops:                  0          -
ExportAll Ops                0          -
PathConf Ops:                0          -
Total Ops:                   0          -
```

statistics nfs show-nlm

(DEPRECATED)-Display NLM statistics

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

Description

The `statistics nfs show-nlm` command displays the following statistics about the Network Lock Manager (NLM) on each node in the cluster:

- Result of the operations (success or failure)
- Total number of null operations
- Total number of test operations
- Total number of lock operations
- Total number of cancel operations
- Total number of unlock operations
- Total number of granted operations

- Total number of share operations

- Total number of unshare operations

- Total number of nmlock operations

- Total number of freeall operations

- Total number of all the above operations

This command is designed to be used to analyze performance characteristics and to help diagnose issues.

> (i) This command requires an effective cluster version earlier than Data ONTAP 9.0. Data for nodes running Data ONTAP 9.0 or later is not collected, and will not be displayed. Use the statistics show-object *nlm* command instead.

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 (privilege: advanced)

If you specify this parameter, the command displays statistics only for the specified node.

[-result {success|failure|all}] - Result (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified result (success/failure/all).

[-null <Counter with Delta>] - Null Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of null operations.

[-test <Counter with Delta>] - Test Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of test operations.

[-lock <Counter with Delta>] - Lock Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of lock operations.

[-cancel <Counter with Delta>] - Cancel Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of cancel operations.

[-unlock <Counter with Delta>] - Unlock Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of unlock operations.

`[-granted <Counter with Delta>]` - Granted Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of granted operations.

`[-share <Counter with Delta>]` - Share Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of share operations.

`[-unshare <Counter with Delta>]` - Unshare Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of unshare operations.

`[-nmlock <Counter with Delta>]` - NmLock Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of nmlock operations.

`[-freeall <Counter with Delta>]` - FreeAll Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of freeall operations.

`[-total <Counter64 with Delta>]` - Total Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of total operations.

Examples

The following example displays statistics about the NLM for a node named node1:

```
cluster1::*> statistics nfs show-nlm -node node1

Node                    Value          Delta
node1              --------success-------
Null:                     0              -
Test:                     0              -
Lock:                     2          0/s:23s
Cancel:                   0              -
Unlock:                   1          0/s:23s
Granted:                  0              -
Share:                    0              -
Unshare:                  0              -
NmLock:                   0              -
FreeAll:                  0              -
Total:                    3          0/s:23s

Node                    Value          Delta
node1              --------failure-------
Null:                     0              -
Test:                     0              -
Lock:                     0              -
Cancel:                   0              -
Unlock:                   0              -
Granted:                  0              -
Share:                    0              -
Unshare:                  0              -
NmLock:                   0              -
FreeAll:                  0              -
Total:                    0              -
```

Related Links

statistics nfs show-statusmon

Display status monitor statistics

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

Description

The `statistics nfs show-statusmon` command displays the following statistics about the Status Monitor on each node in the cluster:

• Result of the operations (success or failure)

- Total number of null operations

- Total number of stat operations

- Total number of monitor operations

- Total number of unmonitor operations

- Total number of unmonitor all operations

- Total number of simucrash operations

- Total number of notify operations

- Total number of all the above operations

This command is designed to be used to analyze performance characteristics and to help diagnose issues.

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 (privilege: advanced)

If you specify this parameter, the command displays statistics only for the specified node.

[-result {success|failure|all}] - Result (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified result (success/failure/all).

[-null <Counter with Delta>] - Null Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of null operations.

[-stat <Counter with Delta>] - Stat Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of stat operations.

[-monitor <Counter with Delta>] - Monitor Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of monitor operations.

[-unmonitor <Counter with Delta>] - Unmonitor Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of unmonitor operations.

[-unmonall <Counter with Delta>] - Unmonitor All Operations (privilege: advanced)

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of unmonitor all operations.

[-simucrash <Counter with Delta>] - **SimuCrash Operations (privilege: advanced)**

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of simucrash operations.

[-notify <Counter with Delta>] - **Notify Operations (privilege: advanced)**

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of notify operations.

[-total <Counter64 with Delta>] - **Total Operations (privilege: advanced)**

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of total operations.

Examples

The following example displays statistics about the status monitor for a node named node1:

```
cluster1::*> statistics nfs show-statusmon -node node1

Node                     Value           Delta
node1                 --------success-------
Null Ops:                    0              -
Stat Ops:                    0              -
Monitor Ops:                 0              -
Unmonitor Ops:               0              -
Unmon All Ops:               0              -
SimuCrash Ops:               0              -
Notify Ops:                  0              -
Total Ops:                   0              -

Node                     Value           Delta
node1                 --------failure-------
Null Ops:                    0              -
Stat Ops:                    0              -
Monitor Ops:                 0              -
Unmonitor Ops:               0              -
Unmon All Ops:               0              -
SimuCrash Ops:               0              -
Notify Ops:                  0              -
Total Ops:                   0              -
```

statistics nfs show-v3

Display NFSv3 statistics

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

Description

The `statistics nfs show-v3` command displays the following statistics about the NFSv3 operations on each node in the cluster: 31

- Result of the operations (success or failure)
- Total number of null operations
- Total number of getattr operations
- Total number of setattr operations
- Total number of lookup operations
- Total number of access operations
- Total number of readsymlink operations
- Total number of read operations
- Total number of write operations
- Total number of create operations
- Total number of mkdir operations
- Total number of symlink operations
- Total number of mknod operations
- Total number of remove operations
- Total number of rmdir operations
- Total number of rename operations
- Total number of link operations
- Total number of readdir operations
- Total number of readdirplus operations
- Total number of fsstat operations
- Total number of fsinfo operations
- Total number of pathconf operations
- Total number of commit operations
- Total number of nfsv3 operations
- Percent of null operations
- Percent of getattr operations
- Percent of setattr operations
- Percent of lookup operations
- Percent of access operations
- Percent of readsymlink operations
- Percent of read operations
- Percent of write operations
- Percent of create operations
- Percent of mkdir operations

- Percent of symlink operations
- Percent of mknod operations
- Percent of remove operations
- Percent of rmdir operations
- Percent of rename operations
- Percent of link operations
- Percent of readdir operations
- Percent of readdirplus operations
- Percent of fsstat operations
- Percent of fsinfo operations
- Percent of pathconf operations
- Percent of commit operations

This command is designed to be used to analyze performance characteristics and to help diagnose issues.

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

If you specify this parameter, the command displays NFSv3 statistics only for the specified node.

[-result {success|failure|all}] - Result

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified result (success/failure/all).

[-null <Counter with Delta>] - Null Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of null operations.

[-gattr <Counter with Delta>] - GetAttr Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of getattr operations.

[-sattr <Counter with Delta>] - SetAttr Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of setattr operations.

[-lookup <Counter with Delta>] - LookUp Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of lookup operations.

`[-access <Counter with Delta>]` - **Access Operations**

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of access operations.

`[-rsym <Counter with Delta>]` - **ReadSymlink Operations**

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of readsymlink operations.

`[-read <Counter with Delta>]` - **Read Operations**

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of read operations.

`[-write <Counter with Delta>]` - **Write Operations**

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of write operations.

`[-create <Counter with Delta>]` - **Create Operations**

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of create operations.

`[-mkdir <Counter with Delta>]` - **MkDir Operations**

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of mkdir operations.

`[-symln <Counter with Delta>]` - **SymLink Operations**

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of symlink operations.

`[-mknod <Counter with Delta>]` - **MkNod Operations**

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of mknod operations.

`[-remove <Counter with Delta>]` - **Remove Operations**

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of remove operations.

`[-rmdir <Counter with Delta>]` - **RmDir Operations**

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of rmdir operations.

`[-rename <Counter with Delta>]` - **Rename Operations**

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of rename operations.

`[-link <Counter with Delta>]` - **Link Operations**

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of link operations.

`[-rdir <Counter with Delta>]` - **ReadDir Operations**

If you specify this parameter, the command displays statistics only about the node or nodes that have the

specified number of readdir operations.

[-rdirp <Counter with Delta>] - ReadDirPlus Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of readdirplus operations.

[-fsstat <Counter with Delta>] - FsStat Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of fsstat operations.

[-fsinfo <Counter with Delta>] - FsInfo Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of fsinfo operations.

[-pconf <Counter with Delta>] - PathConf Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of pathconf operations.

[-commit <Counter with Delta>] - Commit Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of commit operations.

[-total <Counter64 with Delta>] - Total Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of total NFSv3 operations.

[-null-pct <Counter with Delta>] - Percent Null Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of null operations.

[-gattr-pct <Counter with Delta>] - Percent GetAttr Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of getattr operations.

[-sattr-pct <Counter with Delta>] - Percent SetAttr Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of setattr operations.

[-lookup-pct <Counter with Delta>] - Percent LookUp Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of lookup operations.

[-access-pct <Counter with Delta>] - Percent Access Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of access operations.

[-rsym-pct <Counter with Delta>] - Percent ReadSymlink Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of readsymlink operations.

[-read-pct <Counter with Delta>] - Percent Read Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of read operations.

[-write-pct <Counter with Delta>] - Percent Write Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of write operations.

[-create-pct <Counter with Delta>] - Percent Create Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of create operations.

[-mkdir-pct <Counter with Delta>] - Percent MkDir Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of mkdir operations.

[-symln-pct <Counter with Delta>] - Percent SymLink Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of symlink operations.

[-mknod-pct <Counter with Delta>] - Percent MkNod Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of mknod operations.

[-remove-pct <Counter with Delta>] - Percent Remove Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of remove operations.

[-rmdir-pct <Counter with Delta>] - Percent RmDir Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of rmdir operations.

[-rename-pct <Counter with Delta>] - Percent Rename Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of rename operations.

[-link-pct <Counter with Delta>] - Percent Link Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of link operations.

[-rdir-pct <Counter with Delta>] - Percent ReadDir Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of readdir operations.

[-rdirp-pct <Counter with Delta>] - Percent ReadDirPlus Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of readdirplus operations.

[-fsstat-pct <Counter with Delta>] - Percent FsStat Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the

specified percentage of fsstat operations.

[-fsinfo-pct <Counter with Delta>] - Percent FsInfo Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of fsinfo operations.

[-pconf-pct <Counter with Delta>] - Percent PathConf Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of pathconf operations.

[-commit-pct <Counter with Delta>] - Percent Commit Ops

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of commit operations.

Examples

The following example displays statistics about the NFSv3 operations for a node named node1:

```
cluster1::> statistics nfs show-v3 -node node1

Node                 Value              Delta          Percent Ops    Delta
node1                --------------------------success----------------------
Null Ops:                    4           -               7%             -
GetAttr Ops:                10           -              19%             -
SetAttr Ops:                 2           -               4%             -
Lookup Ops:                  2           -               4%             -
Access Ops:                 14           -              26%             -
ReadSymlink Ops:             0           -               0%             -
Read Ops:                    0           -               0%             -
Write Ops:                   0           -               0%             -
Create Ops:                  2           -               4%             -
MkDir Ops:                   1           -               2%             -
Symlink Ops:                 0           -               0%             -
MkNod Ops:                   0           -               0%             -
Remove Ops:                  1           -               2%             -
RmDir Ops:                   0           -               0%             -
Rename Ops:                  0           -               0%             -
Link Ops:                    0           -               0%             -
ReadDir Ops:                 2           -               4%             -
ReadDirPlus Ops:            10           -              19%             -
FsStat Ops:                  1           -               2%             -
FsInfo Ops:                  5           -               9%             -
PathConf Ops:                0           -               0%             -
Commit Ops:                  0           -               0%             -
Total Ops:                  54           -

Node                 Value              Delta          Percent Ops    Delta
node1                --------------------------failure----------------------
```

```
Null Ops:                       0              -              0%              -
GetAttr Ops:                    0              -              0%              -
SetAttr Ops:                    0              -              0%              -
Lookup Ops:                     2              -            100%              -
Access Ops:                     0              -              0%              -
ReadSymlink Ops:                0              -              0%              -
Read Ops:                       0              -              0%              -
Write Ops:                      0              -              0%              -
Create Ops:                     0              -              0%              -
MkDir Ops:                      0              -              0%              -
Symlink Ops:                    0              -              0%              -
MkNod Ops:                      0              -              0%              -
Remove Ops:                     0              -              0%              -
RmDir Ops:                      0              -              0%              -
Rename Ops:                     0              -              0%              -
Link Ops:                       0              -              0%              -
ReadDir Ops:                    0              -              0%              -
ReadDirPlus Ops:                0              -              0%              -
FsStat Ops:                     0              -              0%              -
FsInfo Ops:                     0              -              0%              -
PathConf Ops:                   0              -              0%              -
Commit Ops:                     0              -              0%              -
Total Ops:                      2              -

Node            Value                  Delta              Percent Ops    Delta
node1           --------------------------    all    ----------------------
Null Ops:                       4              -              7%              -
GetAttr Ops:                   10              -             18%              -
SetAttr Ops:                    2              -              4%              -
Lookup Ops:                     4              -              7%              -
Access Ops:                    14              -             25%              -
ReadSymlink Ops:                0              -              0%              -
Read Ops:                       0              -              0%              -
Write Ops:                      0              -              0%              -
Create Ops:                     2              -              4%              -
MkDir Ops:                      1              -              2%              -
Symlink Ops:                    0              -              0%              -
MkNod Ops:                      0              -              0%              -
Remove Ops:                     1              -              2%              -
RmDir Ops:                      0              -              0%              -
Rename Ops:                     0              -              0%              -
Link Ops:                       0              -              0%              -
ReadDir Ops:                    2              -              4%              -
ReadDirPlus Ops:               10              -             18%              -
FsStat Ops:                     1              -              2%              -
FsInfo Ops:                     5              -              9%              -
```

```
PathConf Ops:              0            -            0%            -
Commit Ops:                0            -            0%            -
Total Ops:                56            -
```

statistics nfs show-v4

Display NFSv4 statistics

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

Description

The `statistics nfs show-v4` command displays the following statistics about the NFSv4 operations on each node in the cluster:

- Result of the operations (success or failure)
- Total number of null operations
- Total number of compound operations
- Total number of access operations
- Total number of close operations
- Total number of commit operations
- Total number of create operations
- Total number of delegpurge operations
- Total number of delegret operations
- Total number of getattr operations
- Total number of getfh operations
- Total number of link operations
- Total number of lock operations
- Total number of lockt operations
- Total number of locku operations
- Total number of lookup operations
- Total number of lookupp operations
- Total number of nverify operations
- Total number of open operations
- Total number of openattr operations
- Total number of openconf operations
- Total number of opendowng operations
- Total number of putfh operations
- Total number of putpubfh operations
- Total number of putrootfh operations
- Total number of read operations

- Total number of readdir operations
- Total number of readlink operations
- Total number of remove operations
- Total number of rename operations
- Total number of renew operations
- Total number of restorefh operations
- Total number of savefh operations
- Total number of secinfo operations
- Total number of setattr operations
- Total number of setcliid operations
- Total number of setcliidconf operations
- Total number of verify operations
- Total number of write operations
- Total number of rellockown operations
- Total number of total operations
- Percent of null operations
- Percent of compound operations
- Percent of access operations
- Percent of close operations
- Percent of commit operations
- Percent of create operations
- Percent of delegpurge operations
- Percent of delegret operations
- Percent of getattr operations
- Percent of getfh operations
- Percent of link operations
- Percent of lock operations
- Percent of lockt operations
- Percent of locku operations
- Percent of lookup operations
- Percent of lookupp operations
- Percent of nverify operations
- Percent of open operations
- Percent of openattr operations
- Percent of openconf operations
- Percent of opendowng operations
- Percent of putfh operations

- Percent of putpubfh operations
- Percent of putrootfh operations
- Percent of read operations
- Percent of readdir operations
- Percent of readlink operations
- Percent of remove operations
- Percent of rename operations
- Percent of renew operations
- Percent of restorefh operations
- Percent of savefh operations
- Percent of secinfo operations
- Percent of setattr operations
- Percent of setcliid operations
- Percent of setCliidconf operations
- Percent of verify operations
- Percent of write operations
- Percent of rellockown operations

This command is designed to be used to analyze performance characteristics and to help diagnose issues.

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

If you specify this parameter, the command displays NFSv4 statistics only for the specified node.

[-result {success|failure|all}] - Result

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified result (success/failure/all).

[-null <Counter with Delta>] - Null Procedure

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of null operations.

[-cmpnd <Counter with Delta>] - Compound Procedure

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of compound operations.

[-access <Counter with Delta>] - Access Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of access operations.

[-close <Counter with Delta>] - Close Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of close operations.

[-commit <Counter with Delta>] - Commit Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of commit operations.

[-create <Counter with Delta>] - Create Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of create operations.

[-delpur <Counter with Delta>] - Delegpurge Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of delegpurge operations.

[-delrtn <Counter with Delta>] - Delegret Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of delegret operations.

[-gattr <Counter with Delta>] - GetAttr Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of getattr operations.

[-getfh <Counter with Delta>] - GetFh Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of getfh operations.

[-link <Counter with Delta>] - Link Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of link operations.

[-lock <Counter with Delta>] - Lock Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of lock operations.

[-lockt <Counter with Delta>] - LockT Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of lockt operations.

[-locku <Counter with Delta>] - LockU Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of locku operations.

[-lookup <Counter with Delta>] - Lookup Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the

specified number of lookup operations.

`[-lookpp <Counter with Delta>]` - LookupP Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of lookupp operations.

`[-nverfy <Counter with Delta>]` - Nverify Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of nverify operations.

`[-open <Counter with Delta>]` - Open Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of open operations.

`[-opattr <Counter with Delta>]` - OpenAttr Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of openattr operations.

`[-opconf <Counter with Delta>]` - OpenConf Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of openconf operations.

`[-opndg <Counter with Delta>]` - OpenDowng Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of opendowng operations.

`[-putfh <Counter with Delta>]` - PutFh Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of putfh operations.

`[-putpfh <Counter with Delta>]` - PutPubFh Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of putpubfh operations.

`[-putrfh <Counter with Delta>]` - PutRootFh Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of putrootfh operations.

`[-read <Counter with Delta>]` - Read Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of read operations.

`[-readdr <Counter with Delta>]` - ReadDir Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of readdir operations.

`[-rlink <Counter with Delta>]` - ReadLink Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of readlink operations.

[-remove <Counter with Delta>] - Remove Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of remove operations.

[-rename <Counter with Delta>] - Rename Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of rename operations.

[-renew <Counter with Delta>] - Renew Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of renew operations.

[-restfh <Counter with Delta>] - RestoreFh Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of restorefh operations.

[-savefh <Counter with Delta>] - SaveFh Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of savefh operations.

[-secinf <Counter with Delta>] - SecInfo Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of secinfo operations.

[-sattr <Counter with Delta>] - SetAttr Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of setattr operations.

[-sclid <Counter with Delta>] - SetClild Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of setcliid operations.

[-scidc <Counter with Delta>] - SetClildConf Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of setcliidconf operations.

[-verify <Counter with Delta>] - Verify Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of verify operations.

[-write <Counter with Delta>] - Write Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of write operations.

[-relown <Counter with Delta>] - RelLockOwn Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified number of rellockown operations.

[-total <Counter64 with Delta>] - Total Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the

specified number of total nfsv4 operations.

[-null-pct <Counter with Delta>] - Percent Null Procedure

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of null operations.

[-cmpnd-pct <Counter with Delta>] - Percent Compound Procedure

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of compound operations.

[-access-pct <Counter with Delta>] - Percent Access Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of access operations.

[-close-pct <Counter with Delta>] - Percent Close Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of close operations.

[-commit-pct <Counter with Delta>] - Percent Commit Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of commit operations.

[-create-pct <Counter with Delta>] - Percent Create Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of create operations.

[-delpur-pct <Counter with Delta>] - Percent Delegpurge Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of delegpurge operations.

[-delrtn-pct <Counter with Delta>] - Percent Delegret Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of delegret operations.

[-gattr-pct <Counter with Delta>] - Percent GetAttr Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of getattr operations.

[-getfh-pct <Counter with Delta>] - Percent GetFh Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of getfh operations.

[-link-pct <Counter with Delta>] - Percent Link Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of link operations.

[-lock-pct <Counter with Delta>] - Percent Lock Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of lock operations.

[-lockt-pct <Counter with Delta>] - Percent LockT Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of lockt operations.

[-locku-pct <Counter with Delta>] - Percent LockU Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of locku operations.

[-lookup-pct <Counter with Delta>] - Percent Lookup Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of lookup operations.

[-lookpp-pct <Counter with Delta>] - Percent LookupP Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of lookupp operations.

[-nverfy-pct <Counter with Delta>] - Percent Nverify Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of nverify operations.

[-open-pct <Counter with Delta>] - Percent Open Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of open operations.

[-opattr-pct <Counter with Delta>] - Percent OpenAttr Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of openattr operations.

[-opconf-pct <Counter with Delta>] - Percent OpenConf Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of openconf operations.

[-opndg-pct <Counter with Delta>] - Percent OpenDowng Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of opendowng operations.

[-putfh-pct <Counter with Delta>] - Percent PutFh Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of putfh operations.

[-putpfh-pct <Counter with Delta>] - Percent PutPubFh Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of putpubfh operations.

[-putrfh-pct <Counter with Delta>] - Percent PutRootFh Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of putrootfh operations.

[-read-pct <Counter with Delta>] - Percent Read Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the

specified percentage of read operations.

[-readdr-pct <Counter with Delta>] - Percent ReadDir Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of readdir operations.

[-rlink-pct <Counter with Delta>] - Percent ReadLink Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of readlink operations.

[-remove-pct <Counter with Delta>] - Percent Remove Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of remove operations.

[-rename-pct <Counter with Delta>] - Percent Rename Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of rename operations.

[-renew-pct <Counter with Delta>] - Percent Renew Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of renew operations.

[-restfh-pct <Counter with Delta>] - Percent RestoreFh Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of restorefh operations.

[-savefh-pct <Counter with Delta>] - Percent SaveFh Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of savefh operations.

[-secinf-pct <Counter with Delta>] - Percent SecInfo Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of secinfo operations.

[-sattr-pct <Counter with Delta>] - Percent SetAttr Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of setattr operations.

[-sclid-pct <Counter with Delta>] - Percent SetCliId Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of setcliid operations.

[-scidc-pct <Counter with Delta>] - Percent SetCliIdConf Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of setcliidconf operations.

[-verify-pct <Counter with Delta>] - Percent Verify Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of verify operations.

[-write-pct <Counter with Delta>] - Percent Write Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of write operations.

[-relown-pct <Counter with Delta>] - Percent RelLockOwn Operations

If you specify this parameter, the command displays statistics only about the node or nodes that have the specified percentage of rellockown operations.

Examples

The following example displays statistics about the NFSv4 operations for a node named node1:

```
cluster1::> statistics nfs show-v4 -node node1

Node                    Value              Delta            Percent Ops    Delta
node1                   --------------------------success----------------------
Null Procs:                     2             -                   1%          -
Cmpnd Procs:                   92             -                               -
Access Ops:                    16             -                   6%          -
Close Ops:                      8             -                   3%          -
Commit Ops:                     0             -                   0%          -
Create Ops:                     0             -                   0%          -
Delpur Ops:                     0             -                   0%          -
Delrtn Ops:                     0             -                   0%          -
Getattr Ops:                   76             -                  27%          -
Getfh Ops:                     22             -                   8%          -
Link Ops:                       0             -                   0%          -
Lock Ops:                       0             -                   0%          -
Lockt Ops:                      0             -                   0%          -
Locku Ops:                      0             -                   0%          -
Lookup Ops:                    13             -                   5%          -
Lookupp Ops:                    0             -                   0%          -
Nverify Ops:                    0             -                   0%          -
Open Ops:                       8             -                   3%          -
Openattr Ops:                   0             -                   0%          -
Openconf Ops:                   0             -                   0%          -
Opendowng Ops:                  0             -                   0%          -
Putfh Ops:                     92             -                  32%          -
Putpubfh Ops:                   0             -                   0%          -
Putrootfh Ops:                  2             -                   1%          -
Read Ops:                       0             -                   0%          -
Readdir Ops:                    2             -                   1%          -
Readlink Ops:                   0             -                   0%          -
Remove Ops:                     5             -                   2%          -
Rename Ops:                     3             -                   1%          -
Renew Ops:                      0             -                   0%          -
Restorefh Ops:                 11             -                   4%          -
```

```
Savefh Ops:                   13              -                 5%               -
Secinfo Ops:                   0              -                 0%               -
Setattr Ops:                   8              -                 3%               -
Setclid Ops:                   1              -                 0%               -
Setclidconf Ops:               1              -                 0%               -
Verify Ops:                    0              -                 0%               -
Write Ops:                     3              -                 1%               -
Rlockown Ops:                  0              -                 0%               -
Total Ops:                   286              -
Node              Value              Delta          Percent Ops   Delta
node1             -------------------------failure-----------------------
Null Procs:                    0              -                 0%               -
Cmpnd Procs:                   0              -                                  -
Access Ops:                    0              -                 0%               -
Close Ops:                     0              -                 0%               -
Commit Ops:                    0              -                 0%               -
Create Ops:                    0              -                 0%               -
Delpur Ops:                    0              -                 0%               -
Delrtn Ops:                    0              -                 0%               -
Getattr Ops:                   0              -                 0%               -
Getfh Ops:                     0              -                 0%               -
Link Ops:                      0              -                 0%               -
Lock Ops:                      0              -                 0%               -
Lockt Ops:                     0              -                 0%               -
Locku Ops:                     0              -                 0%               -
Lookup Ops:                    5              -                63%               -
Lookupp Ops:                   0              -                 0%               -
Nverify Ops:                   0              -                 0%               -
Open Ops:                      2              -                25%               -
Openattr Ops:                  0              -                 0%               -
Openconf Ops:                  0              -                 0%               -
Opendowng Ops:                 0              -                 0%               -
Putfh Ops:                     0              -                 0%               -
Putpubfh Ops:                  0              -                 0%               -
Putrootfh Ops:                 0              -                 0%               -
Read Ops:                      0              -                 0%               -
Readdir Ops:                   0              -                 0%               -
Readlink Ops:                  0              -                 0%               -
Remove Ops:                    0              -                 0%               -
Rename Ops:                    0              -                 0%               -
Renew Ops:                     0              -                 0%               -
Restorefh Ops:                 0              -                 0%               -
Savefh Ops:                    0              -                 0%               -
Secinfo Ops:                   0              -                 0%               -
Setattr Ops:                   1              -                13%               -
Setclid Ops:                   0              -                 0%               -
```

```
Setclidconf Ops:               0            -              0%            -
Verify Ops:                    0            -              0%            -
Write Ops:                     0            -              0%            -
Rlockown Ops:                  0            -              0%            -
Total Ops:                     8            -
Node                Value            Delta          Percent Ops   Delta
node1              -------------------------- all ----------------------
Null Procs:                    2            -              1%            -
Cmpnd Procs:                  92            -                            -
Access Ops:                   16            -              5%            -
Close Ops:                     8            -              3%            -
Commit Ops:                    0            -              0%            -
Create Ops:                    0            -              0%            -
Delpur Ops:                    0            -              0%            -
Delrtn Ops:                    0            -              0%            -
Getattr Ops:                  76            -             26%            -
Getfh Ops:                    22            -              7%            -
Link Ops:                      0            -              0%            -
Lock Ops:                      0            -              0%            -
Lockt Ops:                     0            -              0%            -
Locku Ops:                     0            -              0%            -
Lookup Ops:                   18            -              6%            -
Lookupp Ops:                   0            -              0%            -
Nverify Ops:                   0            -              0%            -
Open Ops:                     10            -              3%            -
Openattr Ops:                  0            -              0%            -
Openconf Ops:                  0            -              0%            -
Opendowng Ops:                 0            -              0%            -
Putfh Ops:                    92            -             31%            -
Putpubfh Ops:                  0            -              0%            -
Putrootfh Ops:                 2            -              1%            -
Read Ops:                      0            -              0%            -
Readdir Ops:                   2            -              1%            -
Readlink Ops:                  0            -              0%            -
Remove Ops:                    5            -              2%            -
Rename Ops:                    3            -              1%            -
Renew Ops:                     0            -              0%            -
Restorefh Ops:                11            -              4%            -
Savefh Ops:                   13            -              4%            -
Secinfo Ops:                   0            -              0%            -
Setattr Ops:                   9            -              3%            -
Setclid Ops:                   1            -              0%            -
Setclidconf Ops:               1            -              0%            -
Verify Ops:                    0            -              0%            -
Write Ops:                     3            -              1%            -
Rlockown Ops:                  0            -              0%            -
```

```
   Total Ops:                    294              -
```

statistics node commands

statistics node show

System utilization metrics for each node in the cluster

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

Description

This command continuously displays performance data for nodes at a regular interval. The command output displays data in the following columns:

- Node - node name.
- CPU (%) - CPU utilization.
- Total Ops - total number of operations per second.
- Latency(ms) - average latency for an operation in milliseconds.

Parameters

`[-node {<nodename>|local}]` - Node

   Selects the node for which you want to display performance data.

`[-sort-key <text>]` - Column to Sort By

   If this parameter is specified, the command displays statistics sorted by the specified column.

`-interval <integer>` - Interval

   Specifies, in seconds, the interval between statistics updates. The default setting is 5 seconds.

`-iterations <integer>` - Iterations

   Specifies the number of iterations the command runs before terminating. The default setting is 1. If the number is 0 (zero), the command continues to run until you interrupt it by pressing Ctrl-C.

`-max <integer>` - Maximum Number of Instances

   Specifies the maximum number of aggregates to display. The default setting is 25.

Examples

The following example displays node statistics:

```
cluster1::> statistics node show
cluster1 : 12/31/2013 16:00:04

       CPU *Total  Latency
  Node (%)     Ops    (ms)
  ----- --- ------ -------
  node2  76    113       -
  node1  58     10       -

[...]
```

statistics oncrpc commands

statistics oncrpc show-rpc-calls

Display ONC RPC Call Statistics

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

Description

(i)   This command is deprecated and will be removed in a future major release.

The `statistics oncrpc show-rpc-calls` command displays information about the Open Network Computing Remote Procedure Call (ONC RPC) calls performed by the nodes of a cluster.

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 (privilege: advanced)
Use this parameter to display information only about the RPC calls performed by the node you specify.

[-protocol {TCP|UDP}] - Transport Protocol (privilege: advanced)
Use this parameter to display information only about the RPC calls performed using the network protocol you specify.

[-badproc <Counter with Delta>] - Bad Procedure Calls (privilege: advanced)
Use this parameter to display information only about the RPC calls that have the number of bad procedure calls you specify. Bad procedure calls are RPC requests that contain invalid procedure numbers and cannot be completed.

[-badlen <Counter with Delta>] - Bad Length Calls (privilege: advanced)

Use this parameter to display information only about the RPC calls that have the number of bad length calls you specify.

[-badhdr <Counter with Delta>] - Bad Header Calls (privilege: advanced)

Use this parameter to display information only about the RPC calls that have the number of bad header calls you specify.

[-badcalls <Counter with Delta>] - Bad Calls (privilege: advanced)

Use this parameter to display information only about the RPC calls that have the number of bad calls you specify.

[-badprogcalls <Counter with Delta>] - Bad Program Calls (privilege: advanced)

Use this parameter to display information only about the RPC calls that have the number of bad program calls you specify.

[-calls <Counter64 with Delta>] - Total Calls (privilege: advanced)

Use this parameter to display information only about the RPC calls that have the total number of bad calls you specify.

Examples

```
cluster1::> statistics oncrpc show-rpc-calls

Node                 Value              Delta
node1            ------------tcp-------------
Bad Proc:                   0              -
Bad Len:                    0              -
Bad Hdr:                    0              -
Bad Calls:                  0              -
Bad Prog Calls:             0              -
Total Calls:                0              -

Node                 Value              Delta
node1            ------------udp-------------
Bad Proc:                   0              -
Bad Len:                    0              -
Bad Hdr:                    0              -
Bad Calls:                  0              -
Bad Prog Calls:             0              -
Total Calls:                0              -

Node                 Value              Delta
node2            ------------tcp-------------
Bad Proc:                   0              -
Bad Len:                    0              -
Bad Hdr:                    0              -
Bad Calls:                  0              -
Bad Prog Calls:             0              -
Total Calls:                0              -

Node                 Value              Delta
node2            ------------udp-------------
Bad Proc:                   0              -
Bad Len:                    0              -
Bad Hdr:                    0              -
Bad Calls:                  0              -
Bad Prog Calls:             0              -
Total Calls:                0              -
4 entries were displayed.
```

statistics port commands

statistics port fcp show

FCP port interface throughput and latency metrics

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

Description

This command continuously displays performance data for FCP ports at a regular interval. The command output displays data in the following columns:

- Port - port name.
- Read Ops - read operations per second.
- Write Ops - write operations per second.
- Other Ops - other operations per second.

Parameters

`[-port <text>]` - Port
  Selects the port for which you want to display performance data.

`[-sort-key <text>]` - Column to Sort By
  If this parameter is specified, the command displays statistics sorted by the specified column.

`-interval <integer>` - Interval
  Specifies, in seconds, the interval between statistics updates. The default setting is 5 seconds.

`-iterations <integer>` - Iterations
  Specifies the number of iterations the command runs before terminating. The default setting is 1. If the number is 0 (zero), the command continues to run until you interrupt it by pressing Ctrl-C.

`-max <integer>` - Maximum Number of Instances
  Specifies the maximum number of ports to display. The default setting is 25.

Examples

The following example displays port statistics:

```
cluster1::> statistics port fcp  show
cluster1 : 12/31/2013 16:00:04

       *Total Read Write
 Port     Ops  Ops   Ops
 ----- ------ ---- -----
 port1      2    2     0
 port2      3    0     3

 [...]
```

statistics preset commands

statistics preset delete

Delete an existing Performance Preset

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

Description

Deletes a performance preset configuration and all of its associated details.

Parameters

-preset <text> - Preset Name (privilege: advanced)
 Specifies the name of the performance presets that you want to delete.

Examples

```
cluster1::*> statistics preset show
        Preset Name: asup-event
        Preset UUID: 55c03699-01db-11e2-8e3e-123478563412
            Comment: The event-based AutoSupport Data ONTAP Performance
Archive
                     preset configuration. This preset configuration is
used
                     whenever an event-based AutoSupport is triggered.
          Privilege: diagnostic
          Read-Only: true
     Archive Enabled: false
      Generation ID: 0
Preset Name: asup-hourly
        Preset UUID: 56178a2a-01db-11e2-8e3e-123478563412
            Comment: The hourly AutoSupport Data ONTAP Performance Archive
                     preset configuration. This preset configuration is
used by
                     the hourly AutoSupport collection events.
          Privilege: diagnostic
          Read-Only: true
     Archive Enabled: true
      Generation ID: 0
Preset Name: default
        Preset UUID: 55ac6297-01db-11e2-8e3e-123478563412
            Comment: The default Data ONTAP Performance Archive preset
                     configuration. This preset configuration includes
                     essential counters to assist in general
troubleshooting of
```

```
                           system performance.
          Privilege: diagnostic
          Read-Only: true
    Archive Enabled: true
      Generation ID: 0
Preset Name: diagnostic
        Preset UUID: 561db291-01db-11e2-8e3e-123478563412
            Comment: The diagnostic Data ONTAP Performance Archive preset
                     configuration. This preset configuration includes more
                     counters at faster sample periods than the default
                     configuration to assist in troubleshooting abnormal
                     system performance.
          Privilege: diagnostic
          Read-Only: true
    Archive Enabled: false
      Generation ID: 0
Preset Name: foo
        Preset UUID: 7a04f19d-02a7-11e2-8e40-123478563412
            Comment: Test preset
          Privilege: diagnostic
          Read-Only: false
    Archive Enabled: false
      Generation ID: 0

5 entries were displayed.

cluster1::*> statistics preset delete -preset foo

cluster1::*> statistics preset show
        Preset Name: asup-event
        Preset UUID: 55c03699-01db-11e2-8e3e-123478563412
            Comment: The event-based AutoSupport Data ONTAP Performance
Archive
                     preset configuration. This preset configuration is
used
                     whenever an event-based AutoSupport is triggered.
          Privilege: diagnostic
          Read-Only: true
    Archive Enabled: false
      Generation ID: 0
Preset Name: asup-hourly
        Preset UUID: 56178a2a-01db-11e2-8e3e-123478563412
            Comment: The hourly AutoSupport Data ONTAP Performance Archive
                     preset configuration. This preset configuration is
used by
                     the hourly AutoSupport collection events.
```

```
              Privilege: diagnostic
              Read-Only: true
        Archive Enabled: true
          Generation ID: 0
Preset Name: default
            Preset UUID: 55ac6297-01db-11e2-8e3e-123478563412
                Comment: The default Data ONTAP Performance Archive preset
                         configuration. This preset configuration includes
                         essential counters to assist in general
troubleshooting of
                         system performance.
              Privilege: diagnostic
              Read-Only: true
        Archive Enabled: true
          Generation ID: 0
Preset Name: diagnostic
            Preset UUID: 561db291-01db-11e2-8e3e-123478563412
                Comment: The diagnostic Data ONTAP Performance Archive preset
                         configuration. This preset configuration includes more
                         counters at faster sample periods than the default
                         configuration to assist in troubleshooting abnormal
                         system performance.
              Privilege: diagnostic
              Read-Only: true
        Archive Enabled: false
          Generation ID: 0

4 entries were displayed.
```

statistics preset modify

Modify an existing Performance Preset

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

Description

Modifies an existing performance preset configuration. The command modifies the global properties of a preset, but does not modify the details of the preset, such as specific objects and counters sampled.

Parameters

`-preset <text>` - Preset Name (privilege: advanced)

Name of the performance preset to be modified.

`[-new-name <text>]` - New Preset Name (privilege: advanced)

Set preset name to the given new name.

[-comment <text>] - Preset Description (privilege: advanced)

Set comment to the given value.

[-privilege <PrivilegeLevel>] - Preset Privilege Level (privilege: advanced)

Set privilege level at which this preset can be viewed or modified to the given value. Possible values: admin, advanced, diagnostic.

Examples

```
cluster1::*> statistics preset show
        Preset Name: delta
        Preset UUID: 7a04f19d-02a7-11e2-8e40-123478563412
            Comment: custom preset description
          Privilege: diagnostic
          Read-Only: false
   Archive Enabled: false
      Generation ID: 0

1 entry was displayed.

cluster1::*> statistics preset modify -preset delta -comment "new comment"

cluster1::*> statistics preset show
        Preset Name: delta
        Preset UUID: 7a04f19d-02a7-11e2-8e40-123478563412
            Comment: new comment
          Privilege: diagnostic
          Read-Only: false
   Archive Enabled: false
      Generation ID: 0

1 entry was displayed.
```

statistics preset show

Display information about Performance Presets

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

Description

Displays information about performance preset configurations.

Parameters

{ [-fields <fieldname>,…]

Selects which performance preset attributes to display.

`| [-instance ] }`

Shows details of all attributes of performance preset configuration.

`[-preset <text>] - Preset Name (privilege: advanced)`

Selects the performance presets that match the specified preset name.

`[-comment <text>] - Preset Description (privilege: advanced)`

Selects the performance presets that match the specified comment.

`[-privilege <PrivilegeLevel>] - Preset Privilege Level (privilege: advanced)`

Selects the performance presets that are available with the specified privilege.

`[-is-read-only {true|false}] - Is Preset Read-Only? (privilege: advanced)`

Selects the performance presets that are read-only (true) or are not read-only (false). Read-only presets cannot be modified.

`[-store <text>] - Name of Store Where Data is Saved (privilege: advanced)`

Selects the store where data is saved.

Examples

```
cluster1::*> statistics preset show
Preset Name          Privilege  Read-Only Comment
------------------- ---------- ---------
---------------------------------------
aggregate_overview  admin       true      This preset configuration is used
by
                                          statistics aggregate show
command.
object.
                                          Provides overview of aggregate
disk_overview       advanced    true      This preset configuration is used
by
                                          statistics disk show command.
                                          Provides overview of disk object.
fcp_port_overview   admin       true      This preset configuration is used
by
                                          statistics port fcp show command.
                                          Provides overview of fcp port
object.
flash_pool_overview admin       true      This preset configuration is used
by
                                          statistics cache flash-pool show
                                          command. Provides overview of
flash
                                          pool object.
[...]
```

statistics preset detail show

Display information about Performance Preset Details

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

Description

Displays the specific details of each preset, including the objects sampled, the counter sample periods, and the counters sampled.

Parameters

{ [-fields <fieldname>,…]

Selects which performance preset detail attributes to display.

| [-instance] }

Displays all of the performance preset detail attributes.

[-preset <text>] - Preset Name (privilege: advanced)

Selects the performance preset details that match the specified preset name.

[-object <text>] - Performance Object (privilege: advanced)

Selects the performance preset details that match the specified object name.

[-sample-period <sample_period>] - Archive Sample period (privilege: advanced)

Selects the performance preset details that are collected at the specified sample period.

[-counter-set <text>,…] - Performance Counter Name Set (privilege: advanced)

Selects the performance preset details that match the specified counters in the counter set. Use "|" to separate multiple counters.

[-instance-filters <text>,…] - Performance Instance Filters (privilege: advanced)

Selects the performance preset details that match the specified instance filters. Use "|" to separate multiple instance filters. This field is reserved for future use.

Examples

```
cluster1::*> statistics preset detail show
                         Sample Counter          Instance
Preset Name Object       Period Set              Filters
----------- ------------ ------ --------------
-------------------------------
asup-event  aggregate    1w     instance_name, -
                                node_name,
                                process_name,
                                parent_host,
                                total_
                                transfers,
                                user_reads,
                                user_writes,
                                cp_reads,
                                user_read_
                                blocks,
                                user_write_
                                blocks,
                                cp_read_
                                blocks,
                                wv_fsid,
                                wv_vol_type,
                                wv_fsinfo_fs_
                                version,
                                wv_volinfo_fs_
                                options,
 . . .
```

statistics qtree commands

statistics qtree show

Qtree I/O operation rates

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

Description

This command continuously displays performance data for qtrees at a regular interval. The command output displays data in the following columns:

- Qtree - Qtree name.
- Vserver - Vserver name.
- Volume - Volume name.
- NFS Ops - NFS operations per second.
- CIFS Ops - CIFS operations per second.
- Internal Ops - Internal operations per second.
- Total Ops - Total number of operations per second.

Parameters

`[-qtree <text>]` **- Qtree**

Selects the qtree for which you want to display performance data. The qtree name has to be given in the format "vol_name/qtree_name"

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

Selects the Vserver for which you want to display performance data.

`[-volume <text>]` **- Volume**

Selects the volume for which you want to display performance data.

`[-sort-key <text>]` **- Column to Sort By**

If this parameter is specified, the command displays statistics sorted by the specified column.

`-interval <integer>` **- Interval**

Specifies, in seconds, the interval between statistics updates. The default setting is 5 seconds.

`-iterations <integer>` **- Iterations**

Specifies the number of iterations the command runs before terminating. The default setting is 1. If the number is 0 (zero), the command continues to run until you interrupt it by pressing Ctrl-C.

`-max <integer>` **- Maximum Number of Instances**

Specifies the maximum number of qtrees to display. The default setting is 25.

Examples

The following example displays qtree statistics:

```
C1_sti20-vsim-ucs429g_1520278254::> statistics qtree show
C1_sti20-vsim-ucs429g_1520278254 : 3/14/2018 15:40:46
NFS CIFS Internal *Total
      Qtree Vserver  Volume ops  ops      ops    ops
----------- ------- ------- --- ---- -------- ------
flexvol/qt1     vs0 flexvol   7    0        0      7
 dp_vol/qt9     vs0  dp_vol   7    0        0      7
 dp_vol/qt8     vs0  dp_vol   7    0        0      7
[...]
```

statistics samples commands

statistics samples delete

Delete statistics samples

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

Description

This command deletes samples that you created using the statistics start command.

Parameters

-vserver <vserver name> - Vserver (privilege: advanced)
   Selects the Vserver for which you want to delete the sample. The default Vserver is admin Vserver.

-sample-id <text> - Sample Identifier (privilege: advanced)
   Specifies the sample that you want to delete. This is a required parameter.

Examples

The following example deletes the sample "smpl_1":

```
cluster1::*> statistics samples delete -sample-id smpl_1
```

Related Links

• statistics start

statistics samples show

Display statistics samples

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

Description

This command displays information about the samples that you created using the statistics start command.

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.

| [-describe] (privilege: advanced) }

Displays detailed information about each sample.

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

Selects the samples that match this parameter value. If you omit this parameter, the command displays details for all samples.

[-sample-id <text>] - Sample Identifier (privilege: advanced)

Selects the samples that match this parameter value. If you do not specify this parameter, the command will display information about all the samples in the cluster.

Examples

The following example displays information for sample "smpl_1":

```
cluster1::*> statistics samples show -sample-id smpl_1
Vserver           Sample ID            Start Time      Stop Time      Status
---------------- -------------------- -------------- --------------
----------
  cluster-d1       smpl_1                09/13 18:06:46 -              Ready
```

The following example displays detailed information for sample "smpl_1":

```
cluster1::*> statistics samples show -sample-id smpl_1 -describe
Vserver: vs1
 Sample ID: smpl_1
    Object: processor
  Instance: -
   Counter: -
Start Time: 09/13 18:06:46
 Stop Time: -
    Status: Ready        - -
 Privilege: admin
```

statistics settings commands

statistics settings modify

Modify settings for the statistics commands

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

Description

This command modifies the settings for all of the `statistics` commands.

Parameters

`[-display-rates {true|false}]` - Display Rates (privilege: advanced)

Specifies whether the `statistics` commands display rate counters in rates/second. The default is true.

`[-client-stats {enabled|disabled}]` - Collect Per-Client Statistics (privilege: advanced)

Specifies whether `statistics` commands display per-client information. The default is disabled.

> (i)   If you enable this setting, you might significantly impact system performance.

`[-counter-display-units {B|KB|MB|GB}]` - Counter Display Units (privilege: advanced)

Specifies display units for the counters. The default setting is MB.

`[-display-count-exponent <integer>]` - Display Count Exponent (privilege: advanced)

Specifies display exponent value for the counters representing counts. The default setting is 3 (thousand).

Examples

The following example sets the value of the `-display-rates` parameter to false :

```
cluster1::*> statistics settings modify -display-rates false
```

statistics settings show

Display settings for the statistics commands

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

Description

This command displays the current settings for all of the `statistics` commands.

Examples

The following example displays the current settings for all `statistics` commands:

```
cluster1::*> statistics settings show
Display rate Counters in rate/sec: true

Counter Display: full
Counter Display Units: MB
Display Count Exponent: 3
```

statistics system commands

statistics system show

System utilization metrics for the cluster

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

Description

This command continuously displays performance data for cluster at a regular interval. The command output displays data in the following columns:

- System - cluster name.
- CPU (%) - CPU utilization.
- Total Ops - total number of operations per second.
- Latency(ms) - average latency for an operation in milliseconds.

Parameters

`[-system <text>]` - System

Selects the cluster for which you want to display performance data.

`[-sort-key <text>]` - Column to Sort By

If this parameter is specified, the command displays statistics sorted by the specified column.

`-interval <integer>` - Interval

Specifies, in seconds, the interval between statistics updates. The default setting is 5 seconds.

`-iterations <integer>` - Iterations

Specifies the number of iterations the command runs before terminating. The default setting is 1. If the number is 0 (zero), the command continues to run until you interrupt it by pressing Ctrl-C.

`-max <integer>` - Maximum Number of Instances

Specifies the maximum number of systems to display. The default setting is 25.

Examples

The following example displays system statistics:

```
cluster1::> statistics system show
cluster1 : 12/31/2013 16:00:04

        CPU *Total Latency
  System (%)    Ops    (ms)
 ------- --- ------ -------
 Cluster  76    113      -

[...]
```

statistics top commands

statistics top client show

Most active NFS and CIFS clients

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

Description

This command continuously displays performance data for the top NFS and CIFS clients at a regular interval. The command output displays data in the following columns:

- Client - client name.
- Vserver - vserver name.
- Node - node name.
- Total Ops - total number of operations per second.
- Total (Bps) - total throughput in bytes per second.

Parameters

[-node {<nodename>|local}] - Node

Selects the node for which you want to display performance data.

[-sort-key <text>] - Column to Sort By

If this parameter is specified, the command displays statistics sorted by the specified column.

-interval <integer> - Interval

Specifies, in seconds, the interval between statistics updates. The default setting is 5 seconds.

-iterations <integer> - Iterations

Specifies the number of iterations the command runs before terminating. The default setting is 1. If the number is 0 (zero), the command continues to run until you interrupt it by pressing Ctrl-C.

`-max <integer>` - Maximum Number of Instances

Specifies maximum number of top clients to display. The default setting is 10.

Examples

The following example displays top client statistics:

```
cluster1::> statistics top client show
cluster-1 : 12/31/1969 16:00:04
*Total Total
           Client   Vserver         Node    Ops  (Bps)
------------------ --------- ------------- ------ -----
 172.17.236.53:938 vserver01 cluster-node2      9     80
172.17.236.160:898 vserver02 cluster-node1      6     50

[...]
```

statistics top file show

Most actively accessed files

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

Description

This command continuously displays performance data for top files at a regular interval. The command output displays data in the following columns:

- File - file name.
- Volume - volume name.
- Vserver - vserver name.
- Aggregate - aggregate name.
- Node - node name.
- Total Ops - total number of operations per second.
- Total (Bps) - total throughput in bytes per second.

Parameters

`[-node {<nodename>|local}]` - Node

Selects the node for which you want to display performance data.

`[-sort-key <text>]` - Column to Sort By

If this parameter is specified, the command displays statistics sorted by the specified column.

`-interval <integer>` - Interval

Specifies, in seconds, the interval between statistics updates. The default setting is 5 seconds.

`-iterations <integer>` - Iterations

    Specifies the number of iterations the command runs before terminating. The default setting is 1. If the number is 0 (zero), the command continues to run until you interrupt it by pressing Ctrl-C.

`-max <integer>` - Maximum Number of Instances

    Specifies maximum number of top files to display. The default setting is 10.

Examples

The following example displays top files statistics:

```
cluster1::> statistics top file show
cluster-1 : 12/31/1969 16:00:04


                                                          *Total
Total
                    File   Volume    Vserver Aggregate          Node    Ops
(Bps)
-------------------- -------  --------- --------- ------------- ------
-----
/vol/vol01/clus/cache   vol01  vserver01      aggr1 cluster-node2      9
80
          /vol/vol02   vol02  vserver02      aggr2 cluster-node1      6
50

[...]
```

statistics volume commands

statistics volume show

Volume throughput and latency metrics

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

Description

This command continuously displays performance data for volumes at a regular interval. The command output displays data in the following columns:

- Volume - volume name.
- Vserver - vserver name.
- Aggregate - aggregate name.
- Total Ops - total number of operations per second.
- Read Ops - read operations per second.
- Write Ops - write operations per second.

- Other Ops - other operations per second.
- Read (Bps) - read throughput in bytes per second.
- Write (Bps) - write throughput in bytes per second.
- Latency(us) - average latency for an operation in microseconds.

Parameters

`[-volume <text>]` **- Volume**

Selects the volume for which you want to display performance data.

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

Selects the vserver for which you want to display performance data.

`[-aggregate <text>]` **- Aggregate**

Selects the aggregate for which you want to display performance data.

`[-sort-key <text>]` **- Column to Sort By**

If this parameter is specified, the command displays statistics sorted by the specified column.

`-interval <integer>` **- Interval**

Specifies, in seconds, the interval between statistics updates. The default setting is 5 seconds.

`-iterations <integer>` **- Iterations**

Specifies the number of iterations the command runs before terminating. The default setting is 1. If the number is 0 (zero), the command continues to run until you interrupt it by pressing Ctrl-C.

`-max <integer>` **- Maximum Number of Instances**

Specifies the maximum number of volumes to display. The default setting is 25.

Examples

The following example displays volume statistics:

```
cluster1::> statistics volume show
cluster1 : 12/31/2013 16:00:04

                        *Total Read Write Other   Read Write Latency
 Volume Vserver Aggregate   Ops  Ops   Ops   Ops  (Bps) (Bps)    (us)
 ------ ------- --------- ------ ---- ----- ----- ------ ----- -------
   vol0       -     aggr0     58   13    15    29 310585  3014      39
   vol0       -   aggr0_n0     56    0    11    45   8192 28826      47
[...]
```

statistics vserver commands

statistics vserver show

Vserver throughput and latency metrics

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

Description

This command continuously displays performance data for Vservers at a regular interval. The command output displays data in the following columns:

- Vserver - Vserver name.
- Total Ops - total number of operations per second.
- Read Ops - read operations per second.
- Write Ops - write operations per second.
- Other Ops - other operations per second.
- Read (Bps) - read throughput in bytes per second.
- Write (Bps) - write throughput in bytes per second.
- Latency(us) - average latency for an operation in microseconds.

Parameters

`[-vserver <vserver name>]` - Vserver

Selects the vserver for which you want to display performance data.

`[-sort-key <text>]` - Column to Sort By

If this parameter is specified, the command displays statistics sorted by the specified column.

`-interval <integer>` - Interval

Specifies, in seconds, the interval between statistics updates. The default setting is 5 seconds.

`-iterations <integer>` - Iterations

Specifies the number of iterations the command runs before terminating. The default setting is 1. If the number is 0 (zero), the command continues to run until you interrupt it by pressing Ctrl-C.

`-max <integer>` - Maximum Number of Instances

Specifies the maximum number of Vservers to display. The default setting is 25.

Examples

The following example displays Vserver statistics:

```
cluster1::> statistics vserver show
cluster1 : 12/31/2013 16:00:04

        *Total Read Write Other   Read Write Latency
 Vserver    Ops  Ops   Ops   Ops  (Bps) (Bps)    (us)
 -------  ------ ---- ----- ----- ------ ----- -------
     vs1      58   13    15    29 310585  3014      39
     vs2      56    0    11    45   8192 28826      47

[...]
```

statistics workload commands

statistics workload show

QoS workload throughput and latency metrics

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

Description

This command continuously displays performance data for workloads at a regular interval. The command output displays data in the following columns:

- Workload - workload name.
- Total Ops - total number of operations per second.
- Read Ops - read operations per second.
- Write Ops - write operations per second.
- Other Ops - other operations per second.
- Read (Bps) - read throughput in bytes per second.
- Write (Bps) - write throughput in bytes per second.
- Latency(us) - average latency for an operation in microseconds.

Parameters

`[-workload <text>]` - Workload (privilege: advanced)
    Selects the workload for which you want to display performance data.

`[-sort-key <text>]` - Column to Sort By (privilege: advanced)
    If this parameter is specified, the command displays statistics sorted by the specified column.

`-interval <integer>` - Interval (privilege: advanced)
    Specifies, in seconds, the interval between statistics updates. The default setting is 5 seconds.

`-iterations <integer>` - Iterations (privilege: advanced)

Specifies the number of iterations the command runs before terminating. The default setting is 1. If the number is 0 (zero), the command continues to run until you interrupt it by pressing Ctrl-C.

`-max <integer>` - Maximum Number of Instances (privilege: advanced)

Specifies the maximum number of workloads to display. The default setting is 25.

Examples

The following example displays workload statistics:

```
cluster1::> statistics workload show
cluster1 : 12/31/2013 16:00:04

                *Total Read Write Other   Read Write Latency
       Workload    Ops  Ops   Ops   Ops  (Bps) (Bps)    (us)
--------------- ------ ---- ----- ----- ------ ----- -------
 _USERSPACE_APPS    30    1     3     0  30765  8553       0
     _WAFL_SCAN     20    0     0     0      0     0       0
       _WAFL_CP      0    0     0     0      0     0       -

[...]
```