



# **storage automated-working-set-analyzer commands**

## Command reference

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# Table of Contents

storage automated-working-set-analyzer commands .....	1
storage automated-working-set-analyzer show .....	1
Description .....	1
Parameters .....	1
Examples .....	3
storage automated-working-set-analyzer start .....	3
Description .....	4
Parameters .....	4
Examples .....	4
storage automated-working-set-analyzer stop .....	4
Description .....	4
Parameters .....	4
Examples .....	5
storage automated-working-set-analyzer volume show .....	5
Description .....	5
Parameters .....	5
Examples .....	6

# storage automated-working-set-analyzer commands

## storage automated-working-set-analyzer show

Display running instances

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

### Description

The automated-working-set-analyzer show command displays the Automated Working-set Analyzer running instances.

### Parameters

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

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

**| [-instance ] (privilege: advanced) }**

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

**[-node <nodename>] - Node Name (privilege: advanced)**

This parameter indicates the node name that the AWA instance runs on.

**[-flash-cache {true|false}] - Flash Cache Node-wide Modeling (privilege: advanced)**

This parameter indicates whether the AWA is modeling flash-cache.

**[-aggregate-uuid <UUID>] - Uuid of the Aggregate (privilege: advanced)**

This parameter indicates the aggregate uuid that the AWA instance runs on.

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

This parameter indicates the aggregate name that the AWA instance runs on.

**[-working-set-size {true|false}] - Working Set Size (privilege: advanced)**

This parameter indicates whether the AWA instance is configured to find the working set size.

**[-start-time <Date>] - Starting Time (privilege: advanced)**

This parameter indicates the time when the AWA instance was started.

**[-total-intervals <integer>] - Total Interval Count (privilege: advanced)**

This parameter indicates the total number of intervals that the AWA instance has covered.

**[-read-throughput {<integer>[Bps|KBps|MBps|GBps]}] - Read Throughput (privilege: advanced)**

This parameter indicates the maximum read throughput over an interval that AWA has observed from the storage disks.

**[-write-throughput {<integer>[Bps | KBps | MBps | GBps]}] - Write Throughput (privilege: advanced)**

This parameter indicates the maximum write throughput over an interval that AWA has observed to the storage disks

**[-cacheable-read <percent>] - Cacheable Read (privilege: advanced)**

This parameter indicates the maximum percent of cacheable read over an interval that AWA has observed. Cacheable reads are non-sequential reads, i.e., the percentage of data reads that could have been cached.

**[-cacheable-write <percent>] - Cacheable Write (privilege: advanced)**

This parameter indicates the maximum percent of cacheable write over an interval that AWA has observed. Cacheable writes are random overwrites, percentage of disk writes that could have been cached.

**[-projected-cache-size {<integer>[KB | MB | GB | TB | PB]}] - Max Projected Cache Size (privilege: advanced)**

This parameter indicates the projected Flash Pool cache usage.

**[-projected-read-hit <percent>] - Projected Read Hit (privilege: advanced)**

This parameter indicates the percentage of blocks that could be read from the Flash Pool cache instead of HDDs.

**[-projected-write-hit <percent>] - Projected Write Hit (privilege: advanced)**

This parameter indicates the percentage of block overwrites that could go to the Flash Pool cache instead of HDDs.

**[-referenced-interval-id <integer>] - Referenced Interval ID (privilege: advanced)**

This parameter indicates the interval in which the cache size effect information is derived from.

**[-referenced-interval-time <Date>] - Referenced Interval Time (privilege: advanced)**

This parameter indicates the time when the referenced interval for the cache size effect information is derived from.

**[-referenced-interval-cache-size {<integer>[KB | MB | GB | TB | PB]}] - Referenced Interval Cache Size (privilege: advanced)**

This parameter indicates the cache size at the end of the referenced interval from which the cache size effect information is based on.

**[-read-hit-20 <percent>] - 20% Cache Read Hit (privilege: advanced)**

This parameter indicates the predicted read hit rate when the cache size is 20% of the referenced cache size.

**[-read-hit-40 <percent>] - 40% Cache Read Hit (privilege: advanced)**

This parameter indicates the predicted read hit rate when the cache size is 40% of the referenced cache size.

**[-read-hit-60 <percent>] - 60% Cache Read Hit (privilege: advanced)**

This parameter indicates the predicted read hit rate when the cache size is 60% of the referenced cache size.

**[-read-hit-80 <percent>] - 80% Cache Read Hit (privilege: advanced)**

This parameter indicates the predicted read hit rate when the cache size is 80% of the referenced cache size.

**[-read-hit-100 <percent>] - 100% Cache Read Hit (privilege: advanced)**

This parameter indicates the predicted read hit rate when the cache size is 100% of the referenced cache size.

**[-write-hit-20 <percent>] - 20% Cache Write Hit (privilege: advanced)**

This parameter indicates the predicted write hit rate when the cache size is 20% of the referenced cache size.

**[-write-hit-40 <percent>] - 40% Cache Write Hit (privilege: advanced)**

This parameter indicates the predicted write hit rate when the cache size is 40% of the referenced cache size.

**[-write-hit-60 <percent>] - 60% Cache Write Hit (privilege: advanced)**

This parameter indicates the predicted write hit rate when the cache size is 60% of the referenced cache size.

**[-write-hit-80 <percent>] - 80% Cache Write Hit (privilege: advanced)**

This parameter indicates the predicted write hit rate when the cache size is 80% of the referenced cache size.

**[-write-hit-100 <percent>] - 100% Cache Write Hit (privilege: advanced)**

This parameter indicates the predicted write hit rate when the cache size is 100% of the referenced cache size.

**[-num-intervals-show <integer>] - Number of intervals to show (privilege: advanced)**

This parameter indicates the number of intervals to the past this command is showing.

## Examples

The following example shows a running instance of automated-working-set-analyzer on node *node1* for aggregate *aggr0*.

```
cluster1::> cluster-1::> storage automated-working-set-analyzer show
Node          FC      Aggregate      wss      Intervals Start Time
-----  -----  -----  -----  -----
node1        false    aggr0        false      125 Wed Jul 22 13:58:17
2015
```

## storage automated-working-set-analyzer start

Command to start Automated Working Set Analyzer on node or aggregate

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

## Description

The automated-working-set-analyzer start command enables the Automated Workload Analyzer that is capable of doing the following:

- Flash Pool modeling for an aggregate
- Flash Cache modeling for a node - can not specify an aggregate.
- Working set size estimation
- Workload monitoring

## Parameters

**-node <nodename> - Node Name (privilege: advanced)**

This parameter indicates the node name that the AWA instance runs on.

**[-flash-cache {true|false}] - Flash Cache Node-wide Modeling (privilege: advanced)**

This parameter indicates whether the AWA is modeling flash-cache.

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

This parameter indicates the aggregate name that the AWA instance runs on.

**[-working-set-size {true|false}] - Working Set Size (privilege: advanced)**

This parameter indicates whether the AWA instance is configured to find the working set size.

## Examples

```
cluster1::> storage automated-working-set-analyzer start -node vsim1  
-aggregate aggr0
```

## storage automated-working-set-analyzer stop

Command to stop Automated Working Set Analyzer on node or aggregate

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

## Description

The storage automated-working-set-analyzer stop command terminates one or multiple Automated Workload Analyzer running instances.

## Parameters

**-node <nodename> - Node Name (privilege: advanced)**

This parameter indicates the node name that the AWA instance runs on.

**[-flash-cache {true|false}] - Flash cache node-wide modeling (privilege: advanced)**

This parameter indicates whether the AWA is modeling flash-cache.

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

This parameter indicates the aggregate name that the AWA instance runs on.

## **Examples**

```
cluster1::> storage automated-working-set-analyzer stop -node vsim1  
-aggregate aggr1
```

## **storage automated-working-set-analyzer volume show**

Displays the Automated Working Set Analyzer volume table

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

## **Description**

The automated-working-set-analyzer volume show command displays the volume statistics reported by the corresponding Automated Working-set Analyzer running instances.

## **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 ] (privilege: advanced) }**

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

### **[-node <nodename>] - Node (privilege: advanced)**

This parameter indicates the node name that the AWA instance runs on.

### **[-flash-cache {true|false}] - Flash Cache Node-wide Modeling (privilege: advanced)**

This parameter indicates whether the AWA is modeling flash-cache.

### **[-vol-uuid <UUID>] - Uuid of the Volume (privilege: advanced)**

This parameter indicates the volume uuid that this command is issued on.

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

This parameter indicates the aggregate name that the AWA instance runs on.

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

This parameter indicates the volume name that this command is issued on.

### **[-rank <integer>] - Cache Benefit Rank (privilege: advanced)**

This parameter indicates the rank of this volume among all volumes that would be most benefited by the modeled cache technology based on the AWA prediction.

**[-read-throughput {<integer>[Bps | KBps | MBps | GBps]}] - Read Throughput (privilege: advanced)**

This parameter indicates the maximum read throughput over an interval that AWA has observed from the storage disks for this volume.

**[-write-throughput {<integer>[Bps | KBps | MBps | GBps]}] - Write Throughput (privilege: advanced)**

This parameter indicates the maximum write throughput over an interval that AWA has observed to the storage disks for this volume.

**[-cacheable-read <percent>] - Cacheable Read (privilege: advanced)**

This parameter indicates the maximum percent of cacheable read over an interval that AWA has observed for this volume. Cacheable reads are non-sequential reads, i.e., the percentage of data reads that could have been cached.

**[-cacheable-write <percent>] - Cacheable Write (privilege: advanced)**

This parameter indicates the maximum percent of cacheable write over an interval that AWA has observed. Cacheable writes are random overwrites, percentage of disk writes that could have been cached.

**[-projected-cache-size {<integer>[KB | MB | GB | TB | PB]}] - Max Projected Cache Size (privilege: advanced)**

This parameter indicates the projected Flash Pool cache usage by this volume.

**[-projected-read-hit <percent>] - Projected Read Hit (privilege: advanced)**

This parameter indicates the percentage of blocks that could be read from the Flash Pool cache instead of HDDs for this volume.

**[-projected-write-hit <percent>] - Projected Write Hit (privilege: advanced)**

This parameter indicates the percentage of block overwrites that could go to the Flash Pool cache instead of HDDs for this volume.

**[-num-intervals-show <integer>] - Number of intervals to show (privilege: advanced)**

This parameter indicates the number of intervals to the past this command is showing.

## Examples

```
cluster1::> cluster-1::*> storage automated-working-set-analyzer volume
show
Node          FC      Aggregate    Volume      Rank  Read Thrupt Write
Thrput
-----
-----
vsim1        false  aggr0        vol0          1    230.47KBps
580.09KBps
```

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