



statistics-v1 commands

ONTAP 9.5 commands

NetApp
November 11, 2022

Table of Contents

- statistics-v1 commands 1
- statistics-v1 nfs commands 1
- statistics-v1 protocol-request-size commands 28

statistics-v1 commands

statistics-v1 nfs commands

statistics-v1 nfs show-mount

Display mount statistics

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

Description

The `statistics-v1 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

If you specify this parameter, the command displays 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.

[-mount <Counter with Delta>] - Mount Operations

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

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

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

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

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

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

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

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-v1 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-v1 nfs show-nlm

(DEPRECATED)-Display NLM statistics

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

Description

The `statistics-v1 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.



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

If you specify this parameter, the command displays 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.

[-test <Counter with Delta>] - Test Operations

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

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

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

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

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

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

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

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

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

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-v1 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 show](#)

statistics-v1 nfs show-statusmon

Display status monitor statistics

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

Description

The `statistics-v1 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

If you specify this parameter, the command displays 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.

[-stat <Counter with Delta>] - Stat Operations

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

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

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

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

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

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

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-v1 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-v1 nfs show-v3

Display NFSv3 statistics

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

Description

The `statistics-v1 nfs show-v3` command displays the following statistics about the NFSv3 operations on each node in the cluster:

- 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.

[-symlink-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.

[-rmdir-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-v1 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-v1 nfs show-v4

Display NFSv4 statistics

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

Description

The `statistics-v1 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>] - Delepurge Operations

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

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

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

[-nverify <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.

[-opattn <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.

[-putpubfh <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.

[-readdir <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>] - SetClid 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>] - SetClidConf 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 Deleypurge Operations

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

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

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

[-nverify-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.

[-opatrr-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.

[-putpfb-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 readdr 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 SetClid Operations

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

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

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

[-relovn-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 relockown operations.

Examples

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

```
cluster1::> statistics-v1 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%	-
Opendingg 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%	-

statistics-v1 protocol-request-size commands

statistics-v1 protocol-request-size show

Display size statistics for CIFS and NFS protocol read and write requests

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

Description

This command displays size statistics for CIFS and NFS protocol read and write requests. The output of the command includes the following information:

- Node name
- Statistic type
- Average size of request
- Total request count
- Current number of requests in each category of request size
- Number of requests after the command was last executed

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 this parameter is specified, the command displays statistics only for the specified node.

[-stat-type <Protocol Type>] - RW Request Stat Type

If this parameter is specified, the command displays only the statistics of the specified protocol type. Protocol types include the following: `cifs_read`, `cifs_write`, `nfs2_read`, `nfs2_write`, `nfs3_read`, and `nfs3_write`.

[-total-req-count <Counter64 with Delta>] - Total Request Count

If this parameter is specified, the command displays only statistics with the specified total number of requests.

[-average-size <Counter64 with Delta>] - Average Request Size

If this parameter is specified, the command displays only statistics with the specified average request size.

[-histo08 <Counter64 with Delta>] - 0 - 511

If this parameter is specified, the command displays only statistics with the specified number of requests in

this size range.

[-histo09 <Counter64 with Delta>] - 512 - 1023

If this parameter is specified, the command displays only statistics with the specified number of requests in this size range.

[-histo10 <Counter64 with Delta>] - 1024 - 2047

If this parameter is specified, the command displays only statistics with the specified number of requests in this size range.

[-histo11 <Counter64 with Delta>] - 2048 - 4096

If this parameter is specified, the command displays only statistics with the specified number of requests in this size range.

[-histo12 <Counter64 with Delta>] - 4096 - 8191

If this parameter is specified, the command displays only statistics with the specified number of requests in this size range.

[-histo13 <Counter64 with Delta>] - 8192 - 16K

If this parameter is specified, the command displays only statistics with the specified number of requests in this size range.

[-histo14 <Counter64 with Delta>] - 16K - 32K

If this parameter is specified, the command displays only statistics with the specified number of requests in this size range.

[-histo15 <Counter64 with Delta>] - 32K - 64K

If this parameter is specified, the command displays only statistics with the specified number of requests in this size range.

[-histo16 <Counter64 with Delta>] - 64K - 128K

If this parameter is specified, the command displays only statistics with the specified number of requests in this size range.

[-histo17 <Counter64 with Delta>] - Greater than 128K

If this parameter is specified, the command displays only statistics with the specified number of requests in this size range.

Examples

The following example displays the number of NFS v3 requests in each size range for only one node in the cluster.

```
cluster1::> statistics protocol-request-size show -stat-type nfs3_* -node
node0
```

```
Node:                node0
Stat Type:           nfs3_read
Value                Delta
-----
Average Size:                6          -
Total Request Count:
465947409                  -
0-511:                      567023    -
512-1023:                   4306     -
1K-2047:                     175      -
2K-4095:                    160404   -
4K-8191:                    537576   -
8K-16383:                   1742701  -
16K-32767:                  1418620  -
32K-65535:
461516604                  -
64K-131071:                  0         -
128K - :                     0         -
```

```
Node:                node0
Stat Type:           nfs3_write
Value                Delta
-----
Average Size:                0          -
Total Request Count:
199294247                  -
0-511:                      36556    -
512-1023:                   3683     -
1K-2047:                     745      -
2K-4095:                    1413     -
4K-8191:                    28643    -
8K-16383:
199223207                  -
16K-32767:                  0         -
32K-65535:                  0         -
64K-131071:                 0         -
128K - :                     0         -
```


Copyright information

Copyright © 2022 NetApp, Inc. All Rights Reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means—graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system—without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP "AS IS" AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

Trademark information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.