



# **Use statistics to monitor Hyper-V and SQL Server over SMB activity**

**ONTAP 9**

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# Use statistics to monitor Hyper-V and SQL Server over SMB activity

## Determine which statistics objects and counters are available

Before you can obtain information about CIFS, SMB, auditing, and BranchCache hash statistics and monitor performance, you must know which objects and counters are available from which you can obtain data.

### Steps

1. Set the privilege level to advanced:

```
set -privilege advanced
```

2. Perform one of the following actions:

| If you want to determine...         | Enter...   |
|-------------------------------------|--|
| Which objects are available         | <code>statistics catalog object show</code>                            |
| Specific objects that are available | <code>statistics catalog object show object <i>object_name</i></code>  |
| Which counters are available        | <code>statistics catalog counter show object <i>object_name</i></code> |

See the man pages for more information about which objects and counters are available.

3. Return to the admin privilege level:

```
set -privilege admin
```

### Examples

The following command displays descriptions of selected statistic objects related to CIFS and SMB access in the cluster as seen at the advanced privilege level:

```
cluster1::> set -privilege advanced
```

Warning: These advanced commands are potentially dangerous; use them only when directed to do so by support personnel.

Do you want to continue? {y|n}: y

```
cluster1::*> statistics catalog object show -object audit
      audit_ng          CM object for exporting audit_ng
performance counters
```

```
cluster1::*> statistics catalog object show -object cifs
      cifs              The CIFS object reports activity of the
                        Common Internet File System protocol
                        ...
```

```
cluster1::*> statistics catalog object show -object nblade_cifs
      nblade_cifs       The Common Internet File System (CIFS)
                        protocol is an implementation of the
Server
                        ...
```

```
cluster1::*> statistics catalog object show -object smb1
      smb1              These counters report activity from the
SMB
                        revision of the protocol. For information
                        ...
```

```
cluster1::*> statistics catalog object show -object smb2
      smb2              These counters report activity from the
                        SMB2/SMB3 revision of the protocol. For
                        ...
```

```
cluster1::*> statistics catalog object show -object hashd
      hashd             The hashd object provides counters to
measure
                        the performance of the BranchCache hash
daemon.
```

```
cluster1::*> set -privilege admin
```

The following command displays information about some of the counters for the `cifs` object as seen at the advanced privilege level:



This example does not display all of the available counters for the `cifs` object; output is truncated.

```
cluster1::> set -privilege advanced
```

Warning: These advanced commands are potentially dangerous; use them only when directed to do so by support personnel.

Do you want to continue? {y|n}: y

```
cluster1::*> statistics catalog counter show -object cifs
```

Object: cifs

| Counter              | Description  |
|----------------------|--|
| active_searches      | Number of active searches over SMB and SMB2                                  |
| auth_reject_too_many | Authentication refused after too many requests were made in rapid succession |
| avg_directory_depth  | Average number of directories crossed by SMB and SMB2 path-based commands    |
| ...                  | ...  |

```
cluster2::> statistics start -object client -sample-id
```

Object: client

| Counter              | Value                   |
|----------------------|-------------------------|
| cifs_ops             | 0                       |
| cifs_read_ops        | 0                       |
| cifs_read_recv_ops   | 0                       |
| cifs_read_recv_size  | 0B                      |
| cifs_read_size       | 0B                      |
| cifs_write_ops       | 0                       |
| cifs_write_recv_ops  | 0                       |
| cifs_write_recv_size | 0B                      |
| cifs_write_size      | 0B                      |
| instance_name        | vserver_1:10.72.205.179 |
| instance_uuid        | 2:10.72.205.179         |
| local_ops            | 0                       |
| mount_ops            | 0                       |

[...]

# Display SMB statistics

You can display various SMB statistics to monitor performance and diagnose issues.

## Steps

1. Use the `statistics start` and optional `statistics stop` commands to collect a data sample.
2. Perform one of the following actions:

| If you want to display statistics for... | Enter the following command...                   |
|--|--|
| All versions of SMB                      | <code>statistics show -object cifs</code>        |
| SMB 1.0                                  | <code>statistics show -object smb1</code>        |
| SMB 2.x and SMB 3.0                      | <code>statistics show -object smb2</code>        |
| SMB subsystem of the node                | <code>statistics show -object nblade_cifs</code> |

Learn more about the `statistics` commands:

- [statistics show](#)
- [statistics start](#)
- [statistics stop](#)

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