



Monitor SMB activity

ONTAP 9

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Monitor SMB activity

Display ONTAP SMB session information

You can display information about established SMB sessions, including the SMB connection and session ID and the IP address of the workstation using the session. You can display information about the session's SMB protocol version and continuously available protection level, which helps you identify whether the session supports nondisruptive operations.

About this task

You can display information for all of the sessions on your SVM in summary form. However, in many cases, the amount of output that is returned is large. You can customize what information is displayed in the output by specifying optional parameters:

- You can use the optional `-fields` parameter to display output about the fields you choose.

You can enter `-fields ?` to determine what fields you can use.

- You can use the `-instance` parameter to display detailed information about established SMB sessions.
- You can use the `-fields` parameter or the `-instance` parameter either alone or in combination with other optional parameters.

Step

1. Perform one of the following actions:

| If you want to display SMB session information... | Enter the following command... |
|---|--|
| For all sessions on the SVM in summary form | <code>vserver cifs session show -vserver vserver_name</code> |
| On a specified connection ID | <code>vserver cifs session show -vserver vserver_name -connection-id integer</code> |
| From a specified workstation IP address | <code>vserver cifs session show -vserver vserver_name -address workstation_IP_address</code> |
| On a specified LIF IP address | <code>vserver cifs session show -vserver vserver_name -lif-address LIF_IP_address</code> |
| On a specified node | <code>vserver cifs session show -vserver vserver_name -node {node_name local}</code> |

| If you want to display SMB session information... | Enter the following command... |
|---|--|
| From a specified Windows user | <pre>vserver cifs session show -vserver vserver_name -windows-user domain_name\\user_name</pre> |
| With a specified authentication mechanism | <pre>vserver cifs session show -vserver vserver_name -auth-mechanism {NTLMv1 NTLMv2 Kerberos Anonymous}</pre> |
| With a specified protocol version | <pre>vserver cifs session show -vserver vserver_name -protocol-version {SMB1 SMB2 SMB2_1 SMB3 SMB3_1}</pre> <div style="display: flex; align-items: center;"> <p>Continuously available protection and SMB Multichannel are available only on SMB 3.0 and later sessions. To view their status on all qualifying sessions, you should specify this parameter with the value set to SMB3 or later.</p> </div> |
| With a specified level of continuously available protection | <pre>vserver cifs session show -vserver vserver_name -continuously-available {No Yes Partial}</pre> <div style="display: flex; align-items: center;"> <p>If the continuously available status is Partial, this means that the session contains at least one open continuously available file, but the session has some files that are not open with continuously available protection. You can use the vserver cifs sessions file show command to determine which files on the established session are not open with continuously available protection.</p> </div> |
| With a specified SMB signing session status | <pre>vserver cifs session show -vserver vserver_name -is-session-signed {true false}</pre> |

Examples

The following command displays session information for the sessions on SVM vs1 established from a workstation with IP address 10.1.1.1:

```
cluster1::> vserver cifs session show -address 10.1.1.1
Node:      node1
Vserver:   vs1
Connection Session
ID          ID      Workstation      Windows User      Open      Idle
-----  -----  -----
3151272279,
3151272280,
3151272281  1      10.1.1.1        DOMAIN\joe      2          23s
```

The following command displays detailed session information for sessions with continuously available protection on SVM vs1. The connection was made by using the domain account.

```
cluster1::> vserver cifs session show -instance -continuously-available
Yes

          Node: node1
          Vserver: vs1
          Session ID: 1
          Connection ID: 3151274158
Incoming Data LIF IP Address: 10.2.1.1
          Workstation IP address: 10.1.1.2
          Authentication Mechanism: Kerberos
          Windows User: DOMAIN\SERVER1$
          UNIX User: pcuser
          Open Shares: 1
          Open Files: 1
          Open Other: 0
          Connected Time: 10m 43s
          Idle Time: 1m 19s
          Protocol Version: SMB3
Continuously Available: Yes
          Is Session Signed: false
          User Authenticated as: domain-user
          NetBIOS Name: -
          SMB Encryption Status: Unencrypted
```

The following command displays session information on a session using SMB 3.0 and SMB Multichannel on SVM vs1. In the example, the user connected to this share from an SMB 3.0 capable client by using the LIF IP address; therefore, the authentication mechanism defaulted to NTLMv2. The connection must be made by using Kerberos authentication to connect with continuously available protection.

```
cluster1::> vserver cifs session show -instance -protocol-version SMB3

        Node: node1
        Vserver: vs1
        Session ID: 1
        **Connection IDs: 3151272607,31512726078,3151272609
        Connection Count: 3**
Incoming Data LIF IP Address: 10.2.1.2
        Workstation IP address: 10.1.1.3
        Authentication Mechanism: NTLMv2
                Windows User: DOMAIN\administrator
                UNIX User: pcuser
        Open Shares: 1
        Open Files: 0
        Open Other: 0
        Connected Time: 6m 22s
        Idle Time: 5m 42s
        Protocol Version: SMB3
        Continuously Available: No
        Is Session Signed: false
        User Authenticated as: domain-user
        NetBIOS Name: -
        SMB Encryption Status: Unencrypted
```

Related information

[Displaying information about open SMB files](#)

Display information about open ONTAP SMB files

You can display information about open SMB files, including the SMB connection and session ID, the hosting volume, the share name, and the share path. You can display information about a file's continuously available protection level, which is helpful in determining whether an open file is in a state that supports nondisruptive operations.

About this task

You can display information about open files on an established SMB session. The displayed information is useful when you need to determine SMB session information for particular files within an SMB session.

For example, if you have an SMB session where some of the open files are open with continuously available protection and some are not open with continuously available protection (the value for the `-continuously-available` field in `vserver cifs session show` command output is `Partial`), you can determine which files are not continuously available by using this command.

You can display information for all open files on established SMB sessions on storage virtual machines (SVMs) in summary form by using the `vserver cifs session file show` command without any optional parameters.

However, in many cases, the amount of output returned is large. You can customize what information is displayed in the output by specifying optional parameters. This can be helpful when you want to view information for only a small subset of open files.

- You can use the optional `-fields` parameter to display output on the fields you choose.

You can use this parameter either alone or in combination with other optional parameters.

- You can use the `-instance` parameter to display detailed information about open SMB files.

You can use this parameter either alone or in combination with other optional parameters.

Step

1. Perform one of the following actions:

| If you want to display open SMB files... | Enter the following command... |
|---|--|
| On the SVM in summary form | <code>vserver cifs session file show -vserver vserver_name</code> |
| On a specified node | <code>vserver cifs session file show -vserver vserver_name -node {node_name local}</code> |
| On a specified file ID | <code>vserver cifs session file show -vserver vserver_name -file-id integer</code> |
| On a specified SMB connection ID | <code>vserver cifs session file show -vserver vserver_name -connection-id integer</code> |
| On a specified SMB session ID | <code>vserver cifs session file show -vserver vserver_name -session-id integer</code> |
| On the specified hosting aggregate | <code>vserver cifs session file show -vserver vserver_name -hosting -aggregate aggregate_name</code> |
| On the specified volume | <code>vserver cifs session file show -vserver vserver_name -hosting-volume volume_name</code> |
| On the specified SMB share | <code>vserver cifs session file show -vserver vserver_name -share share_name</code> |

| If you want to display open SMB files... | Enter the following command... |
|---|---|
| On the specified SMB path | <pre>vserver cifs session file show -vserver vserver_name -path path</pre> |
| With the specified level of continuously available protection | <pre>vserver cifs session file show -vserver vserver_name -continuously -available {No Yes}</pre> <p> If the continuously available status is No, this means that these open files are not capable of nondisruptively recovering from takeover and giveback. They also cannot recover from general aggregate relocation between partners in a high-availability relationship.</p> |
| With the specified reconnected state | <pre>vserver cifs session file show -vserver vserver_name -reconnected {No Yes}</pre> <p> If the reconnected state is No, the open file is not reconnected after a disconnection event. This can mean that the file was never disconnected, or that the file was disconnected and is not successfully reconnected. If the reconnected state is Yes, this means that the open file is successfully reconnected after a disconnection event.</p> |

There are additional optional parameters that you can use to refine the output results. Learn more about `vserver cifs session file show` in the [ONTAP command reference](#).

Examples

The following example displays information about open files on SVM vs1:

```
cluster1::> vserver cifs session file show -vserver vs1
Node:      node1
Vserver:   vs1
Connection: 3151274158
Session:   1
File      File      Open Hosting          Continuously
ID        Type      Mode Volume      Share      Available
-----  -----  -----  -----  -----
41       Regular    r     data       data      Yes
Path: \mytest.rtf
```

The following example displays detailed information about open SMB files with file ID 82 on SVM vs1:

```
cluster1::> vserver cifs session file show -vserver vs1 -file-id 82
-instance

          Node: node1
          Vserver: vs1
          File ID: 82
          Connection ID: 104617
          Session ID: 1
          File Type: Regular
          Open Mode: rw
Aggregate Hosting File: aggr1
          Volume Hosting File: data1
          CIFS Share: data1
          Path from CIFS Share: windows\win8\test\test.txt
          Share Mode: rw
          Range Locks: 1
Continuously Available: Yes
          Reconnected: No
```

Related information

[Display session information](#)

Determine which statistics, objects, and counters are available on ONTAP SMB servers

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 | statistics catalog object show |
| Specific objects that are available | statistics catalog object show -object object_name |
| Which counters are available | statistics catalog counter show -object object_name |

Learn more about `statistics catalog object show`, including which objects and counters are available, in the [ONTAP command reference](#).

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     vsserver_1:10.72.205.179
  instance_uuid      2:10.72.205.179
  local_ops          0
  mount_ops          0

  ...

```

Related information

- [Display statistics](#)
- [statistics catalog counter show object](#)

- [statistics start](#)

Display ONTAP SMB statistics

You can display various statistics, including statistics about CIFS and SMB, auditing, and BranchCache hashes, to monitor performance and diagnose issues.

Before you begin

You must have collected data samples by using the `statistics start` and `statistics stop` commands before you can display information about objects.

Learn more about `statistics start` and `statistics stop` in the [ONTAP command reference](#).

Steps

1. Set the privilege level to advanced: `set -privilege advanced`
2. Perform one of the following actions:

| If you want to display statistics for... | Enter... |
|--|--|
| 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> |
| CIFS subsystem of the node | <code>statistics show -object nblade_cifs</code> |
| Multiprotocol audit | <code>statistics show -object audit_ng</code> |
| BranchCache hash service | <code>statistics show -object hashd</code> |
| Dynamic DNS | <code>statistics show -object ddns_update</code> |

Learn more about `statistics show` in the [ONTAP command reference](#).

3. Return to the admin privilege level: `set -privilege admin`

Related information

- [Determine which statistics, objects, and counters are available on servers](#)
- [Monitoring SMB signed session statistics](#)
- [Display BranchCache statistics](#)
- [Use statistics to monitor automatic node referral activity](#)
- [SMB configuration for Microsoft Hyper-V and SQL Server](#)
- [Performance monitoring setup](#)

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