



# **Display cluster connections**

ONTAP 9

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# Display cluster connections

You can display all the active connections in the cluster or a count of active connections on the node by client, logical interface, protocol, or service. You can also display all the listening connections in the cluster.

## Display active connections by client (cluster administrators only)

You can view the active connections by client to verify the node that a specific client is using and to view possible imbalances between client counts per node.

### About this task

The count of active connections by client is useful in the following scenarios:

- Finding a busy or overloaded node.
- Determining why a particular client's access to a volume is slow.

You can view details about the node that the client is accessing and then compare it with the node on which the volume resides. If accessing the volume requires traversing the cluster network, clients might experience decreased performance because of the remote access to the volume on an oversubscribed remote node.

- Verifying that all nodes are being used equally for data access.
- Finding clients that have an unexpectedly high number of connections.
- Verifying whether certain clients have connections to a node.

### Step

Display a count of the active connections by client on a node by using the `network connections active show-clients` command.

For more information about this command, see the man page: [ONTAP 9 commands](#)

```

network connections active show-clients
Node      Vserver Name      Client IP Address      Count
-----
node0     vs0                192.0.2.253            1
          vs0                192.0.2.252            2
          Cluster        192.10.2.124           5
node1     vs0                192.0.2.250            1
          vs0                192.0.2.252            3
          Cluster        192.10.2.123           4
node2     vs1                customer.example.com    1
          vs1                192.0.2.245            3
          Cluster        192.10.2.122           4
node3     vs1                customer.example.org    1
          vs1                customer.example.net    3
          Cluster        192.10.2.121           4

```

## Display active connections by protocol (cluster administrators only)

You can display a count of the active connections by protocol (TCP or UDP) on a node to compare the usage of protocols within the cluster.

### About this task

The count of active connections by protocol is useful in the following scenarios:

- Finding the UDP clients that are losing their connection.

If a node is near its connection limit, UDP clients are the first to be dropped.

- Verifying that no other protocols are being used.

### Step

Display a count of the active connections by protocol on a node by using the `network connections active show-protocols` command.

For more information about this command, see the man page.

```

network connections active show-protocols
Node      Vserver Name  Protocol  Count
-----
node0
      vs0      UDP      19
      Cluster  TCP      11
node1
      vs0      UDP      17
      Cluster  TCP      8
node2
      vs1      UDP      14
      Cluster  TCP      10
node3
      vs1      UDP      18
      Cluster  TCP      4

```

## Display active connections by service (cluster administrators only)

You can display a count of the active connections by service type (for example, by NFS, SMB, mount, and so on) for each node in a cluster. This is useful to compare the usage of services within the cluster, which helps to determine the primary workload of a node.

### About this task

The count of active connections by service is useful in the following scenarios:

- Verifying that all nodes are being used for the appropriate services and that the load balancing for that service is working.
- Verifying that no other services are being used. Display a count of the active connections by service on a node by using the `network connections active show-services` command.

For more information about this command, see the man page: [ONTAP 9 commands](#)

```

network connections active show-services
Node      Vserver Name      Service      Count
-----
node0
      vs0          mount         3
      vs0          nfs           14
      vs0          nlm_v4        4
      vs0          cifs_srv      3
      vs0          port_map      18
      vs0          rclopcp       27
      Cluster      ctlopcp       60
node1
      vs0          cifs_srv      3
      vs0          rclopcp       16
      Cluster      ctlopcp       60
node2
      vs1          rclopcp       13
      Cluster      ctlopcp       60
node3
      vs1          cifs_srv      1
      vs1          rclopcp       17
      Cluster      ctlopcp       60

```

## Display active connections by LIF on a node and SVM

You can display a count of active connections for each LIF, by node and storage virtual machine (SVM), to view connection imbalances between LIFs within the cluster.

### About this task

The count of active connections by LIF is useful in the following scenarios:

- Finding an overloaded LIF by comparing the number of connections on each LIF.
- Verifying that DNS load balancing is working for all data LIFs.
- Comparing the number of connections to the various SVMs to find the SVMs that are used the most.

### Step

Display a count of active connections for each LIF by SVM and node by using the `network connections active show-lifs` command.

For more information about this command, see the man page: [ONTAP 9 commands](#)

```
network connections active show-lifs
Node      Vserver Name  Interface Name  Count
-----
node0
    vs0        datalif1        3
    Cluster    node0_clus_1    6
    Cluster    node0_clus_2    5
node1
    vs0        datalif2        3
    Cluster    node1_clus_1    3
    Cluster    node1_clus_2    5
node2
    vs1        datalif2        1
    Cluster    node2_clus_1    5
    Cluster    node2_clus_2    3
node3
    vs1        datalif1        1
    Cluster    node3_clus_1    2
    Cluster    node3_clus_2    2
```

## Display active connections in a cluster

You can display information about the active connections in a cluster to view the LIF, port, remote host, service, storage virtual machines (SVMs), and protocol used by individual connections.

### About this task

Viewing the active connections in a cluster is useful in the following scenarios:

- Verifying that individual clients are using the correct protocol and service on the correct node.
- If a client is having trouble accessing data using a certain combination of node, protocol, and service, you can use this command to find a similar client for configuration or packet trace comparison.

### Step

Display the active connections in a cluster by using the `network connections active show` command.

For more information about this command, see the man page: [ONTAP 9 commands](#)

The following command shows the active connections on the node node1:

```
network connections active show -node node1
```

Vserver	Interface	Remote	
Name	Name:Local Port	Host:Port	Protocol/Service
-----	-----	-----	-----
Node: node1			
Cluster	node1_clus_1:50297	192.0.2.253:7700	TCP/ctlopcp
Cluster	node1_clus_1:13387	192.0.2.253:7700	TCP/ctlopcp
Cluster	node1_clus_1:8340	192.0.2.252:7700	TCP/ctlopcp
Cluster	node1_clus_1:42766	192.0.2.252:7700	TCP/ctlopcp
Cluster	node1_clus_1:36119	192.0.2.250:7700	TCP/ctlopcp
vs1	data1:111	host1.aa.com:10741	UDP/port-map
vs3	data2:111	host1.aa.com:10741	UDP/port-map
vs1	data1:111	host1.aa.com:12017	UDP/port-map
vs3	data2:111	host1.aa.com:12017	UDP/port-map

The following command shows the active connections on SVM vs1:

```
network connections active show -vserver vs1
```

Vserver	Interface	Remote	
Name	Name:Local Port	Host:Port	Protocol/Service
-----	-----	-----	-----
Node: node1			
vs1	data1:111	host1.aa.com:10741	UDP/port-map
vs1	data1:111	host1.aa.com:12017	UDP/port-map

## Display listening connections in a cluster

You can display information about the listening connections in a cluster to view the LIFs and ports that are accepting connections for a given protocol and service.

### About this task

Viewing the listening connections in a cluster is useful in the following scenarios:

- Verifying that the desired protocol or service is listening on a LIF if client connections to that LIF fail consistently.
- Verifying that a UDP/rclopcp listener is opened at each cluster LIF if remote data access to a volume on one node through a LIF on another node fails.
- Verifying that a UDP/rclopcp listener is opened at each cluster LIF if SnapMirror transfers between two nodes in the same cluster fail.
- Verifying that a TCP/ctlopcp listener is opened at each intercluster LIF if SnapMirror transfers between two nodes in different clusters fail.

### Step

Display the listening connections per node by using the `network connections listening show` command.



network connections listening show

Vserver Name	Interface Name:Local Port	Protocol/Service
-----	-----	-----
Node: node0		
Cluster	node0_clus_1:7700	TCP/ctlopcp
vs1	data1:4049	UDP/unknown
vs1	data1:111	TCP/port-map
vs1	data1:111	UDP/port-map
vs1	data1:4046	TCP/sm
vs1	data1:4046	UDP/sm
vs1	data1:4045	TCP/nlm-v4
vs1	data1:4045	UDP/nlm-v4
vs1	data1:2049	TCP/nfs
vs1	data1:2049	UDP/nfs
vs1	data1:635	TCP/mount
vs1	data1:635	UDP/mount
Cluster	node0_clus_2:7700	TCP/ctlopcp

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