



## Get started

### ONTAP 9

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# Get started

## Network management overview

You can use the following information to perform basic storage network administration using System Manager or the CLI. You can configure physical and virtual network ports (VLANs and interface groups), create LIFs using IPv4 and IPv6, manage routing and host-resolution services in clusters, use load balancing to optimize network traffic, and monitor a cluster using SNMP.

Unless otherwise stated, the CLI procedures apply to all versions of ONTAP 9.

To understand the impact of network features available with each ONTAP 9 release, see the [ONTAP Release Notes](#).

Beginning with ONTAP 9.8, you can use System Manager to display a graphic that shows the components and configuration of your network. Beginning with ONTAP 9.12, you can view the LIF and subnet association on the Network Interfaces grid. If you are using classic System Manager (available only in ONTAP 9.7 and earlier), see [Managing the network](#).

The new network visualization feature enables users to see the network connections path across hosts, ports, SVMs, volumes, etc. in a graphical interface.

The graphic displays when you select **Network > Overview** or when you select  from the **Network** section of the Dashboard.


The following categories of components are shown in the graphic:

- Hosts
- Storage ports
- Network interfaces
- Storage VMs
- Data access components

Each section shows additional details that you can hover your mouse over or select to perform network management and configuration tasks.

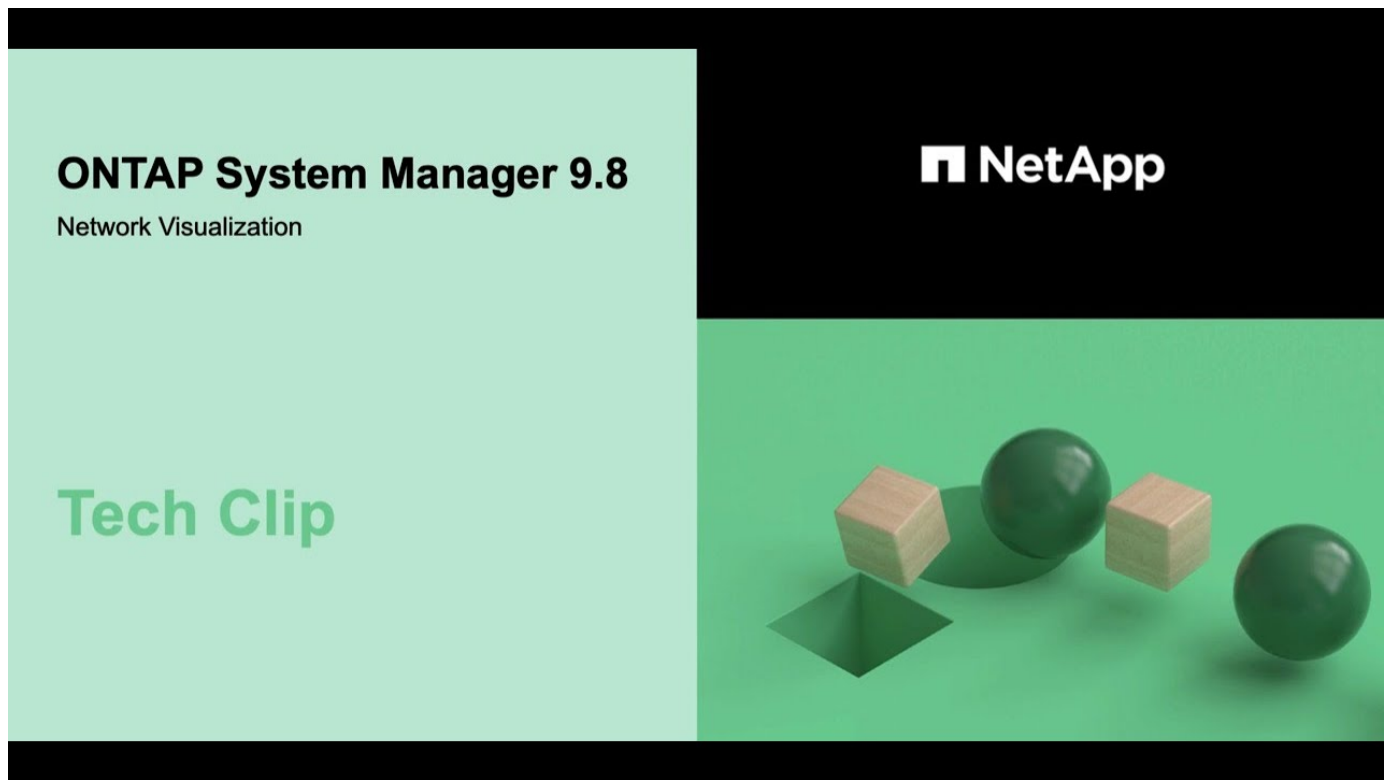
## Examples

The following are some examples of the many ways you can interact with the graphic to view details about each component or initiate actions to manage your network:

- Click on a host to see its configuration: the ports, network interfaces, storage VMs, and data access components associated with it.
- Hover the mouse over the number of volumes in a storage VM to select a volume to view its details.
- Select an iSCSI interface to view its performance over the last week.
- Click on  next to a component to initiate actions to modify that component.
- Quickly determine where problems might occur in your network, indicated by an "X" next to unhealthy

components.

## System Manager Network Visualization video



## Verify your networking configuration after an ONTAP upgrade from ONTAP 9.7x or earlier

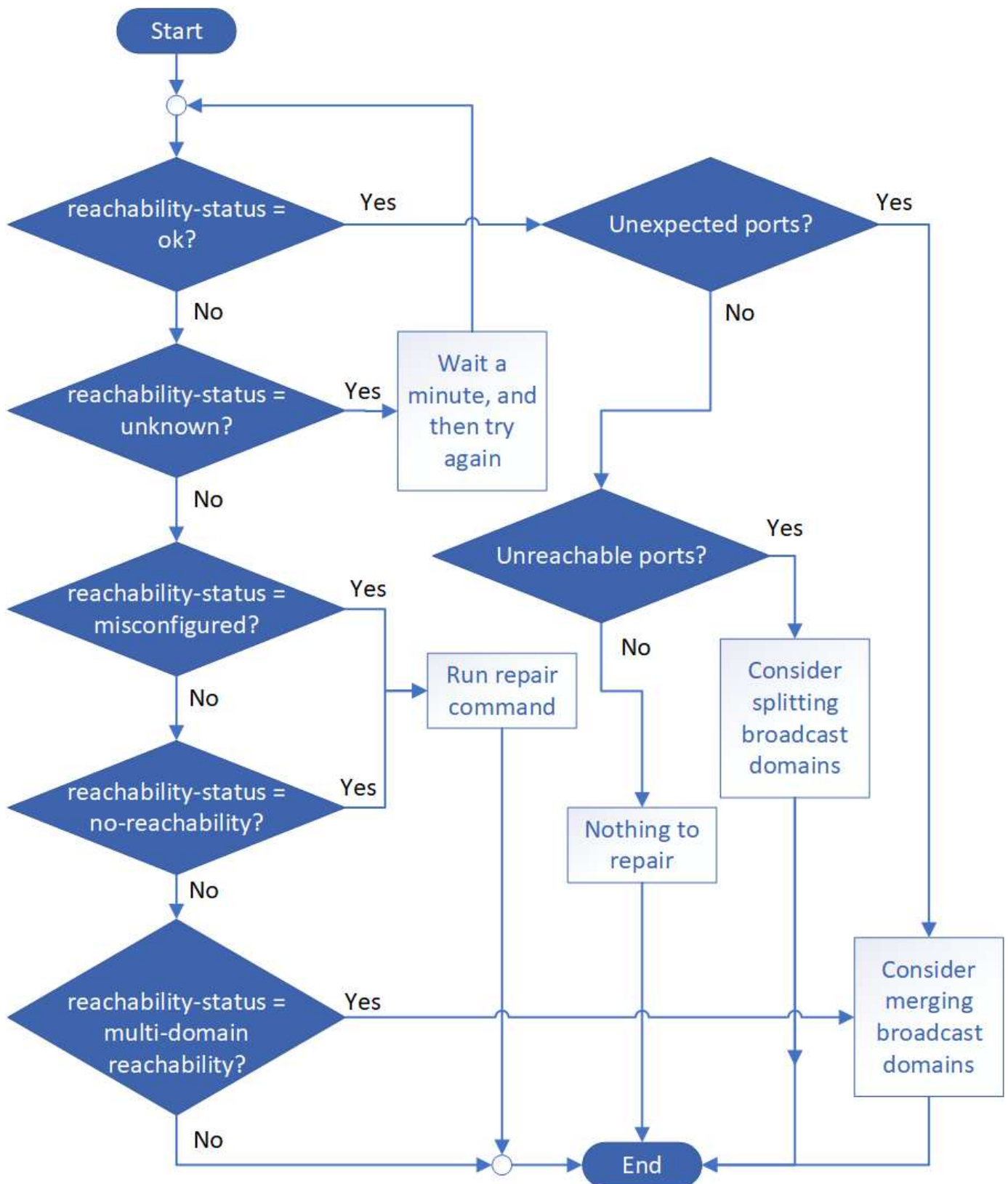
After you upgrade from ONTAP 9.7x or earlier to ONTAP 9.8 or later, you should verify your network configuration. After the upgrade, ONTAP automatically monitors layer 2 reachability.

### Step

1. Verify each port has reachability to its expected broadcast domain:

```
network port reachability show -detail
```

The command output contains reachability results. Use the following decision tree and table to understand the reachability results (reachability-status) and determine what, if anything, to do next.



| reachability-status | Description |
|---------------------|-------------|
|---------------------|-------------|

|                            |   |
|----------------------------|---|
| ok                         | <p>The port has layer 2 reachability to its assigned broadcast domain.</p> <p>If the reachability-status is "ok", but there are "unexpected ports", consider merging one or more broadcast domains. For more information, see <a href="#">Merge broadcast domains</a>.</p> <p>If the reachability-status is "ok", but there are "unreachable ports", consider splitting one or more broadcast domains. For more information, see <a href="#">Split broadcast domains</a>.</p> <p>If the reachability-status is "ok", and there are no unexpected or unreachable ports, your configuration is correct.</p> |
| misconfigured-reachability | <p>The port does not have layer 2 reachability to its assigned broadcast domain; however, the port does have layer 2 reachability to a different broadcast domain.</p> <p>You can repair the port reachability. When you run the following command, the system will assign the port to the broadcast domain to which it has reachability:</p> <pre>network port reachability repair -node -port</pre> <p>For more information, see <a href="#">Repair port reachability</a>.</p>  |
| no-reachability            | <p>The port does not have layer 2 reachability to any existing broadcast domain.</p> <p>You can repair the port reachability. When you run the following command, the system will assign the port to a new automatically created broadcast domain in the Default IPspace:</p> <pre>network port reachability repair -node -port</pre> <p>For more information, see <a href="#">Repair port reachability</a>.</p>  |
| multi-domain-reachability  | <p>The port has layer 2 reachability to its assigned broadcast domain; however, it also has layer 2 reachability to at least one other broadcast domain.</p> <p>Examine the physical connectivity and switch configuration to determine if it is incorrect or if the port's assigned broadcast domain needs to be merged with one or more broadcast domains.</p> <p>For more information, see <a href="#">Merge broadcast domains</a> or <a href="#">Repair port reachability</a>.</p>  |
| unknown                    | <p>If the reachability-status is "unknown", then wait a few minutes and try the command again.</p>  |

After you repair a port, you need to check for and resolve displaced LIFs and VLANs. If the port was part of an interface group, you also need to understand what happened to that interface group. For more information, see [Repair port reachability](#).

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