



# CHAPTER 1

## High Availability Overview

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You can configure the high availability (HA) software framework and redundancy features using Cisco DCNM for SAN. These features include application restartability and nondisruptive supervisor switchability. Cisco high availability is a technology delivered in Cisco NX-OS software that enables network-wide resilience to increase IP network availability.

The Cisco MDS 9500 Series of multilayer directors and switches support application restartability and nondisruptive supervisor switchability. The switches are protected from system failure by redundant hardware components and a high availability software framework.

The high availability (HA) software framework enables the following features:

- Ensures nondisruptive software upgrade capability.
- Provides redundancy for supervisor module failure by using dual supervisor modules.
- Performs nondisruptive restarts of a failed process on the same supervisor module. A service running on the supervisor modules and on the switching module tracks the HA policy defined in the configuration and takes action based on this policy. This feature is also available in switches in the Cisco MDS 9200 Series and the Cisco MDS 9100 Series.
- Protects against link failure using the PortChannel (port aggregation) feature. This feature is also available in switches in the Cisco MDS 9200 Series and in the Cisco MDS 9100 Series.
- Provides management redundancy using the Virtual Router Redundancy Protocol (VRRP). This feature is also available in switches in the Cisco MDS 9200 Series and in the Cisco MDS 9100 Series.
- Provides switchovers if the active supervisor fails. The standby supervisor, if present, takes over without disrupting storage or host traffic.

Directors in the Cisco MDS 9500 Series have two supervisor modules (Supervisor-1 and Supervisor-2) in slots 5 and 6 (Cisco MDS 9509 and 9506 Switches) or slots 7 and 8 (Cisco MDS 9513 Switch). When the switch powers up and both supervisor modules are present, the supervisor module that comes up first enters the active mode, and the supervisor module that comes up second enters the standby mode. If both supervisor modules come up at the same time, Supervisor-1 becomes active. The standby supervisor module constantly monitors the active supervisor module. If the active supervisor module fails, the standby supervisor module takes over without any impact to user traffic.



**Note**

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For high availability, you need to connect the Ethernet port for both active and standby supervisors to the same network or virtual LAN. The active supervisor owns the one IP address used by these Ethernet connections. On a switchover, the newly activated supervisor takes over this IP address.

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For information on configuring high availability, see Chapter 2, “Configuring High Availability.”

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