

Dear MetroCluster customer!

Are you planning to invest in a NetApp MetroCluster infrastructure?

Maybe you've opted for synchronously mirrored, high-availability storage because you need crucial company data to be constantly available to applications and users. So failure of the central storage system would mean an absolutely critical condition for your company. This type of failure is also often associated with the high costs of lost revenue or a tarnished image.

For this reason, we recommend that you take precautions. Keep your data available at all times with ClusterLion, even if one site's MetroCluster is affected by a failure!

In the event of a failure, ClusterLion automatically switches all services over to the other site within a few seconds so that all data continues to be available to applications and users.

ClusterLion



In accordance with the guidelines of the current NetApp MetroCluster Disaster Recovery Guide, ClusterLion executes an automatic switchover (if, for example, a power failure, ONTAP panic, side disaster or network failure occurs).

Excerpt from the ONTAP 9.x MetroCluster DR Guide:

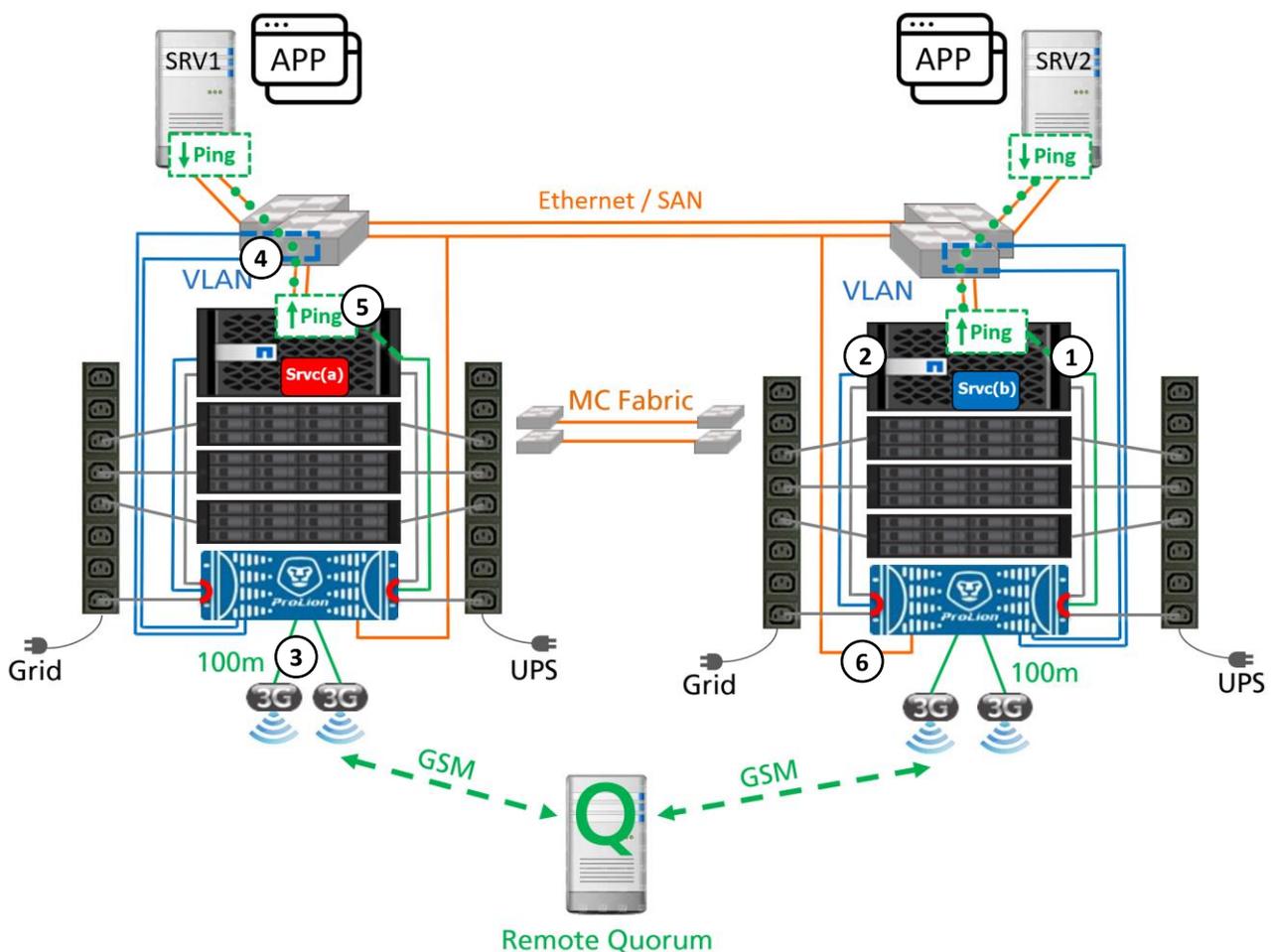
Site failure

In a MetroCluster configuration, all controller modules fail at a site due to loss of power, replacement of equipment, or disaster. Typically, MetroCluster configurations cannot differentiate between failures and disasters; however, witness software, such as the MetroCluster Tiebreaker software, can differentiate between them. A site failure condition can lead automatic switchover if ISL links and switches are up.

Source: https://library.netapp.com/ecm/ecm_download_file/ECMLP2495113

While MetroCluster does not independently switch over in a variety of situations, and an administrator needs a certain amount of time to assess the critical situation and take action accordingly, the problem situation identification process gets up and running and a switchover to the “surviving” site is initiated by ClusterLion within a few seconds. Consequently, all storage virtual machines (SVMs) are available at the surviving site within the SCSI timeout. This means your applications remain available at all times, even if the MetroCluster on one site is affected by a failure.

Schematic representation of a typical ClusterLion setup with NFO and Application Integration:



- (1) Dedicated Ethernet connection between ClusterLion and NetApp Storage Controller for querying various ONTAP and MetroCluster metrics.
- (2) Serial connection between ClusterLion and NetApp Controller for Alive Heartbeat.
- (3) Dedicated Ethernet connection with PoE for communication and power between ClusterLion and cellular gateways.
- (4) Dedicated VLAN link between two ClusterLion Ethernet ports to verify front-end Ethernet. (Only necessary when using "NFO")
- (5) Ping-Check from ONTAP to defined IP addresses for checking the front-end Ethernet. (Only necessary when using "NFO")
- (6) Routed Ethernet connection between ClusterLion and front-end Ethernet for triggering application-related scripts. (Only necessary when using "Application Integration")

All you need to do is take a bit of time now, then you'll be well prepared in the future and gain a lot of security for your critical company data!

- ✓ ClusterLion can be installed within 2 hours with no downtime.
- ✓ As implementation prerequisites, you just need 2 units of space in the MetroCluster rack and 2 patch connections for our mobile gateways.
- ✓ With ClusterLion you do not need a third data center because the Quorum service is provided "as a service" free of charge by ProLion. This saves you a lot on costs.
- ✓ This cleverly devised solution requires absolutely no detailed analysis of the solution and no individual acceptance through NetApp, which ensures support as ClusterLion is a certified NetApp-compatible solution!
- ✓ ClusterLion is completely self-sufficient even when there's a power- or network outage, as an example.
- ✓ Mobile communication is absolutely secure and there is no possibility whatsoever of manipulation. Many independent security departments of German and European banks have already verified this and classified it as secure! These customers have also offered to be listed as reference customers for ClusterLion.
- ✓ ClusterLion is also the only solution on the market that can recognize a network outage between host systems and the central storage. In this case, data access is no longer possible and ClusterLion switches services over to the other computing center. This is done via the ClusterLion NFO (network failover option) for NetApp CDOT systems.
- ✓ ClusterLion is also the only system which offers an "application integrated Switchover". As soon as the MetroCluster triggers a switchover, the applications and hosts can be "informed" directly via post-scripts. For example, to directly boot VMware, Oracle databases or other applications (scan data stores) as soon as the storage comes online at the surviving site!
- ✓ ClusterLion also fully supports the new NetApp IP MetroCluster and gets even more relevant in this setup, as the MCC-IP does not support AUSO (Automatic Unplanned Switchover)!
- ✓ ClusterLion identifies and differentiates the type of error, such as power failure, ONTAP panic, split-brain condition etc., acts accordingly and ensures with absolute reliability that no data loss occurs, and all services keep on running.
- ✓ According to the NetApp DR Guide, ClusterLion verifies the system failure, cuts the power connections to the NetApp storage controllers and ensures that these do not start up unintentionally.
- ✓ The detailed status of the MetroCluster is updated in near-real-time in a standalone GUI. The IT department can access the GUI at any time and everywhere through a browser and view the actual status of the MetroCluster.
- ✓ During maintenance work you can switch ClusterLion to maintenance mode quickly and easily. Once maintenance is finished, a safety circuit reminds you to reactivate ClusterLion.
- ✓ We take care to ensure continuous development. This means that ClusterLion is not only constantly optimized but also new functions are integrated. Software updates are provided at regular intervals by ProLion and the ProLion Support coordinates and monitors implementation.
- ✓ Apart from email alerts, ProLion Support continuously monitors the system and proactively contacts and notifies customers.
- ✓ Last but not least, electrical circuits in ClusterLion rule out solution manipulation and our customers can rest assured that ClusterLion always makes the right decision!

With ClusterLion we offer continuous monitoring of your MetroCluster, ensuring that your data is available constantly and you remain protected from a split-brain scenario at all times.

	TieBreaker	Manual Switchover	ClusterLion
Support for 7-Mode and cDOT MC config.	✓	✓	✓
Continues operation even during site-failure	✓	✗	✓
Only two data centers are needed to run switchover	✗	✓	✓
Highly secure against Split-Brain and data loss	✗	✓	✓
Independent remote view on MetroCluster status	✗	✗	✓
Very easy to install and operate	✗	✗	✓
Switchover during network failures	✗	✗	✓
Application integrated Switchover	✗	✗	✓

Here's what our customers have to say:

„With ClusterLion I get ‘two administrators’ on my side who monitor every node of the MetroCluster 24/7, make reliable verifications and execute a switchover within seconds according to the NetApp Disaster Recovery Guide. This has allowed us to reach the maximum level of availability!“

Do you still have questions? We are passionate and experienced storage experts and are gladly at your disposal at any time!



ClusterLion

AUTOMATISIERTER
SWITCHOVER FÜR
NETAPP METROCLUSTER