



MetroCluster software defined storage

ONTAP Select

Barb Einarsen
November 21, 2019

This PDF was generated from https://docs.netapp.com/us-en/ontap-select/concept_usecase_mc_sds.html on April 25, 2020. Always check docs.netapp.com for the latest.

Table of Contents

MetroCluster software defined storage 1

MetroCluster software defined storage

ONTAP Select MetroCluster SDS offers enhanced protection and a cost effective implementation.

A two-node cluster can be stretched between two locations if certain minimum requirements are met. This architecture fits neatly in between hardware-based MetroCluster and single data-center clusters (hardware-defined or software-defined). The requirements for the ONTAP Select MetroCluster SDS highlight the general flexibility of software-defined storage solutions as well as the differences between it and the hardware-based MetroCluster SDS. No proprietary hardware is required.

Unlike MetroCluster, ONTAP Select uses the existing network infrastructure and supports a network latency of up to 5ms RTT with a maximum jitter of up to 5ms, for a total of 10ms maximum latency. A maximum distance of 10km is also a requirement, although the latency profile is more important. Separation requirements in the market space have more to do with physical separation than the actual distance. In some instances, this can mean different buildings. In other instances, it can mean different rooms in the same building. Regardless of the actual physical placement, what defines a two-node cluster as a MetroCluster SDS is that each node uses a separate uplink switch.

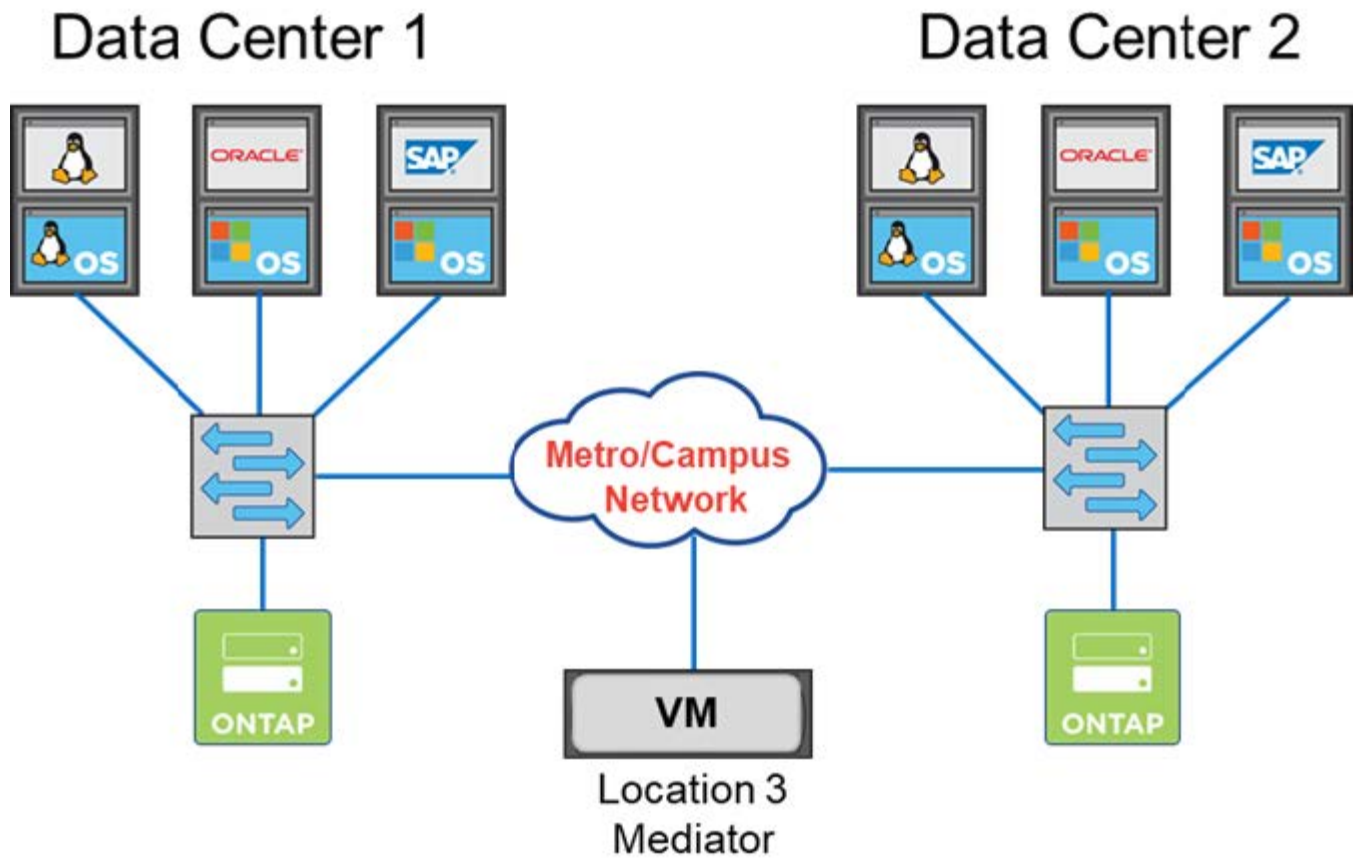
As part of the two-node HA configuration, a mediator is required to properly identify the active node during a failover and avoid any split-brain scenario in which both nodes remain independently active during a network partition. This operation is identical to the regular two-node HA configuration previously available. For proper protection and failover during site failure, the mediator should be in a different site from the two HA nodes. The maximum latency between the mediator and each ONTAP Select node cannot exceed 125ms.

With this solution, enterprise customers can confidently take advantage of the flexibility of a software-defined storage solution on commodity hardware. They can deploy with peace of mind knowing their data is protected with an enterprise-grade, 0 RPO solution.

ONTAP Select MetroCluster SDS provides the following benefits:

- MetroCluster SDS provides another dimension (data center to data center) of protection for ONTAP Select. Customers can now take advantage of this extra level of protection in addition to leveraging all the benefits of software-defined storage and ONTAP.
- MetroCluster SDS provides business-critical data protection with a 0 RPO and automatic failover. Both the data storage and the application access points are automatically switched over to the surviving data center or node with zero intervention from IT.
- MetroCluster SDS is cost effective. It takes advantage of the existing networking infrastructure to enable stretched resiliency between the HA pair, and no additional hardware is required. It also provides active/active data access and data center redundancy in the same cluster.

MetroCluster SDS



Metro/Campus Network:

- 5ms RTT/5ms jitter
- Maximum latency 10ms
- 10KM distance between nodes

For more best practices and other requirements, see the sections [Two-node HA versus multi-node HA](#) and [Two-node stretched HA \(MetroCluster SDS\) best practices](#).

Copyright Information

Copyright © 2019–2020 NetApp, Inc. All rights reserved. Printed in the U.S. No part of this document covered by copyright may be reproduced in any form or by any means-graphic, electronic, or mechanical, including photocopying, recording, taping, or storage in an electronic retrieval system-without prior written permission of the copyright owner.

Software derived from copyrighted NetApp material is subject to the following license and disclaimer:

THIS SOFTWARE IS PROVIDED BY NETAPP “AS IS” AND WITHOUT ANY EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, THE IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WHICH ARE HEREBY DISCLAIMED. IN NO EVENT SHALL NETAPP BE LIABLE FOR ANY DIRECT, INDIRECT, INCIDENTAL, SPECIAL, EXEMPLARY, OR CONSEQUENTIAL DAMAGES (INCLUDING, BUT NOT LIMITED TO, PROCUREMENT OF SUBSTITUTE GOODS OR SERVICES; LOSS OF USE, DATA, OR PROFITS; OR BUSINESS INTERRUPTION) HOWEVER CAUSED AND ON ANY THEORY OF LIABILITY, WHETHER IN CONTRACT, STRICT LIABILITY, OR TORT (INCLUDING NEGLIGENCE OR OTHERWISE) ARISING IN ANY WAY OUT OF THE USE OF THIS SOFTWARE, EVEN IF ADVISED OF THE POSSIBILITY OF SUCH DAMAGE.

NetApp reserves the right to change any products described herein at any time, and without notice. NetApp assumes no responsibility or liability arising from the use of products described herein, except as expressly agreed to in writing by NetApp. The use or purchase of this product does not convey a license under any patent rights, trademark rights, or any other intellectual property rights of NetApp.

The product described in this manual may be protected by one or more U.S. patents, foreign patents, or pending applications.

RESTRICTED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (c)(1)(ii) of the Rights in Technical Data and Computer Software clause at DFARS 252.277-7103 (October 1988) and FAR 52-227-19 (June 1987).

Trademark Information

NETAPP, the NETAPP logo, and the marks listed at <http://www.netapp.com/TM> are trademarks of NetApp, Inc. Other company and product names may be trademarks of their respective owners.