Overview of the ARL upgrade

ONTAP Systems

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May 10, 2021

Table of Contents

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Before you upgrade the nodes using ARL, you should understand how the procedure works. In this document, the procedure is broken down into several stages.

During the procedure, you upgrade the original controller hardware with the replacement controller hardware, one controller at a time, taking advantage of the HA pair configuration to relocate the ownership of non-root aggregates. All non-root aggregates must undergo two relocations to reach their final destination, which is the correct upgraded node.

Each aggregate has a home owner and current owner. The home owner is the actual owner of the aggregate, and the current owner is the temporary owner.

Stage	Steps
Stage 1: Prepare for upgrade	1. Run prechecks to verify that the operation can be performed. 2. Correct aggregate ownership if a precheck fails. 3. Enter the cluster-base license keys. 4. Get an IP address for storage encryption. 5. Manage authentication using a KMIP server. 6. Manage storage encryption using an onboard key manager (OKM). 7. Quiesce the SnapMirror relationships (optional). Aggregate ownership at the end of Stage 1: • Node1 is the home owner and current owner of the node1 aggregates. • Node2 is the home owner and current owner of the node2 aggregates.
Stage 2: Relocate and retire node1	1. Relocate non-root aggregates from node1 to node2. 2. Relocate non-SAN data LIFs owned by node1 to node2. 3. Relocate failed or vetoed aggregates. 4. Retire node1. 5. Prepare for netbooting (optional). Aggregate ownership at the end of Stage 2: • Node2 is the current owner of node1 aggregates. • Node2 is the home owner and current owner of node2 aggregates.

Stage	Steps
Stage 3: Install and boot node3	1. Install and boot node3. 2. Set the FC or (converged network adapter) CNA configuration. 3. Configure the FC ports. 4. Check and configure the UTA/UTA2 ports. 5. Verify node3 is successfully installed. 6. Restore node3 network configuration. 7. Move non-SAN data LIFs ownde by node 1 from node2 to node3. 8. Relocate non-root aggregates owned by node1 from node2 to node3. Aggregate ownership at the end of Stage 3: • Node3 is the home owner and current owner of node1 aggregates. • Node2 is the home owner and current owner of node2 aggregates.
Stage 4: Relocate and retire node2	1. Relocate non-root aggregates from node2 to node3. 2. Relocate non-SAN data LIFs owned by node2 to node 3. 3. Retire node2. Aggregate ownership at the end of Stage 4: • Node3 is the home owner and current owner of aggregates that originally belonged to node1. • Node2 is the home owner of node2 aggregates. • Node3 is the current owner of node2 aggregates.
Stage 5: Install and boot node4	1. Install and boot node4. 2. Set the FC or CNA configuration on node4. 3. Configure the FC ports. 4. Check and configure the UTA/UTA2 ports. 5. Verify node4 is successfully installed. 6. Restore node4 network configuration 7. Relocate non-SAN data LIFs owned by node2 from node3 to node4 and verify the SAN LIFs on node4. Aggregate ownership at the end of Stage 5: • Node3 is the home owner and current owner of the aggregates that originally belonged to node1. • Node4 is the home owner and current owner of aggregates that originally belonged to node2.

Stage	Steps
Stage 6: Complete the upgrade	1. Verify the system is set up correctly. 2. Set up Storage Encryption on the new controller module. 3. Set up NetApp Volume Encryption on the new control module. 4. Decommission the old system. 5. Resume NetApp SnapMirror operations, if needed.