



## **clam events**

### **ONTAP 9.15.1 EMS reference**

NetApp  
June 10, 2024

# Table of Contents

- clam events ..... 1
  - clam.disable events ..... 1
  - clam.enable events ..... 1
  - clam.failover events ..... 2
  - clam.heartbeat events ..... 3
  - clam.invalid events ..... 3
  - clam.mailbox events ..... 4
  - clam.node events ..... 4
  - clam.partner events ..... 7
  - clam.peer events ..... 7
  - clam.reenable events ..... 8
  - clam.start events ..... 8
  - clam.stop events ..... 9
  - clam.takeover events ..... 9
  - clam.update events ..... 10
  - clam.valid events ..... 11
  - clam.voting events ..... 11

# clam events

## clam.disable events

### clam.disable

#### Severity

INFORMATIONAL

#### Description

This message occurs when the Kernel Cluster Services (KCS) Connectivity, Liveliness, Availability Monitor (CLAM) is disabled by either turning off the KCS capability or by setting the 'clam sysctl/bootarg' variable.

#### Corrective Action

If you want CLAM functionality disabled, no action is needed. Otherwise, reenable CLAM and reboot the node to make CLAM operational again.

#### Syslog Message

CLAM functionality is disabled.

#### Parameters

(None).

### clam.disable.takeover

#### Severity

INFORMATIONAL

#### Description

This message occurs when the Kernel Cluster Services (KCS) Connectivity, Liveliness, Availability Monitor (CLAM) is disabled from initiating storage failover requests. This capability is automatically disabled in a NAS-only configuration. To control the setting of CLAM takeover, additional interfaces, such as sysctl bootarg, are provided.

#### Corrective Action

No action is needed.

#### Syslog Message

CLAM is disabled from performing storage failover.

#### Parameters

(None).

## clam.enable events

### clam.enable

#### Severity

INFORMATIONAL

## Description

This message occurs when the Kernel Cluster Services (KCS) Connectivity, Liveliness, Availability Monitor (CLAM) is enabled to operate on this node. When all nodes in the cluster are upgraded to a KCS-available image, KCS capability gets turned on. This event is an indication that CLAM will be now begin to function.

## Corrective Action

No action is needed.

## Syslog Message

CLAM functionality is enabled.

## Parameters

(None).

## clam.enable.takeover

### Severity

INFORMATIONAL

### Description

This message occurs when the Kernel Cluster Services (KCS) Connectivity, Liveliness, Availability Monitor (CLAM) is enabled to initiate storage failover requests when the CLAM OOQ (Out Of Quorum) condition is detected on the partner node. This capability is automatically enabled in a scalable SAN configuration. To control the setting of CLAM takeover, additional interfaces, such as sysctl bootarg, are provided.

### Corrective Action

No action is needed.

### Syslog Message

CLAM is enabled to perform storage failover when partner node is OOQ.

### Parameters

(None).

## clam.failover events

### clam.failover.event

#### Severity

INFORMATIONAL

#### Description

This message occurs when the Kernel Cluster Services (KCS) Connectivity, Liveliness, Availability Monitor (CLAM) receives a failover event from high-availability(HA) subsystem.

#### Corrective Action

(None).

#### Syslog Message

CLAM on node (id=%llu) received an HA failover event for partner (ID=%llu) indicating that %s.

## Parameters

**localnodeid** (LONGINT): Node ID of the local node.

**partnernodeid** (LONGINT): Node ID of the partner node.

**event\_description** (STRING): Description of the event that CLAM received from the HA subsystem.

# clam.heartbeat events

## clam.heartbeat.state.change

### Severity

INFORMATIONAL

### Description

This message occurs when the Kernel Cluster Services Connectivity, Liveliness, Availability Monitor (CLAM) detects that the state of the heartbeats to a node changed(that is, either the heartbeats started succeeding or they started failing).

### Corrective Action

Take one or more of the following actions: - A repeated toggling of the heartbeat state indicates intermittent network issues. Check the connectivity of the node to the cluster interconnect and fix any problems. - In all the other cases, the heartbeat failure will eventually result in the node going out of quorum. If that happens, take the actions prescribed for "EMS\_clam\_node\_oq event".

### Syslog Message

Heartbeats to node (name=%s, ID=%llu) are %s.

## Parameters

**hostname** (STRING): Host name of the node.

**nodeid** (LONGINT): Node ID of the node.

**state** (STRING): New state of the heartbeats to this node.

# clam.invalid events

## clam.invalid.config

### Severity

ERROR

### Description

This message occurs when the Kernel Cluster Services (KCS) Connectivity, Liveliness, Availability Monitor (CLAM) determines that the local node is in an invalid configuration for providing CLAM functionality.

### Corrective Action

Take one or more of the following actions, as appropriate: - Enable failover on the node by running the 'storage failover modify -node node\_name -enabled true' command. - If there is a version incompatibility between the local node and the other nodes in the cluster, upgrade the nodes as needed.

### Syslog Message

Local node (name=%s, id=%llu) is in an invalid configuration for providing CLAM functionality. CLAM cannot determine the identity of the HA partner.

## Parameters

**localhostname** (STRING): Host name of the local node.

**localnodeid** (LONGINT): Node ID of the local node.

# clam.mailbox events

## clam.mailbox.initialized

### Severity

INFORMATIONAL

### Description

This message occurs when the Kernel Cluster Services (KCS) Connectivity, Liveliness, Availability Monitor (CLAM) has written to the high availability (HA) mailboxes that it has initialized and is ready to participate in CLAM quorum.

### Corrective Action

(None).

### Syslog Message

CLAM on local node has initialized its mailboxes and is ready to participate in quorum.

## Parameters

(None).

# clam.node events

## clam.node.disabled

### Severity

INFORMATIONAL

### Description

This message occurs when the local Connectivity, Liveliness and Availability Monitor (CLAM) concludes that the local node is now disabled.

### Corrective Action

This EMS is logged when the local node has lost connectivity with the rest of the nodes in the cluster and the connectivity has not been restored in time for the local node to participate in cluster quorum. Take the actions prescribed for "EMS\_clam\_node\_ooq" event.

### Syslog Message

CLAM published an event indicating the local node is now disabled(reason: %s).

## Parameters

**disabled\_reason** (STRING): Reason for the node getting disabled.

## clam.node.inq

**Severity**

INFORMATIONAL

**Description**

This message occurs when the Kernel Cluster Services (KCS) Connectivity, Liveliness, Availability Monitor (CLAM) determines that a node in the cluster has transitioned to "cluster quorum".

**Corrective Action**

(None).

**Syslog Message**

Cluster node (name=%s, ID=%llu) is in "CLAM quorum".

**Parameters**

**hostname** (STRING): Host name of the cluster node that transitioned to quorum.

**nodeid** (LONGINT): Node ID of the cluster node that transitioned to quorum.

**clam.node.oog****Severity**

EMERGENCY

**Description**

This message occurs when the Kernel Cluster Services (KCS) Connectivity, Liveliness, Availability Monitor (CLAM) determines that a node in the cluster is out of "cluster quorum".

**Corrective Action**

Take one or more of the following actions: - Follow the KB article 2022109 to troubleshoot the resolve the issue. - Check the connectivity of the node to the cluster interconnect and fix any problems. - If the local node is administratively disabled, enable it by running the following command from the clustershell 'cluster modify -node node\_name -eligibility true'. - If the node is supposed to be in an HA pair but is not, enable the HA pair. You can check whether a node is in an HA pair by running 'storage failover show' command from the clustershell. You can enable storage failover by running the 'storage failover modify -enabled true' command from the clustershell. - If there is a version incompatibility between the local node and the other nodes in the cluster, upgrade the nodes as needed. You can see the software version of all the nodes from the clustershell using the 'version -node \*' command.

**Syslog Message**

Node (name=%s, ID=%llu) is out of "CLAM quorum" (reason=%s).

**Parameters**

**hostname** (STRING): Host name of the node that is out of quorum.

**nodeid** (LONGINT): Node ID of the node that is out of quorum.

**reason** (STRING): Reason for the out of quorum transition.

**clam.node.paused****Severity**

INFORMATIONAL

**Description**

This message occurs when the local Connectivity, Liveliness and Availability Monitor (CLAM) entered a paused state.

**Corrective Action**

(None).

**Syslog Message**

CLAM published an event indicating the local node has paused.

**Parameters**

(None).

**clam.node.resumed****Severity**

INFORMATIONAL

**Description**

This message occurs when the local Connectivity, Liveliness and Availability Monitor (CLAM) was previously in a paused state and has now resumed.

**Corrective Action**

(None).

**Syslog Message**

CLAM published an event indicating the local node has resumed.

**Parameters**

(None).

**clam.node.start.voting****Severity**

INFORMATIONAL

**Description**

This message occurs when the Kernel Cluster Services (KCS) Connectivity, Liveliness, Availability Monitor (CLAM) on a local node has started to vote for its high-availability (HA) partner node.

**Corrective Action**

(None).

**Syslog Message**

CLAM on local node (ID:%llu) has started to vote for its HA partner node (ID:%llu).

**Parameters**

**local\_id** (LONGINT): Node ID of the local node.

**partner\_id** (LONGINT): Node ID of the partner node.



## clam.node.stop.voting

### Severity

INFORMATIONAL

### Description

This message occurs when the Kernel Cluster Services (KCS) Connectivity, Liveliness, Availability Monitor (CLAM) on a local node has stopped voting for its high-availability (HA) partner node.

### Corrective Action

(None).

### Syslog Message

CLAM on local node (ID:%llu) has stopped to vote for its HA partner node (ID:%llu).

### Parameters

**local\_id** (LONGINT): Node ID of the local node.

**partner\_id** (LONGINT): Node ID of the partner node.

## clam.partner events

### clam.partner.halting

#### Severity

INFORMATIONAL

#### Description

This message occurs when the Kernel Cluster Services (KCS) Connectivity, Liveness, Availability Monitor (CLAM) is notified that its high-availability (HA) partner node is undergoing a planned shutdown.

#### Corrective Action

(None).

#### Syslog Message

CLAM is notified that its HA partner node is undergoing a planned shutdown (reason: %s).

#### Parameters

**reason** (STRING): Reason for the partner beginning the halt process.

## clam.peer events

### clam.peer.halting

#### Severity

INFORMATIONAL

#### Description

This message occurs when the Kernel Cluster Services (KCS) Connectivity, Liveness, and Availability Monitor (CLAM) is notified that its high-availability (HA) partner node is undergoing a planned shutdown.

### Corrective Action

(None).

### Syslog Message

CLAM is notified that node %s (ID=%llu) is undergoing a planned shutdown.

### Parameters

**hostnode** (STRING): Name of node beginning the halt process.

**nodeid** (LONGINT): ID of node beginning the halt process.

## clam.reenable events

### clam.reenable

#### Severity

INFORMATIONAL

#### Description

This message occurs when the Kernel Cluster Services (KCS) Connectivity, Liveliness, Availability Monitor (CLAM) is reenabled to operate on this node after being intentionally disabled. The intentional disabling could have been through turning off KCS capability or setting the 'clam bootarg/sysctl' variable. Reenabling CLAM functionality warrants a reboot, upon which CLAM will be functional.

#### Corrective Action

Reboot the node to make CLAM operational.

#### Syslog Message

CLAM functionality is reenabled. Reboot the node to make CLAM operational.

#### Parameters

(None).

## clam.start events

### clam.start.mailbox.polling

#### Severity

INFORMATIONAL

#### Description

This message occurs when the Kernel Cluster Services (KCS) Connectivity, Liveliness, Availability Monitor (CLAM) has started a poll to read CLAM mailboxes.

#### Corrective Action

(None).

#### Syslog Message

CLAM on local node (ID=%llu) has started a poll to read HA partner (ID=%llu) mailbox.

## Parameters

**local\_id** (LONGINT): Node ID of the local node.

**partner\_id** (LONGINT): Node ID of the partner node.

# clam.stop events

## clam.stop.mailbox.polling

### Severity

INFORMATIONAL

### Description

This message occurs when the Kernel Cluster Services (KCS) Connectivity, Liveliness, Availability Monitor (CLAM) has stopped polling the CLAM mailboxes.

### Corrective Action

(None).

### Syslog Message

CLAM on local node (ID=%llu) has stopped the poll to read HA partner (ID=%llu) mailbox.

## Parameters

**local\_id** (LONGINT): Node ID of the local node.

**partner\_id** (LONGINT): Node ID of the partner node.

# clam.takeover events

## clam.takeover

### Severity

INFORMATIONAL

### Description

This message occurs when the Kernel Cluster Services Connectivity, Liveliness, Availability Monitor (CLAM) triggers takeover of a partner node after determining that the local node is in "CLAM quorum" and the partner node is out of "CLAM quorum".

### Corrective Action

Take one or more of the following actions: - If the node panicked or is hung, troubleshoot and resolve the problem. - Check the connectivity of the node to the cluster interconnect and fix any problems. - If the local node is administratively disabled, enable it by running the following command from the clustershell 'cluster modify -node node\_name -eligibility true'. - If the node is supposed to be in an HA pair but is not, enable the HA pair. You can check whether a node is in an HA pair by running the 'storage failover show' command from the clustershell. You can enable storage failover by running the 'storage failover modify -enabled true' command from the clustershell. - If there is a version incompatibility between the local node and the other nodes in the cluster, upgrade the nodes as needed. You can see the software version of all the nodes from the clustershell using the 'version -node \*' command.

### Syslog Message

Local node (name=%s, ID=%llu) initiated takeover of partner node (name=%s, ID=%llu, state=%llu)

result=%s, type=%s.

## Parameters

**localhostname** (STRING): Host name of the local node.  
**localnodeid** (LONGINT): Node ID of the local node.  
**partnerhostname** (STRING): Host name of the partner node.  
**partnernodeid** (LONGINT): Node ID of the partner node.  
**partnerstate** (LONGINTEX): The high-availability state of the partner node  
**result** (STRING): Result of the takeover initiation operation.  
**type** (STRING): Takeover Type.

## clam.takeover.disallowed

### Severity

INFORMATIONAL

### Description

This message occurs when Kernel Cluster Services (KCS) Connectivity, Liveliness, Availability Monitor (CLAM) cannot initiate takeover operations. Takeover is disallowed by High Availability (HA) subsystem on the partner node.

### Corrective Action

(None).

### Syslog Message

CLAM on node %s (ID=%llu) cannot proceed with a takeover operation of partner node %s (ID=%llu) because HA disallowed takeover. Reason :%s

## Parameters

**local\_host\_name** (STRING): Host name of the local node.  
**localnodeid** (LONGINT): Node ID of the local node.  
**partner\_host\_name** (STRING): Host name of the partner node.  
**partnernodeid** (LONGINT): Node ID of the partner node.  
**reason** (STRING): Reason takeover was disabled.

## clam.update events

### clam.update.partner.state

#### Severity

INFORMATIONAL

#### Description

This message occurs when the Kernel Cluster Services (KCS) Connectivity, Liveliness, Availability Monitor (CLAM) updates the failover state of the partner.

#### Corrective Action

(None).

#### Syslog Message

CLAM on node (ID=%llu) updated failover state of partner (ID=%llu) to %s.

## Parameters

**localnodeid** (LONGINT): Node ID of the local node.  
**partnernodeid** (LONGINT): Node ID of the partner node.  
**partner\_state** (STRING): Description of the partner state.

# clam.valid events

## clam.valid.config

### Severity

INFORMATIONAL

### Description

This message occurs when the Kernel Cluster Services (KCS) Connectivity, Liveliness, Availability Monitor (CLAM) determines that the local node is in a valid configuration for providing CLAM functionality.

### Corrective Action

No action is needed.

### Syslog Message

Local node (name=%s, id=%llu) is operating in a suitable configuration for providing CLAM functionality.

## Parameters

**localhostname** (STRING): Host name of the local node.  
**localnodeid** (LONGINT): Node ID of the local node.  
**partnerhostname** (STRING): Host name of the partner node.  
**partnernodeid** (LONGINT): Node ID of the partner node.

# clam.voting events

## clam.voting.state.change

### Severity

INFORMATIONAL

### Description

This message occurs when the Kernel Cluster Services Connectivity, Liveliness, Availability Monitor (CLAM) detects that the voting state of the node changed.

### Corrective Action

(None).

### Syslog Message

CLAM on node (name=%s, ID=%llu) has %s voting for its HA partner node(name=%s, ID=%llu).

## Parameters

**local\_hostname** (STRING): Host name of the local node.  
**localId** (LONGINT): Node ID of the local node.  
**state** (STRING): New voting state of the node.  
**partner\_hostname** (STRING): Host name of the HA partner node.

**partnerId** (LONGINT): Node ID of the HA partner node.

## Copyright information

Copyright © 2024 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.

LIMITED RIGHTS LEGEND: Use, duplication, or disclosure by the government is subject to restrictions as set forth in subparagraph (b)(3) of the Rights in Technical Data -Noncommercial Items at DFARS 252.227-7013 (FEB 2014) and FAR 52.227-19 (DEC 2007).

Data contained herein pertains to a commercial product and/or commercial service (as defined in FAR 2.101) and is proprietary to NetApp, Inc. All NetApp technical data and computer software provided under this Agreement is commercial in nature and developed solely at private expense. The U.S. Government has a non-exclusive, non-transferrable, nonsublicensable, worldwide, limited irrevocable license to use the Data only in connection with and in support of the U.S. Government contract under which the Data was delivered. Except as provided herein, the Data may not be used, disclosed, reproduced, modified, performed, or displayed without the prior written approval of NetApp, Inc. United States Government license rights for the Department of Defense are limited to those rights identified in DFARS clause 252.227-7015(b) (FEB 2014).

## 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.