

CSCF Degraded HSS Redundancy

Call Session Control Function

OPERATING INSTRUCTIONS

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1 Alarm Description

The Call Session Control Function (CSCF) quarantines a Home Session Server (HSS) when it detects that the HSS is unavailable. An HSS is quarantined only when there are multiple HSS nodes in the network. If the HSS becomes unavailable, and is not the last HSS in the list, it is put in quarantine, an alarm is issued, and a failover to the next HSS in the list takes place. An HSS in quarantine is never used.

Note: This only applies when monolithic HSS setup is deployed, that is, not when using HSS-FE and Centralized User Database (CUDb).

The alarm indicates the HSS host identity (FQDN) that has been put in quarantine.

Table 1 CSCF Degraded HSS Redundancy Alarm Causes

Alarm Cause	Description	Fault Reason	Fault Location	Impact
HSS Redundancy has been compromised.	CSCF has determined that at least one HSS has become unavailable and put in quarantine.	The HSS is unavailable and therefore put into quarantine, which has caused the alarm to be raised.	The attribute <code>cscfHssInQuarantineEntry</code> is placed in the MOC <code>CscfHssQuarantine</code> , which represents an HSS currently placed in quarantine. It is only possible to remove an entry, not to add an entry, or to change an existing entry. Removing an entry from the list leads to the HSS being used immediately.	If the HSS becomes unavailable, and is not the last HSS in the list, it is put in quarantine, an alarm is issued, and a failover to the next HSS in the list takes place. An HSS in quarantine is never used.

Note: The alarm can appear as a result of maintenance activity.

Table 2 CSCF Degraded HSS Redundancy Alarm Attributes

Attribute Name	Attribute Value
Major Type	193
Minor Type	6684690
Managed Object Class	CscfHssQuarantine



Attribute Name	Attribute Value
Managed Object Instance	ManagedElement=<node_name>,CscfFunction=1,CSCF-Application=CSCF,CscfHssQuarantine=0
Specific Problem	CSCF Degraded HSS Redundancy
Event Type	qualityOfServiceAlarm (3)
Probable Cause	x736OutOfService (414)
Additional Text	Check connection to the HSS, CscfHssInQuarantineEntry=<HSS host identity (FQDN)>
Perceived Severity	critical (3)

2 Procedure

2.1 Handle Alarm CSCF Degraded HSS Redundancy

Prerequisites

— This instruction references the following documents:

- Managed Object Model (MOM)
- vDicos, Diameter Link Failure

— No tools are required.

— The following conditions must apply:

- The alarm is raised.
- It must be possible to communicate with the HSS, therefore the alarm vDicos, Diameter Link Failure must not be raised for the HSS that is to be taken out of quarantine.
- All users must be deregistered in the HSS.
- The HSS that is to be taken out of quarantine must have the same provisioning status as the HSS that is handling the traffic.



Note: Taking an HSS out of quarantine has consequences. A failover to another HSS could be disturbing for already registered users if the registration information is not synchronized between the HSSs (the HSS loses all registration information at failover). The loss of registration information in the HSS leads to registration state inconsistencies between the CSCF and the HSS; already registered users are in state registered in CSCF, but not registered in the HSS. When an HSS is taken out of quarantine, the same consequences for registered users as at a failover occurs. In other words, a fallback is as disturbing as a failover.

Steps

1. Select the appropriate action:
 - Manually remove HSSs from quarantine: Proceed to Section 2.2 Manually Remove HSS from Quarantine on page 3.
 - Automatically remove HSSs from quarantine: Proceed to Section 2.3 Automatically Remove HSS from Quarantine on page 4.

2.2 Manually Remove HSS from Quarantine

Steps

1. Make sure that the quarantined HSS is operating normally and that the Diameter links between the CSCF and the HSS are up.
Only then can the HSS be removed manually from quarantine.
2. Select the appropriate action:
 - To remove specific HSSs from quarantine: Continue with the next step.
 - To remove all HSSs from quarantine: Proceed with Step 4.
3. Remove the specific HSSs from the quarantine list and then proceed to Step 5.

Every HSS in quarantine is presented in the Operation & Maintenance (O&M) interface as an entry in a quarantine list. The name of the entry is `cscfHssInQuarantineEntry`. Remove the HSSs from quarantine by removing the corresponding list entries.

For more information about configuration management parameters, refer to *Managed Object Model (MOM)*.

4. Set `cscfHssQuarantineEnabled` to **false**

All HSSs are removed from the quarantined list and the associated alarm is cleared.

5. Has the alarm ceased?



Yes: Proceed with Step 7.

No: Continue with the next step.

6. If the alarm is not ceased, consult the next level of maintenance support.

Further actions are outside the scope of this instruction.

7. Job is completed.

2.3 Automatically Remove HSS from Quarantine

Steps

1. Set `cscfAutoRemoveHssFromQuarantineTime` to the time that all HSSs must be removed from quarantine.

For example, if `cscfAutoRemoveHssFromQuarantineTime` is set to **02:00**, all quarantined HSSs are removed from quarantine at 2 am.

If no time is set, the automatic removal is disabled. Automatic removal is disabled by default.

For more information about configuration management parameters, refer to *Managed Object Model (MOM)*.

2. Wait for the time that is set in `cscfAutoRemoveHssFromQuarantineTime` to pass.

3. Has the alarm ceased?

Yes: Proceed with Step 5.

No: Continue with the next step.

4. If the alarm is not ceased, consult the next level of maintenance support.

Further actions are outside the scope of this instruction.

5. Job is completed.