

# Troubleshoot SMF Error Log "All Peers Are Dead"

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## Introduction

This document describes how to troubleshoot Session Management Function (SMF) log alert related to **All Peers are Dead, Setting status code to 0.**

## Problem

The session impact was reported on the SMF.

## Analysis

### Log All Peers are Dead

The log indicates that all peers inside SelectedProfileName:CHF-OFF are dead.

The log covers all endpoints configured on SMF, and anytime you see all peers are dead inside the profile this always leads to session impact.

<#root>

```
master-1 b26897bce81a[2516]:
master-1 c77834f772f7[2516]: ***** TRANSACTION: 2475167152 *****
master-1 c77834f772f7[2516]: ***** TRANSACTION: 2475167152 *****
master-1 c77834f772f7[2516]: TRANSACTION SUCCESS:
master-1 c77834f772f7[2516]: TRANSACTION SUCCESS:
master-1 c77834f772f7[2516]: GR Instance ID : 1
master-1 c77834f772f7[2516]: GR Instance ID : 1
master-1 c77834f772f7[2516]: Txn Type : N40ChargingDataReq(3585)
master-1 c77834f772f7[2516]: Txn Type : N40ChargingDataReq(3585)
master-1 c77834f772f7[2516]: Priority : 1
master-1 c77834f772f7[2516]: Priority : 1
master-1 c77834f772f7[2516]: Session Namespace : smf(1)
master-1 c77834f772f7[2516]: Session Namespace : smf(1)
master-1 c77834f772f7[2516]: CDL Slice Name : smf
master-1 c77834f772f7[2516]: CDL Slice Name : smf
```

```

master-1 c77834f772f7[2516]: LOG MESSAGES:
master-1 c77834f772f7[2516]: LOG MESSAGES:
master-1 c77834f772f7[2516]: 2023/09/10 15:00:00.007 [ERROR] [nrFClient.Discovery.nrf]

```

All Peers are Dead, Setting status code to 0

(timeout)

```

master-1 c77834f772f7[2516]: 2023/09/10 15:00:00.007 [ERROR] [nrFClient.Discovery.nrf]

```

All Peers are Dead, Setting status code to 0

(timeout)

```

master-1 c77834f772f7[2516]: 2023/09/10 15:00:00.007 [ERROR] [nrFClient.Discovery.nrf] Message send fai
master-1 c77834f772f7[2516]: 2023/09/10 15:00:00.007 [ERROR] [nrFClient.Discovery.nrf] Message send fai
master-1 c77834f772f7[2516]: *****
master-1 c77834f772f7[2516]: *****

```

Based on the configuration, the SMF tries to reach to the primary server with higher priority in case there is an HTTP code 504 (timeout) system, and then the SMF tries to reach out to the secondary server. If that fails, as well in that case system also sets session in continue mode.

In the example, the secondary Charging function (CHF) for Offline is 10.10.10.2. The SMF received the 504 error and the action is FailureContinueAction.

<#root>

```

master-2 42013075464a[2621]: 2023/09/10 15:00:00.063 rest-ep [ERROR] [RestClient.go:175] [infra.rest_cl
master-2 42013075464a[2621]: 2023/09/10 15:00:00.063 rest-ep [ERROR] [Config.go:1721] [nrFClient.Discov
master-2 42013075464a[2621]: ***** TRANSACTION: 2252879781 *****
master-2 42013075464a[2621]: TRANSACTION SUCCESS:
master-2 42013075464a[2621]: GR Instance ID : 1
master-2 42013075464a[2621]: Txn Type : N40ChargingDataReq(3521)
master-2 42013075464a[2621]: Priority : 1
master-2 42013075464a[2621]: Session Namespace : smf(1)
master-2 42013075464a[2621]: CDL Slice Name : smf
master-2 42013075464a[2621]: LOG MESSAGES:
master-2 42013075464a[2621]: 2023/09/10 15:00:00.063 [ERROR] [rest_ep.app.ChargingIntf] {imsi-123456789
master-2 42013075464a[2621]: 2023/09/10 15:00:00.063 [ERROR] [nrFClient.SendMesg.NRF] FHI status

```

504

```

timediff 1000332537, Uri: http://10.10.10.2:1090/OFFLINE/nchf-convergedcharging/v2, retryCount = 0 loo
master-2 42013075464a[2621]: 2023/09/10 15:00:00.063 [ERROR] [nrFClient.Discovery.nrf] Message send fai
master-2 42013075464a[2621]: *****

```

## SMF Checks

On SMF, check peers and their connected time regarding the endpoint that reported the issue.

```

smf# show peers
GR

```

INSTANCE	ENDPOINT	LOCAL ADDRESS	PEER ADDRESS	DIRECTION	POD INSTANCE	TYPE	CONN TIME
1	<none>	192.168.1.1	10.10.10.2:1090	Outbound	rest-ep-0	Rest	4 hour
1	<none>	192.168.1.2	10.10.10.2:1090	Outbound	rest-ep-1	Rest	4 hour

1	<none>	192.168.1.3	10.10.10.1:1090	Outbound	rest-ep-2	Rest	4 hours
1	<none>	192.168.1.3	10.10.10.2:1090	Outbound	rest-ep-2	Rest	4 hours
1	<none>	192.168.1.4	10.10.10.1:1090	Outbound	rest-ep-3	Rest	4 hours
1	<none>	192.168.1.2	10.10.10.1:1090	Outbound	rest-ep-1	Rest	4 hours
1	<none>	192.168.1.4	10.10.10.2:1090	Outbound	rest-ep-3	Rest	2 hours
1	<none>	192.168.1.1	10.10.10.1:1090	Outbound	rest-ep-0	Rest	4 hours

// CHF related profiles

```
profile network-element chf CHF-OFFLINE
  nf-client-profile CHF-OFF
  failure-handling-profile Fail-H-CHF-OFF
  discovery local
exit
```

// Here is configuration for CHF profile where all peers are dead

```
profile nf-client nf-type chf
  chf-profile CHF-OFF
  locality LOC1
  priority 1
  service name type nchf-convergedcharging
  responsetimeout 1000
  endpoint-profile epprof
  capacity 10
  api-root OFFLINE
  uri-scheme http
  version
  uri-version v2
  exit
  endpoint-name ep1
  priority 1
  capacity 10
  primary ip-address ipv4 10.10.10.1
  primary ip-address port 1090
  exit
  endpoint-name ep2
  priority 2
  capacity 10
  primary ip-address ipv4 10.10.10.2
  primary ip-address port 1090
  exit
  exit
  exit
  exit
```

// Failure handling that in case of timeout (HTTP code 504) then try secondary server one time and then

```
profile nf-client-failure nf-type chf
  profile failure-handling Fail-H-CHF-OFF
  service name type nchf-convergedcharging
  responsetimeout 1000
  message type ChfConvergedchargingCreate
  status-code httpv2 504
  retry 1
  action continue
  exit
  exit
```

```

message type ChfConvergedchargingUpdate
status-code httpv2 504
  retry 1
  action continue
exit
message type ChfConvergedchargingDelete
status-code httpv2 504
  retry 1
  action continue
exit
exit
exit

```

## Grafana Checks

The direct correlation between HTTP 504 Timeout and the time of the issue was observed.

query: `sum(increase(smf_restep_http_msg_total{nf_type="chf", namespace=~"$namespace"}[15m])) by (api_name)`



## Nexus Checks

Check for any flaps that happened.

Nexus# `show logging last 500 | include BFD`

## Solution

The solution to this problem varies in this case because SMF is the client and CHF is the server.

Loss of connection was not caused by SMF.