



# Handling Uneven Resource Distribution Notifications on Session Managers

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## Feature Summary and Revision History

### Summary Data

Applicable Product(s) or Functional Area	<ul style="list-style-type: none"><li>• P-GW</li><li>• GGSN</li><li>• SAEGW</li></ul>
Applicable Platform(s)	<ul style="list-style-type: none"><li>• ASR 5500</li><li>• VPC-DI</li></ul>
Feature Default	Disabled - Configuration Required
Related Changes in this Release	Not Applicable
Related Documentation	<ul style="list-style-type: none"><li>• <i>Command Line Interface Reference</i></li><li>• <i>P-GW Administration Guide</i></li><li>• <i>Statistics and Counters Reference</i></li></ul>

### Revision History

Revision Details	Release
First introduced.	21.25

## Feature Description

The SNMP traps and alarms support uneven distribution of resources on session managers across the system. The active session manager task calculates the threshold of resource usage. The supported SNMP trap and alarm configures the monitoring threshold difference between the number of calls among the session managers.

This feature supports the following functions:

1. Raise alarms and traps

The alarm will be raised when the load difference between the most loaded and least loaded session manager is greater than the configured threshold. The session manager load is calculated by the number of sessions.

2. Clear alarms and traps

The alarm will be cleared when the load difference between the most loaded and least loaded session manager is lesser than the configured threshold. The session manager load is calculated by the number of sessions.




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**Note** The threshold calculations does not consider the standby session manager instances.

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## Configuring Threshold Levels and SNMP Traps

### Configuring Threshold Levels

Use the following configuration to configure threshold levels for session manager:

```
configure
  [ no ] threshold sess-uneven-dist threshold_percentage [ clear
clear_threshold_percentage [ sess-min-sessmgr-cnt number_of_sessmgr_with_least_calls
  [ sess-active number_of_min_active_session_system_wide  ] ] ]
  [ no ] threshold monitoring sess-uneven-dist
  threshold poll sess-uneven-dist interval interval_range
  default threshold sess-uneven-dist
end
```

**NOTES:**

- **threshold:** Configures a specific threshold-based alarm.
- **sess-uneven-dist threshold\_percentage:** The number of threshold indicates the percentage difference of established session between the most loaded session manager and the least loaded session manager. The default value for threshold is 50%.
- **clear clear\_threshold\_percentage:** Clears the configured alarm threshold. The default value for threshold is 50%.

- **sess-min-sessmgr-cnt** *number\_of\_sessmgr\_with\_least\_calls*: Configures the number of count of session managers with minimum number of calls to be monitored for calculating uneven session distribution.
- **sess-active** *number\_of\_min\_active\_session\_system\_wide*: Configures the active sessions after which uneven call distribution threshold will be monitored. The default value is 10000.
- **monitoring sess-uneven-dist**: Enables or disables thresholds alerting for a group of thresholds. The number of threshold indicates the percentage difference of established session between the most loaded session manager and the least loaded session manager.
- **poll sess-uneven-dist interval** *interval range*: Configures the threshold polling interval. The value is rounded up to the closest multiple of 30 seconds. The default value is 900.
- **default**: Sets or restores the default value assigned for the specified parameter.

## Configuring SNMP Traps

Use the following configuration to configure SNMP traps for session managers and uneven resource distribution:

```
configure
  snmp trap [ enable | suppress ] { sessionUnevenDistribution |
sessionUnevenDistributionclear }
end
```

### NOTES:

- **sessionUnevenDistribution**: Configures the threshold for detection of uneven call distribution on session manager.
- **sessionUnevenDistributionclear**: Clears the threshold detection of uneven call distribution on session manager.

## Monitoring and Troubleshooting

This section provides information to monitor and troubleshoot this feature using show commands and bulk statistics.

### Show Commands and Outputs

This section provides information regarding show commands and/or their outputs in support of this feature.

#### show threshold

The output of this command displays the following fields:

```
show threshold

Threshold operation model: ALARM

Configured thresholds:

      Name:          sess-uneven-dist
      Config Scope:  SYSTEM
      Threshold:     20%
```

```
Clear Threshold: 10%
```

```
Active thresholds:
```

```
Name:          sess-uneven-dist
Config Scope:  SYSTEM
Threshold:     20%
Clear Threshold: 10%
Poll Interval: 120Seconds
Next Poll Time: 2021-Aug-10+17:32:00
```

```
Enabled threshold groups: (name, scope)
sess-uneven-dist          SYSTEM
```

```
Non-default poll intervals:
place-holder              0Sec
sess-uneven-dist         120Sec
```

```
No outstanding alarm
```

### show threshold all

The output of this command displays the following fields:

```
show threshold all
```

```
Threshold operation model: ALARM
```

```
Configured thresholds:
```

```
Name:          sess-uneven-dist
Config Scope:  SYSTEM
Threshold:     20%
Clear Threshold: 10%
```

```
Active thresholds:
```

```
Name:          sess-uneven-dist
Config Scope:  SYSTEM
Threshold:     20%
Clear Threshold: 10%
Poll Interval: 120Seconds
Next Poll Time: 2021-Aug-10+17:34:00
```

```
Enabled threshold groups: (name, scope)
sess-uneven-dist          SYSTEM
```

```
Non-default poll intervals:
place-holder              0Sec
sess-uneven-dist         120Sec
```

```
No outstanding alarm
```

### show threshold default

The output of this command displays the following fields:

```
show threshold default
Default Thresholds:
```

```
sess-uneven-dist          15Min    Notify Above    50%
```

### show snmp trap statistics

The output of this command displays the following fields:

```
show snmp trap statistics
SNMP Notification Statistics:
  Total number of notifications      : 118
  Last notification sent             : Tuesday August 10 17:31:56 IST 2021
  Notification sending is           : enabled
  Notifications have never been disabled
  Notifications have never been cleared
  Notifications in current period   : 2
  Notifications in previous period  : 0
  Notification monitor period       : 300 seconds
```

Trap Name	#Gen	#Disc	Disable	Last Generated
SessionUnevenDistribution	1	0	0	2021:08:10:13:36:00
SessionUnevenDistributionClear	1	0	0	2021:08:10:15:12:00

```
Total number of notifications Disabled : 92
```

