

CLI Commands

Virtual Multimedia Resource Function

User Guide

Copyright

© Ericsson AB 2016, 2017. All rights reserved. No part of this document may be reproduced in any form without the written permission of the copyright owner.

Disclaimer

The contents of this document are subject to revision without notice due to continued progress in methodology, design and manufacturing. Ericsson shall have no liability for any error or damage of any kind resulting from the use of this document.



Contents

1	Introduction	1
2	Command Access Restriction	2
3	mrf_appl Commands	3
3.1	announcement-counters	4
3.2	announcement-status	5
3.3	h248-counters	8
3.4	h248interface-counters	9
3.5	compute-resource	10
3.6	context-info	11
3.7	sctp-pm-counters	13
3.8	sctp-status	14
3.9	service-pm-counters	15
3.10	status	17
3.11	internals	18
3.12	overload-control	19
4	ipp Commands	21
4.1	ipp ping	21
4.2	ipp conf	22
4.3	ipp debug-counters	22
4.4	ipp pm-counters	25
4.5	ipp discard-counters	26
4.6	ipp error-counters	29
4.7	ipp signal-counters	31
4.8	ipp ethdev-counters	33
4.9	ipp dpdk-counters	34
4.10	ipp internals	40
5	vMRF Utility Scripts	47
5.1	verify_vmrf_cluster_status.py	47
5.2	verify_vmrf_node_status.py	47
5.3	collectData.py	48
5.4	mrf_export_conf.py	48



5.5	mrf_import_conf.py	48
6	Linux Commands	49



1 Introduction

This User Guide describes the Command-Line Interface (CLI) Commands available for use only in the Virtual Multimedia Resource Function (vMRF).



2 Command Access Restriction

Users have access to CLI commands as defined by the POSIX group shown in [Table 1](#).

Table 1 POSIX Group for Command Restriction

Name	Description
mrf-op	Normal operator; Access to all vMRF CLI commands for information printing

CLI commands, by default, are run on the SC VM that the user logged on using SSH. Commands can be run on the VNF level by adding **cluster run** to the command.

It is possible to run commands on a specific PL VM for troubleshooting purposes.

Note: Commands that are defined for SC VMs (for example, commands that are used to operate MOs) cannot be run on PL VMs.



3 mrf_appl Commands

Table 2 mrf_appl Commands

Name	Description	POSIX Group(s) with Access
announcement-counters on page 4	Displays announcement PM counters since last restart	mrf-op
announcement-status on page 5	Displays information on announcement playing failures	mrf-op
h248-counters on page 8	Displays H.248 command statistics and information on possible command execution failures	mrf-op
h248interface-counters on page 9	Displays H.248 interface-related counters.	mrf-op
compute-resource on page 10	Displays counters related to compute-resource.	mrf-op
context-info on page 11	Displays context-related data and statistics	mrf-op
sctp-pm-counters on page 13	Displays Linux kernel SCTP ⁽¹⁾ counters	mrf-op
sctp-status on page 14	Displays the operational state of SCTP links	mrf-op
service-pm-counters on page 15	Displays Service PM counters since last restart	mrf-op
status on page 17	Command to query signalling state	mrf-op
internals on page 18	Displays application internal info	mrf-op

(1) Stream Control Transmission Protocol



3.1 announcement-counters

This command displays announcement-related PM counters since the last restart. Counter values are not stored to disk, that is, counters are reset when the application is restarted.

Options without arguments:

-h, --help Prints the help message.

Example: Print Announcement Counters

```
cli_tool mrf_appl announcement-counters
```

```
Basic Announcement ID: 11 lang: en-GB  
basic/phr_annc.wav
```

```
-----  
announcementPlayReqs           : 34  
announcementPlayFails          : 0
```

```
Basic Announcement ID: 103 lang: en-GB  
basic/3.wav
```

```
-----  
announcementPlayReqs           : 2  
announcementPlayFails          : 0
```

```
Basic Announcement ID: 107 lang: en-GB  
basic/phr_7.wav
```

```
-----  
announcementPlayReqs           : 2  
announcementPlayFails          : 0
```

```
Basic Announcement ID: 111 lang: en-GB  
basic/11.wav
```

```
-----  
announcementPlayReqs           : 2  
announcementPlayFails          : 0
```

```
Variable announcement Type: TIME lang: en-GB  
variable/Time_en-GB.lua
```

```
-----  
announcementPlayReqs           : 1  
announcementPlayFails          : 0
```

```
Variable announcement Type: DIGITS lang: fr-FR  
variable/Digits_fr-FR.lua
```

```
-----  
announcementPlayReqs           : 0  
announcementPlayFails          : 0
```



3.2 announcement-status

This command displays information on failures in announcement playing.

Options without arguments:

- h, --help** Prints the help message.
- s, --status** Prints information on failures in announcement playing.
- j, --json** Prints information on failures in json format.

Options with mandatory arguments:

- c, --clear** Clears fault information specified in the argument.

Example: Print Information on Failures in Announcement Playing

```
cli_tool mrf_appl announcement-status --status
```

```
-----
ANNOUNCEMENT FAULTS
-----
--
time          announcementId  language  faultId  category
announcementId  language  description
-----
--
2016-12-21T09:42:19+00:00      1          CONFIGURATION FAULT
555          en-GB          Missing BasicAnnouncement MO configuration.
                                     Announcement requested in H.248 is not configured.
2016-12-21T09:43:05+00:00      2          INFORMATION ONLY
214          en-GB          File caching failure:
                                     File not found: ./cache/2_JANUARY.wav
                                     Cache automatically recovered
2016-12-21T09:43:22+00:00      3          INFORMATION ONLY
216          en-GB          File caching failure:
                                     File not found: ./cache/0_MARCH.wav
                                     Cache automatically recovered
2016-12-21T10:40:55+00:00      4          CONFIGURATION FAULT
DATE          en-GB          Missing VariableAnnouncement MO
configuration.
                                     Announcement requested in H.248 is not configured.
2016-12-21T10:40:55+00:00      5          CONFIGURATION FAULT
TIME          en-GB          Missing VariableAnnouncement MO
configuration.
```



```
Announcement requested in H.248 is not configured. →
2016-12-21T10:40:55+00:00 6 CONFIGURATION FAULT →
DIGITS en-GB Missing VariableAnnouncement MO →
configuration. →

Announcement requested in H.248 is not configured. →
2016-12-21T10:42:25+00:00 7 CONFIGURATION FAULT →
NUMBER en-GB Variable Announcement logic execution error. →

logicFile: /announcement_storage/variable/Date_en-GB.lua →

input data: 0 →

lua interpreter error: "ERROR in function →
get_play_list_adpter():⇒ →
./cache/19_Date_en-GB.lua:103: Input length is not 8" →
----- →
-- →
```

Example: Remove Entries with a Specific <faultId>

cli_tool mrf_appl announcement-status --clear 4

```
Removed announcement fault with faultId = 4
cli_tool mrf_appl announcement-status --status →
----- →
-- →
ANNOUNCEMENT FAULTS →
----- →
-- →
time          faultId  category →
announcementId language  description →
----- →
-- →
2016-12-21T09:42:19+00:00 1 CONFIGURATION FAULT →
555 en-GB Missing BasicAnnouncement MO configuration. →

Announcement requested in H.248 is not configured. →

2016-12-21T09:43:05+00:00 2 INFORMATION ONLY →
214 en-GB File caching failure: →

File not found: ./cache/2_JANUARY.wav →

Cache automatically recovered →

2016-12-21T09:43:22+00:00 3 INFORMATION ONLY →
216 en-GB File caching failure: →

File not found: ./cache/0_MARCH.wav →

Cache automatically recovered →

2016-12-21T10:40:55+00:00 5 CONFIGURATION FAULT →
TIME en-GB Missing VariableAnnouncement MO →
configuration. →
----- →
```



```

Announcement requested in H.248 is not configured.
2016-12-21T10:40:55+00:00      6      CONFIGURATION FAULT      →
DIGITS      en-GB      Missing VariableAnnouncement MO      →
configuration.

Announcement requested in H.248 is not configured.      →

2016-12-21T10:42:25+00:00      7      CONFIGURATION FAULT      →
NUMBER      en-GB      Variable Announcement logic execution error.      →

logicFile: /announcement_storage/variable/Date_en-GB.lua      →

input data: 0      →

lua interpreter error: "ERROR in function      →
get_play_list_adpter()':⇒      →
./cache/19_Date_en-GB.lua:103: Input length is not 8"      →
-----      →
--      →

```

Example: Remove All Entries of Category INFORMATION ONLY

cli_tool mrf_appl announcement-status --clear info

```

Removed announcement fault with faultId = 4
cleared 2 faults
cli_tool mrf_appl announcement-status --status
-----
--
ANNOUNCEMENT FAULTS
-----
--
time      faultId  category
announcementId      language      description
-----
--
2016-12-21T09:42:19+00:00      1      CONFIGURATION FAULT      →
555      en-GB      Missing BasicAnnouncement MO configuration.      →
Announcement requested in H.248 is not configured.      →

2016-12-21T10:40:55+00:00      5      CONFIGURATION FAULT      →
TIME      en-GB      Missing VariableAnnouncement MO      →
configuration.      →
Announcement requested in H.248 is not configured.      →

2016-12-21T10:40:55+00:00      6      CONFIGURATION FAULT      →
DIGITS      en-GB      Missing VariableAnnouncement MO      →
configuration.      →
Announcement requested in H.248 is not configured.      →

2016-12-21T10:42:25+00:00      7      CONFIGURATION FAULT      →
NUMBER      en-GB      Variable Announcement logic execution error.      →

logicFile: /announcement_storage/variable/Date_en-GB.lua      →

input data: 0      →

lua interpreter error: "ERROR in function      →
get_play_list_adpter()':⇒      →

```



```
./cache/19_Date_en-GB.lua:103: Input length is not 8"
-----
--
```

Example: Remove All Entries

```
cli_tool mrf_appl announcement-status --clear all
```

```
cleared 4 faults
cli_tool mrf_appl announcement-status --status
ANNOUNCEMENTS OK
```

3.3 h248-counters

This command displays H.248 command statistics and information on possible command execution failures.

Options without arguments:

- h, --help** Prints the help message.
- t, --timestamps** Lists H.248 command counters, with a timestamp for the last 10 error or reason message.
- c, --clear** Resets all H.248 command counters.
- j, --json** Prints the current status of SCTP link in `json` format.

Example: Print Command Statistics

```
cli_tool mrf_appl h248-counters
```

```
Add Request total: 1 (Emergency: 0 IEPS: 0 Priority: 0)
    Pendlings: 0
    Pending limit exceeded: 0
    Retransmissions: 0
    Retransmission limit exceeded: 0
```

```
Modify Request total: 0 (Emergency: 0 IEPS: 0 Priority: 0)
    Pendlings: 0
    Pending limit exceeded: 0
    Retransmissions: 0
    Retransmission limit exceeded: 0
```

```
Move Request total: 0
    Pendlings: 0
    Pending limit exceeded: 0
    Retransmissions: 0
    Retransmission limit exceeded: 0
```



```

Subtract Request total: 1
    Pendlings: 0
    Pending limit exceeded: 0
    Retransmissions: 0
    Retransmission limit exceeded: 0

Notify Request total: 0
    Pendlings: 0
    Pending limit exceeded: 0
    Retransmissions: 0
    Retransmission limit exceeded: 0

Service Change Request total: 6
    Pendlings: 0
    Pending limit exceeded: 0
    Retransmissions: 0
    Retransmission limit exceeded: 0

    4 sent with reason 901 (GCP_COLD_BOOT)
    Originated from MRFP_APPL at location 0 (visible →
as ERR_LOC_00000 in source code)

    2 sent with reason 905
    (GCP_TERMINATION_TAKEN_OUT_OF_SERVICE) →
    Originated from MRFP_APPL at location 0 (visible →
as ERR_LOC_00000 in source code)

Audit Capability Request total: 0
    Pendlings: 0
    Pending limit exceeded: 0
    Retransmissions: 0
    Retransmission limit exceeded: 0

Audit Value Request total: 0
    Pendlings: 0
    Pending limit exceeded: 0
    Retransmissions: 0
    Retransmission limit exceeded: 0

Topology Request total: 0
    Pendlings: 0
    Pending limit exceeded: 0
    Retransmissions: 0
    Retransmission limit exceeded: 0

```

3.4 h248interface-counters

This command displays H248 interface-related counters.

Options without arguments:



-h, --help Prints the help message.

-j, --json Prints counters in `json` format.

Options with mandatory arguments:

-i, --id Prints counters of an `MrfH248Interface` specified by its ID.

Example: Print Counters

```
cli_tool mrf_appl h248interface-counters
```

```
[2016-11-01 11:41:49.019]
LDN =
MediaResourceFunction=1,MrfH248Control=1,MrfH248Interface →
=1
audioConfParticipantCreations      : 100
audioConfParticipants              : 0
audioConferenceCreations            : 18
audioConferences                    : 0
terminationReqs                    : 120
rejTerminationReqs                 : 2
abnormTermTerminations              : 0
LDN =
MediaResourceFunction=1,MrfH248Control=1,MrfH248Interface →
=2
audioConfParticipantCreations      : 0
audioConfParticipants              : 0
audioConferenceCreations            : 0
audioConferences                    : 0
terminationReqs                    : 12
rejTerminationReqs                 : 0
abnormTermTerminations              : 0
```

3.5 compute-resource

This command displays PM counters related to vSwitch packet loss, memory, and swap memory use, and disk space of a VM, represented by the *ComputeResource* MO.

Options without arguments:

-h, --help Prints the help message.

-c, --ClearStaticValues Clears previously set static values from counters.



Example: Print Compute Resource Counters

```
cli_tool mrf_appl compute-resource
```

```
ComputeResource=1
vSwitchTxPacketLoss [ppm]      : 0
memoryTotal [kB]                : 4040360
memoryUsed [%]                  : 44
swapMemoryTotal [kB]            : 0
swapMemoryUsed [%]              : 0
diskSize [kB]                   : 3732144
diskPercentUsed [%]             : 15
```

3.6 context-info

This command gives information on active contexts.

Options without arguments:

-h, --help Prints the help message.

-l, --list Prints active contextIDs.

Options with mandatory arguments:

-a, --alive Prints contexts that have been in use for the number of seconds specified in the argument.

-i, --id Prints detailed information on a context specified by its ID.

j, --json Prints context-related information in json format.

Example: Print Summary Context Information

```
cli_tool mrf_appl context-info
```

```
Context creation rate within last 94502s: 0 /s

Total number of active contexts 0
Normal Calls: 0
Emergency Calls: 0
Priority Calls: 0
IEPS Calls: 0
```

Example: List Contexts Alive for 2 Seconds or More

```
cli_tool mrf_appl context-info -a 2
```



```
[2016-09-14 09:55:31.898]

Context creation rate within last 1s: 1.28946 /s

Total number of contexts alive for 2s or more: 3

ContextId: 15 alive for 00:00:05
ContextId: 14 alive for 00:00:07
ContextId: 13 alive for 00:03:01
```

Example: List Active Context IDs

```
cli_tool mrf_appl context-info -l

[2016-03-10 08:39:49.556]

Context creation rate within last 1s: 1 /s

Total number of contexts 3
Normal Calls: 3
Emergency Calls: 0
Priority Calls: 0
IEPS Calls: 0
Active context IDs:
7 (NORMAL_CALL)
6 (NORMAL_CALL)
5 (NORMAL_CALL)
```

Example: List Detailed Information on One Context

```
cli_tool mrf_appl context-info -i 1

[2016-09-12 05:31:05.341]

Context creation rate within last 15s: 0 /s

ContextId=1
CallType=NORMAL_CALL
Alive: 00:00:16 Created: 2016-09-12T05:30:49+00:00

Command history:

2016-09-12T05:30:49+00:00 ADD transactionId=2 termId=rtp/ →
1/1 CallType=NORMAL_CALL ErrorCode=0
Stream1=AUDIO, PCMA, Send/receive
```



Example: List Detailed Information on All Contexts

```
cli_tool mrf_appl context-info -i all
```

```
[2016-09-12 05:38:45.996]
```

```
Context creation rate within last 460s: 0 /s
```

```
-----
```

```
ContextId=2
```

```
CallType=NORMAL_CALL
```

```
Alive: 00:00:01 Created: 2016-09-12T05:38:44+00:00
```

```
Command history:
```

```
2016-09-12T05:30:49+00:00 ADD transactionId=2 termId=rtp/ →  
1/1 CallType=NORMAL_CALL ErrorCode=0  
Stream1=AUDIO, PCMA, Send/receive
```

```
-----
```

```
ContextId=3
```

```
CallType=EMERGENCY_CALL
```

```
Alive: 00:00:01 Created: 2016-09-12T05:38:44+00:00
```

```
Command history:
```

```
2016-09-12T05:30:49+00:00 ADD transactionId=2 termId=rtp/ →  
1/1 CallType=NORMAL_CALL ErrorCode=0  
Stream1=AUDIO, PCMA, Send/receive
```

```
-----
```

3.7 sctp-pm-counters

This command displays SCTP PM counters.

Options without arguments:

-h, --help Prints the help message.

Options with mandatory arguments:

-n, --name Prints an SCTP counter specified by its name.

Example: Print the Counters

```
cli_tool mrf_appl sctp-pm-counters
```

```
[2016-03-10 09:26:21.030]
```

```
sctpCurrEstab : 2
```



```
sctpActiveEstabs      : 10
sctpPassiveEstabs     : 0
sctpAbortedS          : 28370
sctpShutdowns        : 8
sctpOutOfBlues        : 0
sctpChecksumErrors    : 0
sctpOutCtrlChunks     : 29383
sctpOutOrderChunks    : 167
sctpOutUnorderChunks  : 0
sctpInCtrlChunks      : 29507
sctpInOrderChunks     : 63
sctpInUnorderChunks   : 0
sctpFragUsrMsgs       : 0
sctpReasmUsrMsgs      : 0
sctpOutSCTPPacks      : 29550
sctpInSCTPPacks       : 29567
```

Example: Print One Counter

```
cli_tool mrf_appl sctp-pm-counters -n sctpCurrEstab
```

```
[2016-03-10 09:27:18.521]
sctpCurrEstab           : 2
```

3.8 sctp-status

This command prints the `operationalState` attribute of an SCTP link.

Options without arguments:

- h, --help** Prints the help message.
- j, --json** Prints all information about the MTAS in `json` format.

Options with mandatory arguments:

- i, --id** Prints the `operationalState` attribute of a given MTAS.
- o, --operationalState** Prints all information about the MTAS with the specified `operationalState`.

Example: Print SCTP Link Operational State for All MTAS

```
cli_tool mrf_appl sctp-status
```

```
[2016-09-13 11:54:21.594]
LDN=
```

→



```
MediaResourceFunction=1,MrfH248Control=1,MrfH248Interface →
=2, operationalState: DISABLED, administrativeState: →
UNLOCKED
LDN= →
MediaResourceFunction=1,MrfH248Control=1,MrfH248Interface →
=1, operationalState: ENABLED, administrativeState: →
UNLOCKED
```

Example: Print Disabled SCTP Links

```
cli_tool mrf_appl sctp-status -o DISABLED
```

```
[2016-09-13 11:54:21.594]
LDN= →
MediaResourceFunction=1,MrfH248Control=1,MrfH248Interface →
=2, operationalState: DISABLED, administrativeState: →
UNLOCKED
```

Example: Print SCTP Link Operational State for a MTASs

```
cli_tool mrf_appl sctp-status -i
MediaResourceFunction=1,MrfH248Control=1,MrfH248Interface
=2
```

```
[2016-09-13 11:54:21.594]
LDN= →
MediaResourceFunction=1,MrfH248Control=1,MrfH248Interface →
=2, operationalState: DISABLED, administrativeState: →
UNLOCKED
```

3.9 service-pm-counters

This command prints service PM counters since the last restart.

Options without arguments:

- h, --help** Prints the help message.
- j, --json** Prints service PM counters in `json` format.

Options with mandatory arguments:

- s, --service-name** Prints service counters specified by their name. Valid service names are: `amrnb`, `amrwb`, `dtmfr`, `dtmfs`, `pcm`, `g722`, `g729`, `announcement`, `jitter`, `audio-mixing`, `rtp`, `tsr`, `fh`.

**Example: Print All Service PM Counters****cli_tool mrf_appl service-pm-counters**

```
[2017-01-10 08:49:31.528]
Counters for DTMFS
pmBusyInstances           : 0
pmNormalRelease           : 0
pmTotalSeizures           : 0
pmUnsuccSeizures         : 0
-----
Counters for TSR
pmBusyInstances           : 0
pmNormalRelease           : 0
pmTotalSeizures           : 0
pmUnsuccSeizures         : 0
-----
Counters for DTMFR
pmBusyInstances           : 0
pmNormalRelease           : 0
pmTotalSeizures           : 0
pmUnsuccSeizures         : 0
-----
Counters for AMRNB
pmBusyInstances           : 0
pmNormalRelease           : 1
pmTotalSeizures           : 1
pmUnsuccSeizures         : 0
-----
Counters for FH
pmBusyInstances           : 0
pmNormalRelease           : 88
pmTotalSeizures           : 88
pmUnsuccSeizures         : 0
-----
Counters for ANNOUNCEMENT
pmBusyInstances           : 0
pmNormalRelease           : 42
pmTotalSeizures           : 42
pmUnsuccSeizures         : 0
-----
Counters for AUDIO_MIXING
pmBusyInstances           : 0
pmNormalRelease           : 2
pmTotalSeizures           : 2
pmUnsuccSeizures         : 0
-----
Counters for RTP_RTCP
pmBusyInstances           : 0
pmNormalRelease           : 88
pmTotalSeizures           : 88
pmUnsuccSeizures         : 0
```



```

-----
Counters for JITTER
pmBusyInstances      : 0
pmNormalRelease      : 88
pmTotalSeizures      : 88
pmUnsuccSeizures     : 0
-----
Counters for PCM
pmBusyInstances      : 0
pmNormalRelease      : 88
pmTotalSeizures      : 88
pmUnsuccSeizures     : 0
-----
Counters for AMRWB
pmBusyInstances      : 0
pmNormalRelease      : 16
pmTotalSeizures      : 16
pmUnsuccSeizures     : 0
-----
Counters for G729
pmBusyInstances      : 0
pmNormalRelease      : 1
pmTotalSeizures      : 1
pmUnsuccSeizures     : 0
-----

```

Example: Print DTMFR Service PM Counters

```
cli_tool mrf_appl service-pm-counters -s dtmfr
```

```

[2016-10-03 11:20:20.013]
Service counters for DTMFR:
pmBusyInstances      : 0
pmNormalRelease      : 0
pmTotalSeizures      : 5
pmUnsuccSeizures     : 0

```

3.10 status

This command prints signaling state information.

Options without arguments:

- h, --help** Prints the help message.
- j, --json** Prints signaling state information in `json` format.

**Example: Print Signaling State Information****cli_tool mrf_appl status**

```

mrsv-admin@fv-mrsv:~$ cli_tool mrf_appl status
[2016-09-20 12:41:09.308]
Signalling State:
=====
H248Interface-Id: 2 H248Interface-LDN: →
"MediaResourceFunction=1,MrfH248Control=1,MrfH248Interfac →
e=2" H248Interface association state: UNLOCKED
H248Interface Service Change state: COMPLETED
Sctp operational state: ENABLED
Remote IP Address: 10.0.0.2 Remote Port: 9101
=====
H248Interface-Id: 1 H248Interface-LDN: →
"MediaResourceFunction=1,MrfH248Control=1,MrfH248Interfac →
e=1" H248Interface association state: UNLOCKED
H248Interface Service Change state: COMPLETED
Sctp operational state: ENABLED
Remote IP Address: 10.0.0.2 Remote Port: 2944
=====
LocalEndpoint Id: 3
Dscp: 40
Local port: 2944
=====
Sctp socket state: INITIATED.
DHCP assigned IP: 10.0.0.4
=====
MRF instance administrative state: UNLOCKED
=====

```

3.11 internals

This command prints application internal information.

Options without arguments:

- h, --help** Prints the help message.
- j, --json** Prints application internal information in json format.

Example: Print Application Internal Information**cli_tool mrf_appl internals**

```

mrsv-admin@fv-mrsv:~$ cli_tool mrf_appl internals
[2016-09-09 12:38:10.111]
Timer state:

```



```
=====
Number of running timers : 1
Number of timer instances: 11
Next timer expiration    : [2016-09-09 12:38:12.824]
Last timer expiration    : [2016-09-09 12:38:12.824]
=====
IsOiImmBusy: 0
```

3.12 overload-control

This command is used to check the status of overload supervision.

Options without arguments:

-h, --help Prints the help message.

-s, --status Prints the status of the overload supervision.

-i, --setCapacityLimitExceededPercentage

Defines the percentage of the total available capacity that is used to calculate ⇒

capacityLimitExceededThresholdHigh. Default value is 80%.

-m, --setMpdProcessorLoad

Sets the MPD processor load to a static value in percents (range: 0–100). Use the option `setOverloadCalcState <calcBasedLoad>` to change back to the mode where load is measured and calculated normally.

-n, --setIppProcessorLoad

Sets the IPP processor load to a static value in tenths of a percent (range: 0–1000). Use the option `setOverloadCalcState <calcBasedLoad>` to change back to the mode where load is measured and calculated normally.

-e, --setIppVSwitchLoad

Sets the IPP vSwitch load to static value in tenths of a percent (range: 0–1000). Use the option `setOverloadCalcState <calcBasedLoad>` to change back to the mode where load is measured and calculated normally.

-p, --setApplProcessorLoad



Sets the APPLICATION processor load to static value in percent (range: 0–100). Use the option `setOverloadCalcState <calcBasedLoad>` to change back to mode where load is measured and calculated normally.

Example: Print the Current Status of the Overload Supervision

cli_tool mrf_appl overload-control -s

```
[2016-03-09 12:35:57.770]
Overload Control Status:
-----
Constants:
capacityForPriorityCalls:          2.0 %
capacityLimitExceededThresholdHigh: IPP: 76.4 % MPD: 76 % =>
APPL: 76 % (threshold for CapacityLimitExceeded Alarm raise)
capacityLimitExceededThresholdLow: IPP: 76.4 % MPD: 76 % =>
APPL: 76 % => (threshold for CapacityLimitExceeded Alarm cease)
overloadThresholdHigh:            IPP: 98.0 % MPD: 98 % =>
APPL: 98 % => (threshold for Overload Alarm raise and normal call rejection)
overloadThresholdLow:             IPP: 96.0 % MPD: 96 % =>
APPL: 96 % =>
(threshold for Overload Alarm cease)
loadControlInterval:              1000 ms
loadMeasurementInterval:          100 ms
loadMeasurementArrayLength:       10
-----

Load Information (used in load control):
Instance   processor load % vSwitch loss based load %   resource load %
allocated cores =>
(core index start from 1)
MPD        0          -          0          MPD
control: 3  MPD userplane: 4
IPP        5.68      0.0      0.1          1
APPLICATION 1        -          -          3
-----

Overload Status:
MPD:        NO_OVERLOAD
IPP:        NO_OVERLOAD
APPLICATION: NO_OVERLOAD
-----

Overload Calculation State:
MPD:        measurement based load
IPP:        measurement based load
APPLICATION: measurement based load
-----

CPU load on cores (based on /proc/stat):
CoreIndex:  3 (APPL, MPD control) 4 (MPD userplane)
CPU load (%): 1          1.03
```



4 ipp Commands

Table 3 ipp commands

Name	Description	POSIX Group with Access
<i>ping</i>	Ping remote host over media link	mrf-op
<i>conf</i>	Print current network configuration for media	mrf-op
<i>debug-counters</i>	Displays debug counters	mrf-op
<i>pm-counters</i>	Displays PM counters	mrf-op
<i>discard-counters</i>	Displays discard counters	mrf-op
<i>signal-counters</i>	Displays signal counters	mrf-op
<i>ethdev-counters</i>	Displays ethdev counters	mrf-op
<i>dpdk-counters</i>	Displays various dpdk counters	mrf-op
<i>error-counters</i>	Displays error counters	mrf-op
<i>internals</i>	Print internal configuration and statistics	mrf-op

4.1 ipp ping

Mandatory parameters:

- m, --mediaipif** Specifies the host by its media IP interface ID from where the ping is sent. Acceptable values can be found in the output of `ipp conf`, as described in [ipp conf](#) on page 22. Either the `-m` or the `-n` option is mandatory.
- n, --network** Specifies the host on the network by its network name from where the ping is sent. Either the `-m` or the `-n` option is mandatory.
- remote_address**



The IP address of the host to ping, in dotted decimal notation.

Example: Ping a Host Specified by the Media IP Interface

```
cli_tool ipp ping -m 1 192.0.2.118
```

```
PING 192.0.2.118 64 bytes of data
64 bytes from 192.0.2.118: icmp_seq=0 ttl=64 time=9 ms
```

Example: Ping a Host Specified by the Network Name

```
cli_tool ipp ping -n default_network 10.2.0.3
```

```
PING 10.2.0.3 56 bytes of data
56 bytes from 10.2.0.3: icmp_seq=0 ttl=64 time=2 ms
```

4.2 ipp conf

Example: Faulty Configuration, Next Hop MAC Not Resolved

```
cli_tool ipp conf
```

```
Configuration:
Network (id:1)                                default_network
  VLAN ID                                     -
  UDP Port Range                             1024..65535
  Media IP IF (id:1)
    Ethdev                                    em1 (id:0)
    MAC                                       FA:16:EE:48:F9:67
    Link                                     UP
    IP                                       10.2.0.42
    Status                                  DHCP OK
  Static Route (id:4)
    IP                                       0.0.0.0/0
    Nexthop (id:4)
      MAC                                    FA:16:EE:EF:A5:49
      IP                                    10.2.0.1
```

4.3 ipp debug-counters

Example: Print the Counters

```
cli_tool ipp debug-counters
```

```
[2016-03-10 09:31:35.111]
```



```

Debug counters:
ARP_BROADCAST_REQUESTS_SENT      : →
4
ARP_BROADCAST_PROBE_REQUESTS_SENT : →
8
ARP_BROADCAST_REQUESTS_RECEIVED  : →
0
ARP_UNICAST_REQUESTS_RECEIVED    : →
1190
ARP_REPLIES_RECEIVED             : →
2
NEXTHOP_MAC_UPDATED_AT_ARP_REPLY : →
2
NEXTHOP_MAC_UPDATED_AT_ICMPV6_NEIGHBOR_SOLICITATION : →
2
ICMPV4_ECHO_REQUESTS_RECEIVED    : →
0
ICMPV4_ECHO_REQUESTS_SENT        : →
1
ICMPV4_ECHO_REPLY_RECEIVED       : →
0
ICMPV4_ECHO_REPLY_SENT           : →
0
ICMPV4_UNREACHABLE_NETWORK_RECEIVED : →
0
ICMPV4_UNREACHABLE_HOST_RECEIVED : →
0
ICMPV4_UNREACHABLE_PORT_RECEIVED : →
11
ICMPV4_FRAGMENTATION_NEEDED_RECEIVED : →
0
ICMPV4_TIME_EXCEEDED_RECEIVED    : →
0
ICMPV6_PACKETS_RECEIVED          : →
0
ICMPV6_UNSUPPORTED_MESSAGES_RECEIVED : →
0
ICMPV6_NEIGHBOR_SOLICITATION_RECEIVED : →
757
ICMPV6_NEIGHBOR_ADVERTISEMENT_RECEIVED : →
2
ICMPV6_NEIGHBOR_SOLICITATION_SENT : →
2
ICMPV6_ECHO_REQUEST_SENT         : →
0
ICMPV6_ECHO_REQUEST_RECEIVED     : →
0

```



```
ICMPV6_ECHO_REPLY_SENT           : →
0
ICMPV6_ECHO_REPLY_RECEIVED       : →
0
ICMPV6_UNSOLICITED_NEIGHBOR_ADVERTISEMENTS_SENT : →
2
ICMPV6_UNSOLICITED_NEIGHBOR_ADVERTISEMENTS_DAD_SENT : →
2
ICMPV6_DU_NO_ROUTE_TO_DESTINATION_RECEIVED : →
0
ICMPV6_DU_COMM_ADMIN_PROHIBITED_RECEIVED : →
0
ICMPV6_DU_BEYOND_SOURCE_ADDR_SCOPE_RECEIVED : →
0
ICMPV6_DU_ADDR_UNREACHABLE_RECEIVED : →
0
ICMPV6_DU_PORT_UNREACHABLE_RECEIVED : →
0
ICMPV6_DU_SRC_ADDR_FAIL_INGRESS_POLICY_RECEIVED : →
0
ICMPV6_DU_REJECT_ROUTE_TO_DEST_RECEIVED : →
0
ICMPV6_TE_HOP_LIMIT_EXCEEDED_RECEIVED : →
0
ICMPV6_TE_FRAGMENT_REASSEMBLY_TIME_EXCEEDED_RECEIVED : →
0
ICMPV6_PACKET_TOO_BIG_RECEIVED : →
0
MPD_PACKETS_IN                   : →
0
MPD_PACKETS_OUT                  : →
0
IP_TRANSLATION_UDP_PACKETS       : →
0
IP_TRANSLATION_ICMP_PACKETS      : →
0
DHCP_ACK_RECEIVED                : →
526
DHCP_OFFER_RECEIVED              : →
2
DHCP_NAK_RECEIVED                : →
0
DHCPV6_ADVERTISE_RECEIVED        : →
2
DHCPV6_REPLY_RECEIVED            : →
577
EXCESSIVE_TRAFFIC_THRESHOLD_EXCEEDED_ALARM_RAISE : →
```



```

0
EXCESSIVE_TRAFFIC_THRESHOLD_EXCEEDED_ALARM_Cease      : →
0
UDP_IPV4_MULTICONTEXT_OPTIMIZATION                    : →
0
UDP_IPV6_MULTICONTEXT_OPTIMIZATION                    : →
0
MEDIA_STOP_SUPERVISION_DETECTED_STOP                  : →
0
MEDIA_STOP_SUPERVISION_DETECTED_START                  : →
0

```

Example: Clear One Counter

```
cli_tool ipp debug-counters --clear
MEDIA_STOP_SUPERVISION_DETECTED_START
```

```
Cleared MEDIA_STOP_SUPERVISION_DETECTED_START debug      →
counter
```

Example: Clear All Counters

```
cli_tool ipp debug-counters --clear all
```

```
Cleared all debug counters
```

4.4 ipp pm-counters

This command displays PM counters.

Example

```
cli_tool ipp pm-counters
```

```

[2016-09-01 12:58:45.399]
PM counters:
default_network
MediaIPInterface (id:1)
    PM_MEDIA_IP_IF_RX_DISC_OCTETS_EXC      :      →
0
    PM_MEDIA_IP_IF_RX_DISC_PKTS_EXC       :      →
0
    PM_MEDIA_IP_IF_RX_DISC_PKTS_OTHER     :      →
0
    PM_MEDIA_IP_IF_RX_OCTETS              :      →
180300

```



```

                PM_MEDIA_IP_IF_RX_PKTS                :                →
2248
                PM_MEDIA_IP_IF_TX_DISC_PKTS_NO_NEXTHOP :                →
0
                PM_MEDIA_IP_IF_TX_OCTETS               :                →
179524
                PM_MEDIA_IP_IF_TX_PKTS                 : 2244

```

4.5 ipp discard-counters

Example

cli_tool ipp discard-counters

2016-03-10 09:38:07.523]

Discard counters:

```

UNSUPPORTED_ETHERTYPE                : →
0
IPV4_REASSEMBLY_NOT_IMPLEMENTED      : →
0
TOO_SHORT_PACKET_FOR_IPV4            : →
0
SEGMENTED_MBUF_NOT_IMPLEMENTED       : →
0
TOO_SHORT_PACKET_FOR_IPV6            : →
0
IPV4_UNSUPPORTED_NEXT_PROTO          : →
0
IPV6_UNSUPPORTED_NEXT_PROTO          : →
0
IPV6_REASSEMBLY_NOT_IMPLEMENTED      : →
0
IPV6_IPSEC_NOT_IMPLEMENTED           : →
0
IPV6_ROUTE_LOOKUP_FAILED             : →
0
IPV6_ROUTE_INVALID_NEXTHOP           : →
0
ARP_FRAME_TOO_SHORT                 : →
0
TOO_SHORT_PACKET_FOR_UDP             : →
0
TTL_EXCEEDED_IN_NAPT                : →
0
METADATA_CEP_NOT_VALID               : →
0
MEDIAIP_NOT_VALID                   : →
0
METADATA_CEPID_OUT_OF_RANGE          : →

```



```

0
ARP_UNSUPPORTED_OP_CODE : →
0
IPV4_ROUTE_INVALID_OUT_MEDIAIP : →
0
IPV4_ROUTE_INVALID_OUT_NETWORK : →
0
IPV4_ROUTE_LOOKUP_FAILED : →
0
IPV4_ROUTE_INVALID_NEXTHOP : →
0
IPV4_ROUTE_INVALID_ROUTE_ENTRY : →
0
NEXT_HOP_MAC_ADDR_NOT_SET : →
0
ICMPV6_UNSUPPORTED_MESSAGE_TYPE : →
0
ICMPV4_UNSUPPORTED_MESSAGE : →
0
ICMPV4_ECHO_REQUEST : →
0
ICMPV6_MESSAGE_FAILED_VALIDATION : →
0
ICMPV6_NDP_OPTION_NEEDED : →
0
ICMPV6_ECHO_REQUEST : →
0
UDP_RX_STREAM_MODE_DROP_TRAFFIC : →
4
UDP_TX_STREAM_MODE_DROP_TRAFFIC : →
0
UDP_RX_SOURCE_FILTERING_DROP_TRAFFIC : →
0
UDP_RX_INVALID_CHECKSUM_IPV4 : →
0
UDP_RX_INVALID_CHECKSUM_IPV6 : →
0
UDP_HEADER_EXCEEDS_MBUF : →
0
MPD_IN_INVALID_USERPLANE_CEP_ID : →
0
MPD_OUT_INVALID_USERPLANE_CEP_ID : →
0
MPD_IN_MBUF_ADJUST_FAILED : →
0
TOO_SHORT_PACKET_FOR_ICMP : →
0
RX_BANDWIDTH_POLICING_DROP_TRAFFIC : →
0
ICMPV6_DEST_UNREACHABLE_MSG_TOO_BIG : →
0
TOO_SHORT_PACKET_FOR_ICMPV6 : →

```



```
0
ICMPV6_PARAM_PROB_ERRONEOUS_HEADER_FIELD : →
0
ICMPV6_PARAM_PROB_UNRECOGNIZED_NEXT_HEADER : →
0
ICMPV6_PARAM_PROB_UNRECOGNIZED_IPV6_OPTIONS : →
0
DHCP_TOO_SHORT_PACKET : →
0
DHCP_INVALID_MAGIC_COOKIE : →
0
DHCP_BOOTP_REQUEST : →
0
DHCP_UNSUPPORTED_REPLY_TYPE : →
0
DHCP_INVALID_CLIENT_MAC_ADDRESS : →
0
DHCP_INVALID_MEDIAIP_ID : →
0
DHCP_AUTOCONF_NOT_ENABLED : →
0
DHCP_OFFER_REJECTED : →
0
DHCP_ACK_REJECTED : →
0
DHCP_INVALID_STATE : →
0
DHCPV6_MISSING_SERVER_IDENTIFIER_OPTION : →
0
DHCPV6_MISSING_CLIENT_IDENTIFIER_OPTION : →
0
DHCPV6_MISSING_IANA_OPTION : →
0
DHCPV6_MISSING_IAADDR_OPTION : →
0
DHCPV6_INVALID_LIFETIME_IN_IAADDR_OPTION : →
0
DHCPV6_INVALID_DUID_IN_CLIENT_IDENTIFIER_OPTION : →
0
DHCPV6_TOO_LONG_DUID_IN_SERVER_IDENTIFIER_OPTION : →
0
DHCPV6_INVALID_MEDIAIP_ID : →
0
DHCPV6_INVALID_SRC_PORT : →
0
DHCPV6_INVALID_DST_PORT : →
0
DHCPV6_INVALID_IA_ID : →
0
DHCPV6_NO_ADDRESS_AVAILABLE : →
0
DHCPV6_AUTOCONF_NOT_ENABLED : →
```



```

0
DHCPV6_INVALID_STATE                                : →
0
DHCPV6_ERROR_CODE_IN_REPLY                          : →
0
UNSUPPORTED_IP_TRANSLATION                          : →
0

```

4.6 ipp error-counters

Example

cli_tool ipp error-counters

```
[2016-03-10 09:39:11.283]
```

```

Error counters:
IP_ADDRESS_COLLISIONS_DETECTED                      : →
0
CEP_ALREADY_RESERVED                                : →
0
TOO_LARGE_MEDIA_IP_ID_FOR_CEP                       : →
0
TOO_LARGE_NEXTHOP_ID_FOR_CEP                        : →
0
CONFIGURED_NEXTHOP_ID_NOT_VALID_FOR_CEP             : →
0
CONFIGURED_MEDIAIP_ID_NOT_VALID_FOR_CEP             : →
0
UNSUITABLE_NETWORK_ID_FOR_CEP                      : →
0
NETWORK_MISMATCH_BETWEEN_CEP_AND_NEXTHOP           : →
0
NETWORK_MISMATCH_BETWEEN_CEP_AND_MEDIAIP           : →
0
CONFIGURED_NETWORK_NOT_VALID_FOR_CEP               : →
0
ADD_NETWORK_FAILED_FOR_TABLE                        : →
0
MODIFY_NETWORK_FAILED_FOR_TABLE                    : →
0
REMOVE_NETWORK_FAILED_FOR_TABLE                    : →
0
ADD_NEXTHOP_FAILED_FOR_TABLE                       : →
0
DELETE_NEXTHOP_FAILED_FOR_TABLE                    : →
0
ADD_MEDIA_IP_FAILED_FOR_TABLE                      : →
0
REMOVE_MEDIA_IP_FAILED_FOR_TABLE                   : →
0

```



```
ADD_STATIC_ROUTE_FAILED_FOR_TABLE      : →
0
REMOVE_STATIC_ROUTE_FAILED_FOR_TABLE    : →
0
RESERVE_IP_REQ_FAILED_FOR_TABLE         : →
0
MODIFY_IP_REQ_FAILED_FOR_TABLE           : →
0
RELEASE_IP_REQ_FAILED_FOR_TABLE         : →
0
CONNECT_IP_REQ_FAILED_FOR_TABLE         : →
0
DISCONNECT_IP_REQ_FAILED_FOR_TABLE      : →
0
CONNECT_IP_MPD_REQ_FAILED_FOR_TABLE     : →
0
ADD_ARP_ENTRY_FOR_MEDIA_IP_FAILED       : →
0
REMOVE_ARP_ENTRY_FOR_MEDIA_IP_FAILED    : →
0
ADD_ARP_ENTRY_FOR_NEXTHOP_FAILED        : →
0
REMOVE_ARP_ENTRY_FOR_NEXTHOP_FAILED     : →
0
CLASSIFIER_RTP_CEP_ENTRY_UPDATE_FAILED  : →
0
CLASSIFIER_RTP_CEP_ENTRY_DEL_FAILED     : →
0
CLASSIFIER_RTCP_CEP_ENTRY_UPDATE_FAILED : →
0
CLASSIFIER_RTCP_CEP_ENTRY_DEL_FAILED    : →
0
UDP_RX_ENTRY_ADD_FAILED                 : →
0
UDP_RX_ENTRY_MOD_FAILED                 : →
0
UDP_TX_ENTRY_ADD_FAILED                 : →
0
UDP_TX_ENTRY_MOD_FAILED                 : →
0
TX_ENTRY_ADD_FAILED                     : →
0
TX_INVALID_OUTPUT_PORT                  : →
0
ARP_PACKET_INSERT_FAILED                : →
0
NDP_PACKET_INSERT_FAILED                : →
0
ICMPV4_ECHO_PACKET_INSERT_FAILED        : →
0
DEL_ICMPV4_ECHO_ENTRY_FAILED            : →
0
```



```

ADD_ICMPV4_ECHO_ENTRY_FAILED           : →
0
ICMPV4_ECHO_REQUEST_SEND_FAILURE       : →
0
ICMPV6_ECHO_PACKET_INSERT_FAILED       : →
0
ICMPV6_ECHO_REQUEST_SEND_FAILURE       : →
0
INVALID_ICMPV4_IDENTITY_RECEIVED        : →
0
INVALID_LOCAL_PORT_FOR_CEP              : →
0
ICMPV6_PACKET_INSERT_FAILED            : →
0
ADD_STATIC_ROUTE_ENTRY_FOR_ROUTE_IPV4_FAILED : →
0
INVALID_BW_POLICING_CONFDATA_FOR_CEP    : →
0

```

4.7 ipp signal-counters

Example

cli_tool ipp signal-counters

```

[2016-03-10 09:39:58.995] Signal counters:
SIG_MSP_MSE_RI_NETWORK_CREATE_REQ      : →
2
SIG_MSP_MSE_RI_NETWORK_CREATE_CFM      : →
2
SIG_MSP_MSE_RI_NETWORK_CREATE_REJ      : →
0
SIG_MSP_MSE_RI_NETWORK_MODIFY_REQ      : →
0
SIG_MSP_MSE_RI_NETWORK_MODIFY_CFM      : →
0
SIG_MSP_MSE_RI_NETWORK_MODIFY_REJ      : →
0
SIG_MSP_MSE_RI_NETWORK_DELETE_REQ      : →
0
SIG_MSP_MSE_RI_NETWORK_DELETE_CFM      : →
0
SIG_MSP_MSE_RI_DSCP_TO_PBIT_CREATE_REQ : →
1
SIG_MSP_MSE_RI_DSCP_TO_PBIT_CREATE_CFM : →
1
SIG_MSP_MSE_RI_DSCP_TO_PBIT_CREATE_REJ : →
0
SIG_MSP_MSE_RI_DSCP_TO_PBIT_MODIFY_REQ : →
0
SIG_MSP_MSE_RI_DSCP_TO_PBIT_MODIFY_CFM : →

```



```
0
SIG_MSP_MSE_RI_DSCP_TO_PBIT_MODIFY_REJ      : →
0
SIG_MSP_MSE_RI_MEDIA_IP_INTERFACE_CREATE_REQ : →
8
SIG_MSP_MSE_RI_MEDIA_IP_INTERFACE_CREATE_CFM : →
4
SIG_MSP_MSE_RI_MEDIA_IP_INTERFACE_CREATE_REJ : →
0
SIG_MSP_MSE_RI_MEDIA_IP_INTERFACE_DELETE_REQ : →
0
SIG_MSP_MSE_RI_MEDIA_IP_INTERFACE_DELETE_CFM : →
0
SIG_MSP_MSE_RI_MEDIA_IP_INTERFACE_DELETE_CFM : →
0
SIG_MSP_MSE_RI_MEDIA_IP_INTERFACE_AUTOCONF_IND : →
532
SIG_MSP_MSE_RI_PING_REQ                      : →
1
SIG_MSP_MSE_RI_PING_CFM                     : →
1
SIG_MSP_MSE_RI_PING_REJ                     : →
0
SIG_MSP_MSE_RI_NEXT_HOP_CREATE_REQ          : →
4
SIG_MSP_MSE_RI_NEXT_HOP_CREATE_CFM          : →
4
SIG_MSP_MSE_RI_NEXT_HOP_CREATE_REJ          : →
0
SIG_MSP_MSE_RI_NEXT_HOP_DELETE_REQ          : →
0
SIG_MSP_MSE_RI_NEXT_HOP_DELETE_CFM          : →
0
SIG_MSP_MSE_RI_STATICROUTE_CREATE_REQ       : →
4
SIG_MSP_MSE_RI_STATICROUTE_CREATE_CFM       : →
4
SIG_MSP_MSE_RI_STATICROUTE_CREATE_REJ       : →
0
SIG_MSP_MSE_RI_STATICROUTE_DELETE_REQ       : →
0
SIG_MSP_MSE_RI_STATICROUTE_DELETE_CFM       : →
0
SIG_MSP_MSE_RI_RESERVE_IP_REQ               : →
8
SIG_MSP_MSE_RI_RESERVE_IP_CFM               : →
8
SIG_MSP_MSE_RI_RESERVE_IP_REJ               : →
0
SIG_MSP_MSE_RI_MODIFY_IP_REQ                : →
6
SIG_MSP_MSE_RI_MODIFY_IP_CFM                : →
6
SIG_MSP_MSE_RI_MODIFY_IP_REJ                : →
```



```

0
SIG_MSP_MSE_RI_RELEASE_IP_REQ      : →
8
SIG_MSP_MSE_RI_RELEASE_IP_CFM      : →
8
SIG_MSP_MSE_RI_CONNECT_IP_REQ      : →
8
SIG_MSP_MSE_RI_CONNECT_IP_CFM      : →
8
SIG_MSP_MSE_RI_CONNECT_IP_REJ      : →
0
SIG_MSP_MSE_RI_FAULT_IND           : →
0
SIG_MSP_MSE_RI_FAULT_CEASED_IND     : →
0
SIG_MSP_MSE_RI_CONNECT_IP_MPD_REQ   : →
0
SIG_MSP_MSE_RI_CONNECT_IP_MPD_CFM   : →
0
SIG_MSP_MSE_RI_CONNECT_IP_MPD_REJ   : →
0
SIG_MSP_MSE_RI_DISCONNECT_IP_REQ    : →
0
SIG_MSP_MSE_RI_DISCONNECT_IP_CFM     : →
0
SIG_MSP_MSE_RI_PM_COUNTER_REPORT_IND : →
31710
SIG_MSP_MSE_RI_PM_COUNTER_SET_REP_INTERVAL_IND : →
1
SIG_MSP_MSE_RI_IP_EVENT_IND         : →
0
SIG_MSP_MSE_RI_TRAFFIC_SUPERVISION_REQ : →
1
SIG_MSP_MSE_RI_TRAFFIC_SUPERVISION_CFM : →
1
SIG_MSP_MSE_RI_TRAFFIC_SUPERVISION_REJ : →
0
SIG_MSP_MSE_RI_MSR_CONFIG_REQ       : →
0
SIG_MSP_MSE_RI_MSR_CONFIG_CFM       : →
0
SIG_MSP_MSE_RI_MSR_CONFIG_REJ       : →
0
UNSUPPORTED_SIGNAL_TYPE_RECEIVED    : →
0

```

4.8 ipp ethdev-counters

This command displays `ethdev` counters.

Options without arguments:



-h, --help Prints the help message.

-c, --clear Clears all `ethdev` counters.

Example: Print the Counters

```
cli_tool ipp ethdev-counters
```

```
rte_ethdev counters:
name status  speed  ipackets  opackets  ibytes  obytes  →
ierrors      oerrors  rx_nombuf
eml          UP    10G      279608    18      24654117  2350    →
0            0          0
```

Example: Clear the Counters

```
cli_tool ipp ethdev-counters --clear
```

```
Cleared all ethdev counters
cli_tool ipp ethdev-counters
rte_ethdev counters:
name status  speed  ipackets  opackets  ibytes  obytes  →
ierrors      oerrors  rx_nombuf
eml          UP    10G      489        0      43175      0    →
0            0          0

cli_tool ipp ethdev-counters
rte_ethdev counters:
name status  speed  ipackets  opackets  ibytes  obytes  →
ierrors      oerrors  rx_nombuf
eml          UP    10G     1047        0      92419      0    →
0            0          0
```

4.9 ipp dpdk-counters

This command prints the status of DPDK-related internal resources.

Options without arguments:

-h, --help Prints the help message.

-m, --memory Prints `rte_memseg`, `rte_memzone`, `rte_mempool`, and `rte_malloc` statistics.

-i, --ipc Prints `dpdkipc` statistics.

Options with mandatory arguments:

-r, --ring Prints the `rte_ring` statistics for one ring or all rings.

Example: Print Current Memory Use by DPDK

```
cli_tool ipp dpdk-counters -m
```



rte_memseg statistics:						
nchannel	phys_addr	virt_addr	len	hugepage_sz	socket_id	→
	nrank					
	11000000	7fb8ec800000	164M	2M		→
0	0	0				
	8b000000	7fb8ec400000	2M	2M		→
0	0	0				
	8b400000	7fb8e9e00000	36M	2M		→
0	0	0				
	8da00000	7fb8e9200000	10M	2M		→
0	0	0				
	8e800000	7fb8e8c00000	4M	2M		→
0	0	0				
	8ee00000	7fb8e7800000	18M	2M		→
0	0	0				
	90200000	7fb8e5c00000	26M	2M		→
0	0	0				
	91e00000	7fb8e5000000	10M	2M		→
0	0	0				
	92c00000	7fb8d4a00000	260M	2M		→
0	0	0				
	a3200000	7fb8d4600000	2M	2M		→
0	0	0				
	a3800000	7fb8d3c00000	8M	2M		→
0	0	0				
	a4200000	7fb8d2c00000	14M	2M		→
0	0	0				
	a5400000	7fb8d2800000	2M	2M		→
0	0	0				
	a5800000	7fb8d2200000	4M	2M		→
0	0	0				
	a6000000	7fb8d1c00000	4M	2M		→
0	0	0				
	a6600000	7fb8d1600000	4M	2M		→
0	0	0				
	a6c00000	7fb8d0400000	16M	2M		→
0	0	0				
	a7e00000	7fb8d0000000	2M	2M		→
0	0	0				
	a8200000	7fb8cf800000	6M	2M		→
0	0	0				
	a8a00000	7fb8cf400000	2M	2M		→
0	0	0				
	a9000000	7fb8cee00000	4M	2M		→
0	0	0				
	a9600000	7fb8ce800000	4M	2M		→
0	0	0				
	a9c00000	7fb8ce400000	2M	2M		→
0	0	0				
	aa200000	7fb8cdc00000	6M	2M		→
0	0	0				
	aaa00000	7fb8cd400000	6M	2M		→
0	0	0				
	ab400000	7fb8cce00000	4M	2M		→
0	0	0				
	aba00000	7fb8cca00000	2M	2M		→
0	0	0				
	abe00000	7fb8cb800000	16M	2M		→
0	0	0				
	ad000000	7fb8cb000000	6M	2M		→
0	0	0				
	ad800000	7fb8c6a00000	68M	2M		→
0	0	0				
	b2000000	7fb8c5a00000	14M	2M		→
0	0	0				
	b3000000	7fb8c4000000	24M	2M		→
0	0	0				
	b4c00000	7fb8c3200000	12M	2M		→
0	0	0				
	b5c00000	7fb8c2e00000	2M	2M		→
0	0	0				
	b6400000	7fb8c2a00000	2M	2M		→
0	0	0				
	b6800000	7fb8bfc00000	44M	2M		→
0	0	0				
	b9600000	7fb8bdc00000	30M	2M		→
0	0	0				
	bb800000	7fb8bd600000	4M	2M		→
0	0	0				



0	0	100000000	7fb8bcc00000	8M	2M	→
0	0	100a00000	7fb8bbc00000	14M	2M	→
0	0	101c00000	7fb8ba200000	24M	2M	→
0	0	103600000	7fb8b8400000	28M	2M	→
0	0	105400000	7fb8b7a00000	8M	2M	→
0	0	105e00000	7fb8b7200000	6M	2M	→
0	0	106800000	7fb8b5c00000	20M	2M	→
0	0	108000000	7fb8b5600000	4M	2M	→
0	0	10a200000	7fb8b5200000	2M	2M	→
0	0	10c000000	7fb8b4e00000	2M	2M	→
0	0	10ca00000	7fb8b4a00000	2M	2M	→
0	0	10f200000	7fb8b4600000	2M	2M	→
0	0	10fe00000	7fb8b4200000	2M	2M	→
0	0	112200000	7fb8b3e00000	2M	2M	→
0	0	112c00000	7fb8b3a00000	2M	2M	→
0	0	115200000	7fb8b3600000	2M	2M	→
0	0	116000000	7fb8b3200000	2M	2M	→
0	0	118200000	7fb8b2e00000	2M	2M	→
0	0	118e00000	7fb8b2a00000	2M	2M	→
0	0	11b200000	7fb8b2600000	2M	2M	→
0	0	11bc00000	7fb8b2200000	2M	2M	→
0	0	11e400000	7fb8b1e00000	2M	2M	→
0	0	11ee00000	7fb8b1a00000	2M	2M	→
0	0	120e00000	7fb8b1600000	2M	2M	→
0	0	121200000	7fb8b1200000	2M	2M	→
0	0	121a00000	7fb8b0e00000	2M	2M	→
0	0	123c00000	7fb8b0a00000	2M	2M	→
0	0	124200000	7fb8b0600000	2M	2M	→
0	0	127400000	7fb8b0200000	2M	2M	→
0	0	127c00000	7fb8afe00000	2M	2M	→
0	0	128000000	7fb8afa00000	2M	2M	→
0	0	128400000	7fb8af600000	2M	2M	→
0	0	128800000	7fb8af200000	2M	2M	→
0	0	128e00000	7fb8aee00000	2M	2M	→
0	0	12c000000	7fb8aea00000	2M	2M	→
0	0	12c400000	7fb8ae600000	2M	2M	→
0	0	12f200000	7fb8ae200000	2M	2M	→
0	0	12f600000	7fb8ade00000	2M	2M	→
0	0	134600000	7fb8ada00000	2M	2M	→
0	0	134c00000	7fb8ad600000	2M	2M	→



```

0          0      139600000      7fb8ad000000      4M      2M      →

```

rte_memzone statistics:

name	phys_addr	len	socket_id
MALLOC_S0_HEAP_0	b4c00000	11534336	0
RG_MP_log_history	b5700000	8320	0
MP_log_history	8b000000	1872064	0
rte_eth_dev_data	8b1c90c0	72192	0
port0_cvq	8b1db000	8192	0
port0_cvq_hdrzone	8b1dd000	4096	0
port1_cvq	8b1de000	8192	0
port1_cvq_hdrzone	8b1e0000	4096	0
RG_MP_pktbuf1	b5702080	262272	0
MP_pktbuf1	b6800000	39588096	0
port0_rvq0	8b1e1000	12288	0
port0_tvq0	8b1e4000	12288	0
port0_tvq0_hdrzone	8b1e7000	3072	0
port1_rvq0	8b1e8000	12288	0
port1_tvq0	8b1eb000	12288	0
port1_tvq0_hdrzone	8b1ee000	3072	0
RG_classed_udp	8b1eec00	16512	0
RG_classed_arp	8b1f2c80	8320	0
RG_classed_icmp	8b1f4d00	8320	0
RG_classed_icmpv6	8b1f6d80	8320	0
RG_classed_frag	8b1f8e00	8320	0
RG_classed_dhcp	8b1fae80	8320	0
RG_classed_ipv6_ll	8b1fcf00	8320	0
RG_arpout	b5742100	8320	0
RG_icmpv6out	b5744180	8320	0
RG_icmpout	b5746200	8320	0
RG_naptout	b5748280	8320	0
RG_udp_out	b574a300	8320	0
RG_udp_fwd	b574c380	8320	0
RG_internal_loop	b574e400	8320	0
DPDKIPC_SHARED_MZ	8b1fef80	64	0
RG_MEDIA_CH_IN_ALL	b5750480	16512	0
RG_MEDIA_CH_OUT_0	b5754500	4224	0
RG_MEDIA_CH_OUT_1	b5755580	4224	0
RG_MEDIA_CH_OUT_2	b5756600	4224	0
RG_MEDIA_CH_OUT_3	b5757680	4224	0
RG_MEDIA_CH_OUT_4	b5758700	4224	0
RG_MEDIA_CH_OUT_5	b5759780	4224	0
RG_MEDIA_CH_OUT_6	b575a800	4224	0
RG_MEDIA_CH_OUT_7	b575b880	4224	0
RG_MEDIA_CH_OUT_8	b575c900	4224	0
RG_MEDIA_CH_OUT_9	b575d980	4224	0
RG_MEDIA_CH_OUT_10	b575ea00	4224	0
RG_MEDIA_CH_OUT_11	b575fa80	4224	0
RG_MEDIA_CH_OUT_12	b5760b00	4224	0
RG_MEDIA_CH_OUT_13	b5761b80	4224	0
RG_MEDIA_CH_OUT_14	b5762c00	4224	0
RG_MEDIA_CH_OUT_15	b5763c80	4224	0
RG_TEST_PORT_SEND_RING	8b1fefc0	1152	0
RG_TEST_PORT_RECV_RING	8b1fff40	640	0
RG_MSERI_SEND_RING	8b1fff6c0	2176	0
RG_MSERI_RECV_RING	b5764d00	2176	0
MALLOC_S0_HEAP_1	a4200000	11534336	0
MALLOC_S0_HEAP_2	b2000000	11534336	0

rte_mempool statistics:

name	size	cache_size	ring count
log_history	512	0	252
pktbuf1	16384	128	15447

rte_malloc statistics:

socket	bytes	free bytes	used bytes	free_count	used_count
0	34602816	8622528	25980288	3	245
1	0	0	0	0	0
2	0	0	0	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0
6	0	0	0	0	0
7	0	0	0	0	0



Example: Print the Status of a Named DPDK Ring or All Rings Known by IPP

```
cli_tool ipp dpdk-counters -r internal_loop
```

```
rte_ring statistics:
      name      size  watermark  prod/cons      count      →
free_count
1023  internal_loop  1024      1024      --/--          0          →

cli_tool ipp dpdk-counters -r all
rte_ring statistics:
      name      size  watermark  prod/cons      count      →
free_count
2047  classed_udp    2048      2048      --/--          0          →
1023  classed_arp     1024      1024      --/--          0          →
1023  classed_icmp     1024      1024      --/--          0          →
1023  classed_icmpv6    1024      1024      --/--          0          →
1023  classed_frag     1024      1024      --/--          0          →
1023  classed_dhcp     1024      1024      --/--          0          →
1023  classed_ipv6_ll   1024      1024      --/--          0          →
1023  arpout           1024      1024      --/--          0          →
1023  icmpv6out        1024      1024      --/--          0          →
1023  icmpout          1024      1024      --/--          0          →
1023  naptout          1024      1024      --/--          0          →
1023  udp_out          1024      1024      --/--          0          →
1023  udp_fwd          1024      1024      --/--          0          →
1023  internal_loop    1024      1024      --/--          0          →
0     _TEST_PORT_SEND_RING  128      100      --/--          →
127
0     _TEST_PORT_RECV_RING   64       50      --/--          →
63
0     _MSERI_SEND_RING      256      200      --/--          →
255
0     _MSERI_RECV_RING     256      200      --/--          →
255
2047  _MEDIA_CH_IN_ALL    2048      2048      --/--          0          →
1     _MEDIA_CH_OUT_0      512      512      --/--          →
510
0     _MEDIA_CH_OUT_1      512      512      --/--          →
511
0     _MEDIA_CH_OUT_2      512      512      --/--          →
511
0     _MEDIA_CH_OUT_3      512      512      --/--          →
511
0     _MEDIA_CH_OUT_4      512      512      --/--          →
511
0     _MEDIA_CH_OUT_5      512      512      --/--          →
511
0     _MEDIA_CH_OUT_6      512      512      --/--          →
511
0     _MEDIA_CH_OUT_7      512      512      --/--          →
511
0     _MEDIA_CH_OUT_8      512      512      --/--          →
511
0     _MEDIA_CH_OUT_9      512      512      --/--          →
511
0     _MEDIA_CH_OUT_10     512      512      --/--          →
511
0     _MEDIA_CH_OUT_11     512      512      --/--          →
511
```



```

0      511
0      _MEDIA_CH_OUT_12      512      512      --/--      →
0      511
0      _MEDIA_CH_OUT_13      512      512      --/--      →
0      511
0      _MEDIA_CH_OUT_14      512      512      --/--      →
0      511
0      _MEDIA_CH_OUT_15      512      512      --/--      →
0      511

```

Example: Print the Current Status of dpdkipc Channels

cli_tool ipp dpdk-counters --ipc

dpdkipc statistics:

	name	send count	recv count	
semaphore				
	_TEST_PORT_RECV_RING	0		→
0	0			
	_MSERI_RECV_RING	0		→
0	0			
	_MEDIA_CH_OUT_0	0		→
0	0			
	_MEDIA_CH_OUT_1	0		→
0	0			
	_MEDIA_CH_OUT_2	0		→
4	4			
	_MEDIA_CH_OUT_3	0		→
0	0			
	_MEDIA_CH_OUT_4	0		→
0	0			
	_MEDIA_CH_OUT_5	0		→
0	0			
	_MEDIA_CH_OUT_6	0		→
0	0			
	_MEDIA_CH_OUT_7	0		→
0	0			
	_MEDIA_CH_OUT_8	0		→
0	0			
	_MEDIA_CH_OUT_9	0		→
0	0			
	_MEDIA_CH_OUT_10	0		→
0	0			
	_MEDIA_CH_OUT_11	0		→
0	0			
	_MEDIA_CH_OUT_12	0		→
0	0			
	_MEDIA_CH_OUT_13	0		→
0	0			
	_MEDIA_CH_OUT_14	0		→
0	0			
	_MEDIA_CH_OUT_15	0		→
0	0			



4.10 ipp internals

This command inspects the internals of the IP pipeline.

Options without arguments:

-h, --help Prints the help message.

-f, --file Shows the config file.

Options with mandatory arguments:

-l, --lcore Prints `lcore` internal configuration and statistics.

-m, --measure Shows the current load on `lcore`.

-p, --port Prints port statistics of a pipeline port specified by its name.

-t, --tableshow Shows information about an internal table specified by its name.

Example: Print Current IP Pipeline Configuration As a File (Format Acceptable at IPP Startup)

```
cli_tool ipp internals --file
```

```
;;; Initial configuration file of the IP pipeline
;;; hostname: 103-PL-3
;;; generated: Thu May 28 10:17:03 2015
;;;
;;; file format version 001
PIPELINECONF001{
    MEMPOOL {
        name = "pktbuf1"
        ,id = 0
        ,type = PKT_MBUF ;;; received or transmitted media →
        packets
    }
    ...
}
```

Example: Print the Internal Pipeline Along with Packet Handling Statistics

```
cli_tool ipp internals -f | grep lcore
```

```
,lcore = 0
,lcore = 0
,lcore = 0
```



```
,lcore = 0
,lcore = 0
,lcore = 0
,lcore = 0

cli tool ipp internals --lcore 0
lcore 0 has 7 pipelines:
```

```
-----
pipeline      runs/flush
inport %      outport %      table %
0             2.57          1.69          0.53
4             480289234
misses        0
discarded     0

portname dir    max burst    total    discards    lost
queue max queue avg
0          0      arpout in      64         0         0
0          0      udp_out in      64    480289218         0
0          0      icmpout in     64         0         0
0          0      icmpv6out in    64         0         0
0          0      classed_dhcp in    64         16         0
0          0      classed_ipv6_ll in 64         0         0
0          0      em1 out      64    241677114         0
9720       0      internal_loop out 64         0         0
0          0      0.00

-----
pipeline      runs/flush
inport %      outport %      table %
0             1.39          11.46         0.96
4             480289340
misses        0
discarded     0

portname dir    max burst    total    discards    lost
queue max queue avg
0          0      udp_fwd in      64    480289340         0
0          0      mpdport in     64         0         0
0          0      udp_out out    64    480289468         0
0          0      0.00

-----
pipeline      runs/flush
inport %      outport %      table %
0             0.16          7.04          4.07
4             480289596
misses        0
discarded     0

portname dir    max burst    total    discards    lost
queue max queue avg
0          0      classed_udp in    64    480289596         0
0          0      udp_fwd out     64    480289596         0
0          0      mpdport out     64         0         0
0          0      0.00

-----
```



```
-----
inport %      pipeline      runs/flush      total in      total out      total diff      →
              output %      table %
0            0.00      0.00      0.00      4            0            0            0            →
              tablename      hits      misses      discarded
              table_arp_handler      0            0            0

              portname dir      max burst      total      discards      lost      →
queue max      queue avg
0              0      0.00      64            0            0            0            →
              0      0.00      64            0            0            0            →
              arpout out
0              0      0.00      64            0            0            0            →

-----
inport %      pipeline      runs/flush      total in      total out      total diff      →
              output %      table %
0            0.00      0.00      0.00      4            0            0            0            →
              tablename      hits      misses      discarded
              table_icmpv6_handler      0            0            0

              portname dir      max burst      total      discards      lost      →
queue max      queue avg
0              0      0.00      64            0            0            0            →
              0      0.00      64            0            0            0            →
              icmpv6out out
0              0      0.00      64            0            0            0            →

-----
inport %      pipeline      runs/flush      total in      total out      total diff      →
              output %      table %
0            0.00      0.00      0.00      4            0            0            0            →
              tablename      hits      misses      discarded
              table_icmp_handler      0            0            0

              portname dir      max burst      total      discards      lost      →
queue max      queue avg
0              0      0.00      64            0            0            0            →
              0      0.00      64            0            0            0            →
              icmpout out
0              0      0.00      64            0            0            0            →

-----
inport %      pipeline      runs/flush      total in      total out      total diff      →
              output %      table %
16           5.08      12.79      1.29      4      480289740      480289724            0            →
              classifier
              tablename      hits      misses      discarded
              table_l2l3_classifier      480289740            0            0

              portname dir      max burst      total      discards      lost      →
queue max      queue avg
0              0      0.00      16      238612370            0            0            →
              0      0.00      16            0            0            0            →
              internal_loop in
0              0      0.00      64      480289724            0            0            →
              0      0.00      64            0            0            0            →
              classed_udp out
0              0      0.00      64            0            0            0            →
              classed_arp out
0              0      0.00      64            0            0            0            →
              classed_icmp out
0              0      0.00      64            0            0            0            →
              classed_icmpv6 out
0              0      0.00      64            0            0            0            →
              classed_frag out
0              0      0.00      64            0            0            0            →
              classed_dhcp out
0              0      0.00      64            16            16            0            →
```



```

0          0          0.00
          classed_ipv6_ll out          64          0          0          →
0          0          0.00
lcore 0 has 7 pipelines:

packet handling %: 49.04
timer handling %: 0.09
control handling %: 1.01
bw policing %: 0.09
measurement period: 155.23ms

```

Example: Measure Current Load on lcore 0

```
cli_tool ipp internals -m 0
```

Load measure for lcore 0:

```

total: 45.09%
actions: 43.81% (774647 calls)
control: 1.01% (1708 signals)
timers: 0.14%
policing: 0.13%
measurement period: 200.02ms

4.86% (187378 calls) tx_handler
12.50% (187406 calls) udp_tx
8.75% (187406 calls) udp_rx
0.00% (0 calls) arp_handler
0.00% (0 calls) icmpv6_handler
0.00% (0 calls) icmp_handler
17.69% (212457 calls) classifier

```

Example: Update "queue max" and "queue avg" in the lcore Output and Print Queue Size Per Port

```
cli_tool ipp internals --port mpdport
```

```

portname dir    max burst          total    discards          lost    queue max    →
queue avg
mpdport out          64          0          0          0          →
9          0.36
historical queue data (time/max/avg):
1161.226132265622/    3/ 0.246
1161.226561461927/    3/ 0.262
1161.226979298287/    3/ 0.137
1161.227408225793/    2/ 0.066
1161.227826191752/    3/ 0.258
1161.228244024913/    3/ 0.242
1161.228672685220/    3/ 0.262
1161.229094903959/    3/ 0.242
1161.229525140258/    3/ 0.266
1161.229942760619/    0/ 0.000
1161.230371643326/    3/ 0.246
1161.230789511686/    3/ 0.262
1161.231207682444/    3/ 0.234
1161.231637091548/    3/ 0.258
1161.232054691109/    3/ 0.242
1161.232483709814/    3/ 0.148
1161.232911366927/    2/ 0.074
1161.233328960088/    3/ 0.250
1161.233761914774/    3/ 0.262

```



1161.234179664735/	3/ 0.230
1161.234609475437/	3/ 0.262
1161.235027034998/	3/ 0.242
1161.235456248903/	1/ 0.004
1161.235874122063/	3/ 0.230
1161.236292025622/	3/ 0.242
1161.236720885929/	3/ 0.250
1161.237143266267/	3/ 0.234
1161.237573020969/	3/ 0.270
1161.237990722929/	3/ 0.191
1161.238419810434/	1/ 0.023
1161.238837629195/	3/ 0.258
1161.239254883158/	3/ 0.234
1161.239684050662/	3/ 0.262
1161.240101767023/	3/ 0.234
1161.240530489730/	3/ 0.258
1161.240953030067/	1/ 0.004
1161.241382248772/	3/ 0.230
1161.241799997132/	3/ 0.262
1161.242218006292/	3/ 0.234
1161.242647042597/	3/ 0.262
1161.243064517359/	3/ 0.246
1161.243493707264/	3/ 0.195
1161.243911380425/	1/ 0.031
1161.244329279185/	3/ 0.234
1161.244757971491/	3/ 0.254
1161.245185591804/	3/ 0.254
1161.245618111292/	3/ 0.266
1161.246035731654/	3/ 0.246
1161.246465054358/	2/ 0.031
1161.246882916318/	3/ 0.180
1161.247300789478/	3/ 0.234
1161.247730089782/	3/ 0.273
1161.248148054141/	3/ 0.242
1161.248577271246/	3/ 0.258
1161.249000451580/	3/ 0.230
1161.249430743879/	0/ 0.000
1161.249848412240/	3/ 0.266
1161.250266283800/	3/ 0.246
1161.250695707304/	3/ 0.262
1161.251113625263/	3/ 0.234
1161.251542909567/	3/ 0.258
1161.251960745928/	2/ 0.023
1161.252389452635/	3/ 0.180
1161.252811444175/	3/ 0.254
1161.253229238935/	3/ 0.250
1161.253658569639/	3/ 0.266
1161.254076508398/	3/ 0.238
1161.254505719103/	3/ 0.234
1161.254924280260/	1/ 0.004
1161.255342316619/	3/ 0.258
1161.255771266525/	3/ 0.258
1161.256189072485/	3/ 0.242
1161.256617844792/	3/ 0.254
1161.257045604303/	3/ 0.227
1161.257478098192/	3/ 0.109
1161.257895788953/	2/ 0.102
1161.258313479713/	3/ 0.219
1161.258743290415/	3/ 0.230
1161.259161209975/	3/ 0.219
1161.259590523079/	3/ 0.238
1161.260008329039/	3/ 0.223
1161.260437173346/	0/ 0.000
1161.260859384085/	3/ 0.230
1161.261277239644/	3/ 0.242
1161.261706687148/	3/ 0.262
1161.262124625908/	3/ 0.234
1161.262553526214/	3/ 0.258
1161.262971042575/	3/ 0.082
1161.263399688483/	2/ 0.113
1161.263817513643/	3/ 0.254
1161.264234918005/	3/ 0.238
1161.264663688712/	3/ 0.266
1161.265088797036/	3/ 0.246
1161.265519414134/	3/ 0.266
1161.265937114495/	0/ 0.000
1161.266366333200/	3/ 0.242
1161.266783795161/	3/ 0.258
1161.267201740321/	3/ 0.234
1161.267631119025/	3/ 0.258



```

1161.268048622587/ 3/ 0.246
1161.268477684492/ 3/ 0.121
1161.268906029601/ 2/ 0.098
1161.269323984360/ 3/ 0.250
1161.269756681448/ 3/ 0.266
1161.270173986611/ 3/ 0.238
1161.270603694913/ 3/ 0.258
1161.271021395273/ 3/ 0.242
1161.271450345179/ 0/ 0.000
1161.271867933541/ 3/ 0.250
1161.272285846700/ 3/ 0.234
1161.272715006205/ 3/ 0.270
1161.273137194544/ 3/ 0.246
1161.273568339639/ 3/ 0.262
1161.273989529583/ 3/ 0.180
1161.274422082671/ 1/ 0.016
1161.274843152616/ 3/ 0.258
1161.275264323360/ 3/ 0.238
1161.275696769248/ 3/ 0.254
1161.276117856793/ 3/ 0.242
1161.276550086682/ 3/ 0.258
1161.276975449406/ 3/ 0.109
1161.277408295293/ 2/ 0.086
1161.277829518836/ 3/ 0.262
1161.278250662380/ 3/ 0.238
1161.278683079469/ 3/ 0.250
1161.279103715816/ 3/ 0.242
1161.279536081705/ 3/ 0.258
1161.279957110049/ 1/ 0.008
1161.280388805542/ 3/ 0.207
1161.280819686638/ 3/ 0.246
1161.281240833382/ 3/ 0.250
1161.281676658454/ 3/ 0.262
1161.282097861198/ 3/ 0.238
1161.282530716685/ 3/ 0.258
1161.282951639430/ 1/ 0.004
1161.283384395717/ 3/ 0.227
1161.283816308809/ 3/ 0.496
1161.284237225154/ 3/ 0.223
1161.284670872637/ 3/ 0.234
1161.285096305760/ 3/ 0.246
1161.285529332446/ 3/ 0.270
1161.285950010392/ 0/ 0.000
1161.286382222682/ 3/ 0.234
1161.286803436626/ 3/ 0.262
1161.287224704969/ 3/ 0.230
1161.287761324749/ 2/ 0.527
1161.288193666639/ 3/ 0.859
1161.288633610091/ 3/ 0.465
1161.289060065609/ 2/ 0.359
1161.289495316284/ 4/ 1.184
1161.289913091844/ 3/ 2.008
1161.290330878605/ 5/ 3.012
1161.290764081290/ 6/ 3.867
1161.291182903245/ 7/ 4.645
1161.291613232344/ 8/ 5.527
1161.292031244703/ 9/ 6.281
1161.292929805117/ 7/ 3.445
1161.294074244330/ 0/ 0.000
1161.295112176862/ 0/ 0.000
1161.296258854464/ 0/ 0.000
1161.297456232619/ 0/ 0.000
1161.297873353782/ 0/ 0.000
1161.298290022148/ 0/ 0.000
1161.298725164024/ 0/ 0.000
...

```

Example: Print Active CEP Table (All Active Half-calls):

```
cli_tool ipp internals -t cep
```

```

validity      id network mediaip udpport  connectcep  clientcep  servercep
total cepts in use 0

```



```
cli_tool ipp internals -t cep
```

validity	id	network	mediaip	udpport	connectcep	clientcep	servercep
0x000018ff	4	2	2	1026	5	-	-
0x000018ff	5	1	1	1026	4	-	-
0x000018ff	6	2	2	1028	7	-	-
0x000018ff	7	1	1	1028	6	-	-

```
total ceps in use 4
```

```
cli_tool ipp internals -t cep
```

validity	id	network	mediaip	udpport	connectcep	clientcep	servercep
0x000109ff	8	2	2	1030	-	8191	2
0x000109ff	9	1	1	1030	-	8189	4

```
total ceps in use 2
```



5 vMRF Utility Scripts

Table 4 vMRF Utility Scripts

Name	Description	POSIX Group with Access
verify_vmrf_cluster_status.py on page 47	Displays status of services and applications running on a vMRF VNF	mrf-op
verify_vmrf_node_status.py on page 47	Displays status of services and applications running on a vMRF VM	mrf-op
collectData.py or dcgm	Fetches data for TR ⁽¹⁾ s or CSR ⁽²⁾ s	mrf-op and systemd-journal Linux group
mrf_export_conf.py on page 48	Exports vMRF configuration data	emergency user
mrf_import_conf.py on page 48	Imports vMRF configuration data	emergency user

(1) Trouble Report

(2) Customer Service Report

5.1 verify_vmrf_cluster_status.py

This command displays status of services and applications running on a vMRF VNF.

Use

```
verify_vmrf_cluster_status.py
```

5.2 verify_vmrf_node_status.py

This command displays status of services and applications running on a vMRF VM.

Use

```
verify_vmrf_node_status.py
```



5.3 collectData.py

This command collects troubleshooting data.

Note: To collect the logs file generated by this command, the user must be a member of both the `mrf-op` POSIX group and the `systemd-journal` group.

For more information on `collectData.py`, refer to *Data Collection Guideline for vMRF*.

5.4 mrf_export_conf.py

This command exports vMRF configuration data into a file. For more information on configuration export, refer to *vMRF Configuration Management*.

5.5 mrf_import_conf.py

This command imports vMRF configuration data from a file. For more information on configuration import, refer to *vMRF Configuration Management*.



6 Linux Commands

OS restrictions—based on preconfigured access rights for each command—apply to Linux commands, that is, commands in `/bin`, `/sbin`, `/usr/bin`, and `/usr/sbin`. Additional rights can be granted based on `sudo` configuration.