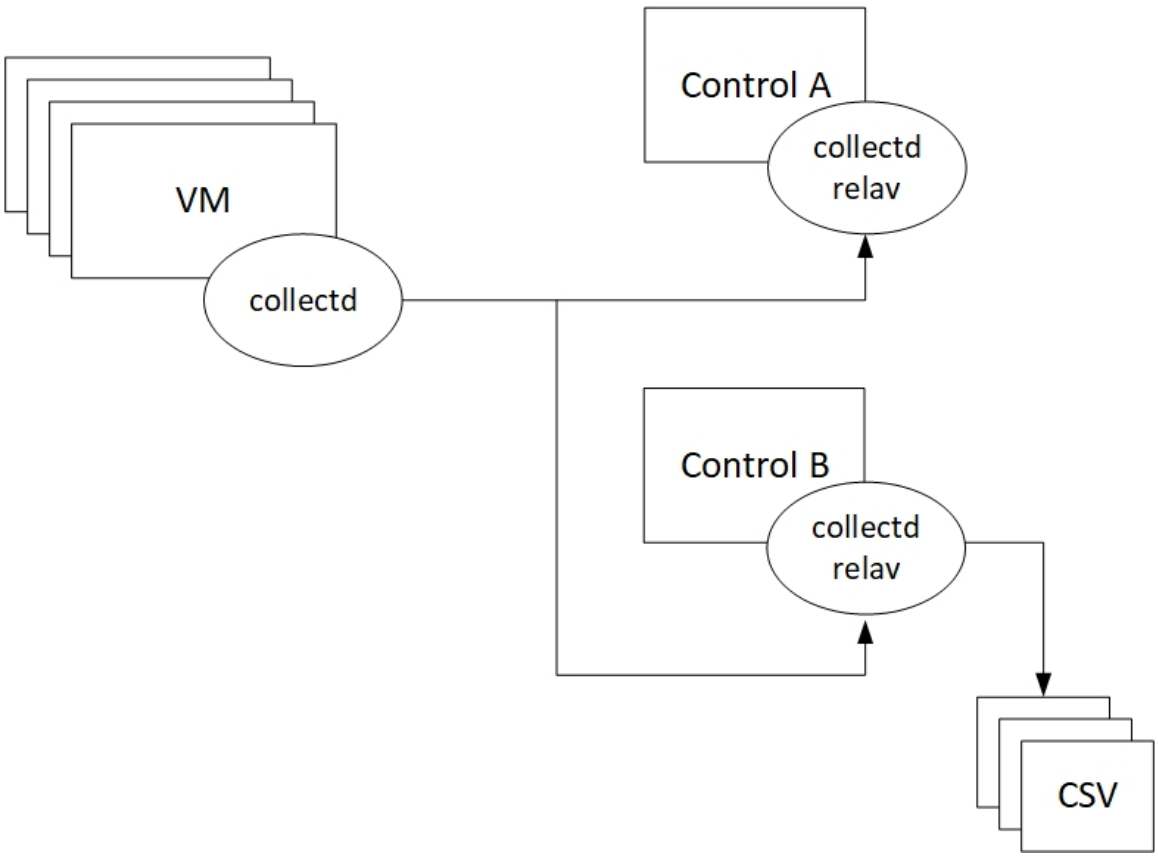
CPS Statistics

Bulk Statistics Overview

Bulk Statistics are the statistics that are gathered over a given time period and written to a set of CSV files. These statistics can be used by external analytic processes and/or network management systems. The architecture of CPS bulk statistic collection is shown in the following illustration.

Figure 1: DRA Bulk Statistic Collection Architecture



The collection utility collectd is used for collecting and storing statistics from each VM. Detailed collectd documentation can be found on http://collectd.org/.

Collectd within CPS is deployed with nodes relaying data using the collectd network plug-in (https://collectd.org/wiki/index.php/Plugin:Network) to the centralized collection nodes on the control-A and control-B virtual machines. The centralized collector writes the collected data to output CSV files.

Note Control A and Control B collect bulk statistics independently. As a result, it is normal to have slight differences between the two files. For example, control-A will generate a file at time t and control-B will generate a file at time t +/- the clock drift between the two machines.

As a best practice, always use the bulk statistics collected from Control-A. Control-B can be used as a backup in the event of failure of control-A.

In the event that Control-A becomes unavailable, statistics will still be gathered on Control-B. Statistics data is not synchronized between Control-A and Control-B, so a gap would exist in the collected statistics while control-A is down.

Note The collectd collection mechanism are separate from the Prometheus / Grafana Monitoring.

CPS Statistics

The list of statistics available in CPS is consolidated in an Excel spreadsheet. After CPS is installed, this spreadsheet can be downloaded from the Bulk Stats link available on below URL:

https://<master ip>/central/dra/#!/dra/docs/stats

Bulk Statistics Collection

By default, CPS outputs a bulk statistics CSV file to the `/var/broadhop/stats/` directory on the control-A and control-B VMs in five-minute intervals.

An scp / sftp daemon running on port 2026 retrieves all statistics within the `/var/broadhop/stats` directory. Only locally defined users within the scheduling application associated to the “bulkstats” or “admin” group are able to retrieve statistics.

You can also retrieve statistics by logging into the virtual machine directly and retrieving the statistics from the `/data/stats` directory.

The default naming standard is `bulk-hostname-YYYY-MM-DD-HH-MI.csv`

These CSV files include all statistics collected from all VMs during the five-minute interval.

Note If a statistic is generated by the system multiple times within the five-minute interval, only the last measured statistics is collected in the CSV file.

The following list is a sample of the file names created in the `/var/broadhop/stats/` directory on the control-A VM:

```
[root@control-1 stats]# pwd
/data/stats-relay-s1/var/broadhop/stats [root@control-A stats]# ls
bulk-control-A-201510131350.csv
bulk-control-A-201510131355.csv
bulk-control-A-201510131400.csv
bulk-control-A-201510131405.csv
bulk-control-A-201510131410.csv
bulk-control-A-201510131415.csv
bulk-control-A-201510131420.csv
bulk-control-A-201510131425.csv
bulk-control-A-201510131430.csv
bulk-control-A-201510131435.csv
bulk-control-A-201510131440.csv
bulk-control-A-201510131445.csv
bulk-control-A-201510131450.csv
bulk-control-A-201510131455.csv
bulk-control-A-201510131500.csv
bulk-control-A-201510131505.csv
bulk-control-A-201510131510.csv
bulk-control-A-201510131515.csv
bulk-control-A-201510131520.csv
bulk-control-A-201510131525.csv
bulk-control-A-201510131530.csv
bulk-control-A-201510131535.csv
bulk-control-A-201510131540.csv
```

```
bulk-control-A-201510131545.csv
bulk-control-A-201510131550.csv
bulk-control-A-201510131555.csv
bulk-control-A-201510131600.csv
bulk-control-A-201510131605.csv
bulk-control-A-201510131610.csv
bulk-control-A-201510131615.csv
bulk-control-A-201510131620.csv
bulk-control-A-201510131625.csv
bulk-control-A-201510131630.csv
```

Retention of CSV Files

CPS retains each bulk statistics CSV file on the control-A/B VM for two days; after which the file is automatically removed.

If you need to preserve these CSV files, you must back up the files or move them to an alternate system.

Diameter Monitoring KPIs

The following table describes CPS KPIs that are useful for monitoring Diameter message traffic.

Note As each deployment is unique, no recommended ranges are provided. Cisco recommends monitoring these KPIs for a period of time (1-3 months) to establish a baseline. Deviations can then be monitored from the baseline values.

Table 1: Diameter Monitoring KPIs

AppId/ Monitoring Area	Category	Statistic	Description	Availability/Node
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_CCR-I_2001. qns_stat.success	Success message count for return code 2001	Policy Director
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_CCR-I_2001. qns_stat.total _time_in_ms	Total milliseconds of successful messages with return code matching2001	Policy Director

AppId/ Monitoring Area	Category	Statistic	Description	Availability/Node
Gx/F	Diameter Round Trip	node[x].messages.e2e _<domain>_[realm_] Gx_CCR-I_3xxx. qns_stat.success	Success count of messages with return code matching 3XXX	Policy Director
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_CCR-I_4xxx. qns_stat.success	Success count of messages with return code matching 4XXX	Policy Director
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_CCR-I_5xxx. qns_stat.success	Success count of messages with return code matching 5XXX	Policy Director
Gx/A	Diameter Input Queue	node1.counters. [realm_] Gx_CCR-I.qns_count	Count of messages successfully sent to the policy engine	Policy Server (qns)
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_CCR-U_2001. qns_stat.success	Success message count for return code 2001	Policy Director
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_CCR-U_2001. qns_stat.total_ time_in_ms	Total milliseconds of successful messages with return code matching2001	Policy Director
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_CCR-U_3xxx. qns_stat.success	Success count of messages with return code matching 3XXX	Policy Director
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_CCR-U_4xxx. qns_stat.success	Success count of messages with return code matching 4XXX	Policy Director
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_CCR-U_5xxx. qns_stat.success	Success count of messages with return code matching 5XXX	Policy Director

AppId/ Monitoring Area	Category	Statistic	Description	Availability/Node
Gx/A	Diameter Input Queue	node1.counters. [realm_] Gx_CCR-U. qns_count	Count of messages successfully sent to the policy engine	Policy Server (qns)
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_CCR-U_2001. qns_stat.success	Success message count for return code 2001	Policy Director
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_CCR-U_2001. qns_stat. total_time_in_ms	Total milliseconds of successful messages with return code matching 2001	Policy Director
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_CCR-U_3xxx. qns_stat.success	Success count of messages with return code matching 3XXX	Policy Director
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_CCR-U_4xxx. qns_stat.success	Success count of messages with return code matching 4XXX	Policy Director
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_CCR-U_5xxx. qns_stat.success	Success count of messages with return code matching 5XXX	Policy Director
Gx/A	Diameter Input Queue	node1.counters. [realm_] Gx_CCR-U. qns_count	Count of messages successfully sent to the policy engine	Policy Server (qns)
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_CCR-T_2001. qns_stat.success	Success message count for return code 2001	Policy Director
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_CCR-T_2001. qns_stat.total_ time_in_ms	Total milliseconds of successful messages with return code matching 2001	Policy Director

AppId/ Monitoring Area	Category	Statistic	Description	Availability/Node
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_CCR-T_3xxx. qns_stat.success	Success count of messages with return code matching 3XXX	Policy Director
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_CCR-T_4xxx. qns_stat.success	Success count of messages with return code matching 4XXX	Policy Director
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_CCR-T_5xxx. qns_stat.success	Success count of messages with return code matching 5XXX	Policy Director
Gx/A	Diameter Input Queue	node1.counters. [realm_] Gx_CCR-T.qns_count	Count of messages successfully sent to the policy engine	Policy Server (qns)
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_RAR_2001. qns_stat.success	Success message count for return code 2001	Policy Director
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_RAR_2001. qns_stat.total_ time_in_ms	Total milliseconds of successful messages with return code matching 2001	Policy Director
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_RAR_3xxx. qns_stat.success	Success count of messages with return code matching 3XXX	Policy Director
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_RAR_4xxx. qns_stat.success	Success count of messages with return code matching 4XXX	Policy Director
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_RAR_5xxx. qns_stat.success	Success count of messages with return code matching 5XXX	Policy Director

AppId/ Monitoring Area	Category	Statistic	Description	Availability/Node
Gx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Gx_RAR_timeout. qns_stat.success	Success timeout count for RAR message	Policy Director
Gx/A	Diameter Input Queue	node1.counters. [realm_] Gx_RAA.qns_count	Count of all messages sent to the policy engine	Policy Server (qns)
Gx/A	Diameter Input Queue	node1.messages. in_q_Gx_RAA. qns_stat.error	Count of messages failed to be sent to the policy engine	Policy Server (qns)
Gx/A	Diameter Input Queue	node1.messages. in_q_Gx_RAA. qns_stat.success	Count of messages successfully sent to the policy engine	Policy Server (qns)
Gx/E	Diameter Output Queue	node1.counters. [realm_] Gx_RAR.qns_count	Count of messages successful sent to the Policy Director (LB)	Policy Server (qns)
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_AAR_2001. qns_stat.success	Success message count for return code 2001	Policy Director
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_AAR_2001. qns_stat.total_ time_in_ms	Total milliseconds of successful messages with return code matching2001	Policy Director
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_AAR_3xxx. qns_stat.success	Success count of messages with return code matching 3XXX	Policy Director
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_AAR_4xxx. qns_stat.success	Success count of messages with return code matching 4XXX	Policy Director
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_AAR_5xxx. qns_stat.success	Success count of messages with return code matching 5XXX	Policy Director

AppId/ Monitoring Area	Category	Statistic	Description	Availability/Node
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_AAR_timeout. qns_stat.success	Success count of messages with return code matching 5XXX	Policy Director
Rx/A	Diameter Input Queue	node1.counters. [realm_] Rx_RAA.qns_count	Count of messages successful sent to the Policy Director (LB)	Policy Server (qns)
Rx/A	Diameter Input Queue	node1.counters. [realm_] Rx_AAR_drop. qns_count	Count of messages dropped due to exceedingSLA	Policy Server (qns)
Rx/E	Diameter Output Queue	node1.counters. [realm_] Rx_AAA_2001. qns_count	Count of AAA messages with result-code = 2001 sent successfully to the PolicyDirector (LB)	Policy Server (qns)
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_ASR_2001. qns_stat.success	Success message count for return code 2001	Policy Director
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_ASR_2001. qns_stat.total_ time_in_ms	Total milliseconds of successful messages with return code matching2001	Policy Director
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_ASR_3xxx. qns_stat.success	Success count of messages with return code matching 3XXX	Policy Director
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_ASR_4xxx. qns_stat.success	Success count of messages with return code matching 4XXX	Policy Director
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_ASR_5xxx. qns_stat.success	Success count of messages with return code matching 5XXX	Policy Director
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_ASR_retry. qns_count	Retry count for ASR message	Policy Server (qns)

AppId/ Monitoring Area	Category	Statistic	Description	Availability/Node
Rx/A	Diameter Input Queue	node1.counters. [realm_] Rx_ASA_bypass. qns_count	Count of message that do not require processing by the policy engine	Policy Server (qns)
Rx/A	Diameter Input Queue	node1.counters. [realm_]Rx_ASA. qns_count	Count of messages successfully sent to the policy engine	Policy Server (qns)
Rx/A	Diameter Input Queue	node1.counters. [realm_] Rx_ASA_drop. qns_count	Count of messages dropped due to exceedingSLA	Policy Server (qns)
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_RAR_2001. qns_stat.success	Success message count for return code 2001	Policy Director
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_RAR_2001. qns_stat.total_ time_in_ms	Total milliseconds of successful messages with return code matching2001	Policy Director
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_RAR_3xxx. qns_stat.success	Success count of messages with return code matching 3XXX	Policy Director
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_RAR_4xxx. qns_stat.success	Success count of messages with return code matching 4XXX	Policy Director
Rx/F	Diameter Input Queue	node[x].messages. e2e_<domain>_ [realm_] Rx_RAR_5xxx. qns_stat.success	Success count of messages with return code matching 5XXX	Policy Director
Rx/A	Diameter Input Queue	node1.counters.[realm_] Rx_RAA_bypass. qns_count	Count of message that do not require processing by the policy engine	Policy Server (qns)
Rx/A	Diameter Output Queue	node1.counters.[realm_] Rx_RAA.qns_count	Count of messages successfully sent to the policy engine	Policy Server (qns)

AppId/ Monitoring Area	Category	Statistic	Description	Availability/Node
Rx/A	Diameter Round Trip	node1.counters.[realm_] Rx_RAA_drop. qns_count	Count of messages dropped due to exceedingSLA	Policy Server (qns)
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_STR_2001. qns_stat.success	Success message count for return code 2001	Policy Director
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_STR_2001. qns_stat.total_time_in_ms	Total milliseconds of successful messages with return code matching2001	Policy Director
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_STR_3xxx. qns_stat.success	Success count of messages with return code matching 3XXX	Policy Director
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_STR_4xxx. qns_stat.success	Success count of messages with return code matching 4XXX	Policy Director
Rx/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Rx_STR_5xxx. qns_stat.success	Success count of messages with return code matching 5XXX	Policy Director
Rx/A	Diameter Input Queue	node1.counters.[realm_] Rx_STR.qns_count	Count of messages successful sent to the policy engine	Policy Server (qns)
Rx/A	Diameter Input Queue	node1.counters. [realm_] Rx_STR_drop. qns_count	Count of messages dropped due to exceedingSLA	Policy Server (qns)
Rx/A	Diameter Input Queue	node1.messages. in_q_Rx_STR. qns_stat.success	Count of messages successful sent to the policy engine	Policy Server (qns)
Rx/A	Diameter Input Queue	node1.messages. in_q_Rx_STR. qns_stat. total_time_in_ms	Total milliseconds of messages successfully sent to the policy engine	Policy Server (qns)

AppId/ Monitoring Area	Category	Statistic	Description	Availability/Node
Rx/D	Engine Message	node1.messages. diameter_Rx_STR. qns_stat.success	Success message count	Policy Server (qns)
Rx/D	Engine Message	node1.messages. diameter_Rx_STR. qns_stat. total_time_in_ms	Total milliseconds of successful messages	Policy Server (qns)
Rx/E	Diameter Input Queue	node1.counters. [realm_] Rx_STA_2001. qns_count	Count of STA messages with result-code = 2001 sent successfully to the PolicyDirector (LB)	Policy Server (qns)
Sy/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Sy_SLR_2001. qns_stat.success	Success message count for return code 2001	Policy Director
Sy/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Sy_SLR_2001. qns_stat. total_time_in_ms	Total milliseconds of successful messages with return code matching2001	Policy Director
Sy/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Sy_SLR_3xxx. qns_stat.success	Success count of messages with return code matching 3XXX	Policy Director
Sy/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Sy_SLR_4xxx. qns_stat.success	Success count of messages with return code matching 4XXX	Policy Director
Sy/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Sy_SLR_5xxx. qns_stat.success	Success count of messages with return code matching 5XXX	Policy Director
Sy/A	Diameter Input Queue	node1.counters. [realm_] Sy_SLR_bypass. qns_count	Count of message that do not require processing by the policy engine	Policy Server (qns)

AppId/ Monitoring Area	Category	Statistic	Description	Availability/Node
Sy/A	Diameter Input Queue	node1.counters.[realm_] Sy_SLR.qns_count	Count of messages successful sent to the policy engine	Policy Server (qns)
Sy/A	Diameter Input Queue	node1.counters.[realm_] Sy_SLR_drop.qns_count	Count of messages dropped due to exceedingSLA	Policy Server (qns)
Sy/A	Diameter Input Queue	node1.messages. in_q_Sy_SLA. qns_stat.success	Count of messages successfully sent to the policy engine	Policy Server (qns)
Sy/A	Diameter Input Queue	node1.messages.in_q_Sy_SLA. qns_stat. total_time_in_ms	Total milliseconds of messages successfully sent to the policy engine	Policy Server (qns)
Sy/D	Engine Message	node1.messages. diameter_Sy_SLA. qns_stat.success	Success message count	Policy Server (qns)
Sy/D	Engine Message	node1.messages. diameter_Sy_SLA. qns_stat. total_time_in_ms	Total milliseconds of successful messages	Policy Server (qns)
Sy/B	Diameter Action	node1.actions. send.diameter_ Sy_SLR.qns_stat.success	Success actions count	Policy Server (qns)
Sy/B	Diameter Action	node1.actions. send.diameter_ Sy_SLR.qns_stat. total_time_in_ms	Total milliseconds of successful messages	Policy Server (qns)
Sy/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Sy_SNR_2001. qns_stat.success	Success message count for return code 2001	Policy Director
Sy/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Sy_SNR_2001. qns_stat. total_time_in_ms	Total milliseconds of successful messages with return code matching2001	Policy Director

AppId/ Monitoring Area	Category	Statistic	Description	Availability/Node
Sy/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Sy_SNR_3xxx. qns_stat.success	Success count of messages with return code matching 3XXX	Policy Director
Sy/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Sy_SNR_4xxx. qns_stat.success	Success count of messages with return code matching 4XXX	Policy Director
Sy/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Sy_SNR_5xxx. qns_stat.success	Success count of messages with return code matching 5XXX	Policy Director
Sy/A	Diameter Input Queue	node1.counters. [realm_] Sy_SNR.qns_count	Count of messages successful sent to the policy engine	Policy Server (qns)
Sy/A	Diameter Input Queue	node1.counters. [realm_] Sy_SNR_drop. qns_count	Count of messages dropped due to exceedingSLA	Policy Server (qns)
Sy/A	Diameter Input Queue	node1.messages. in_q_ Sy_SNR. qns_stat.success	Count of messages successfully sent to the policy engine	Policy Server (qns)
Sy/A	Diameter Input Queue	node1.messages. in_q_Sy_SNR. qns_stat. total_time_in_ms	Total milliseconds of messages successfully sent to the policy engine	Policy Server (qns)
Sy/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Sy_STR_2001. qns_stat.success	Success message count for return code 2001	Policy Director
Sy/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Sy_STR_2001. qns_stat. total_time_in_ms	Total milliseconds of successful messages with return code matching2001	Policy Director

AppId/ Monitoring Area	Category	Statistic	Description	Availability/Node
Sy/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Sy_STR_3xxx. qns_stat.success	Success count of messages with return code matching 3XXX	Policy Director
Sy/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Sy_STR_4xxx. qns_stat.success	Success count of messages with return code matching 4XXX	Policy Director
Sy/F	Diameter Round Trip	node[x].messages. e2e_<domain>_ [realm_] Sy_STR_5xxx. qns_stat.success	Success count of messages with return code matching 5XXX	Policy Director
Sy/A	Diameter Input Queue	node1.counters. [realm_] Sy_STA_bypass. qns_count	Count of message that do not require processing by the policy engine	Policy Server (qns)
Sy/A	Diameter Input Queue	node1.counters. [realm_] Sy_STA.qns_count	Count of messages successful sent to the policy engine	Policy Server (qns)
Sy/A	Diameter Input Queue	node1.counters. [realm_] Sy_STA_drop. qns_count	Count of messages dropped due to exceedingSLA	Policy Server (qns)
Sy/A	Diameter Input Queue	node1.messages. in_q_Sy_STA. qns_stat.success	Count of messages successfully sent to the policy engine	Policy Server (qns)
Sy/A	Diameter Input Queue	node1.messages. in_q_Sy_STA. qns_stat.total_ time_in_ms	Total milliseconds of messages successfully sent to the policy engine	Policy Server (qns)
Sy/D	Engine Message	node1.messages. diameter_Sy_STA. qns_stat.success	Success message count	Policy Server (qns)
Sy/D	Engine Message	node1.messages. diameter_Sy_STA. qns_stat.total_time_in_ms	Total milliseconds of successful messages	Policy Server (qns)

AppId/ Monitoring Area	Category	Statistic	Description	Availability/Node
Sy/B	Diameter Action	node1.actions.send. diameter_Sy_STR. qns_stat.success	Success actions count	Policy Server (qns)
Sy/B	Diameter Action	node1.actions.send. diameter_ Sy_STR.qns_stat. total_time_in_ms	Total milliseconds of successful actions	Policy Server (qns)
Sy/E	Diameter Output Queue	node1.counters. [realm_] Sy_STR.qns_count	Count of messages successfully sent to the Policy Director (LB)	Policy Server (qns)

Example Statistics

Sample CSV Files

The following list is a sample of the file names created in the /var/broadhop/stats directory on the control-A VM.

```
[root@control-A stats]# pwd
/var/broadhop/stats [root@control-A stats]# ls
bulk-control-A-201510131350.csv
bulk-control-A-201510131355.csv
bulk-control-A-201510131400.csv
bulk-control-A-201510131405.csv
bulk-control-A-201510131410.csv
bulk-control-A-201510131415.csv
bulk-control-A-201510131420.csv
bulk-control-A-201510131425.csv
bulk-control-A-201510131430.csv
bulk-control-A-201510131435.csv
bulk-control-A-201510131440.csv
bulk-control-A-201510131445.csv
bulk-control-A-201510131450.csv
bulk-control-A-201510131455.csv
bulk-control-A-201510131500.csv
bulk-control-A-201510131505.csv
bulk-control-A-201510131510.csv
bulk-control-A-201510131515.csv
bulk-control-A-201510131520.csv
bulk-control-A-201510131525.csv
bulk-control-A-201510131530.csv
bulk-control-A-201510131535.csv
bulk-control-A-201510131540.csv
bulk-control-A-201510131545.csv
bulk-control-A-201510131550.csv
bulk-control-A-201510131555.csv
bulk-control-A-201510131600.csv
bulk-control-A-201510131605.csv
bulk-control-A-201510131610.csv
bulk-control-A-201510131615.csv
```

```
bulk-control-A-201510131620.csv
bulk-control-A-201510131625.csv
bulk-control-A-201510131630.csv
```

Sample Output

C,<VM_name>,node1.actions.send.diameter_Gx_CCA-I.qns_stat.success,19 where the <VM_Name> indicates the VM where statistics has been collected.

A sample bulk statistics.csv file is shown below:

```
C,qns01,node1.actions.SaveSubscriberActionImpl.qns_stat.error,0
C,qns01,node1.actions.SaveSubscriberActionImpl.qns_stat.success,6
C,qns01,node1.actions.send.diameter_Gx_CCA-I.qns_stat.error,0
C,qns01,node1.actions.send.diameter_Gx_CCA-I.qns_stat.success,19
C,qns01,node1.actions.send.diameter_Gx_CCA-T.qns_stat.error,0
C,qns01,node1.actions.send.diameter_Gx_CCA-T.qns_stat.success,9
D,qns01,node1.messages.in_q_Gx_CCR-I.qns_stat.total_time_in_ms,14
D,qns01,node1.messages.in_q_Gx_CCR-T.qns_stat.total_time_in_ms,2
D,qns01,node1.messages.in_q_Gx_CCR-U.qns_stat.total_time_in_ms,1
D,qns01,node1.messages.in_q_Gx_RAA.qns_stat.total_time_in_ms,0
D,qns01,node1.messages.in_q_Sh_SNA.qns_stat.total_time_in_ms,2
D,qns01,node1.messages.in_q_Sh_UDA.qns_stat.total_time_in_ms,0
D,qns01,node1.messages.TimerExpired.qns_stat.total_time_in_ms,7244
D,qns01,node1.spr.createSubscriber.qns_stat.total_time_in_ms,29
D,qns01,node1.spr.deleteSubscriber.qns_stat.total_time_in_ms,40
D,qns01,node1.spr.getSubscriber.qns_stat.total_time_in_ms,44
D,qns01,node1.spr.updateSubscriber.qns_stat.total_time_in_ms,21
G,lb02,node1.ldap.SITELDAP.qns_ldap_connection.MaximumAvailableConnections,10.0
G,lb02,node1.ldap.SITELDAP.qns_ldap_connection.NumAvailableConnections,0.0
G,lb02,node1.thread.gauge.daemon_thread_count,80.0
G,lb02,node1.thread.gauge.live_thread_count,184.0
```