Risoluzione dei problemi relativi a uno scenario con schemi Bulkstats e soluzioni consigliate in StarOS

Sommario

Introduzione

Questo documento descrive uno scenario relativo all'aggiunta e all'eliminazione di schemi bulkstat in StarOS insieme a problemi e soluzioni consigliate per questi problemi.

Prerequisiti

Requisiti

Cisco raccomanda la conoscenza dei seguenti argomenti:

- Linux
- StarOS

Cisco consiglia di disporre dei privilegi di accesso:

- modalità nascosta per eseguire la **shell di debug** e accedere al prompt dei comandi di linux shell
- Accesso SFTP (Secure File Transfer Protocol) al nodo StarOS

Componenti usati

Il riferimento delle informazioni contenute in questo documento è StarOS versione 21.16.6.7063.

Le informazioni discusse in questo documento fanno riferimento a dispositivi usati in uno specifico ambiente di emulazione. Su tutti i dispositivi menzionati nel documento la configurazione è stata ripristinata ai valori predefiniti. Se la rete è operativa, valutare attentamente eventuali conseguenze derivanti dall'uso dei comandi.

Premesse

1. Per configurare un file di configurazione per l'archiviazione delle configurazioni relative alle statistiche bulk.
2. Il formato del comando è:

```
configure

    [no] bulkstats config [ schema | supplement ] <url>

end
```

Dove:

- La parola chiave **schema** facoltativa consente di sostituire solo lo schema utilizzando il file fornito e di mantenere la configurazione del server.
- La parola chiave opzionale **additional** consente di integrare la configurazione bulkstats in esecuzione con il contenuto del file di configurazione fornito. Queste parole chiave funzionano solo su file esistenti.
- URL specifica la posizione del file di configurazione bulkstats.

Problema

Impossibile aggiungere nuovi schemi o aggiungere nuovamente lo schema corrente (se eliminato) tramite il prompt dei comandi CLI.

Scenari di test

1. Si è verificato questo problema a causa dell'uso dello **schema di configurazione bulkstat** della cli **<URL>**.
2. Si tratta di un risultato previsto per ogni progetto quando viene utilizzato **uno schema** di parole chiave facoltativo.
3. Lo stesso scenario è stato testato in laboratorio. Ecco i risultati:
   Scenario A. Inizialmente è stata configurata la **configurazione bulkstat <url>**cli.

```
[local]MME# show configuration bulkstats

config

 bulkstats collection

 bulkstats historical collection

 bulkstats config /hd-raid/file1

 bulkstats mode

   file 1

     header format Version-20.0,%ipaddr%,%date%-%time%,%localdate%-
%localtime%,%localtz%,%localtzoffset%,%localdate3%-%localtime3%,%swbuild%
```

```
        footer format EndOfFile

        card schema cardSch1 format
PPM,card,cardSch1,%epochtime%,%localdate%,%localtime%,%uptime%,%card%,%cpubusy%,%cpuidle%,%numpr
oc%,%memused%,%memtotal%,%numcpu%,%cpu0-cpubusy%,%cpu0-cpuidle%,%cpu0-numproc%,%cpu0-
memused%,%cpu0-memtotal%,%cpu0-name%,%cpu0-cpuused-user%,%cpu0-cpuused-sys%,%cpu0-cpuused-
io%,%cpu0-cpuused-irq%,%cpu0-cpuused-idle%,%cpu1-cpubusy%,%cpu1-cpuidle%,%cpu1-numproc%,

        card schema cardSch2 format
PPM,card,cardSch2,%epochtime%,%localdate%,%localtime%,%uptime%,%card%,%cpu1-memused%,%cpu1-
memtotal%,%cpu1-name%,%cpu1-cpuused-user%,%cpu1-cpuused-sys%,%cpu1-cpuused-io%,%cpu1-cpuused-
irq%,%cpu1-cpuused-idle%,%cpu2-cpubusy%,%cpu2-cpuidle%,%cpu2-numproc%,%cpu2-memused%,%cpu2-
memtotal%,%cpu2-name%,%cpu2-cpuused-user%,%cpu2-cpuused-sys%,%cpu2-cpuused-io%,%cpu2-cpuused-
irq%,%cpu2-cpuused-idle%,%cpu3-cpubusy%,%cpu3-cpuidle%,

        card schema cardSch3 format
PPM,card,cardSch3,%epochtime%,%localdate%,%localtime%,%uptime%,%card%,%cpu3-numproc%,%cpu3-
memused%,%cpu3-memtotal%,%cpu3-name%,%cpu3-cpuused-user%,%cpu3-cpuused-sys%,%cpu3-cpuused-
io%,%cpu3-cpuused-irq%,%cpu3-cpuused-idle%,%15avg-cpubusy%,%15peak-cpubusy%,%5avg-
cpubusy%,%5peak-cpubusy%,%1avg-cpubusy%,%15avg-memused%,%15peak-memused%,%5avg-memused%,%5peak-
memused%,%1avg-memused%,%cpu0-15avg-cpubusy%,%cpu0-15peak-cpubusy%,

        port schema portSch1 format
PPM,port,portSch1,%epochtime%,%localdate%,%localtime%,%uptime%,%card%,%port%,%maxrate%,%rxbytes%
,%txbytes%,%ucast_inpackets%,%ucast_outpackets%,%mcast_inpackets%,%mcast_outpackets%,%bcast_inpa
ckets%,%bcast_outpackets%,%rxpackets%,%txpackets%,%rxdiscbytes%,%rxdiscpackets%,%txdiscbytes%,%t
xdiscpackets%,%rxerrorbytes%,%rxerrorpackets%,%txerrorbytes%,%txerrorpackets%,

        port schema portSch2 format
PPM,port,portSch2,%epochtime%,%localdate%,%localtime%,%uptime%,%card%,%port%,%frag-rcvd%,%pkt-
reassembled%,%frag-tokernel%,%util-rx-curr%,%util-tx-curr%,%util-rx-5min%,%util-tx-5min%,%util-
rx-15min%,%util-tx-15min%,%port-5peak-rx-util%,%port-5peak-tx-util%,%port-15peak-rx-util%,%port-
15peak-tx-util%,

        apn-expansion schema apn1 format PPM,apn-expansion,%epochtime%,%localdate%,%localtime%,

        apn-expansion schema apn2 format PPM,apn-expansion,%epochtime%,%localdate%,%localtime%,

        apn-expansion schema apn3 format PPM,apn-expansion,%epochtime%,%localdate%,%localtime%,

      #exit

    #exit

  end


[local]MME# show bulkstats schemas

Bulk Statistics Server Configuration:

 Server State:              Enabled

 File Limit:                7500 KB

 Sample Interval:           15 minutes (0D 0H 15M)

 Transfer Interval:         480 minutes (0D 8H 0M)

 Receiver Mode:             Secondary-on-failure

 Historical Data Collection:   Enabled (15 samples stored)
```

```
Bulk Statistics Server Statistics:

 Records awaiting transmission: 0

 Bytes awaiting transmission:   0

 Total records collected:       0

 Total bytes collected:         0

 Total records transmitted:     0

 Total bytes transmitted:       0

 Total records discarded:       0

 Total bytes discarded:         0

 Last collection time required: 0 second(s)

 Last transfer time required:   0 second(s)

 No successful data transfers

 No attempted data transfers




 File 1

    Remote File Format:          %date%-%time%

    File Header:                 Version-20.0,%ipaddr%,%date%-%time%,%localdate%-
%localtime%,%localtz%,%localtzoffset%,%localdate3%-%localtime3%,%swbuild%

    File Footer:                 EndOfFile

    No bulkstats receivers

    File Statistics:

       Records awaiting transmission: 0

       Bytes awaiting transmission:   0

       Total records collected:       0

       Total bytes collected:         0

       Total records transmitted:     0

       Total bytes transmitted:       0

       Total records discarded:       0

       Total bytes discarded:         0

       Last transfer time required:   0 second(s)

       No successful data transfers
```

No attempted data transfers

 File 2 not configured

 File 3 not configured

 File 4 not configured

------------------ Schemas for File 1-------------------------------------

Type   Name   Active-Only Format

------------ ---------------------- ---------- --

card   cardSch1   No
PPM,card,cardSch1,%epochtime%,%localdate%,%localtime%,%uptime%,%card%,%cpubusy%,%cpuidle%,%numpr
oc%,%memused%,%memtotal%,%numcpu%,%cpu0-cpubusy%,%cpu0-cpuidle%,%cpu0-numproc%,%cpu0-
memused%,%cpu0-memtotal%,%cpu0-name%,%cpu0-cpuused-user%,%cpu0-cpuused-sys%,%cpu0-cpuused-
io%,%cpu0-cpuused-irq%,%cpu0-cpuused-idle%,%cpu1-cpubusy%,%cpu1-cpuidle%,%cpu1-numproc%,

card   cardSch2   No
PPM,card,cardSch2,%epochtime%,%localdate%,%localtime%,%uptime%,%card%,%cpu1-memused%,%cpu1-
memtotal%,%cpu1-name%,%cpu1-cpuused-user%,%cpu1-cpuused-sys%,%cpu1-cpuused-io%,%cpu1-cpuused-
irq%,%cpu1-cpuused-idle%,%cpu2-cpubusy%,%cpu2-cpuidle%,%cpu2-numproc%,%cpu2-memused%,%cpu2-
memtotal%,%cpu2-name%,%cpu2-cpuused-user%,%cpu2-cpuused-sys%,%cpu2-cpuused-io%,%cpu2-cpuused-
irq%,%cpu2-cpuused-idle%,%cpu3-cpubusy%,%cpu3-cpuidle%,

card   cardSch3   No
PPM,card,cardSch3,%epochtime%,%localdate%,%localtime%,%uptime%,%card%,%cpu3-numproc%,%cpu3-
memused%,%cpu3-memtotal%,%cpu3-name%,%cpu3-cpuused-user%,%cpu3-cpuused-sys%,%cpu3-cpuused-
io%,%cpu3-cpuused-irq%,%cpu3-cpuused-idle%,%15avg-cpubusy%,%15peak-cpubusy%,%5avg-
cpubusy%,%5peak-cpubusy%,%1avg-cpubusy%,%15avg-memused%,%15peak-memused%,%5avg-memused%,%5peak-
memused%,%1avg-memused%,%cpu0-15avg-cpubusy%,%cpu0-15peak-cpubusy%,

port   portSch1   No
PPM,port,portSch1,%epochtime%,%localdate%,%localtime%,%uptime%,%card%,%port%,%maxrate%,%rxbytes%
,%txbytes%,%ucast_inpackets%,%ucast_outpackets%,%mcast_inpackets%,%mcast_outpackets%,%bcast_inpa
ckets%,%bcast_outpackets%,%rxpackets%,%txpackets%,%rxdiscbytes%,%rxdiscpackets%,%txdiscbytes%,%t
xdiscpackets%,%rxerrorbytes%,%rxerrorpackets%,%txerrorbytes%,%txerrorpackets%,

port   portSch2   No
PPM,port,portSch2,%epochtime%,%localdate%,%localtime%,%uptime%,%card%,%port%,%frag-rcvd%,%pkt-
reassembled%,%frag-tokernel%,%util-rx-curr%,%util-tx-curr%,%util-rx-5min%,%util-tx-5min%,%util-
rx-15min%,%util-tx-15min%,%port-5peak-rx-util%,%port-5peak-tx-util%,%port-15peak-rx-util%,%port-
15peak-tx-util%,

apn-expansion apn1   No   PPM,apn-
expansion,%epochtime%,%localdate%,%localtime%,

apn-expansion apn2   No   PPM,apn-
expansion,%epochtime%,%localdate%,%localtime%,

```
apn-expansion apn3                        No          PPM,apn-
expansion,%epochtime%,%localdate%,%localtime%,

mon-di-net   mdn1                         No          PPM,%epochtime%,%localdate%,%localtime%,
```

```
[local]MME#
```

Scenario B. Per aggiungere **lo schema della** parola chiave opzionale, è necessario prima rimuovere la cli bulkstat **senza configurare bulkstats**. Quando si esegue **no bulkstats config**, tutti gli schemi correnti nel nodo vengono eliminati.

```
[local]MME#

[local]MME# configure

[local]MME(config)# bulkstats collection

[local]MME(config)# no bulkstats config

<cr>                    - newline

[local]MME(config)# no bulkstats config

[local]MME(config)# end

[local]MME# show configuration bulkstats

config

 bulkstats collection

 bulkstats historical collection

 bulkstats mode

   file 1

     header format Version-20.0,%ipaddr%,%date%-%time%,%localdate%-
%localtime%,%localtz%,%localtzoffset%,%localdate3%-%localtime3%,%swbuild%

     footer format EndOfFile

   #exit

 #exit

end

[local]MME# show bulkstats schemas

Bulk Statistics Server Configuration:

 Server State:                Enabled

 File Limit:                  7500 KB

 Sample Interval:             15 minutes (0D 0H 15M)

 Transfer Interval:           480 minutes (0D 8H 0M)

 Receiver Mode:               Secondary-on-failure

 Historical Data Collection:  Enabled (15 samples stored)
```

```
Bulk Statistics Server Statistics:

 Records awaiting transmission: 0

 Bytes awaiting transmission:   0

 Total records collected:       0

 Total bytes collected:         0

 Total records transmitted:     0

 Total bytes transmitted:       0

 Total records discarded:       0

 Total bytes discarded:         0

 Last collection time required: 0 second(s)

 Last transfer time required:   0 second(s)

 No successful data transfers

 No attempted data transfers



 File 1

    Remote File Format:            %date%-%time%

    File Header:                   Version-20.0,%ipaddr%,%date%-%time%,%localdate%-
%localtime%,%localtz%,%localtzoffset%,%localdate3%-%localtime3%,%swbuild%

    File Footer:                   EndOfFile

    No bulkstats receivers

    File Statistics:

       Records awaiting transmission: 0

       Bytes awaiting transmission:   0

       Total records collected:       0

       Total bytes collected:         0

       Total records transmitted:     0

       Total bytes transmitted:       0

       Total records discarded:       0

       Total bytes discarded:         0

       Last transfer time required:   0 second(s)
```

```
    No successful data transfers

    No attempted data transfers




  File 2 not configured




  File 3 not configured




  File 4 not configured

[local]MME#

[local]MME#
```

Scenario C. Quindi la CLI **bulkstat - schema di configurazione <url>** è configurato. Tutte le configurazioni e gli schemi presenti nel file di configurazione vengono aggiunti al nodo.

```
[local]MME# configure

[local]MME(config)# bulkstats collection

[local]MME(config)# bulkstats config schema /hd-raid/file2

Info: config

Info: bulkstats mode

Info: file 2

Info: header format Version-20.0,%ipaddr%,%date%-%time%,%localdate%-
%localtime%,%localtz%,%localtzoffset%,%localdate3%-%localtime3%,%swbuild%

Info: footer format EndOfFile

Info: diameter-auth schema diameter-authSch1 format PPM,diameter-auth,diameter-
authSch1,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnid%,%vpnname%,%ipaddr%,%port%,%servert
ype%,%group%,%der-req-id-sent%,%der-req-aka-chal-sent%,%der-req-retried%,%dea-chal-rcvd%,%dea-
acpt-rcvd%,%dea-timeout%,%dea-badauth%,%dea-malformed%,%dea-malformed-avp%,%dea-dropped%,%rar-
req-rcvd%,%raa-ans-accpt-sent%,%aar-req-sent%,%str-req-sent%,%str-req-retried%,

Info: diameter-auth schema diameter-authSch2 format PPM,diameter-auth,diameter-
authSch2,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnid%,%vpnname%,%ipaddr%,%port%,%sta-
ans-accpt-rcvd%,%asr-req-rcvd%,%asa-rsp-accpt-sent%,%asa-rsp-rej-sent%,%req-sock-write-
err%,%rsp-sock-write-err%,%any-sock-read-err%,%rem-disconnect%,%loc-disconnect%,

Info: diameter-auth schema diameter-authSch3 format PPM,diameter-auth,diameter-
authSch3,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnid%,%vpnname%,%ipaddr%,%port%,%peer%,%
diameter-auth-msg-multiround%,%diameter-auth-msg-success%,%diameter-auth-msg-err-
protocol%,%diameter-auth-msg-err-transient%,%diameter-auth-msg-err-permanent%,%diameter-auth-
msg-err-other%,%aaa-req-received%,%aaa-req-timeouts%,%aaa-req-dropped%,

Info: schema systemSch1 format
PPM,system,systemSch1,%epochtime%,%localdate%,%localtime%,%uptime%,%sess-ttlarrived%,%sess-
ttlrejected%,%sess-ttlconnected%,%sess-ttlfailed%,%sess-ttldisconn%,%sess-ttlhandoff%,%sess-
```

ttlrenewal%,%sess-ttlcallop%,%sess-ttlauthsucc%,%sess-ttlauthfail%,%sess-curaaaactive%,%sess-
curaaadeleting%,%sess-curaaaacctpending%,%sess-curaaaacctitemsused%,%sess-
curaaaacctitemsmax%,%sess-curaaabuffused%,%sess-curaaabuffmax%,%sess-ttlaaacancauth%,%sess-
ttlaaaacctpurged%,%sess-ttlradacctpurged%,%sess-ttllcpup%,

Info: schema systemSch10 format
PPM,system,systemSch10,%epochtime%,%localdate%,%localtime%,%uptime%,%aaa-ttlpseudoauthreq%,%aaa-
curpseudoauthreq%,%aaa-ttlauthnulluser%,%aaa-ttlacctsucc%,%aaa-ttlacctpurged%,%aaa-
ttlacctcancelled%,%aaa-ttlacctkeepalivesuccess%,%aaa-ttlacctkeepalivetimeout%,%aaa-
ttlacctkeepalivepurged%,%aaa-ttlradacctreq%,%aaa-ttlradacctcancelled%,%aaa-
ttlradacctpurged%,%aaa-ttlradacctreqretried%,%aaa-ttlradacctrspdropped%,%aaa-
ttlmgrpurgedrequests%,%diamauth-msg-mareq%,%diamauth-msg-maans%,%diamauth-msg-
marretry%,%diamauth-msg-maatimeout%,%diamauth-msg-maadropped%,%diamauth-msg-sareq%,

Info: schema systemSch100 format
PPM,system,systemSch100,%epochtime%,%localdate%,%localtime%,%uptime%,%sess-bearerdur-24hr-
qci6%,%sess-bearerdur-over24hr-qci6%,%sess-bearerdur-2day-qci6%,%sess-bearerdur-4day-
qci6%,%sess-bearerdur-5day-qci6%,%sess-bearerdur-5sec-qci7%,%sess-bearerdur-10sec-qci7%,%sess-
bearerdur-30sec-qci7%,%sess-bearerdur-1min-qci7%,%sess-bearerdur-2min-qci7%,%sess-bearerdur-
5min-qci7%,%sess-bearerdur-15min-qci7%,%sess-bearerdur-30min-qci7%,%sess-bearerdur-1hr-
qci7%,%sess-bearerdur-4hr-qci7%,%sess-bearerdur-12hr-qci7%,%sess-bearerdur-24hr-qci7%,%sess-
bearerdur-over24hr-qci7%,%sess-bearerdur-2day-qci7%,%sess-bearerdur-4day-qci7%,%sess-bearerdur-
5day-qci7%,

Info: sgs schema sgsSch1 format
PPM,sgs,sgsSch1,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnname%,%vpnid%,%servname%,%servi
d%,%pag-req-tx%,%pag-req-retx%,%pag-req-rx%,%pag-rej-tx%,%pag-rej-retx%,%pag-rej-rx%,%service-
req-tx%,%service-req-retx%,%service-req-rx%,%dl-ud-tx%,%dl-ud-retx%,%dl-ud-rx%,%ul-ud-tx%,%ul-
ud-retx%,%ul-ud-rx%,%localupd-req-tx%,%localupd-req-retx%,

Info: sgs schema sgsSch2 format
PPM,sgs,sgsSch2,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnname%,%vpnid%,%servname%,%servi
d%,%localupd-req-rx%,%localupd-accept-tx%,%localupd-accept-retx%,%localupd-accept-rx%,%localupd-
rej-tx%,%localupd-rej-retx%,%localupd-rej-rx%,%tmsi-reloc-tx%,%tmsi-reloc-retx%,%tmsi-reloc-
rx%,%alert-req-tx%,%alert-req-retx%,%alert-req-rx%,%alert-ack-tx%,%alert-ack-retx%,%alert-ack-
rx%,%alert-rej-tx%,%alert-rej-retx%,%alert-rej-rx%,%ue-actind-tx%,%ue-actind-retx%,

Info: sgs schema sgsSch3 format
PPM,sgs,sgsSch3,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnname%,%vpnid%,%servname%,%servi
d%,%ue-actind-rx%,%eps-detind-tx%,%eps-detind-retx%,%eps-detind-rx%,%eps-detack-tx%,%eps-detack-
retx%,%eps-detack-rx%,%imsi-detind-tx%,%imsi-detind-retx%,%imsi-detind-rx%,%imsi-detack-
tx%,%imsi-detack-retx%,%imsi-detack-rx%,,,,,,,,%mm-inforeq-tx%,%mm-inforeq-retx%,

Info: exit

[local]MME(config)# end

[local]MME#

[local]MME# show configuration bulkstats

config

 bulkstats collection

 bulkstats historical collection

 bulkstats config schema /hd-raid/file2

 bulkstats mode

   file 1

     header format Version-20.0,%ipaddr%,%date%-%time%,%localdate%-

```
%localtime%,%localtz%,%localtzoffset%,%localdate3%-%localtime3%,%swbuild%

    footer format EndOfFile

  #exit

  file 2

    header format Version-20.0,%ipaddr%,%date%-%time%,%localdate%-
%localtime%,%localtz%,%localtzoffset%,%localdate3%-%localtime3%,%swbuild%

    footer format EndOfFile

    schema systemSch1 format
PPM,system,systemSch1,%epochtime%,%localdate%,%localtime%,%uptime%,%sess-ttlarrived%,%sess-
ttlrejected%,%sess-ttlconnected%,%sess-ttlfailed%,%sess-ttldisconn%,%sess-ttlhandoff%,%sess-
ttlrenewal%,%sess-ttlcallop%,%sess-ttlauthsucc%,%sess-ttlauthfail%,%sess-curaaaactive%,%sess-
curaaadeleting%,%sess-curaaaacctpending%,%sess-curaaaacctitemsused%,%sess-
curaaaacctitemsmax%,%sess-curaaabuffused%,%sess-curaaabuffmax%,%sess-ttlaaacancauth%,%sess-
ttlaaaacctpurged%,%sess-ttlradacctpurged%,%sess-ttllcpup%,

    schema systemSch10 format
PPM,system,systemSch10,%epochtime%,%localdate%,%localtime%,%uptime%,%aaa-ttlpseudoauthreq%,%aaa-
curpseudoauthreq%,%aaa-ttlauthnulluser%,%aaa-ttlacctsucc%,%aaa-ttlacctpurged%,%aaa-
ttlacctcancelled%,%aaa-ttlacctkeepalivesuccess%,%aaa-ttlacctkeepalivetimeout%,%aaa-
ttlacctkeepalivepurged%,%aaa-ttlradacctreq%,%aaa-ttlradacctcancelled%,%aaa-
ttlradacctpurged%,%aaa-ttlradacctreqretried%,%aaa-ttlradacctrspdropped%,%aaa-
ttlmgrpurgedrequests%,%diamauth-msg-mareq%,%diamauth-msg-maans%,%diamauth-msg-
marretry%,%diamauth-msg-maatimeout%,%diamauth-msg-maadropped%,%diamauth-msg-sareq%,

    schema systemSch100 format
PPM,system,systemSch100,%epochtime%,%localdate%,%localtime%,%uptime%,%sess-bearerdur-24hr-
qci6%,%sess-bearerdur-over24hr-qci6%,%sess-bearerdur-2day-qci6%,%sess-bearerdur-4day-
qci6%,%sess-bearerdur-5day-qci6%,%sess-bearerdur-5sec-qci7%,%sess-bearerdur-10sec-qci7%,%sess-
bearerdur-30sec-qci7%,%sess-bearerdur-1min-qci7%,%sess-bearerdur-2min-qci7%,%sess-bearerdur-
5min-qci7%,%sess-bearerdur-15min-qci7%,%sess-bearerdur-30min-qci7%,%sess-bearerdur-1hr-
qci7%,%sess-bearerdur-4hr-qci7%,%sess-bearerdur-12hr-qci7%,%sess-bearerdur-24hr-qci7%,%sess-
bearerdur-over24hr-qci7%,%sess-bearerdur-2day-qci7%,%sess-bearerdur-4day-qci7%,%sess-bearerdur-
5day-qci7%,

    diameter-auth schema diameter-authSch1 format PPM,diameter-auth,diameter-
authSch1,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnid%,%vpnname%,%ipaddr%,%port%,%servert
ype%,%group%,%der-req-id-sent%,%der-req-aka-chal-sent%,%der-req-retried%,%dea-chal-rcvd%,%dea-
acpt-rcvd%,%dea-timeout%,%dea-badauth%,%dea-malformed%,%dea-malformed-avp%,%dea-dropped%,%rar-
req-rcvd%,%raa-ans-accpt-sent%,%aar-req-sent%,%str-req-sent%,%str-req-retried%,

    diameter-auth schema diameter-authSch2 format PPM,diameter-auth,diameter-
authSch2,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnid%,%vpnname%,%ipaddr%,%port%,%sta-
ans-accpt-rcvd%,%asr-req-rcvd%,%asa-rsp-accpt-sent%,%asa-rsp-rej-sent%,%req-sock-write-
err%,%rsp-sock-write-err%,%any-sock-read-err%,%rem-disconnect%,%loc-disconnect%,

    diameter-auth schema diameter-authSch3 format PPM,diameter-auth,diameter-
authSch3,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnid%,%vpnname%,%ipaddr%,%port%,%peer%,%
diameter-auth-msg-multiround%,%diameter-auth-msg-success%,%diameter-auth-msg-err-
protocol%,%diameter-auth-msg-err-transient%,%diameter-auth-msg-err-permanent%,%diameter-auth-
msg-err-other%,%aaa-req-received%,%aaa-req-timeouts%,%aaa-req-dropped%,

    sgs schema sgsSch1 format
PPM,sgs,sgsSch1,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnname%,%vpnid%,%servname%,%servi
d%,%pag-req-tx%,%pag-req-retx%,%pag-req-rx%,%pag-rej-tx%,%pag-rej-retx%,%pag-rej-rx%,%service-
req-tx%,%service-req-retx%,%service-req-rx%,%dl-ud-tx%,%dl-ud-retx%,%dl-ud-rx%,%ul-ud-tx%,%ul-
ud-retx%,%ul-ud-rx%,%localupd-req-tx%,%localupd-req-retx%,

    sgs schema sgsSch2 format
```

```
PPM,sgs,sgsSch2,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnname%,%vpnid%,%servname%,%servi
d%,%localupd-req-rx%,%localupd-accept-tx%,%localupd-accept-retx%,%localupd-accept-rx%,%localupd-
rej-tx%,%localupd-rej-retx%,%localupd-rej-rx%,%tmsi-reloc-tx%,%tmsi-reloc-retx%,%tmsi-reloc-
rx%,%alert-req-tx%,%alert-req-retx%,%alert-req-rx%,%alert-ack-tx%,%alert-ack-retx%,%alert-ack-
rx%,%alert-rej-tx%,%alert-rej-retx%,%alert-rej-rx%,%ue-actind-tx%,%ue-actind-retx%,

     sgs schema sgsSch3 format
PPM,sgs,sgsSch3,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnname%,%vpnid%,%servname%,%servi
d%,%ue-actind-rx%,%eps-detind-tx%,%eps-detind-retx%,%eps-detind-rx%,%eps-detack-tx%,%eps-detack-
retx%,%eps-detack-rx%,%imsi-detind-tx%,%imsi-detind-retx%,%imsi-detind-rx%,%imsi-detack-
tx%,%imsi-detack-retx%,%imsi-detack-rx%,,,,,,,%mm-inforeq-tx%,%mm-inforeq-retx%,

    #exit

  #exit

end
```

`[local]MME#`

Scenario D. In seguito non sarà possibile aggiungere nuovi schemi. Quando si tenta di rimuovere uno schema corrente e di aggiungerlo nuovamente, lo schema viene eliminato ma non sarà possibile aggiungerlo nuovamente. Tuttavia, lo schema corrente era ancora presente nel file di configurazione (file di configurazione presente nell'URL).

`[local]MME# configure`

`[local]MME(config)# bulkstats mode`

```
mode                  - Enters bulk statistics configuration mode, where you can define what
statistics to collect
```

`[local]MME(config)# bulkstats mode`

`[local]MME(config-bulkstats)# file 1`

`[local]MME(config-bulkstats-file-1)# mon-di-net schema mdn1 format PPM,%epochti`

`me%,%localdate%,%localtime%,`

`[local]MME(config-bulkstats-file-1)# exit`

`[local]MME(config-bulkstats)# file 2`

`[local]MME(config-bulkstats-file-2)# mon-di-net schema mdn2 format PPM,%epochti`

`me%,`

`[local]MME(config-bulkstats-file-2)# end`

`[local]MME# show bulkstats schemas`

`Bulk Statistics Server Configuration:`

` Server State:              Enabled`

` File Limit:                7500 KB`

` Sample Interval:           15 minutes (0D 0H 15M)`

```
Transfer Interval:            480 minutes (0D 8H 0M)

Receiver Mode:                Secondary-on-failure

Historical Data Collection:   Enabled (15 samples stored)


Bulk Statistics Server Statistics:

 Records awaiting transmission: 0

 Bytes awaiting transmission:   0

 Total records collected:       0

 Total bytes collected:         0

 Total records transmitted:     0

 Total bytes transmitted:       0

 Total records discarded:       0

 Total bytes discarded:         0

 Last collection time required: 0 second(s)

 Last transfer time required:   0 second(s)

 No successful data transfers

 No attempted data transfers



 File 1

   Remote File Format:          %date%-%time%

   File Header:                 Version-20.0,%ipaddr%,%date%-%time%,%localdate%-
%localtime%,%localtz%,%localtzoffset%,%localdate3%-%localtime3%,%swbuild%

   File Footer:                 EndOfFile

   No bulkstats receivers

   File Statistics:

     Records awaiting transmission: 0

     Bytes awaiting transmission:   0

     Total records collected:       0

     Total bytes collected:         0

     Total records transmitted:     0

     Total bytes transmitted:       0
```

```
    Total records discarded:       0

    Total bytes discarded:         0

    Last transfer time required:   0 second(s)

    No successful data transfers

    No attempted data transfers




 File 2

   Remote File Format:              %date%-%time%

   File Header:                     Version-20.0,%ipaddr%,%date%-%time%,%localdate%-
%localtime%,%localtz%,%localtzoffset%,%localdate3%-%localtime3%,%swbuild%

   File Footer:             EndOfFile

   No bulkstats receivers

   File Statistics:

     Records awaiting transmission: 0

     Bytes awaiting transmission:   0

     Total records collected:       0

     Total bytes collected:         0

     Total records transmitted:     0

     Total bytes transmitted:       0

     Total records discarded:       0

     Total bytes discarded:         0

     Last transfer time required:   0 second(s)

     No successful data transfers

     No attempted data transfers




 File 3 not configured




 File 4 not configured




------------------- Schemas for File 2----------------------------------------

Type        Name                    Active-Only Format
```

```
----------- --------------------- ---------- ---------------------------------------

system       systemSch1             No
PPM,system,systemSch1,%epochtime%,%localdate%,%localtime%,%uptime%,%sess-ttlarrived%,%sess-
ttlrejected%,%sess-ttlconnected%,%sess-ttlfailed%,%sess-ttldisconn%,%sess-ttlhandoff%,%sess-
ttlrenewal%,%sess-ttlcallop%,%sess-ttlauthsucc%,%sess-ttlauthfail%,%sess-curaaaactive%,%sess-
curaaadeleting%,%sess-curaaaacctpending%,%sess-curaaaacctitemsused%,%sess-
curaaaacctitemsmax%,%sess-curaaabuffused%,%sess-curaaabuffmax%,%sess-ttlaaacancauth%,%sess-
ttlaaaacctpurged%,%sess-ttlradacctpurged%,%sess-ttllcpup%,

system       systemSch10            No
PPM,system,systemSch10,%epochtime%,%localdate%,%localtime%,%uptime%,%aaa-ttlpseudoauthreq%,%aaa-
curpseudoauthreq%,%aaa-ttlauthnulluser%,%aaa-ttlacctsucc%,%aaa-ttlacctpurged%,%aaa-
ttlacctcancelled%,%aaa-ttlacctkeepalivesuccess%,%aaa-ttlacctkeepalivetimeout%,%aaa-
ttlacctkeepalivepurged%,%aaa-ttlradacctreq%,%aaa-ttlradacctcancelled%,%aaa-
ttlradacctpurged%,%aaa-ttlradacctreqretried%,%aaa-ttlradacctrspdropped%,%aaa-
ttlmgrpurgedrequests%,%diamauth-msg-mareq%,%diamauth-msg-maans%,%diamauth-msg-
marretry%,%diamauth-msg-maatimeout%,%diamauth-msg-maadropped%,%diamauth-msg-sareq%,

system       systemSch100           No
PPM,system,systemSch100,%epochtime%,%localdate%,%localtime%,%uptime%,%sess-bearerdur-24hr-
qci6%,%sess-bearerdur-over24hr-qci6%,%sess-bearerdur-2day-qci6%,%sess-bearerdur-4day-
qci6%,%sess-bearerdur-5day-qci6%,%sess-bearerdur-5sec-qci7%,%sess-bearerdur-10sec-qci7%,%sess-
bearerdur-30sec-qci7%,%sess-bearerdur-1min-qci7%,%sess-bearerdur-2min-qci7%,%sess-bearerdur-
5min-qci7%,%sess-bearerdur-15min-qci7%,%sess-bearerdur-30min-qci7%,%sess-bearerdur-1hr-
qci7%,%sess-bearerdur-4hr-qci7%,%sess-bearerdur-12hr-qci7%,%sess-bearerdur-24hr-qci7%,%sess-
bearerdur-over24hr-qci7%,%sess-bearerdur-2day-qci7%,%sess-bearerdur-4day-qci7%,%sess-bearerdur-
5day-qci7%,

diameter-auth diameter-authSch1       No        PPM,diameter-auth,diameter-
authSch1,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnid%,%vpnname%,%ipaddr%,%port%,%servert
ype%,%group%,%der-req-id-sent%,%der-req-aka-chal-sent%,%der-req-retried%,%dea-chal-rcvd%,%dea-
acpt-rcvd%,%dea-timeout%,%dea-badauth%,%dea-malformed%,%dea-malformed-avp%,%dea-dropped%,%rar-
req-rcvd%,%raa-ans-accpt-sent%,%aar-req-sent%,%str-req-sent%,%str-req-retried%,

diameter-auth diameter-authSch2       No        PPM,diameter-auth,diameter-
authSch2,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnid%,%vpnname%,%ipaddr%,%port%,%sta-
ans-accpt-rcvd%,%asr-req-rcvd%,%asa-rsp-accpt-sent%,%asa-rsp-rej-sent%,%req-sock-write-
err%,%rsp-sock-write-err%,%any-sock-read-err%,%rem-disconnect%,%loc-disconnect%,

diameter-auth diameter-authSch3       No        PPM,diameter-auth,diameter-
authSch3,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnid%,%vpnname%,%ipaddr%,%port%,%peer%,%
diameter-auth-msg-multiround%,%diameter-auth-msg-success%,%diameter-auth-msg-err-
protocol%,%diameter-auth-msg-err-transient%,%diameter-auth-msg-err-permanent%,%diameter-auth-
msg-err-other%,%aaa-req-received%,%aaa-req-timeouts%,%aaa-req-dropped%,

sgs          sgsSch1                No
PPM,sgs,sgsSch1,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnname%,%vpnid%,%servname%,%servi
d%,%pag-req-tx%,%pag-req-retx%,%pag-req-rx%,%pag-rej-tx%,%pag-rej-retx%,%pag-rej-rx%,%service-
req-tx%,%service-req-retx%,%service-req-rx%,%dl-ud-tx%,%dl-ud-retx%,%dl-ud-rx%,%ul-ud-tx%,%ul-
ud-retx%,%ul-ud-rx%,%localupd-req-tx%,%localupd-req-retx%,

sgs          sgsSch2                No
PPM,sgs,sgsSch2,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnname%,%vpnid%,%servname%,%servi
d%,%localupd-req-rx%,%localupd-accept-tx%,%localupd-accept-retx%,%localupd-accept-rx%,%localupd-
rej-tx%,%localupd-rej-retx%,%localupd-rej-rx%,%tmsi-reloc-tx%,%tmsi-reloc-retx%,%tmsi-reloc-
rx%,%alert-req-tx%,%alert-req-retx%,%alert-req-rx%,%alert-ack-tx%,%alert-ack-retx%,%alert-ack-
rx%,%alert-rej-tx%,%alert-rej-retx%,%alert-rej-rx%,%ue-actind-tx%,%ue-actind-retx%,

sgs          sgsSch3                No
PPM,sgs,sgsSch3,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnname%,%vpnid%,%servname%,%servi
d%,%ue-actind-rx%,%eps-detind-tx%,%eps-detind-retx%,%eps-detind-rx%,%eps-detack-tx%,%eps-detack-
retx%,%eps-detack-rx%,%imsi-detind-tx%,%imsi-detind-retx%,%imsi-detind-rx%,%imsi-detack-
```

```
tx%,%imsi-detack-retx%,%imsi-detack-rx%,,,,,,,%mm-inforeq-tx%,%mm-inforeq-retx%,

[local]MME# configure

[local]MME(config)# bulkstats mode

[local]MME(config-bulkstats)# file 2

[local]MME(config-bulkstats-file-2)# no sgs

sgs                    - Removes sgs bulk statistics schema

[local]MME(config-bulkstats-file-2)# no sgs schema sgsSch1

[local]MME(config-bulkstats-file-2)# end

[local]MME# show bulkstats schemas

Bulk Statistics Server Configuration:

 Server State:              Enabled

 File Limit:                7500 KB

 Sample Interval:           15 minutes (0D 0H 15M)

 Transfer Interval:         480 minutes (0D 8H 0M)

 Receiver Mode:             Secondary-on-failure

 Historical Data Collection: Enabled (15 samples stored)



Bulk Statistics Server Statistics:

 Records awaiting transmission: 0

 Bytes awaiting transmission:   0

 Total records collected:       0

 Total bytes collected:         0

 Total records transmitted:     0

 Total bytes transmitted:       0

 Total records discarded:       0

 Total bytes discarded:         0

 Last collection time required: 0 second(s)

 Last transfer time required:   0 second(s)

 No successful data transfers

 No attempted data transfers
```

```
 File 1

   Remote File Format:              %date%-%time%

   File Header:                     Version-20.0,%ipaddr%,%date%-%time%,%localdate%-
%localtime%,%localtz%,%localtzoffset%,%localdate3%-%localtime3%,%swbuild%

   File Footer:              EndOfFile

   No bulkstats receivers

   File Statistics:

     Records awaiting transmission: 0

     Bytes awaiting transmission:   0

     Total records collected:       0

     Total bytes collected:         0

     Total records transmitted:     0

     Total bytes transmitted:       0

     Total records discarded:       0

     Total bytes discarded:         0

     Last transfer time required:   0 second(s)

     No successful data transfers

     No attempted data transfers



 File 2

   Remote File Format:              %date%-%time%

   File Header:                     Version-20.0,%ipaddr%,%date%-%time%,%localdate%-
%localtime%,%localtz%,%localtzoffset%,%localdate3%-%localtime3%,%swbuild%

   File Footer:              EndOfFile

   No bulkstats receivers

   File Statistics:

     Records awaiting transmission: 0

     Bytes awaiting transmission:   0

     Total records collected:       0

     Total bytes collected:         0

     Total records transmitted:     0

     Total bytes transmitted:       0

     Total records discarded:       0
```

```
        Total bytes discarded:          0

        Last transfer time required:   0 second(s)

        No successful data transfers

        No attempted data transfers




  File 3 not configured




  File 4 not configured




------------------ Schemas for File 2---------------------------------------

Type          Name                    Active-Only Format

------------  ----------------------  ----------  ---------------------------------------

system        systemSch1              No
PPM,system,systemSch1,%epochtime%,%localdate%,%localtime%,%uptime%,%sess-ttlarrived%,%sess-
ttlrejected%,%sess-ttlconnected%,%sess-ttlfailed%,%sess-ttldisconn%,%sess-ttlhandoff%,%sess-
ttlrenewal%,%sess-ttlcallop%,%sess-ttlauthsucc%,%sess-ttlauthfail%,%sess-curaaaactive%,%sess-
curaaadeleting%,%sess-curaaaacctpending%,%sess-curaaaacctitemsused%,%sess-
curaaaacctitemsmax%,%sess-curaaabuffused%,%sess-curaaabuffmax%,%sess-ttlaaacancauth%,%sess-
ttlaaaacctpurged%,%sess-ttlradacctpurged%,%sess-ttllcpup%,


system        systemSch10             No
PPM,system,systemSch10,%epochtime%,%localdate%,%localtime%,%uptime%,%aaa-ttlpseudoauthreq%,%aaa-
curpseudoauthreq%,%aaa-ttlauthnulluser%,%aaa-ttlacctsucc%,%aaa-ttlacctpurged%,%aaa-
ttlacctcancelled%,%aaa-ttlacctkeepalivesuccess%,%aaa-ttlacctkeepalivetimeout%,%aaa-
ttlacctkeepalivepurged%,%aaa-ttlradacctreq%,%aaa-ttlradacctcancelled%,%aaa-
ttlradacctpurged%,%aaa-ttlradacctreqretried%,%aaa-ttlradacctrspdropped%,%aaa-
ttlmgrpurgedrequests%,%diamauth-msg-mareq%,%diamauth-msg-maans%,%diamauth-msg-
marretry%,%diamauth-msg-maatimeout%,%diamauth-msg-maadropped%,%diamauth-msg-sareq%,


system        systemSch100            No
PPM,system,systemSch100,%epochtime%,%localdate%,%localtime%,%uptime%,%sess-bearerdur-24hr-
qci6%,%sess-bearerdur-over24hr-qci6%,%sess-bearerdur-2day-qci6%,%sess-bearerdur-4day-
qci6%,%sess-bearerdur-5day-qci6%,%sess-bearerdur-5sec-qci7%,%sess-bearerdur-10sec-qci7%,%sess-
bearerdur-30sec-qci7%,%sess-bearerdur-1min-qci7%,%sess-bearerdur-2min-qci7%,%sess-bearerdur-
5min-qci7%,%sess-bearerdur-15min-qci7%,%sess-bearerdur-30min-qci7%,%sess-bearerdur-1hr-
qci7%,%sess-bearerdur-4hr-qci7%,%sess-bearerdur-12hr-qci7%,%sess-bearerdur-24hr-qci7%,%sess-
bearerdur-over24hr-qci7%,%sess-bearerdur-2day-qci7%,%sess-bearerdur-4day-qci7%,%sess-bearerdur-
5day-qci7%,


diameter-auth diameter-authSch1       No            PPM,diameter-auth,diameter-
authSch1,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnid%,%vpnname%,%ipaddr%,%port%,%servert
ype%,%group%,%der-req-id-sent%,%der-req-aka-chal-sent%,%der-req-retried%,%dea-chal-rcvd%,%dea-
acpt-rcvd%,%dea-timeout%,%dea-badauth%,%dea-malformed%,%dea-malformed-avp%,%dea-dropped%,%rar-
req-rcvd%,%raa-ans-accpt-sent%,%aar-req-sent%,%str-req-sent%,%str-req-retried%,


diameter-auth diameter-authSch2       No            PPM,diameter-auth,diameter-
authSch2,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnid%,%vpnname%,%ipaddr%,%port%,%sta-
ans-accpt-rcvd%,%asr-req-rcvd%,%asa-rsp-accpt-sent%,%asa-rsp-rej-sent%,%req-sock-write-
```

err%,%rsp-sock-write-err%,%any-sock-read-err%,%rem-disconnect%,%loc-disconnect%,

diameter-auth diameter-authSch3   No   PPM,diameter-auth,diameter-
authSch3,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnid%,%vpnname%,%ipaddr%,%port%,%peer%,%
diameter-auth-msg-multiround%,%diameter-auth-msg-success%,%diameter-auth-msg-err-
protocol%,%diameter-auth-msg-err-transient%,%diameter-auth-msg-err-permanent%,%diameter-auth-
msg-err-other%,%aaa-req-received%,%aaa-req-timeouts%,%aaa-req-dropped%,

sgs   sgsSch2   No
PPM,sgs,sgsSch2,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnname%,%vpnid%,%servname%,%servi
d%,%localupd-req-rx%,%localupd-accept-tx%,%localupd-accept-retx%,%localupd-accept-rx%,%localupd-
rej-tx%,%localupd-rej-retx%,%localupd-rej-rx%,%tmsi-reloc-tx%,%tmsi-reloc-retx%,%tmsi-reloc-
rx%,%alert-req-tx%,%alert-req-retx%,%alert-req-rx%,%alert-ack-tx%,%alert-ack-retx%,%alert-ack-
rx%,%alert-rej-tx%,%alert-rej-retx%,%alert-rej-rx%,%ue-actind-tx%,%ue-actind-retx%,

sgs   sgsSch3   No
PPM,sgs,sgsSch3,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnname%,%vpnid%,%servname%,%servi
d%,%ue-actind-rx%,%eps-detind-tx%,%eps-detind-retx%,%eps-detind-rx%,%eps-detack-tx%,%eps-detack-
retx%,%eps-detack-rx%,%imsi-detind-tx%,%imsi-detind-retx%,%imsi-detind-rx%,%imsi-detack-
tx%,%imsi-detack-retx%,%imsi-detack-rx%,,,,,,,,%mm-inforeq-tx%,%mm-inforeq-retx%,

[local]MME# configure

[local]MME(config)# bulkstats mode

[local]MME(config-bulkstats)# file 2

[local]MME(config-bulkstats-file-2)# sgs schema sgsSch1 format PPM,sgs,sgsSch1,

%epochtime%,%localdate%,%localtime%,%uptime%,%vpnname%,%vpnid%,%servname%,%serv

id%,%pag-req-tx%,%pag-req-retx%,%pag-req-rx%,%pag-rej-tx%,%pag-rej-retx%,%pag-r

ej-rx%,%service-req-tx%,%service-req-retx%,%service-req-rx%,%dl-ud-tx%,%dl-ud-r

etx%,%dl-ud-rx%,%ul-ud-tx%,%ul-ud-retx%,%ul-ud-rx%,%localupd-req-tx%,%localupd-

req-retx%,

[local]MME(config-bulkstats-file-2)# end

[local]MME# show bulkstats schemas

Bulk Statistics Server Configuration:

 Server State: Enabled

  File Limit: 7500 KB

 Sample Interval: 15 minutes (0D 0H 15M)

 Transfer Interval: 480 minutes (0D 8H 0M)

 Receiver Mode: Secondary-on-failure

 Historical Data Collection: Enabled (15 samples stored)

Bulk Statistics Server Statistics:

 Records awaiting transmission: 0

Bytes awaiting transmission: 0

Total records collected: 0

Total bytes collected: 0

Total records transmitted: 0

Total bytes transmitted: 0

Total records discarded: 0

Total bytes discarded: 0

Last collection time required: 0 second(s)

Last transfer time required: 0 second(s)

No successful data transfers

No attempted data transfers

 File 1

   Remote File Format: %date%-%time%

   File Header: Version-20.0,%ipaddr%,%date%-%time%,%localdate%-
%localtime%,%localtz%,%localtzoffset%,%localdate3%-%localtime3%,%swbuild%

   File Footer: EndOfFile

   No bulkstats receivers

   File Statistics:

     Records awaiting transmission: 0

     Bytes awaiting transmission: 0

     Total records collected: 0

     Total bytes collected: 0

     Total records transmitted: 0

     Total bytes transmitted: 0

     Total records discarded: 0

     Total bytes discarded: 0

     Last transfer time required: 0 second(s)

     No successful data transfers

     No attempted data transfers

 File 2

```
    Remote File Format:              %date%-%time%

    File Header:                     Version-20.0,%ipaddr%,%date%-%time%,%localdate%-
%localtime%,%localtz%,%localtzoffset%,%localdate3%-%localtime3%,%swbuild%

    File Footer:                     EndOfFile

    No bulkstats receivers

    File Statistics:

       Records awaiting transmission: 0

       Bytes awaiting transmission:   0

       Total records collected:       0

       Total bytes collected:         0

       Total records transmitted:     0

       Total bytes transmitted:       0

       Total records discarded:       0

       Total bytes discarded:         0

       Last transfer time required:   0 second(s)

       No successful data transfers

       No attempted data transfers




 File 3 not configured




 File 4 not configured




------------------ Schemas for File 2----------------------------------------

Type          Name                     Active-Only Format

------------  -----------------------  -----------  --------------------------------------

system      systemSch1               No
PPM,system,systemSch1,%epochtime%,%localdate%,%localtime%,%uptime%,%sess-ttlarrived%,%sess-
ttlrejected%,%sess-ttlconnected%,%sess-ttlfailed%,%sess-ttldisconn%,%sess-ttlhandoff%,%sess-
ttlrenewal%,%sess-ttlcallop%,%sess-ttlauthsucc%,%sess-ttlauthfail%,%sess-curaaaactive%,%sess-
curaaadeleting%,%sess-curaaaacctpending%,%sess-curaaaacctitemsused%,%sess-
curaaaacctitemsmax%,%sess-curaaabuffused%,%sess-curaaabuffmax%,%sess-ttlaaacancauth%,%sess-
ttlaaaacctpurged%,%sess-ttlradacctpurged%,%sess-ttllcpup%,

system      systemSch10              No
PPM,system,systemSch10,%epochtime%,%localdate%,%localtime%,%uptime%,%aaa-ttlpseudoauthreq%,%aaa-
curpseudoauthreq%,%aaa-ttlauthnulluser%,%aaa-ttlacctsucc%,%aaa-ttlacctpurged%,%aaa-
```

```
ttlacctcancelled%,%aaa-ttlacctkeepalivesuccess%,%aaa-ttlacctkeepalivetimeout%,%aaa-
ttlacctkeepalivepurged%,%aaa-ttlradacctreq%,%aaa-ttlradacctcancelled%,%aaa-
ttlradacctpurged%,%aaa-ttlradacctreqretried%,%aaa-ttlradacctrspdropped%,%aaa-
ttlmgrpurgedrequests%,%diamauth-msg-mareq%,%diamauth-msg-maans%,%diamauth-msg-
marretry%,%diamauth-msg-maatimeout%,%diamauth-msg-maadropped%,%diamauth-msg-sareq%,

system          systemSch100          No
PPM,system,systemSch100,%epochtime%,%localdate%,%localtime%,%uptime%,%sess-bearerdur-24hr-
qci6%,%sess-bearerdur-over24hr-qci6%,%sess-bearerdur-2day-qci6%,%sess-bearerdur-4day-
qci6%,%sess-bearerdur-5day-qci6%,%sess-bearerdur-5sec-qci7%,%sess-bearerdur-10sec-qci7%,%sess-
bearerdur-30sec-qci7%,%sess-bearerdur-1min-qci7%,%sess-bearerdur-2min-qci7%,%sess-bearerdur-
5min-qci7%,%sess-bearerdur-15min-qci7%,%sess-bearerdur-30min-qci7%,%sess-bearerdur-1hr-
qci7%,%sess-bearerdur-4hr-qci7%,%sess-bearerdur-12hr-qci7%,%sess-bearerdur-24hr-qci7%,%sess-
bearerdur-over24hr-qci7%,%sess-bearerdur-2day-qci7%,%sess-bearerdur-4day-qci7%,%sess-bearerdur-
5day-qci7%,

diameter-auth diameter-authSch1          No          PPM,diameter-auth,diameter-
authSch1,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnid%,%vpnname%,%ipaddr%,%port%,%servert
ype%,%group%,%der-req-id-sent%,%der-req-aka-chal-sent%,%der-req-retried%,%dea-chal-rcvd%,%dea-
acpt-rcvd%,%dea-timeout%,%dea-badauth%,%dea-malformed%,%dea-malformed-avp%,%dea-dropped%,%rar-
req-rcvd%,%raa-ans-accpt-sent%,%aar-req-sent%,%str-req-sent%,%str-req-retried%,

diameter-auth diameter-authSch2          No          PPM,diameter-auth,diameter-
authSch2,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnid%,%vpnname%,%ipaddr%,%port%,%sta-
ans-accpt-rcvd%,%asr-req-rcvd%,%asa-rsp-accpt-sent%,%asa-rsp-rej-sent%,%req-sock-write-
err%,%rsp-sock-write-err%,%any-sock-read-err%,%rem-disconnect%,%loc-disconnect%,

diameter-auth diameter-authSch3          No          PPM,diameter-auth,diameter-
authSch3,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnid%,%vpnname%,%ipaddr%,%port%,%peer%,%
diameter-auth-msg-multiround%,%diameter-auth-msg-success%,%diameter-auth-msg-err-
protocol%,%diameter-auth-msg-err-transient%,%diameter-auth-msg-err-permanent%,%diameter-auth-
msg-err-other%,%aaa-req-received%,%aaa-req-timeouts%,%aaa-req-dropped%,

sgs          sgsSch2          No
PPM,sgs,sgsSch2,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnname%,%vpnid%,%servname%,%servi
d%,%localupd-req-rx%,%localupd-accept-tx%,%localupd-accept-retx%,%localupd-accept-rx%,%localupd-
rej-tx%,%localupd-rej-retx%,%localupd-rej-rx%,%tmsi-reloc-tx%,%tmsi-reloc-retx%,%tmsi-reloc-
rx%,%alert-req-tx%,%alert-req-retx%,%alert-req-rx%,%alert-ack-tx%,%alert-ack-retx%,%alert-ack-
rx%,%alert-rej-tx%,%alert-rej-retx%,%alert-rej-rx%,%ue-actind-tx%,%ue-actind-retx%,

sgs          sgsSch3          No
PPM,sgs,sgsSch3,%epochtime%,%localdate%,%localtime%,%uptime%,%vpnname%,%vpnid%,%servname%,%servi
d%,%ue-actind-rx%,%eps-detind-tx%,%eps-detind-retx%,%eps-detind-rx%,%eps-detack-tx%,%eps-detack-
retx%,%eps-detack-rx%,%imsi-detind-tx%,%imsi-detind-retx%,%imsi-detind-rx%,%imsi-detack-
tx%,%imsi-detack-retx%,%imsi-detack-rx%,,,,,,,%mm-inforeq-tx%,%mm-inforeq-retx%,

[local]MME#
```

Scenario E. Il risultato è che ogni volta che si utilizza la parola chiave opzionale **schema**, non è possibile aggiungere nuovi schemi. È possibile eliminare gli schemi correnti (dal nodo) ma non aggiungerli di nuovo. Tuttavia, gli schemi correnti presenti nel file di configurazione (presente in <url>, non vengono influenzati dalle modifiche apportate nel nodo).

Soluzione

1. Viene utilizzato **<url>lo schema di configurazione** cli **bulkstat**, a causa del quale si è verificato il problema.
2. Si tratta di un risultato previsto per ogni progettazione, che si ottiene se viene utilizzato **lo schema** della parola chiave opzionale.
3. Per questo caso sono disponibili tre soluzioni:

A.Per rimuovere lo **schema di configurazione bulkstat** della cli **<url>** e controllare l'aggiunta/eliminazione degli schemi tramite il prompt dei comandi cli manuale.

B. Per utilizzare il **supplemento** opzionale della parola chiave nel bulkstat config cli. Con il **supplemento di configurazione bulkstat** della cli **<url>** è possibile aggiungere gli schemi presenti nel file di configurazione agli schemi del nodo corrente. È possibile aggiungere/eliminare nuovi schemi e anche gli schemi correnti possono essere eliminati/aggiunti nuovamente dal prompt dei comandi CLI.

C. Per aggiungere/eliminare gli schemi richiesti direttamente nel file di configurazione e quindi ricaricare le configurazioni con il file di configurazione (prima rimuovere la cli **senza utilizzare la configurazione bulkstat**, aggiungere gli schemi nel file di configurazione e quindi aggiungerli nuovamente con la configurazione **bulkstats <url>**). Per aggiungere gli schemi nel file di configurazione, è possibile utilizzare l'editor VI o SFTP il file

Con l'editor vi:

```
[local]MME-01# cli test-commands password <pswd>
Warning: Test commands enables internal testing and debugging commands
USE OF THIS MODE MAY CAUSE SIGNIFICANT SERVICE INTERRUPTION

[local]MME-01# debug shell
Last log in: Wed Dec 22 15:05:12 +0530 2021 on pts/3 from 10.227.224.108.
MME-01:card1-cpu0# ls -lrtha

total 16
-r--r--r-- 1 root root 952 Dec 15 23:30 .rhosts
-r--r--r-- 1 root root 1.7K Dec 15 23:30 .gdbinit
drwx------ 2 root root 100 Dec 15 23:30 .ssh
drwxr-xr-x 24 root root 500 Dec 15 23:30 ..
-rw------- 1 root root 118 Dec 21 14:48 .bash_history
-rw-r--r-- 1 root root 1 Dec 22 15:05 file
drwxr-xr-x 3 root root 140 Dec 22 15:05 .

MME-01:card1-cpu0# vi file
```

Spostare il file di configurazione da <url> nell'unità locale, modificarlo e reinserirlo nell'<url>.