

Oracle® COMMUNICATIONS

Policy Management Feature Activation

Release 12.2

Notification Triggers for Aggregate Quota

E82606-01

February 2017

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1. Contacts and Customer Care

1.1 Oracle Customer Care

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1.2 Acronyms

Acronym/Term	Definition
AF	Application Function
CCA	Credit-Control-Answer
CCR	Credit-Control-Request
OCS	Online Charging System
PCEF	Policy and Charging Enforcement Function
PUA	Profile-Update-Answer
PUR	Profile-Update-Request
RAA	Re-Auth-Answer
RAR	Re-Auth-Request
SPR	Subscriber Profile Repository
STA	Session-Termination-Answer
STR	Session-Termination-Request
UDA	User-Data-Answer
UDR	User-Data-Request

1.3 Terminology

Pass	<p>A Pass is a one-time override which temporarily replaces or augments the subscriber's default Plan or service, if any. While a Pass is in effect, it may modify the QoS controls, charging parameters, or other configurable rules associated with a subscriber's service.</p> <p>A Pass may:</p> <ul style="list-style-type: none"> • be valid for a restricted interval • start when provisioned, or at a specific time, or upon occurrence of a triggering event within its validity interval • end at a specific time, or after given duration once activated, or upon a particular event • apply continuously, or only during certain time periods, or only under certain conditions (e.g. when roaming) • apply to the subscriber's overall usage, or be more limited (e.g. applying only to specific applications, flows, traffic types, or pre-defined rules) <p>Passes are common options for pre-paid subscribers, who frequently have limited or no data access via their basic Plan, and may purchase Passes to gain access to such services. They can also be used to allow Casual Use plans for pre- or post-paid subscribers to purchase services on an occasional basis which they would not otherwise subscribe for on an ongoing basis.</p>
Quota	<p>A Quota specifies restrictions on the amount of data Volume, active session Time, or service-specific Events that a subscriber can consume. A single Quota may express limits on any</p>

combination of Volume, Time, or Events. Quotas may be associated with a time period during which activity is measured. Passes allow Casual Use plans for pre- or post-paid subscribers to purchase services on an occasional basis which they would not otherwise subscribe for on an ongoing basis.

G-S-U Granted Service Unit

Plan A subscriber's Plan is the description of their basic, recurring service. Frequently, the Tier and/or Entitlement fields of the subscriber's Profile data may be used to indicate or derive the Plan type. Plans include enforceable policy characteristics (QoS and Charging parameters and PCC rules) computed automatically or through policy rules. A Plan may have associated Quota controls, which in turn may be subject to modification or over-ride through Passes, Top-ups, and Roll-overs (see below).

Quota Roll-over Quota units unused in one interval saved for use in a later quota interval.

Quota Top-up An extension to existing plan that allows a subscriber to use resources above his/her normal plan limits.

Threshold A Threshold is a soft limit at which usage must be reported during the monitoring of a Quota, usually lower than the full limit associated with the Quota. Typically, service parameters are not adjusted when a Threshold is reached, but other actions may be taken, such as notifying the user of their current usage.

2. Purpose and Scope

Currently, policy conditions such as “*where the user is using greater than # percent of select type for selected quota*” does not take into account of any Top-ups or Rollover limit setup in the quota plan. The percentage is applied only to the base quota plan limits. So if there are notification triggers setup based on these calculations, they may be triggered incorrectly from the Subscriber’s point of view.

This feature extends the capability of those policy conditions to use percentage calculations by aggregating all Top-ups and Rollovers usage and limits for the Subscriber. However, expired/exhausted Top-ups are NOT used in the calculations. And, Subscriber’s Passes are NOT included as part of these calculations for a given quota plan.

The scope of this document is to highlight the methodology of enabling this feature and rolling back by disabling it. It is also showing the functional changes to the existing Policy conditions when this feature is enabled.

2.1 Detail Description

There is a new checkbox called “**Aggregate Quota**” added into the existing Quota Convention configuration page in Release 12.2 CMP GUI. By default, it’s disabled for backward compatibility upon the system upgraded to Release 12.2.

CMP GUI: Policy Server → Quota Conventions → All → (Quota Convention name) → Modify

The screenshot displays the Oracle Communications Policy Management interface. On the left is a navigation menu with 'POLICY SERVER' expanded, showing various configuration options. The main area is titled 'Quota Convention Administration' and shows details for 'HH_QuotaConvention_1'. It includes 'Modify' and 'Delete' buttons. The 'Configuration' section lists various settings, with 'Aggregate Quota' at the bottom, which is checked and highlighted by a red rectangle.

Configuration	
Name	HH_QuotaConvention_1
Description / Location	
Rollover Usage	Default
Interval percentage of the limits (%)	0.0
Max percentage of the limits (%)	0.0
Rollover Time Units	No
Rollover Total Volume	No
Rollover Input Volume	No
Rollover Output Volume	No
Rollover Service Specific Units	No
Discard Rollover on Calculation	No
Consume Rollover before Quota	No
Enable Top-ups	Yes
Aggregate Quota	Yes

In order to better illustrate of this feature, here are two example of use cases that are applicable -

EXAMPLE-1:

A policy condition such as the following already exists -

*where the user is using **greater than 80 percent** and **less than 90 percent** of **total volume** for **PoolQuota1** quota*

send SMS '80 percent quota reached.' to user. Request delivery receipt 'default'.

The **PoolQuota1** is defined as a Quota Plan with Initial Volume Limit 10 MB (base plan).

The Subscriber purchased one 5 MB Top-up.

Prior to enabling this feature or with pre-Release 12.2 and based of the above policy condition, the expected behavior would be for ORACLE COMMUNICATIONS POLICY MANAGEMENT to send SMS when the usage reaches 8 MB limit, which is 80% (but less than 90%) of the plan limit of 10 MB.

Now, with the feature enabled in Release 12.2, the calculation of that 80% would now include the base plan of 10 MB + the one just-purchased Top-ups i.e. (10MB + 5MB = 15MB), then the SMS/Trace Log would only be sent when the usage reaches 12 MB (80% x 15 MB) or higher.

EXAMPLE-2:

The **PoolQuota1** is defined as a Quota Plan with Initial Volume Limit 10 MB (base plan).

The Subscriber purchased two 5 MB Top-ups but one of which to be activated for future date.

The Subscriber has Roll-over enabled before the Top-ups purchase, and has a Roll-over of 2 MB from the previous Quota plan cycle.

Now, the Subscriber has used up the 10 MB of base plan quota before the next reset cycle, thus granted for the 2 MB Roll-over. During the current cycle, the Subscriber sends a CCR-U (updates of Quota usage) of having to use 1 MB from this Roll-over. So, the total usage (base plan usage + Roll-over usage) would be 10 MB + 1 MB = 11 MB. And, the aggregated limit is now (base plan limit + Top-ups limit + Roll-over limit) 10MB + 10MB + 2MB = 22MB. So with the feature enabled, the percentage would be calculated as (11MB / 22MB) = 50%. , rather with the feature disabled / prior to Release 12.2, this would be computed as (10MB / 10MB) = 100%, thus SMS sent out as the Subscriber has used up the base quota limit for the current cycle.

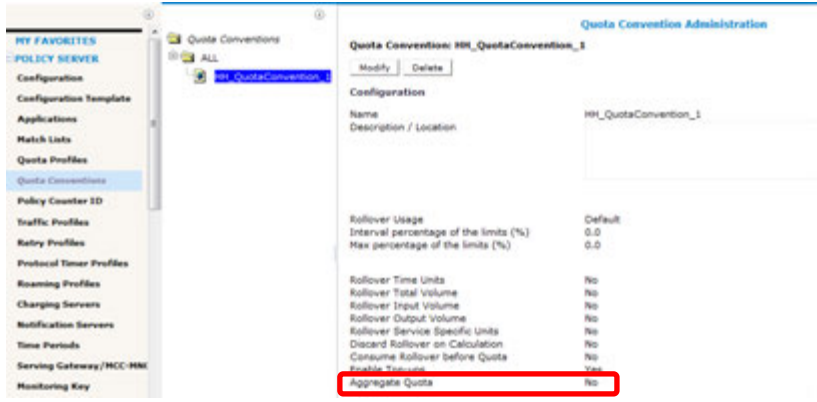
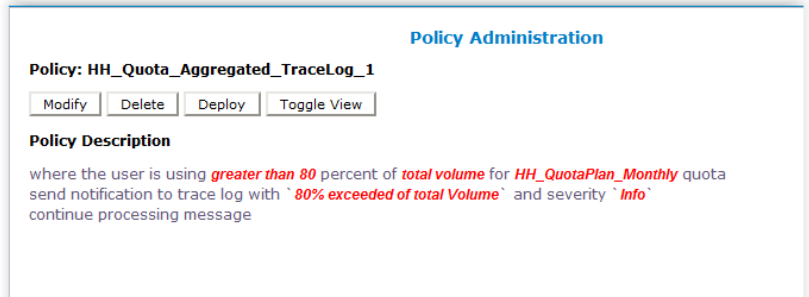
2.2 Policy Conditions Impacted

There are no changes to the policy conditions or actions. However, the behavior of these two following outlined policy conditions will be affected based on this feature being enabled/disabled in Release 12.2.

Table 1 – Policy Changes

Policy Condition Group	Policy Condition or Action	Description
User Conditions	Where the user is using <u>greater than specified</u> percent of <u>select type</u> for <u>selected</u> quota	There is no change to the policy condition. Existing policies that use a quota plan as the selected quota will behave differently based on this feature being enabled.
User Conditions	Where the user is using <u>greater than specified</u> percent and <u>less than specified</u> percent of <u>select type</u> for <u>selected</u> quota	There is no change to the policy condition. Existing policies that use a quota plan as the selected quota will behave differently based on this feature being enabled.

3. Procedure To Enable The Feature

Pre-Enable Verification Steps			
Step	Action	Expected Results	Pass Fail
1	Verify existing Quota Convention configuration page with the feature disabled by default.	<p>CMP GUI: Policy Server → Quota Conventions → All → (Quota Convention name)</p> <ul style="list-style-type: none"> Click on any of the existing Quota Convention name as in the example shown below  <ul style="list-style-type: none"> Ensure that the configuration parameter of “ Aggregate Quota ” is set to “NO” (disabled). <p>NOTE: The rest of configuration may differ depending on each Customer deployment setup.</p>	
2	Verify the existing related Policy conditions	<p>CMP GUI: Policy Management → Policy Library → All → (policy name)</p> <ul style="list-style-type: none"> As shown in the example below -  <p>NOTE: In this case, only showing one of the two affected existing policy conditions, and the other one i.e. of “Where the user is using greater than specified percent and less than specified percent of select type for selected quota ” condition is quite similar as shown in the example above.</p>	

CMP GUI: Policy Server → Quota Profiles → Plans → (quota plan name)

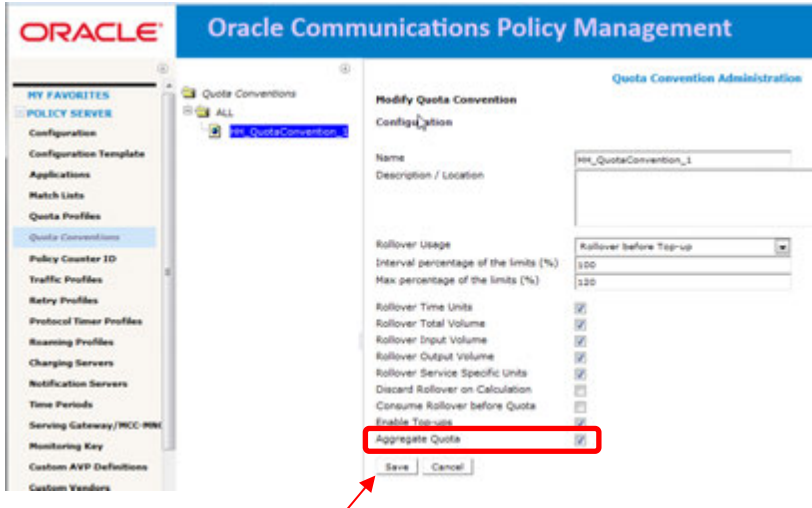
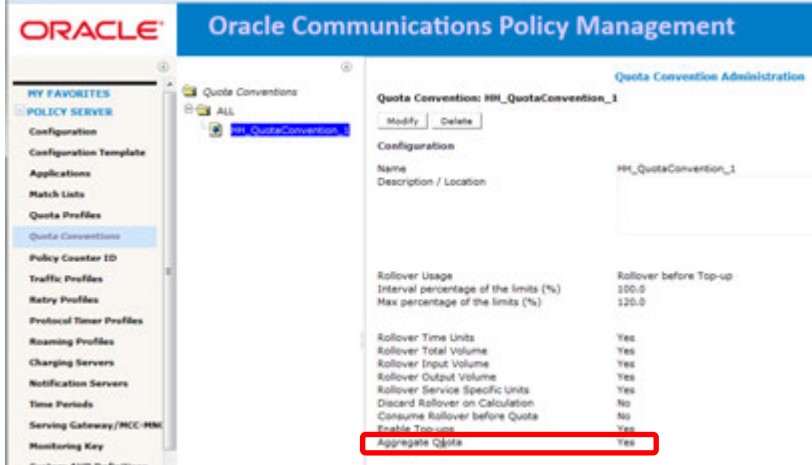
Plan Administration

Plan: HH_QuotaPlan_Monthly

Configuration

Name	HH_QuotaPlan_Monthly
Description / Location	
Quota Profile Type	Subscriber
Enable Dynamic Grant	false
Max Leakage Threshold (MB or seconds)	0
Max Sessions Used For Dynamic Grant	10
Minimum Grant Size	0
Reset Every	1 Months
Reset Time Variable	
Report Offset Limit (minutes)	0
Billing Date Effective Name	Custom1
Initial Total Volume Limit (bytes)	10000000
Initial Upstream Volume Limit (bytes)	None
Initial Downstream Volume Limit (bytes)	None
Initial Time Limit (seconds)	None
Inactivity Detection Time (seconds)	None
Quota Convention	HH_QuotaConvention_1

NOTE: The rest of configuration may differ depending on each Customer deployment setup.

Enable Steps			
Step	Action	Expected Results	Pass Fail
1	Enable the feature	<p>CMP GUI: Policy Server → Quota Conventions → All → (Quota Convention name) → Modify</p> <ul style="list-style-type: none"> Check the the configuration parameter of “ Aggregate Quota ” box i.e. enabled as shown in the example below -  <ul style="list-style-type: none"> Click on “Save” to save the setting. Validate the new configuration has been successfully set as shown below –  <p>NOTE: The rest of configuration may differ depending on each Customer deployment setup.</p> <ul style="list-style-type: none"> <OPTIONAL> Validate the configuration via MPE CLI <p>RcMgr> show quotaconvention</p>	

		<p> Name: HH_QuotaConvention_1 Uid: 281474980612724 (1:3902068) LimitCalculation: BASE RolloverUsage: ROLLOVER_USAGE_BEFORE_TOPUP PercentageRolloverInterval: 100.0 PercentageRolloverMax: 120.00001 Rollover Units: Time, Total Volume, Input Volume, Output Volume, Service Specific, Rollover Total Volume Units: yes No Rollover of Rollover: no Top-ups Enabled: yes Rollover before Plan: no BehaviorMask: 95 AggregateQuotaLimits: yes </p>	
2	Verify EXAMPLE-1 use case configuration	<p>NOTE:</p> <p><i>There is a slight difference in the Policy condition from the one shown earlier in Section 2.1 but expected outcome is still the same.</i></p> <ul style="list-style-type: none"> There is an existing policy condition as follows - <div data-bbox="482 854 1273 1157" data-label="Image"> <p>The screenshot shows a 'Policy Administration' window. At the top, it says 'Policy: HH_Quota_Aggregated_TraceLog_1'. Below this are four buttons: 'Modify', 'Delete', 'Deploy', and 'Toggle View'. Underneath the buttons is a section titled 'Policy Description' which contains the text: 'where the user is using greater than 80 percent of total volume for HH_QuotaPlan_Monthly quota send notification to trace log with 80% exceeded of total Volume and severity Info continue processing message'.</p> </div> <ul style="list-style-type: none"> The HH_QuotaPlan_Monthly is defined as a Quota Plan with Initial Volume Limit 10 MB (base plan) as shown below - 	

Plan Administration

Plan: HH_QuotaPlan_Monthly

[Modify](#) [Delete](#)

Configuration

Name: HH_QuotaPlan_Monthly
Description / Location:

Quota Profile Type: Subscriber

Enable Dynamic Grant: false
Max Leakage Threshold (MB or seconds): 0
Max Sessions Used For Dynamic Grant: 10
Minimum Grant Size: 0

Reset Every: 1 Months
Reset Time Variable:
Report Offset Limit (minutes): 0
Billing Date Effective Name: Custom1

Initial Total Volume Limit (bytes): 10000000
Initial Upstream Volume Limit (bytes): None
Initial Downstream Volume Limit (bytes): None
Initial Time Limit (seconds): None
Inactivity Detection Time (seconds): None
Quota Convention: HH_QuotaConvention_1

- Let say the Subscriber purchased one 5 MB Top-up as the example Subscriber Profile configuration shown below –

Subscriber Profile

Subscriber Profile

[Profile](#) [Quota](#) [State](#) [Dynamic Quota](#)

[Back to Search Page](#)

Dynamic Quota

Subscriber Key Fields:
NAI
E:354 (MISDN)
MSISDN: 123456789012345

[Create](#) [Delete](#) [Reset](#)

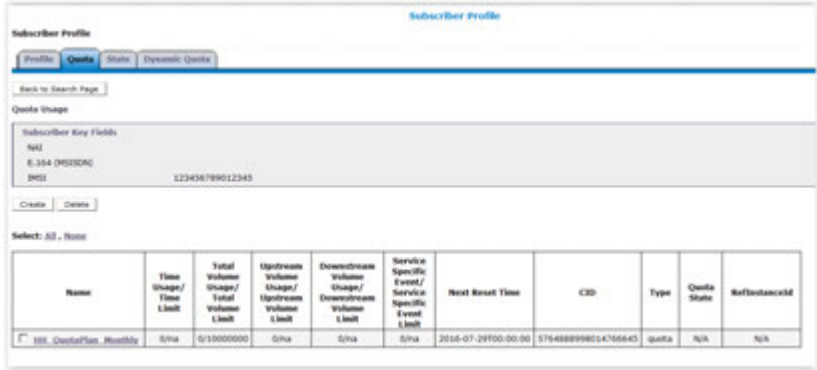
Select: All, None

Name	Time Limit	Total Volume Limit	Upstream Volume Limit	Downstream Volume Limit	Service Specific Event Limit	Purchase Time	Active Time	Expire Time	Type	Priority	InstanceId
HH_QuotaPlan_Monthly	N/A	10000000	N/A	N/A	N/A	-	-	-	Top-up	N/A	1000

NOTE:

Prior to enabling this feature or with pre-Release 12.2 and based of the above policy condition, the expected behavior would be for ORACLE COMMUNICATIONS POLICY MANAGEMENT' to create Trace log when the usage reaches 8 MB limit, which is 80% of the plan limit of 10 MB.

Now, with the feature enabled in Release 12.2, the calculation of that 80% would now include the base plan of 10 MB + the one just-purchased Top-ups i.e. (10MB + 5MB = 15MB), then the Trace log will be created when the usage reaches 12 MB (80% x 15 MB).

Post-Enable Verification Steps			
Step	Action	Expected Results	Pass Fail
1.	Validate the initial base plan volume (with EXAMPLE-1 use case configuration)	<ul style="list-style-type: none"> Initiate the Gx:CCR-I for the Subscriber and ensure that Gx:CCA-I shows the total base plan of 10MB as shown in the example below – <p><i>Diameter Message: CCA</i> <i>Version: 1</i> ----- <i>Hop-By-Hop-Id: 3656230783</i> <i>End-To-End-Id: 768379256</i> <i>Session-Id (263,M,l=39) = hh_pgw.tekelec.com;1467832029;11</i> <i>Result-Code (268,M,l=12) = DIAMETER_SUCCESS (2001)</i> <i>Origin-Host (264,M,l=29) = brbg-mpe-2.oracle.com</i> <i>Origin-Realm (296,M,l=18) = oracle.com</i> <i>Auth-Application-Id (258,M,l=12) = 16777238</i> <i>CC-Request-Type (416,M,l=12) = INITIAL_REQUEST (1)</i> ----- <i>Usage-Monitoring-Information (1067,V,v=10415,l=52) =</i> <i>Granted-Service-Unit (431,,l=24) =</i> <i>CC-Total-Octets (421,,l=16) = 10000000</i> <i>Usage-Monitoring-Level (1068,V,v=10415,l=16) = SESSION_LEVEL (0)</i></p> <ul style="list-style-type: none"> Also, validate the initial quota stated in the Subscriber Profile as shown below – 	
2.	Simulate the usage to the limit point triggering the Policy	<p>Policy RECAP:</p> <p>where the user is using greater than 80 percent of total volume for HH_QuotaPlan_Monthly quota send notification to trace log with '80% exceeded of total Volume' and severity 'Info' continue processing message</p> <p>NOTE:</p> <p>Prior to enabling this feature or with pre-Release 12.2 and based of the above policy condition, the expected behavior would be for ORACLE COMMUNICATIONS POLICY MANAGEMENT' to create Trace log when the usage reaches 8 MB limit, which is 80% of the plan limit of 10 MB.</p> <p>Now, with the feature enabled in Release 12.2, the calculation of that 80%</p>	

		<p>would now include the base plan of 10 MB + the one just-purchased Top-ups i.e. (10MB + 5MB = 15MB), then the Trace log will be created when the usage reaches 12 MB (80% x 20 MB) or higher.</p> <ul style="list-style-type: none"> Simulate the PGW to send Gx:CCR-U of the Subscriber usage of using up the base plan limit of 10MB. <p><i>Diameter Message: CCR</i> <i>Version: 1</i> <i>Msg Length: 248</i> <i>Cmd Flags: REQ,PXY</i> <i>Cmd Code: 272</i> <i>App-Id: 16777238</i> <i>Hop-By-Hop-Id: 0</i> <i>End-To-End-Id: 768379259</i> <i>Session-Id (263,M,l=39) = hh_pgw.tekelec.com;1467832029;11</i> <i>Origin-Host (264,M,l=26) = hh_pgw.tekelec.com</i> <i>Origin-Realm (296,M,l=19) = tekelec.com</i> <i>Auth-Application-Id (258,M,l=12) = 16777238</i> <i>Destination-Realm (283,M,l=18) = oracle.com</i> <i>CC-Request-Type (416,M,l=12) = UPDATE_REQUEST (2)</i> <i>CC-Request-Number (415,M,l=12) = 1</i> <i>Destination-Host (293,M,l=29) = brbg-mpe-1.oracle.com</i> <i>Event-Trigger (1006,VM,v=10415,l=16) = USAGE_REPORT (33)</i> <i>Usage-Monitoring-Information (1067,V,v=10415,l=36) =</i> <i>Used-Service-Unit (446,,l=24) =</i> <i>CC-Total-Octets (421,,l=16) = 10000000</i></p> <p><i>Diameter Message: CCA</i> <i>Version: 1</i> <i>Msg Length: 228</i> <i>Cmd Flags: PXY</i> <i>Cmd Code: 272</i> <i>App-Id: 16777238</i> <i>Hop-By-Hop-Id: 3656230786</i> <i>End-To-End-Id: 768379259</i> <i>Session-Id (263,M,l=39) = hh_pgw.tekelec.com;1467832029;11</i> <i>Result-Code (268,M,l=12) = DIAMETER_SUCCESS (2001)</i> <i>Origin-Host (264,M,l=29) = brbg-mpe-1.oracle.com</i> <i>Origin-Realm (296,M,l=18) = oracle.com</i> <i>Auth-Application-Id (258,M,l=12) = 16777238</i> <i>CC-Request-Type (416,M,l=12) = UPDATE_REQUEST (2)</i> <i>CC-Request-Number (415,M,l=12) = 1</i> <i>Revalidation-Time (1042,VM,v=10415,l=16) = 3678754805 (Fri Jul 29 00:20:05 EDT 2016)</i> <i>Usage-Monitoring-Information (1067,V,v=10415,l=52) =</i> <i>Granted-Service-Unit (431,,l=24) =</i> <i>CC-Total-Octets (421,,l=16) = 5000000</i> <i>Usage-Monitoring-Level (1068,V,v=10415,l=16) = SESSION_LEVEL (0)</i></p> <p>NOTE: As can be seen of the GSU Total available limit is now referring to the purchased Top-up of 5 MB (5000000) as the initial</p>	
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base plan of 10MB has been used up.

- At this point, the “*HH_Quota_Aggregated_TraceLog_1*” policy should NOT be triggered by checking the serving MPE Policy Statistic Report, as the total usage has NOT reached the 80% threshold.

Policy Server Administration

Policy Server: brbg-mpe-1

System Reports Logs Policy Server Diameter Routing Policies Data Sources Session Viewer Debug

Policy Statistics

Pause Cancel

Evaluated 0
Executed 0
Ignored 0

Policy Details Statistics

Name	Evaluated	Executed	Ignored
Policy HH_Quota_Used_Monthly	0	0	0
Policy HH_Quota_Aggregated_TraceLog_1	0	0	0

- Verify the updated Quota status in the Subscriber Profile of the total usage now –

Subscriber Profile

Profile Quota State Dynamic Quota

Back to Search Page

Quota Usage

Subscriber Key Fields:

IMSI 123456789012345
E.164 (MSISDN) 123456789012345

Create Delete

Select: All None

Name	Time Usage / Time Limit	Total Volume Usage / Total Volume Limit	Upstream Volume Usage / Upstream Volume Limit	Downstream Volume Usage / Downstream Volume Limit	Service Specific (Event) / Service Specific Event Limit	Reset Reset Time	CD	Type	Quota State	RefInUseCount
HH_QuotaPlan_Monthly	5/mo	10000000/10000000	5/mo	5/mo	5/mo	2016-07-29T00:00:00	57648899901476643	Quota	N/A	N/A

- Also as seen in the MPE Trace Log showing there is NO policy triggered INFO logged –

[Diameter:Received CCR \[3377853741:768379281 / hh_pgw.tekelec.com;1467832029;brbg-mra-1.oracle.com\(10.196.165.3:52588\)\]](#)

[Diameter:Sent CCA \[3377853741:768379281 / hh_pgw.tekelec.com;1467832029;11DIAMETER SUCCESS \(2001\) to brbg-mra-1.oracle.com\(10.196.165.3:52588\) in 10 ms](#)

[Diameter:Sent PUR \[1821801009:1803482164 / brbg-mpe-2.oracle.com;1465858911;mpbay2.oracle.com\(10.196.165.20:3868\)\]](#)

[Diameter:Received PUA \[1821801009:1803482164 / brbg-mpe-2.oracle.com;1465858911;61169\] DIAMETER SUCCESS \(2001\) from mpbay2.oracle.com\(10.196.165.20:3868\) in 14 ms](#)

- Simulate the PGW to send another Gx:CCR-U of the

		<p>Subscriber usage of , this time, using up another 3MB, as shown in the following Gx:CCA-I –</p> <p><i>Diameter Message: CCR</i> <i>Version: 1</i> <i>Msg Length: 248</i> <i>Cmd Flags: REQ,PXY</i> <i>Cmd Code: 272</i> <i>App-Id: 16777238</i> <i>Hop-By-Hop-Id: 0</i> <i>End-To-End-Id: 768379282</i> <i>Session-Id (263,M,l=40) = hh_pgw.tekelec.com;1467832029;11</i> <i>Origin-Host (264,M,l=26) = hh_pgw.tekelec.com</i> <i>Origin-Realm (296,M,l=19) = tekelec.com</i> <i>Auth-Application-Id (258,M,l=12) = 16777238</i> <i>Destination-Realm (283,M,l=18) = oracle.com</i> <i>CC-Request-Type (416,M,l=12) = UPDATE_REQUEST (2)</i> <i>CC-Request-Number (415,M,l=12) = 2</i> <i>Destination-Host (293,M,l=29) = brbg-mpe-2.oracle.com</i> <i>Event-Trigger (1006,VM,v=10415,l=16) = USAGE_REPORT (33)</i> <i>Usage-Monitoring-Information (1067,V,v=10415,l=36) =</i> <i>Used-Service-Unit (446,,l=24) =</i> <i>CC-Total-Octets (421,,l=16) = 3000000</i></p> <p><i>Diameter Message: CCA</i> <i>Version: 1</i> <i>Msg Length: 228</i> <i>Cmd Flags: PXY</i> <i>Cmd Code: 272</i> <i>App-Id: 16777238</i> <i>Hop-By-Hop-Id: 3656230809</i> <i>End-To-End-Id: 768379282</i> <i>Session-Id (263,M,l=40) = hh_pgw.tekelec.com;1467832029;11</i> <i>Result-Code (268,M,l=12) = DIAMETER_SUCCESS (2001)</i> <i>Origin-Host (264,M,l=29) = brbg-mpe-2.oracle.com</i> <i>Origin-Realm (296,M,l=18) = oracle.com</i> <i>Auth-Application-Id (258,M,l=12) = 16777238</i> <i>CC-Request-Type (416,M,l=12) = UPDATE_REQUEST (2)</i> <i>CC-Request-Number (415,M,l=12) = 2</i> <i>Revalidation-Time (1042,VM,v=10415,l=16) = 3678409008 (Mon Jul 25 00:16:48 EDT 2016)</i> <i>Usage-Monitoring-Information (1067,V,v=10415,l=52) =</i> <i>Granted-Service-Unit (431,,l=24) =</i> <i>CC-Total-Octets (421,,l=16) = 2000000</i> <i>Usage-Monitoring-Level (1068,V,v=10415,l=16) = SESSION_LEVEL (0)</i></p> <p>NOTE: As can be seen of the GSU Total available limit is now showing the remainder of 2000000 (2MB)</p> <ul style="list-style-type: none"> Also as seen in the Quota usage status of the Subscriber 	
--	--	--	--

Profile –

Subscriber Profile

Subscriber Profile

Profile Quota State Dynamically Quota

Back to Search Page

Quota Usage

Subscriber Key Fields

NAI
E.344 (MSISDN)
IMSI 123456789012345

Create Create

Select: All, None

Name	Time Usage/ Time Limit	Total Volume Usage/ Total Volume Limit	Upstream Volume Usage/ Upstream Volume Limit	Downstream Volume Usage/ Downstream Volume Limit	Service Specific Event/ Service Specific Event Limit	Next Reset Time	CD	Type	Quota Status	Refetches/old
HH_QuotaPlan_Monthly	1/1	10000000/10000000	1/1	1/1	1/1	-	0000	top-up	N/A	576488999014766643
HH_QuotaPlan_Monthly	1/1	10000000/10000000	1/1	1/1	1/1	2018-07-27 00:00:00	576488999014766643	quota	N/A	N/A

- Now at this point, the “*HH_Quota_Aggregated_TraceLog_1*” policy should be triggered by checking the serving MPE Policy Statistic Report as shown below, as the total usage has reached the 80% threshold i.e. in this example of (10 MB + 3 MB) = 13 MB > than the 80% of total (10 MB + 5MB = 12 MB)

Policy Server Administration

Policy Server: brbg-mpe-2

System Reports Logs Policy Server Diameter Routing Policies Data Sources Session Viewer Debug

Policy Statistics

Pause Cancel

Evaluated 2
Executed 2
Ignored 0

Policy Details Statistics

Name	Evaluated	Executed	Ignored
Policy HH_Quota_Used_Monthly	1	1	0
Policy HH_Quota_Aggregated_TraceLog_1	1	1	0

Also as seen in the MPE Trace Log –

Diameter:Received CCR [3377853791:768379282 / hh_pgw.tekelec.com;1467832029;brbg-mra-1.oracle.com(10.196.165.3:52588)]

SH:Searching for DiameterMultiConnectionRoundRobinPeer(mpbay2.oracle.com):123456789012345

Diameter:Sent UDR [1821801087:1803482338 / brbg-mpe-2.oracle.com;1465858911;mpbay2.oracle.com(10.196.165.20:3868)]

Diameter:Received UDA [1821801087:1803482338 / brbg-mpe-2.oracle.com;1465858911;61186] DIAMETER_SUCCESS (2001) from mpbay2.oracle.com(10.196.165.20:3868) in 10 ms

Policy Action Trace: 80% exceeded of total Volume

Diameter:Sent CCA [3377853791:768379282 / hh_pgw.tekelec.com;1467832029;11] DIAMETER_SUCCESS (2001) to brbg-mra-1.oracle.com(10.196.165.3:52588) in 25 ms

[Diameter:Sent PUR \[1821801088:1803482339 / brbg-mpe-2.oracle.com;1465858911;61187\] to mpbay2.oracle.com\(10.196.165.20:3868\)](#)

[Diameter:Received PUA \[1821801088:1803482339 / brbg-mpe-2.oracle.com;1465858911;61187\] DIAMETER SUCCESS \(2001\) from mpbay2.oracle.com\(10.196.165.20:3868\) in 7 ms](#)

NOTE:

More details on the Quota usage update to Subscriber Profile as shown below –

Diameter Message: UDR

Version: 1
 Msg Length: 428
 Cmd Flags: REQ,PXY
 Cmd Code: 306
 App-Id: 16777217
 Hop-By-Hop-Id: 1821801087
 End-To-End-Id: 1803482338
 Session-Id (263,M,l=46) = brbg-mpe-2.oracle.com;1465858911;61186
 Origin-Host (264,M,l=29) = brbg-mpe-2.oracle.com
 Origin-Realm (296,M,l=18) = oracle.com
 Vendor-Specific-Application-Id (260,M,l=32) =
 Vendor-Id (266,M,l=12) = 10415
 Auth-Application-Id (258,M,l=12) = 16777217
 Auth-Session-State (277,M,l=12) = NO_STATE_MAINTAINED (1)
 Destination-Realm (283,M,l=18) = oracle.com
 User-Identity (700,VM,v=10415,l=80) =
 IMS-Public-Id (601,VM,v=10415,l=65) =
 sip:123456789012345@ims.mnc045.mcc123.3gppnetwork.org
 Data-Reference (703,VM,v=10415,l=16) = REPOSITORY_DATA (0)
 Service-Indication (704,VM,v=10415,l=28) = CamiantQuotaData
 Service-Indication (704,VM,v=10415,l=35) = CamiantDynamicQuotaData
 Service-Indication (704,VM,v=10415,l=28) = CamiantStateData
 Supported-Features (628,VM,v=10415,l=56) =
 Vendor-Id (266,M,l=12) = 10415
 Feature-List-ID (629,V,v=10415,l=16) = 1
 Feature-List (630,V,v=10415,l=16) = 1

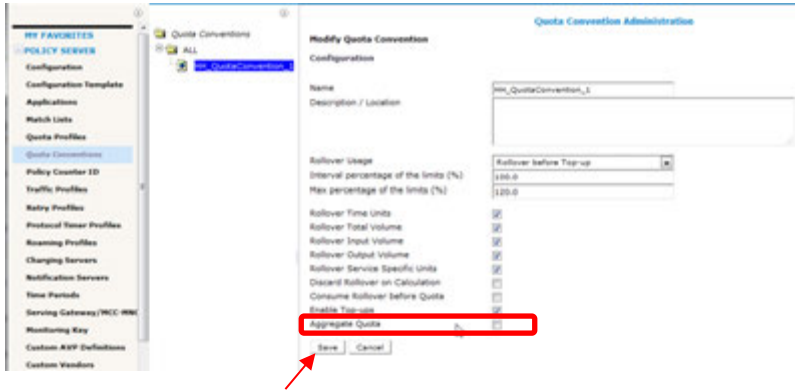

Diameter Message: UDA

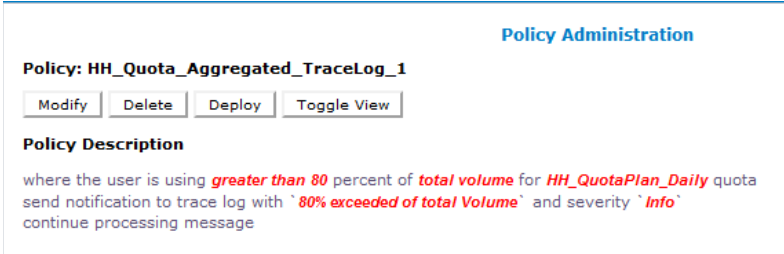
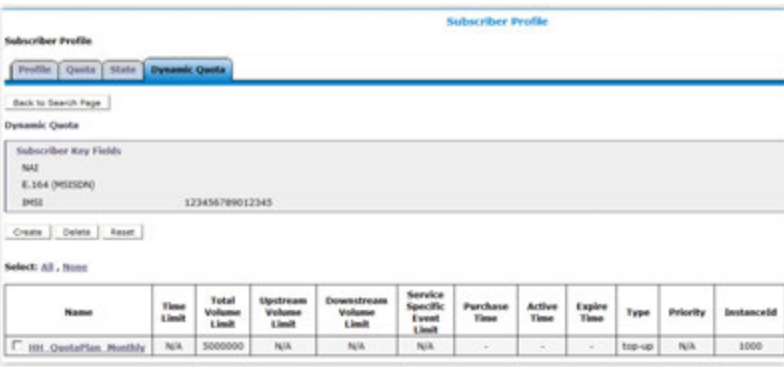
Version: 1
 Msg Length: 1112
 Cmd Flags: PXY
 Cmd Code: 306
 App-Id: 16777217
 Hop-By-Hop-Id: 1821801087
 End-To-End-Id: 1803482338
 Session-Id (263,M,l=46) = brbg-mpe-2.oracle.com;1465858911;61186
 Vendor-Specific-Application-Id (260,M,l=32) =
 Vendor-Id (266,M,l=12) = 10415
 Auth-Application-Id (258,M,l=12) = 16777217
 Auth-Session-State (277,M,l=12) = NO_STATE_MAINTAINED (1)
 Supported-Features (628,VM,v=10415,l=56) =
 Vendor-Id (266,M,l=12) = 10415
 Feature-List-ID (629,V,v=10415,l=16) = 1
 Feature-List (630,V,v=10415,l=16) = 1

	<p>User-Data (702,VM,v=10415,l=883) = <?xml version="1.0" encoding="UTF-8"?><Sh-Data><RepositoryData><ServiceIndication>CamiantQuotaData</ServiceIndication><SequenceNumber>1</SequenceNumber><ServiceData><![CDATA[<?xml version="1.0" encoding="UTF-8"?><usage><version>3</version><quota name="HH_QuotaPlan_Monthly"><cid>5764888998014766645</cid><Type>quota</Type><nextResetTime>2016-07-25T00:00:00</nextResetTime><totalVolume>10000000</totalVolume></quota></usage>]]></ServiceData></RepositoryData><RepositoryData><ServiceIndication>CamiantDynamicQuotaData</ServiceIndication><SequenceNumber>0</SequenceNumber><ServiceData><![CDATA[<?xml version="1.0" encoding="UTF-8"?><Definition><version>1</version><DynamicQuota name="HH_QuotaPlan_Monthly"><Instanceld>1000</Instanceld><Type>top-up</Type><InitialTotalVolume>5000000</InitialTotalVolume></DynamicQuota></Definition>]]></ServiceData></RepositoryData></Sh-Data></p> <p>Origin-Realm (296,M,l=18) = oracle.com Origin-Host (264,M,l=25) = mpbay2.oracle.com Result-Code (268,M,l=12) = DIAMETER_SUCCESS (2001)</p> <p>Diameter Message: PUR Version: 1 Msg Length: 884 Cmd Flags: REQ,PXY Cmd Code: 307 App-Id: 16777217 Hop-By-Hop-Id: 1821801088 End-To-End-Id: 1803482339 Session-Id (263,M,l=46) = brbg-mpe-2.oracle.com;1465858911;61187 Origin-Host (264,M,l=29) = brbg-mpe-2.oracle.com Origin-Realm (296,M,l=18) = oracle.com Vendor-Specific-Application-Id (260,M,l=32) = Vendor-Id (266,M,l=12) = 10415 Auth-Application-Id (258,M,l=12) = 16777217 Auth-Session-State (277,M,l=12) = NO_STATE_MAINTAINED (1) Destination-Realm (283,M,l=18) = oracle.com User-Identity (700,VM,v=10415,l=80) = IMS-Public-Id (601,VM,v=10415,l=65) = sip:123456789012345@ims.mnc045.mcc123.3gppnetwork.org Data-Reference (703,VM,v=10415,l=16) = REPOSITORY_DATA (0) User-Data (702,VM,v=10415,l=602) = <Sh-Data><RepositoryData><ServiceIndication>CamiantQuotaData</ServiceIndication><SequenceNumber>2</SequenceNumber><ServiceData><![CDATA[<?xml version="1.0" encoding="UTF-8"?><usage><version>3</version><quota name="HH_QuotaPlan_Monthly"><cid>1000</cid> <Type>top-up</Type><RefInstanceld>5764888998014766645</RefInstanceld><totalVolume>3000000</totalVolume></quota><quota name="HH_QuotaPlan_Monthly"><cid>5764888998014766645</cid><Type>quota</Type><nextResetTime>2016-07-25T00:00:00</nextResetTime><totalVolume>10000000</totalVolume></quota></usage>]]></ServiceData></RepositoryData></Sh-Data></p> <p>IMS_PUBLIC_ID:sip:123456789012345@ims.mnc045.mcc123.3gppnetwork.orgCamiantQuotaData seqNum : 2</p> <p>Diameter Message: PUA Version: 1 Msg Length: 172 Cmd Flags: PXY Cmd Code: 307 App-Id: 16777217</p>	
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		<p>Hop-By-Hop-Id: 1821801088 End-To-End-Id: 1803482339 Session-Id (263,M,l=46) = brbg-mpe-2.oracle.com;1465858911;61187 Vendor-Specific-Application-Id (260,M,l=32) = Vendor-Id (266,M,l=12) = 10415 Auth-Application-Id (258,M,l=12) = 16777217 Auth-Session-State (277,M,l=12) = NO_STATE_MAINTAINED (1) Origin-Realm (296,M,l=18) = oracle.com Origin-Host (264,M,l=25) = mpbay2.oracle.com Result-Code (268,M,l=12) = DIAMETER_SUCCESS (2001)</p>	
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4. Backout Procedure

Disable the Feature			
Step	Action	Expected Results	Pass Fail
1.	Disable the feature	<p>CMP GUI: Policy Server → Quota Conventions → All → (Quota Convention name) → Modify</p> <ul style="list-style-type: none"> Un-Check the the configuration parameter of “ Aggregate Quota ” box i.e. disabled as shown in the example below -  <ul style="list-style-type: none"> Click on “Save” to save the setting. Validate the new configuration has been successfully set as shown below –  <p>NOTE: The rest of configuration kept intact as in the case prior to enabling this feature in Release 12.2</p> <p><OPTIONAL> Validate the configuration via MPE CLI</p> <p>RcMgr> show quotaconvention</p> <p>Name: HH_QuotaConvention_1 Uid: 281474980612724 (1:3902068)</p>	

		LimitCalculation: BASE RolloverUsage: ROLLOVER_USAGE_BEFORE_TOPUP PercentageRolloverInterval: 100.0 PercentageRolloverMax: 120.00001 Rollover Units: Time,TotalVolume,InputVolume,OutputVolume,ServiceSpecific, Rollover Total Volume Units: yes No Rollover of Rollover: no Top-ups Enabled: yes Rollover before Plan: no BehaviorMask: 95 AggregateQuotaLimits: no	
Disable Verification Steps			
Step	Action	Expected Results	Pass Fail
1	RE-verify EXAMPLE-1 use case configuration	<ul style="list-style-type: none"> The existing policy condition of the following is kept intact as in the case prior to enabling this feature -  <ul style="list-style-type: none"> The HH_QuotaPlan_Monthly defined as a Quota Plan with Initial Volume Limit 10 MB (base plan) is also kept intact. The Subscriber purchased of one 5 MB Top-up is also kept intact. 	
2	Validate the initial base plan volume (with EXAMPLE-1 use case configuration)	<ul style="list-style-type: none"> Initiate the Gx:CCR-I for the Subscriber and ensure that Gx:CCA-I shows the total base plan of 10MB as shown in the example below – <p><i>Diameter Message: CCA</i> <i>Version: 1</i> -----</p>	

Hop-By-Hop-Id: 3656230783
 End-To-End-Id: 768379256
 Session-Id (263,M,l=39) = hh_pgw.tekelec.com;1467832029;0
 Result-Code (268,M,l=12) = DIAMETER_SUCCESS (2001)
 Origin-Host (264,M,l=29) = brbg-mpe-2.oracle.com
 Origin-Realm (296,M,l=18) = oracle.com
 Auth-Application-Id (258,M,l=12) = 16777238
 CC-Request-Type (416,M,l=12) = INITIAL_REQUEST (1)

 Usage-Monitoring-Information (1067,V,v=10415,l=52) =
 Granted-Service-Unit (431,,l=24) =
 CC-Total-Octets (421,,l=16) = 10000000
 Usage-Monitoring-Level (1068,V,v=10415,l=16) = SESSION_LEVEL
 (0)

- Also, validate the initial quota stated in the Subscriber Profile as shown below –

The screenshot shows the 'Subscriber Profile' page with tabs for Profile, Quota, State, and Dynamic Quota. The 'Quota' tab is selected. Below the tabs, there's a 'Back to Search Page' button. The 'Quota Usage' section displays 'Subscriber Key Fields' with values: IMEI, E.354 (MSISDN), and IMSI. Below this, there's a 'Create' and 'Delete' button. A 'Select: All - None' dropdown is present. A table lists various service-specific quotas with columns: Name, Time Usage/Time Limit, Total Volume Usage/Total Volume Limit, Upstream Volume Usage/Upstream Volume Limit, Downstream Volume Usage/Downstream Volume Limit, Service Specific Count/Service Specific Event Limit, Next Reset Time, CSD, Type, Quota State, and ReferenceId. The table has one row for '800_CoverPlan_Monthly'.

Name	Time Usage/Time Limit	Total Volume Usage/Total Volume Limit	Upstream Volume Usage/Upstream Volume Limit	Downstream Volume Usage/Downstream Volume Limit	Service Specific Count/Service Specific Event Limit	Next Reset Time	CSD	Type	Quota State	ReferenceId
800_CoverPlan_Monthly	0/na	0/10000000	0/na	0/na	0/na	2016-07-29T00:00:00	5764888998014766643	quota	N/A	N/A

3

Simulate the usage to the limit point triggering the Policy

NOTE:

Now, with this feature disabled and based of the above policy condition, the expected behavior will be ONLY to account of usage reaches 8 MB limit or higher, which is 80% of the plan limit of 10 MB. Same outcome as in pre-Release 12.2 without considering the Top-up/Rollover.

- Simulate the PGW to send Gx:CCR-U of the Subscriber usage of using 9MB i.e. higher than the (80% of 10MB base plan limit).

Diameter Message: **CCR**
 Version: 1
 Msg Length: 248
 Cmd Flags: REQ,PXY
 Cmd Code: 272
 App-Id: 16777238
 Hop-By-Hop-Id: 0
 End-To-End-Id: 768379259
 Session-Id (263,M,l=39) = hh_pgw.tekelec.com;1467832029;0
 Origin-Host (264,M,l=26) = hh_pgw.tekelec.com

Origin-Realm (296,M,l=19) = tekelec.com
Auth-Application-Id (258,M,l=12) = 16777238
Destination-Realm (283,M,l=18) = oracle.com
CC-Request-Type (416,M,l=12) = UPDATE_REQUEST (2)
CC-Request-Number (415,M,l=12) = 1
Destination-Host (293,M,l=29) = brbg-mpe-1.oracle.com
Event-Trigger (1006,VM,v=10415,l=16) = USAGE_REPORT (33)
Usage-Monitoring-Information (1067,V,v=10415,l=36) =
Used-Service-Unit (446,,l=24) =
CC-Total-Octets (421,,l=16) = 9000000

Diameter Message: CCA
Version: 1
Msg Length: 228
Cmd Flags: PXY
Cmd Code: 272
App-Id: 16777238
Hop-By-Hop-Id: 3656230786
End-To-End-Id: 768379259
Session-Id (263,M,l=39) = hh_pgw.tekelec.com;1467832029;11
Result-Code (268,M,l=12) = DIAMETER_SUCCESS (2001)
Origin-Host (264,M,l=29) = brbg-mpe-1.oracle.com
Origin-Realm (296,M,l=18) = oracle.com
Auth-Application-Id (258,M,l=12) = 16777238
CC-Request-Type (416,M,l=12) = UPDATE_REQUEST (2)
CC-Request-Number (415,M,l=12) = 1
Revalidation-Time (1042,VM,v=10415,l=16) = 3678754805 (Fri Jul 29 00:20:05 EDT 2016)
Usage-Monitoring-Information (1067,V,v=10415,l=52) =
Granted-Service-Unit (431,,l=24) =
CC-Total-Octets (421,,l=16) = 1000000
Usage-Monitoring-Level (1068,V,v=10415,l=16) = SESSION_LEVEL (0)

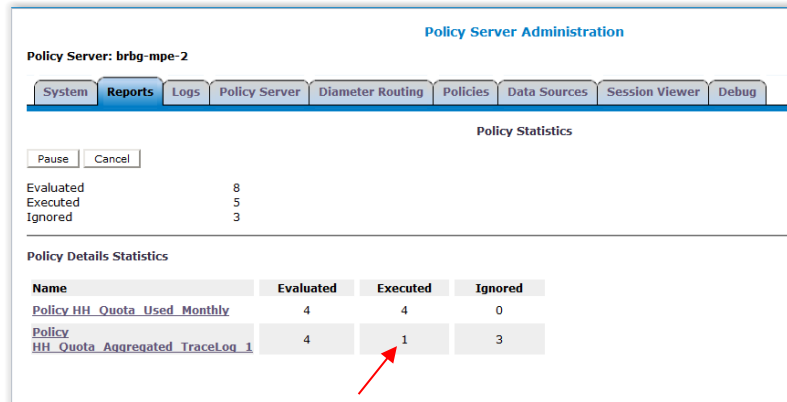
NOTE: As can be seen of the GSU Total available limit is now of remainder of 1MB (1000000)

- Verify the updated Quota status in the Subscriber Profile of the total usage now –

Name	Time Usage/ Time Limit	Total Volume Usage/ Total Volume Limit	Upstream Volume Usage/ Upstream Volume Limit	Downstream Volume Usage/ Downstream Volume Limit	Service Usage/ Event/ Service Usage/ Event Limit	Next Reset Time	CSD	Type	Quota State	RefillRateField
100_CreditPlan_Monthly	0/na	9000000/10000000	0/na	0/na	0/na	2016-07-21T00:00:00	5764888998014766645	quota	N/A	N/A

- Now at this point, the

“HH_Quota_Aggregated_TraceLog_1” policy should be triggered by checking the serving MPE Policy Statistic Report as shown below -



Policy Server: brbg-mpe-2

Policy Server Administration

System Reports Logs Policy Server Diameter Routing Policies Data Sources Session Viewer Debug

Policy Statistics

Pause Cancel

Evaluated 8
Executed 5
Ignored 3

Policy Details Statistics

Name	Evaluated	Executed	Ignored
Policy HH_Quota_Used_Monthly	4	4	0
Policy HH_Quota_Aggregated_TraceLog_1	4	1	3

- Also as seen in the MPE Trace Log –

[Diameter:Received CCR \[3377854064:1288180227 / hh_pgw.tekelec.com;1467846brbg-mra-1.oracle.com\(10.196.165.3:52588\)\]](#)

SH:Searching for DiameterMultiConnectionRoundRobinPeer(mpbay2.oracle.com):123456789012345

[Diameter:Sent UDR \[1821801544:1803483455 / brbg-mpe-2.oracle.com;14658589mpbay2.oracle.com\(10.196.165.20:3868\)\]](#)

[Diameter:Received UDA \[1821801544:1803483455 / brbg-mpe-2.oracle.com;1465858911;61281\] DIAMETER SUCCESS \(2001\) from mpbay2.oracle.com\(10.196.165.20:3868\) in 8 ms](#)

Policy Action Trace: 80% exceeded of total Volume

[Diameter:Sent CCA \[3377854064:1288180227 / hh_pgw.tekelec.com;1467846439;DIAMETER SUCCESS \(2001\) to brbg-mra-1.oracle.com\(10.196.165.3:52588\) in 20 n](#)

[Diameter:Sent PUR \[1821801545:1803483456 / brbg-mpe-2.oracle.com;14658589mpbay2.oracle.com\(10.196.165.20:3868\)\]](#)

[Diameter:Received PUA \[1821801545:1803483456 / brbg-mpe-2.oracle.com;1465858911;61282\] DIAMETER SUCCESS \(2001\) from mpbay2.oracle.com\(10.196.165.20:3868\) in 10 ms](#)

NOTE:

More details on the Quota usage update to Subscriber Profile as shown below –

Diameter Message: UDR

Version: 1

Msg Length: 428

Cmd Flags: REQ,PXY

Cmd Code: 306

App-Id: 16777217

Hop-By-Hop-Id: 1821801544

End-To-End-Id: 1803483455

Session-Id (263,M,I=46) = brbg-mpe-2.oracle.com;1465858911;61281

		<p> Origin-Host (264,M,l=29) = brbg-mpe-2.oracle.com Origin-Realm (296,M,l=18) = oracle.com Vendor-Specific-Application-Id (260,M,l=32) = Vendor-Id (266,M,l=12) = 10415 Auth-Application-Id (258,M,l=12) = 16777217 Auth-Session-State (277,M,l=12) = NO_STATE_MAINTAINED (1) Destination-Realm (283,M,l=18) = oracle.com User-Identity (700,VM,v=10415,l=80) = IMS-Public-Id (601,VM,v=10415,l=65) = sip:123456789012345@ims.mnc045.mcc123.3gppnetwork.org Data-Reference (703,VM,v=10415,l=16) = REPOSITORY_DATA (0) Service-Indication (704,VM,v=10415,l=28) = CamiantQuotaData Service-Indication (704,VM,v=10415,l=35) = CamiantDynamicQuotaData Service-Indication (704,VM,v=10415,l=28) = CamiantStateData Supported-Features (628,VM,v=10415,l=56) = Vendor-Id (266,M,l=12) = 10415 Feature-List-ID (629,V,v=10415,l=16) = 1 Feature-List (630,V,v=10415,l=16) = 1 </p> <p> Diameter Message: UDA Version: 1 Msg Length: 1076 Cmd Flags: PXY Cmd Code: 306 App-Id: 16777217 Hop-By-Hop-Id: 1821801544 End-To-End-Id: 1803483455 Session-Id (263,M,l=46) = brbg-mpe-2.oracle.com;1465858911;61281 Vendor-Specific-Application-Id (260,M,l=32) = Vendor-Id (266,M,l=12) = 10415 Auth-Application-Id (258,M,l=12) = 16777217 Auth-Session-State (277,M,l=12) = NO_STATE_MAINTAINED (1) Supported-Features (628,VM,v=10415,l=56) = Vendor-Id (266,M,l=12) = 10415 Feature-List-ID (629,V,v=10415,l=16) = 1 Feature-List (630,V,v=10415,l=16) = 1 User-Data (702,VM,v=10415,l=848) = <?xml version="1.0" encoding="UTF-8"?><Sh-Data><RepositoryData><ServiceIndication>CamiantQuotaData</ServiceIndication><SequenceNumber>0</SequenceNumber><ServiceData><![CDATA[<?xml version="1.0" encoding="UTF-8"?><usage><version>3</version> <quota name="HH_QuotaPlan_Monthly"><cid>5764888998014766645</cid><Type>quota</Type><nextResetTime>2016-07-25T00:00:00</nextResetTime></quota></usage>]]></ServiceData></RepositoryData><RepositoryData><ServiceIndication>CamiantDynamicQuotaData</ServiceIndication><SequenceNumber>0</SequenceNumber><ServiceData><![CDATA[<?xml version="1.0" encoding="UTF-8"?><Definition><version>1</version><DynamicQuota name="HH_QuotaPlan_Monthly"><InstanceId>1000</InstanceId><Type>top-up</Type><InitialTotalVolume>5000000</InitialTotalVolume></DynamicQuota></Definition>]]></ServiceData></RepositoryData></Sh-Data> Origin-Realm (296,M,l=18) = oracle.com Origin-Host (264,M,l=25) = mpbay2.oracle.com Result-Code (268,M,l=12) = DIAMETER_SUCCESS (2001) </p>	
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		<p>Diameter Message: PUR</p> <p>Version: 1 Msg Length: 720 Cmd Flags: REQ,PXY Cmd Code: 307 App-Id: 16777217 Hop-By-Hop-Id: 1821801545 End-To-End-Id: 1803483456 Session-Id (263,M,l=46) = brbg-mpe-2.oracle.com;1465858911;61282 Origin-Host (264,M,l=29) = brbg-mpe-2.oracle.com Origin-Realm (296,M,l=18) = oracle.com Vendor-Specific-Application-Id (260,M,l=32) = Vendor-Id (266,M,l=12) = 10415 Auth-Application-Id (258,M,l=12) = 16777217 Auth-Session-State (277,M,l=12) = NO_STATE_MAINTAINED (1) Destination-Realm (283,M,l=18) = oracle.com User-Identity (700,VM,v=10415,l=80) = IMS-Public-Id (601,VM,v=10415,l=65) = sip:123456789012345@ims.mnc045.mcc123.3gppnetwork.org Data-Reference (703,VM,v=10415,l=16) = REPOSITORY_DATA (0) User-Data (702,VM,v=10415,l=440) = <Sh-Data><RepositoryData><ServiceIndication>CamiantQuotaData</ServiceIndication><SequenceNumber>1</SequenceNumber><ServiceData><![CDATA[<?xml version="1.0" encoding="UTF-8"?><usage><version>3</version><quota name="HH_QuotaPlan_Monthly"><cid>5764888998014766645</cid><Type>quota</Type><nextResetTime>2016-07-25T00:00:00</nextResetTime><totalVolume>9000000</totalVolume></quota></usage>]]></ServiceData></RepositoryData></Sh-Data> IMS_PUBLIC_ID:sip:123456789012345@ims.mnc045.mcc123.3gppnetwork.org CamiantQuotaData seqNum : 1</p> <p>Diameter Message: PUA</p> <p>Version: 1 Msg Length: 172 Cmd Flags: PXY Cmd Code: 307 App-Id: 16777217 Hop-By-Hop-Id: 1821801545 End-To-End-Id: 1803483456 Session-Id (263,M,l=46) = brbg-mpe-2.oracle.com;1465858911;61282 Vendor-Specific-Application-Id (260,M,l=32) = Vendor-Id (266,M,l=12) = 10415 Auth-Application-Id (258,M,l=12) = 16777217 Auth-Session-State (277,M,l=12) = NO_STATE_MAINTAINED (1) Origin-Realm (296,M,l=18) = oracle.com Origin-Host (264,M,l=25) = mpbay2.oracle.com Result-Code (268,M,l=12) = DIAMETER_SUCCESS (2001)</p>	
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