

DNS服务参数的最佳实践，当您应用“新呼叫策略拒绝”在GGSN

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简介

本文描述在Cisco聚集的服务路由器遇到的方案(ASR) 5x00系列该作为网关通用分组无线业务(GPRS)支持节点(GGSN) newcall策略拒绝发生故障的地方和需要记住的一些注意事项，当您设计域名系统(DNS)网络避免服务中断时。

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[问题：DNS服务参数配置，当您应用Newcall策略拒绝在GGSN](#)

在GGSN软件升级期间，避免服务影响对用户，比如实践，新呼叫策略拒绝在GGSN应用。所需的是服务的GPRS支持节点(SGSN)应该发送流量到下可用的GGSNs根据新的呼叫策略。

然而，这不是案件.newcall策略拒绝例如没有工作正如所料，并且服务下降被看到，当您升级步骤时。

解决方案

如何newcall策略拒绝工作？

一旦newcall策略拒绝在GGSN应用；

```
[local]ASR5K_LAB# newcall policy ggsn-service all reject
```

GGSN拒绝新流入创建信息包数据协议(PDP)上下文请求(CPC-R)没有资源联机，以便SGSN能选择下可用的GGSN，并且在升级维护窗口时因而最小化服务干扰。

newcall策略拒绝实验室结果：

SGSN配置：

在本例中，newcall策略拒绝在GGSN1应用。当呼叫到达时，SGSN发送CPC请求对GGSN1，反过来拒绝呼叫SGSN然后发送请求对GGSN2。

箴言报用户Trace输出：

==>GPRS Mobility/Session Management Message (2 Bytes)
Protocol Discriminator : GMM message
Message : Attach Complete

INBOUND>>>> 05:34:35:320 Eventid:88112(0)
==>GPRS Mobility/Session Management Message (34 Bytes)
Protocol Discriminator : SM message
Message : Activate PDP Context Request
Requested NSAPI
Requested LLC SAPI
Requested Qos
Length of Qos: 14
Requested PDP address
Length : 2
Access Point Name
Length: 10

<<<<OUTBOUND 05:34:35:323 Eventid:116004(3)
GTPC Tx PDU, from 192.168.2.2:19002 to 192.168.2.1:2123 (110)
TEID: 0x00000000, Message type: GTP_CREATE_PDP_CONTEXT_REQ_MSG (0x10) >>>>>>>> to GGSN1
Sequence Number:: 0x00CC (204)

GTP HEADER FOLLOWS:
Version number: 1
Protocol type: 1 (GTP C/U)
Extended header flag: Not present
Sequence number flag: Present
NPDU number flag: Not present
Message Type: 0x10 (GTP_CREATE_PDP_CONTEXT_REQ_MSG)
Message Length: 0x0066 (102)
Tunnel ID: 0x00000000
Sequence Number: 0x00CC (204)

GTP HEADER ENDS.

INFORMATION ELEMENTS FOLLOW:
IMSI: 123450040000000
Recovery: 0x09 (9)
Selection Mode: 0x0 (MS or network provided APN, subscribed verified (Subscribed))
Tunnel ID Data I: 0x8000C002
Tunnel ID Control I: 0x8000C002
NSAPI: 0x05 (5)

END USER ADDRESS FOLLOWS:
PDP Type Organisation: IETF
PDP Type Number: IPv4
Address: Empty

END USER ADDRESS ENDS.
Access Point Name: sitt1.com
GSN Address I: 0xC0A80202 (192.168.2.2)
GSN Address II: 0xC0A80203 (192.168.2.3)
MSISDN: 128612345678901
QOS Profile: 0x0223421F72967373440DFFFF00

COMMON FLAGS FOLLOW:
Prohibit Payload Compression: no
MBMS Service Type: Multicast Service
RAN Procedures Ready: no
MBMS Counting Information: no
No QoS negotiation: no
NRSN: yes
Upgrade QoS Supported: no
Dual Address Bearer Flag: no
COMMON FLAGS END.


```

                NRSN: yes
Upgrade QoS Supported: no
Dual Address Bearer Flag: no
COMMON FLAGS END.
Radio Access Technology: GERAN
                MS Time Zone: -4:00
                Daylight Saving Time: +1 hour
INFORMATION ELEMENTS END.

INBOUND>>>>> 05:34:35:337 Eventid:116003(3)
GTPC Rx PDU, from 192.168.2.128:2123 to 192.168.2.2:19002 (72)
TEID: 0x8000C002, Message type: GTP_CREATE_PDP_CONTEXT_RES_MSG (0x11)
Sequence Number:: 0x00CD (205)
GTP HEADER FOLLOWS:
    Version number: 1
    Protocol type: 1 (GTP C/U)
Extended header flag: Not present
Sequence number flag: Present
NPDU number flag: Not present
    Message Type: 0x11 (GTP_CREATE_PDP_CONTEXT_RES_MSG)
    Message Length: 0x0040 (64)
    Tunnel ID: 0x8000C002
    Sequence Number: 0x00CD (205)
GTP HEADER ENDS.
INFORMATION ELEMENTS FOLLOW:
    Cause: 0x80 (GTP_REQUEST_ACCEPTED)
    Reorder Required: 0x0 (Not present)
    Tunnel ID Data I: 0x0FFFFFFF8
    Tunnel ID Control I: 0x0FFFFFFF8
    Charging ID: 0x00000007
END USER ADDRESS FOLLOWS:
    PDP Type Organisation: IETF
    PDP Type Number: IPv4
    IPv4 Address: 12.0.0.6
END USER ADDRESS ENDS.
    GSN Address I: 0xC0A80280 (192.168.2.128)
    GSN Address II: 0xC0A80280 (192.168.2.128)
    QOS Profile: 0x0222421F7296D1FE460D03FE004A4A
INFORMATION ELEMENTS END.
```

SGSN如何选择GGSN ?

在apn配置文件配置下，有命令apn解决dns查询snaptr。

apn解决dns查询snaptr [EPCue|非EPC ue]

根据用户设备(UE)的EPC功能的SNAPTR过滤器。请使用此命令启用SNAPTR类型APN解决方法的DNS查询3G有EPC订阅的用户的。在此模式的配置促进此功能控制每APN的。如果关键字没有包括与配置，则S-NAPTR查询是可适用的对所有UE、两个EPC有能力UE和非EPC有能力UE。默认情况下，此功能没有启用。

这意味着SGSN发送在命名权限指示器(NAPTR)格式(sitt1.com.apn.epc.mnc090.mcc262.3gppnetwork.org)的DNS查询选择GGSN。

万一NAPTR查询不能然后SGSN fallback查询类型A (sitt1.mnc045.mcc123.gprs)获得GGSN IP地址。

实验室结果：

SGSN配置 :

apn-profile default

apn-resolve-dns-query snaptr

箴言报协议Trace :

*** Verbosity Level (2) ***

*** Verbosity Level (3) ***

<<<<OUTBOUND 05:42:24:667 Eventid:5957(3)

DNS PDU Tx

from : 192.168.2.1 : 49351

to : 192.168.1.254 : 53

bytes : 76

Query ID : 6366

Type : Query

Question : NAPTR ? sitt1.com.apn.epc.mnc045.mcc123.3gppnetwork.org.

Additional :

Name : .

Ext-RCODE : 0

Type : OPT

UDPSize : 4096

INBOUND>>>> 05:42:24:750 Eventid:5956(3)

DNS PDU Rx

from : 192.168.1.254 : 53

to : 192.168.2.1 : 49351

bytes : 76

Query ID : 6366

Type : Response

Authoritative Answer : No

Response code : ServFail

Question : NAPTR ? sitt1.com.apn.epc.mnc045.mcc123.3gppnetwork.org.

Additional :

Name : .

Ext-RCODE : 0

Type : OPT

UDPSize : 4096

<<<<OUTBOUND 05:42:24:752 Eventid:5957(3)

DNS PDU Tx

from : 192.168.2.1 : 51619

to : 192.168.1.254 : 53

bytes : 57

Query ID : 16777

Type : Query

Question : A? sitt1.com.MNC045.MCC123.GPRS.

Additional :

Name : .

Ext-RCODE : 0

Type : OPT

UDPSize : 4096

INBOUND>>>> 05:42:24:781 Eventid:5956(3)

DNS PDU Rx

from : 192.168.1.254 : 53

to : 192.168.2.1 : 51619

bytes : 57

```
Query ID           : 16777
Type               : Response
Authoritative Answer : No
Response code      : Success
Question          : A? sitt1.com.MNC045.MCC123.GPRS.
Additional         :
  Name             : .
  Ext-RCODE        : 0
  Type             : OPT
  UDPsize          : 4096
```

配置示例

如果配置有这些服务参数的DNS :

```
Flags: A           Service: x-3gpp-pgw:x-s5-gtp:x-s8-gtp:x-gn:x-gp
```

当一个非演变的数据包核心(EPC)有能力UE设法根据DNS答案服务类型, SGSN连接, 决定对A查询的fallback。

例如 :

SGSN检查DNS答案服务类型, 并且, 如果不能查找关键字x-3gpp-ggsn:x-gn和x-3gpp-ggsn:x-gp然后SGSN fallback到A查询类型。

```
Query Name: sitt1.com.apn.epc.mnc045.mcc123.3gppnetwork.org
Answer:
  Order: 10           Preference: 10
  Flags: A           Service: x-3gpp-pgw:x-s5-gtp:x-s8-gtp:x-gn:x-gp
  Regular Expression:
  Replacement: TOPON.S5.GGSN1.NODES.EPC.MNC090.MCC262.3GPPNETWORK.ORG
```

```
Query Name: sitt1.mnc045.mcc123.gprs
Query Type: A           TTL: 48993 seconds
Answer:
  IP Address: 192.168.2.1
```

请假设, 如果配置A记录的仅单个GGSN IP地址在DNS, 然后SGSN不能重定向到下可用的GGSNs结果, 并且降低服务。

根据SGSN管理指南 :

Gn SGSN支持, 并且帮助选择Evolved数据包核心的(EPC)有能力UEs一个并行定位信息包数据网络(PDN)网关(P-GW) /GGSN节点并且执行APN完全合格的域名(FQDN)的DNS直接的NAPTR (SNAPTR)查找服务参数的x-3gpp-pgw:x-gn/x-3gpp-pgw:x-gp。在服务参数x-3gpp-ggsn:x-gn和x-3gpp-ggsn:x-gp的接口也用于选择独立GGSNs。

因此, 当您设计DNS记录时, 您能包括服务参数类似 :

```
Flags: A           Service: x-3gpp-pgw:x-s5-gtp:x-s8-gtp:x-gn:x-gp:x-3gpp-ggsn:x-gn:x-gp
```

在此以后, DNS启动返回非EPC的有能力UE多个网关(GW)地址。

```
Query Name: sitt1.com.apn.epc.mnc045.mcc123.3gppnetwork.org
Query Type: NAPTR      TTL: 42755 seconds
Answer:
```

Order: 40 Preference: 40
Flags: A Service: x-3gpp-pgw:x-s5-gtp:x-s8-gtp:x-gn:x-gp:x-3gpp-ggsn:x-gn:x-gp
Regular Expression:
Replacement: TOPON.S5.GGSN03.NODES.EPC.mnc045.mcc123.3GPPNETWORK.ORG

Query Name: sitt1.com.apn.epc.mnc045.mcc123.3gppnetwork.org

Query Type: NAPTR TTL: 42755 seconds

Answer:

Order: 10 Preference: 10
Flags: A Service: x-3gpp-pgw:x-s5-gtp:x-s8-gtp:x-gn:x-gp:x-3gpp-ggsn:x-gn:x-gp
Regular Expression:
Replacement: TOPON.S5.GGSN02.NODES.EPC.mnc045.mcc123.3GPPNETWORK.ORG

Query Name: sitt1.com.apn.epc.mnc045.mcc123.3gppnetwork.org

Query Type: NAPTR TTL: 42755 seconds

Answer:

Order: 20 Preference: 20
Flags: A Service: x-3gpp-pgw:x-s5-gtp:x-s8-gtp:x-gn:x-gp:x-3gpp-ggsn:x-gn:x-gp
Regular Expression:
Replacement: TOPON.S5.GGSN05.NODES.EPC.mnc045.mcc123.3GPPNETWORK.ORG

Query Name: sitt1.com.apn.epc.mnc045.mcc123.3gppnetwork.org

Query Type: NAPTR TTL: 42755 seconds

Answer:

Order: 30 Preference: 30
Flags: A Service: x-3gpp-pgw:x-s5-gtp:x-s8-gtp:x-gn:x-gp:x-3gpp-ggsn:x-gn:x-gp
Regular Expression:
Replacement: TOPON.S5.GGSN04.NODES.EPC.mnc045.mcc123.3GPPNETWORK.ORG

Query Name: TOPON.S5.GGSN04.NODES.EPC.mnc045.mcc123.3GPPNETWORK.ORG

Query Type: NAPTR TTL: 48993 seconds

Answer:

IP Address: 192.168.2.22

Query Name: TOPON.S5.GGSN03.NODES.EPC.mnc045.mcc123.3GPPNETWORK.ORG

Query Type: NAPTR TTL: 48993 seconds

Answer:

IP Address: 192.168.2.18

Query Name: TOPON.S5.GGSN05.NODES.EPC.mnc045.mcc123.3GPPNETWORK.ORG

Query Type: NAPTR TTL: 48993 seconds

Answer:

IP Address: 192.168.2.23

Query Name: TOPON.S5.GGSN02.NODES.EPC.mnc045.mcc123.3GPPNETWORK.ORG

Query Type: NAPTR TTL: 48993 seconds

Answer:

IP Address: 192.168.2.21

总之，请保证您的DNS配置类似x-3gpp-pgw:x-s5-gtp:x-s8-gtp:x-gn:x-gp:x-3gpp-ggsn:x-gn:x-gp避免服务干扰，当您有支持多个的GGSNs geo冗余时。