Updates for Information Model of C&U separation BNG

draft-wcg-i2rs-cu-separation-infor-model-01

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Design Concept

- **Background - BBF relative works:**
  - BNG CU Separation got accepted by WT-384
  - The steady version now is WT-384_Rev.08
  - WT-384 will enter straw ballot

- **Motivation**
  - **Implements Resource Utilization:** Centralized control plane provides the capability of unified managing the network resource & user’s information. It has the overall view of resources and can distribute the resources as required.
  - **Simplified Management:** Centralized control plane provides unified management interface to the outside system, such as EMS, DHCP server, Radius, etc.
  - **Fast TTM:** Control plane and user plane can be extended separately according to different situations. It can help to shorten the time to marketing.
  - **Dynamic control plane:** A large number of users access at any time. It requires a dynamic control plane to handle it.

- **Objective**
  - **Defines a set of information models to present the interaction interface between CP & UPs. It helps to achieve the interworking of different devices.**
    - Define an information model for Control-Plane. It presents that the Rules/Entries which are generated by the centralized Control-Plane.
    - Define an information model for User-Plane. It introduces what attributes will be reported by the User-Plane.
The Usage Example of information model

Manage resources and generate several tables which contains a set of rules according to service requirement

Receive tables, matches rules, performs actions

For Example:

1: Manage resources and generate several tables

Cloud BNG Control Plane

1: Report Traffic Statistics information

Traffic Statistics Infor:
Available Bandwidth=10 MB

Policy:

Rules:
If Bob is an Engineer...
If the source IP address is in the Marketing Subnet...

Actions:
Set Joe's IP address to 192.0.2.100
Limit the bandwidth of application x to 10 Mb

2: CP send this tables to UPs

BNG User Plane

2: Receives The QoS Entries, Matches rules, Performs corresponding actions

User Infor Entries:
Name=Bob
Occupation=Engineer

IPv4 Infor Entries:
Name=Bob
SRC IP=1.1.1.1

QOS Infor Entries:
Name=Bob
CIR=6 MB;
PIR=8 MB;

Available Bandwidth=10 MB

Details of the use case can be referred to draft-gu-nfvg-cloud-bng-architecture
Update in 01 version

- Update the user-plane information model:
  - Rewrite some UP’s information model, corrects clerical errors to improve the readability.

- Adds an appendix section to brief introduce an example for CU separated BNG YANG data model.
  - Reuse the existing works to assemble the YANG data model.
  - Present the instance of CU separated BNG.

E.g. User information
Next Steps

• Ally with corresponding works of BBF.
• Solicit more comments and suggestions.
• Prepare an other version to address received comments.
• Call for adoption...