Controller on Cloud

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1 RNC on Cloud

1.1 PoC team introduction

1.1.1 Team information

We are C team
We are Cloud pioneer in NSN
We are Fu weiyi, Wang wei, Ye Changyi, Dong xiao, Tang huanan, Wu Xiaoping, Chi xiaobo, Zhang bing, Liu weiwei, Xu wei. Gao Leijia

1.1.2 Device information

We have One HP server for cloud platform
MGT IP: 10.56.212.18
USER: root
PASSWD: password

```
Machine (16GB)
  NUMANode L#0 (P#0 8182MB) + Socket L#0 + L3 L#0 (12MB)
    L2 L#0 (256KB) + L1d L#0 (32KB) + L1i L#0 (32KB) + Core L#0
      PU L#0 (P#0)
      PU L#1 (P#12)
    L2 L#1 (256KB) + L1d L#1 (32KB) + L1i L#1 (32KB) + Core L#1
      PU L#2 (P#2)
```

```
    PU L#3 (P#14)
  L2 L#2 (256KB) + L1d L#2 (32KB) + L1i L#2 (32KB) + Core L#2
    PU L#4 (P#4)
    PU L#5 (P#16)
  L2 L#3 (256KB) + L1d L#3 (32KB) + L1i L#3 (32KB) + Core L#3
    PU L#6 (P#6)
    PU L#7 (P#18)
  L2 L#4 (256KB) + L1d L#4 (32KB) + L1i L#4 (32KB) + Core L#4
    PU L#8 (P#8)
    PU L#9 (P#20)
  L2 L#5 (256KB) + L1d L#5 (32KB) + L1i L#5 (32KB) + Core L#5
    PU L#10 (P#10)
    PU L#11 (P#22)
NUMANode L#1 (P#1 8192MB) + Socket L#1 + L3 L#1 (12MB)
  L2 L#6 (256KB) + L1d L#6 (32KB) + L1i L#6 (32KB) + Core L#6
    PU L#12 (P#1)
    PU L#13 (P#13)
  L2 L#7 (256KB) + L1d L#7 (32KB) + L1i L#7 (32KB) + Core L#7
    PU L#14 (P#3)
    PU L#15 (P#15)
  L2 L#8 (256KB) + L1d L#8 (32KB) + L1i L#8 (32KB) + Core L#8
    PU L#16 (P#5)
    PU L#17 (P#17)
  L2 L#9 (256KB) + L1d L#9 (32KB) + L1i L#9 (32KB) + Core L#9
    PU L#18 (P#7)
    PU L#19 (P#19)
 L2 L#10 (256KB) + L1d L#10 (32KB) + L1i L#10 (32KB) + Core L#10
    PU L#20 (P#9)
    PU L#21 (P#21)
 L2 L#11 (256KB) + L1d L#11 (32KB) + L1i L#11 (32KB) + Core L#11
    PU L#22 (P#11)
    PU L#23 (P#23)
HostBridge L#0
  PCIBridge
    PCI 103c:323a
      Block L#0 "sda"
  PCIBridge
    PCI 14e4:1639
      Net L#1 "eth0"
    PCI 14e4:1639
```

```
PCIBridge
  PCI 14e4:1639
  PCI 14e4:1639
    Net L#2 "eth3"
PCIBridge
  PCI 1002:515e
    GPU L#3 "controlD64"
    GPU L#4 "card0"
```

and One IBM server for compiling
MGT IP: 10.56.212.3
USER: con-cloud
PASSWD: password

1.1.3 Contact list in hangzhou

Lab related support	Fu weiyi

1.1.4 Contact list from counterpart

Openstack	Openstack reference wiki
Openstack	Erukala, Vijaya (EXT-Tata Consultancy Ser - FI/Espoo); Singh, Man (NSN - FI/Espo
VSP	
VGP	
UP/UMW	Singh, Satish 1. (NSN - IN/Bangalore)
CP	

1.1.5 WoW

Study

Meetings

- With conterparts
- Internal team

Way of Cooperation

1.1.6 Study Materials

DPDK

- Overview

  1. You will know, what is DPDK, what it is used for.
  2. The components in DPDK
  3. How it help you achive better performance on IA based platform

  IntelDataPlaneDevelopmentKitOverview

- Programing guide
  Read this document before you start programing on the DPDK Programing guide

- API reference
  Don't know the meaning of some API, check here. API reference

- Sample guilde
  Here is some basic samples, such as l2fwd? l3fwd? or hello word. samples testpmd

- Troubleshooting
  DPDK is used to accelerating the packet handling, Opp, you packet lost? start the tracing from here. looking forthe lost packet

- Third part supporting
  Many companies are supporting this DPDK, you may have known some of them

  6WindGate

  Windriver

  Tieto

- Others
  You may find some tips about better programing on Intel based platform

Cloud Virtualization
Vitualization in Intel
Cloud Computing
carrier-cloud-telecoms

VGP Virtual Gateway Platform (VGP) is the name used by MBB product management for the software platform that enables deployment and operation of FlexiNG and other product applications as guests in a virtualization infrastructure

Overview
More in VGP

VSP ./materials/Virtualized+Server+Platform+(VSP1.0+P6)+Architecture+Description.docx

Openstack Openstack reference wiki ./openstack.html

1.1.7 Meeting minutes

Mon Jan 20 13:40:59 2014

1. Current status sharing
2. Study plan
   (a) Common knowlege study in week4
   (b) Divde into two groups

   Group1: Ye changyi, Zhang bing, Fu weiyi, Liu weiwei, Wang wei, Group2: Dongxiao, Chi xiaobo, Zhu tianda, Wu xiaoping, Xu Wei. Tanghuanan.

Hold workshop in weekly round from week5 Topic:

1. DPDK and Openstack material prepare
2. Start from Group1 in week5
3. Way of working
   (a) Gerrit + git
   (b) Select one Scrum master in 20th Feb
   (c) Create public folder for shared materials
   (d) Community has been created
   (e) Mail recored is neccessary for problem tracing
   (f) Study output need to be stored in one shared folder
4. Direction selection

This will be done after the first round study Workshops in week4:

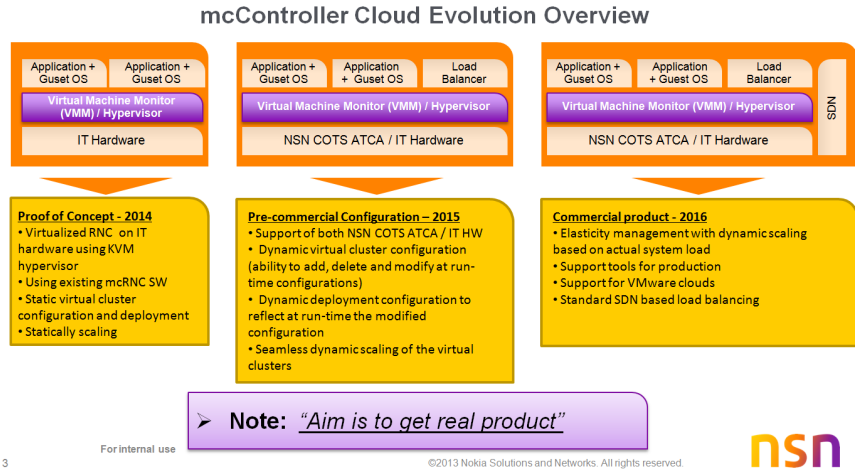
1. Call end to end process Wangwei
2. Current transport plan implementation in mcRNC Zhang bing
3. Openstack/VSP/VGP/DPDK VMware and KVM introduction in 30 slides Gao Leijia

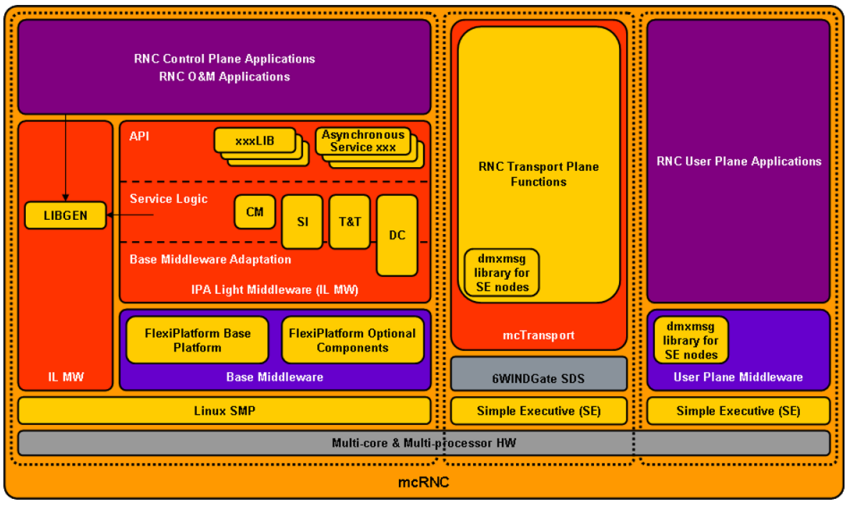
1.2 Project introduction

1.2.1 Overview

./materials/mcController cloud status.pptx
./materials/Controller_Cloud_Proof_of_Concept.pptx

Scope of this PoC PoC is part of the cloud evolution defined in the gragh below





Scope of Hangzhou

In hangzhou, we need to porting current ipalight components on X86 based platform. LibGen SI DC and Dmxmsg have been running on x86 based MGW, CM and T&T have not been compiled with x86, We need to porting them on the x86 based vitual machine.

For mcTransport, it is running in simple executive on octeon currently, we need to porting the functionality to x86 based platform. DPDK is used to accelerate the packet handling performance.

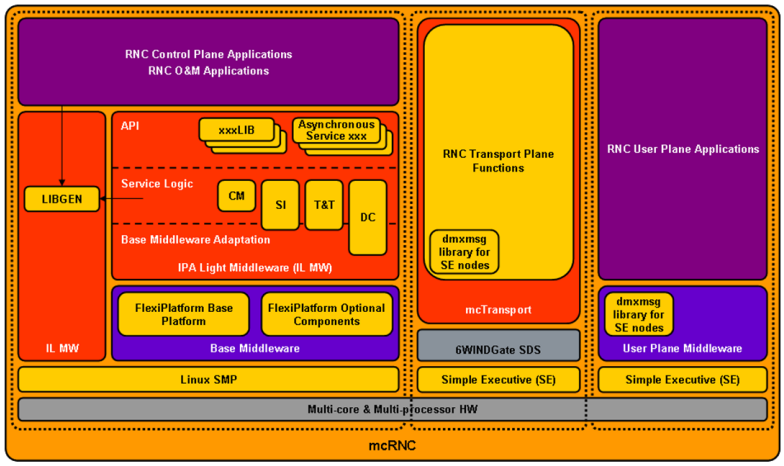
1.2.2 Scheduler

Need to update with Ahmed

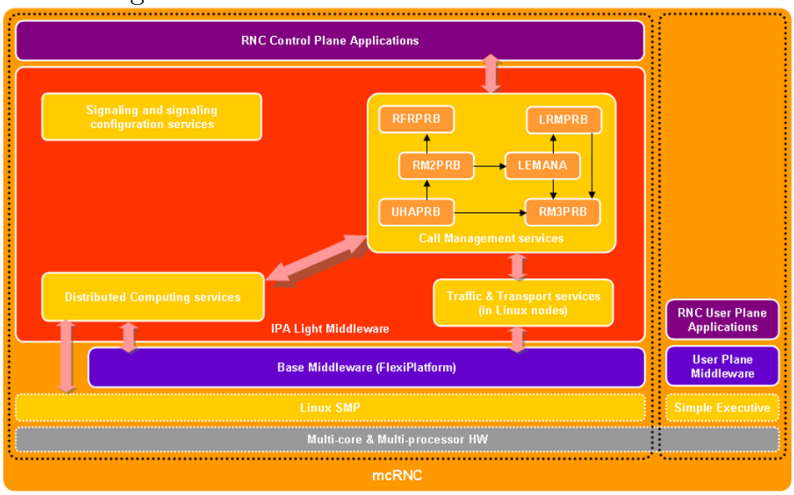
1.2.3 Task tracing

Ipalight porting

- Overall view

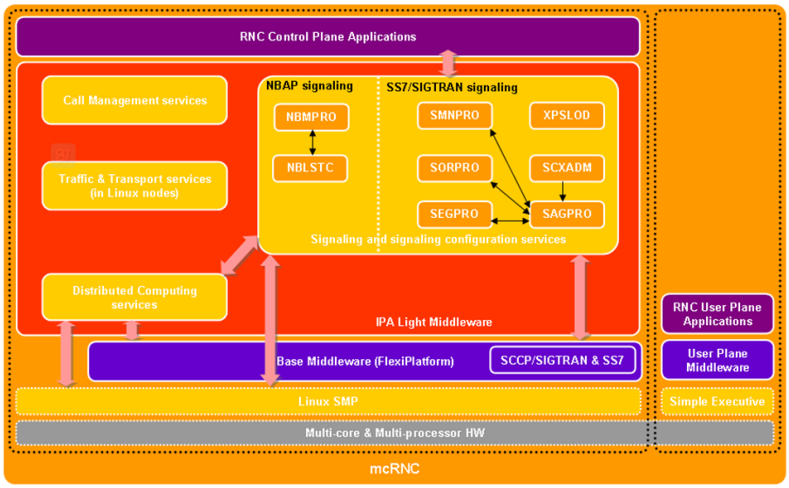


- Call management



PRB	Subsystem	status
RM2PRB		
RFRPRB		
LEMANA		
LRMPRB		
RM3PRB		
UHAPRB		
UMUTIL		
RMUTIL		
LGUTIL		

- Signaling



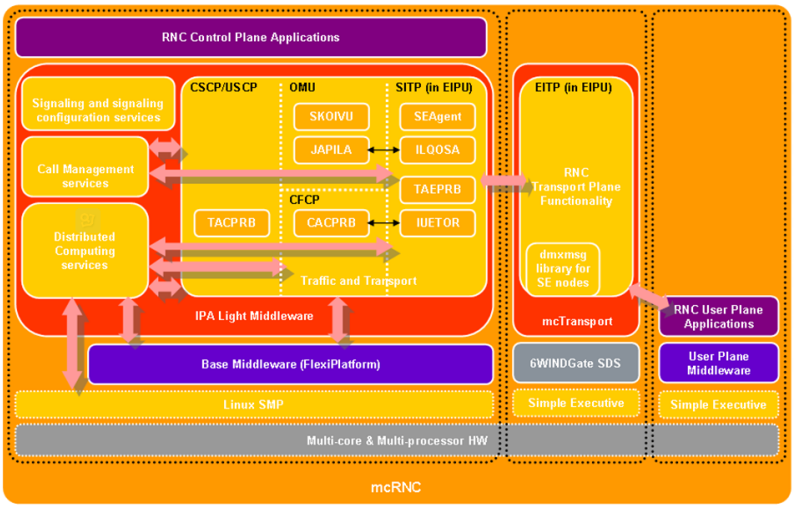
  - SS7 signaling

PRB	Subsystem	Status
SCXADM		
SAGPRO		
SMNPRO		
SEGPRO		
SORPRO		
XPSLOD		

  - NBAP signaling

PRB	Subsystem	Status
NBMPRO		
NBLSTC		

- Traffic and Transport



PRB	Subsystem	Status
CACPRB		
TAEPRB		
IUETOR		
ILQOSA		
SEAgent		
UPCMON		
SKOIVU		
JAPILA		

- Distribute Computing

Transport porting

1.2.4 Work plan

Current status

- Jan 2014
  We have got a 8 people team available. We got HP server built up, Raw DPDK has been deployed on the server, Hello world passed.

  Openstack is installed successfully, and the VM start up. Still some issue blocked the connection with the VM. we still didn't get a shell of the VM.

  Next step is build up the competence of the team

1. What is cloud, what it means to RNC
2. DPDK
3. IP stack over DPDK selection
4. Openstack
5. VGP,VSP
6. IPA light architecture

About the study part, there will be three demos, might happend in week4

1. Singh, Satish 1. (NSN - IN/Bangalore) will demo the previous UP on intel DPDK PoC result
2. FlexiNG will demo the current implementation with the DPDK and intel platform
3. Liquid Core cloud demo the cloud device in core network.

besides, Singh, Satish 1. (NSN - IN/Bangalore) might travel to hangzhou for supporting the transport plan to DPDK work.

Detailed study plan will be discussed by team in week4 meeting.

Questions

- Jan 17th 2014
  Q: The prgress of the device application?

  A: Formal device is still under application. maybe avaliable in three weeks

  Q: The backlog item?

  A: The formal backlog will be created in week4.

  Q: Contact list?

  A: For the UMW/UP, Singh, Satish 1. (NSN - IN/Bangalore) Other is still in buidlling

  Q: Overall target of this project, and scheduler.

  A: PoC work is planned to last one year. Target is a static configured cloud RNC running with live call.

  Q: The porting phase architecture

  A: Ahmed will plan it after this tough period because of P8 issue, In hangzhou team, we will have some proposal.