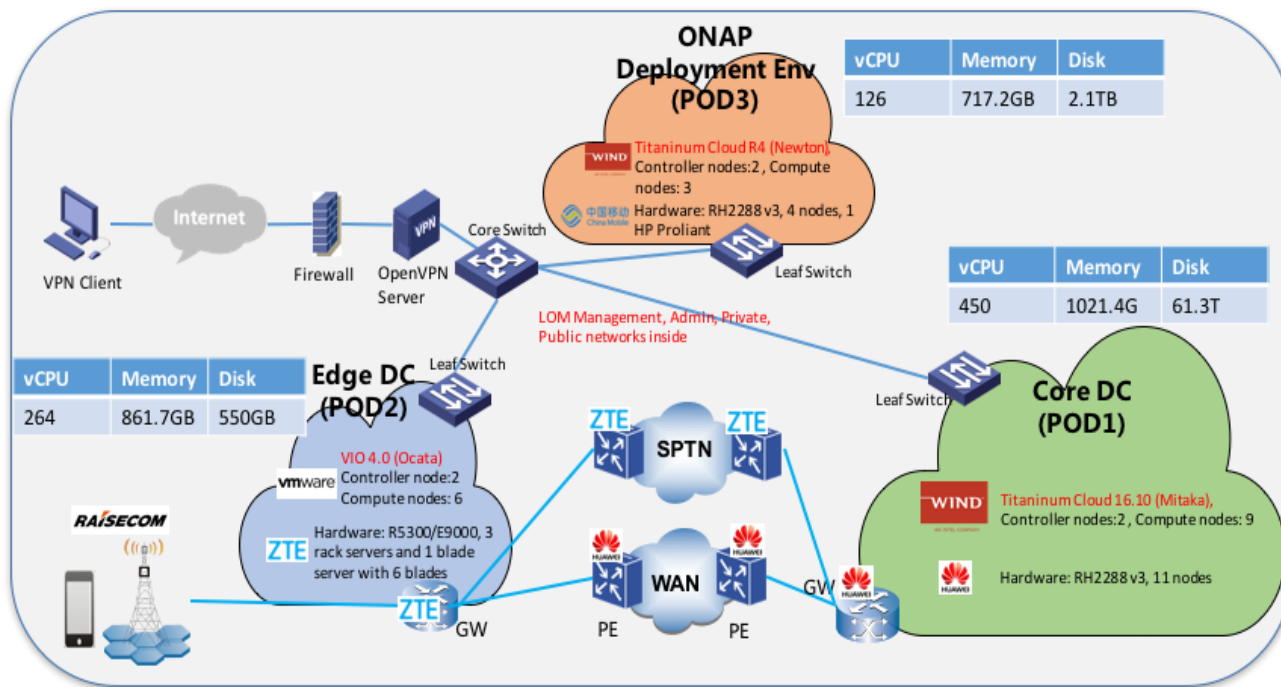




VoLTE Case Demo for Amsterdam

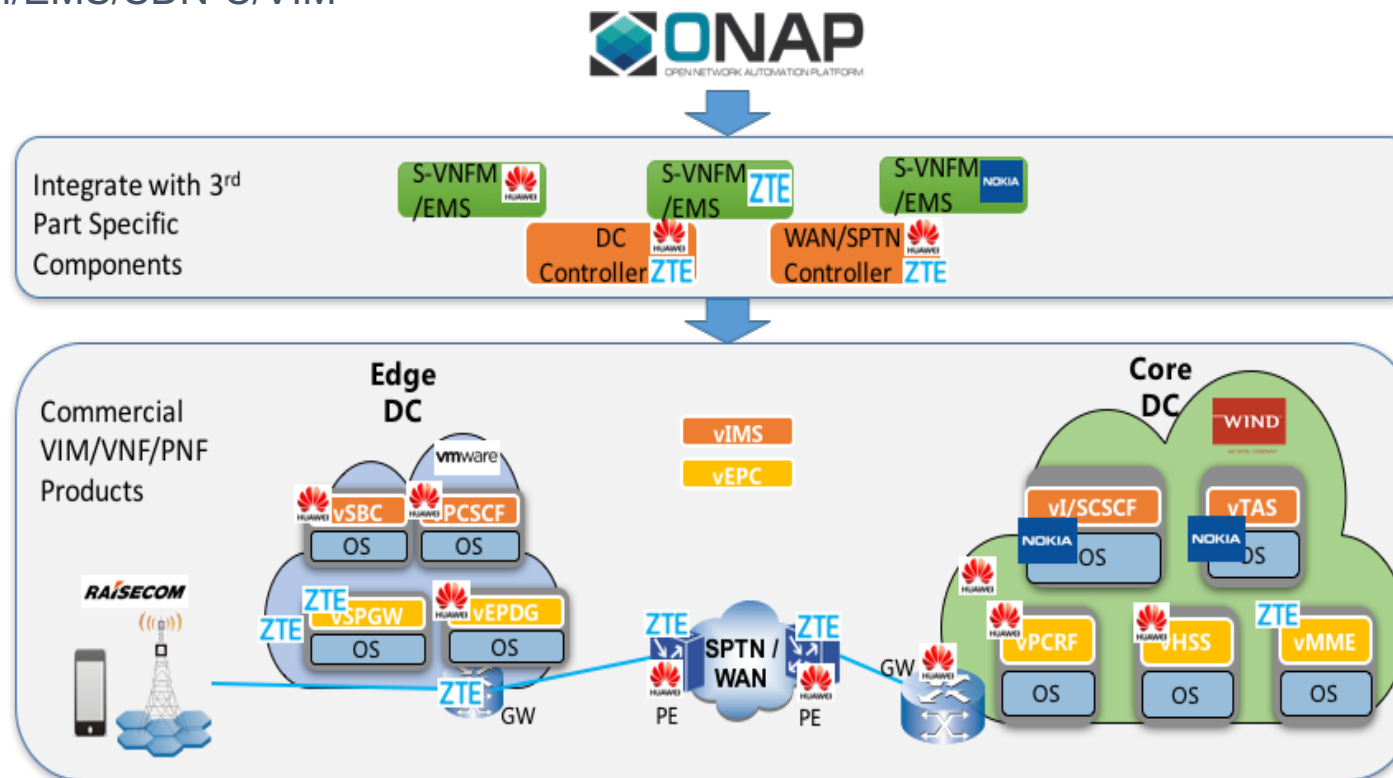
Physical Lab Overview for VoLTE Case



- Three Clouds :
 - Edge (VMware) ,
 - Core (WindRiver)
 - ONAP Env (WindRiver)
- Interconnection between two clouds based on SDN
 - Underlay : L3VPN based on WAN and SPTN
 - Overlay: BGP-EVPN based on VxLAN

Challenges of VoLTE for ONAP

- E2E Service Orchestrator: SDN+NFV
- TOSCA based Models
- Integrate with multi-vendors commercial products as 3rd party elements, such as UE/Small Cell GW/VNF/VNFM/EMS/SDN-C/VIM



Cases of Demo

Model Design

- License
- VSP
- VF
- NS
- E2E

Ext System Registration

- VIM
- VNFM
- SDN Controller
- EMS

Service Lifecycle Management

- Instantiation
- Termination

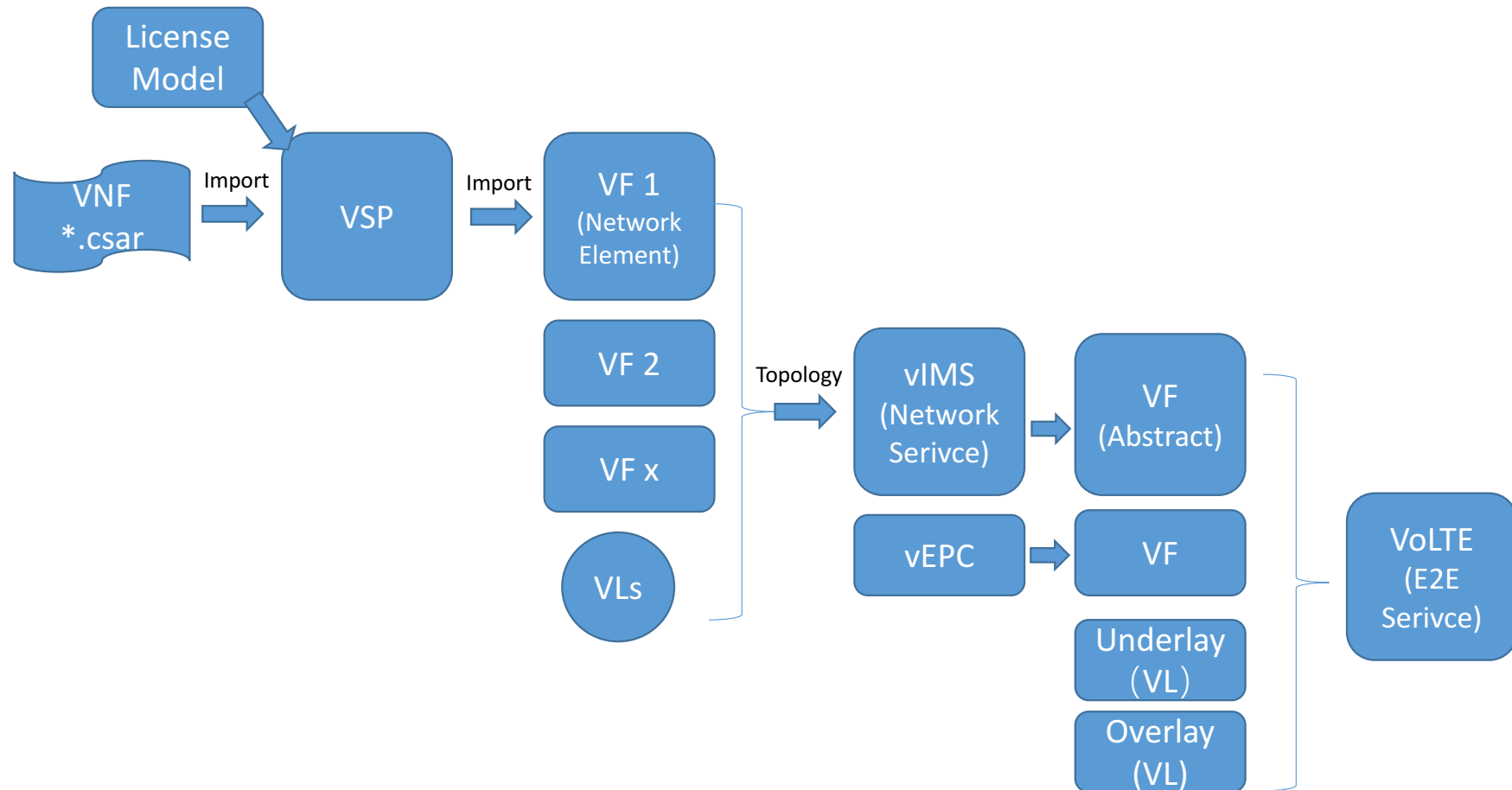
Control-loop (Auto heal)

- Alarm
- Correlation
- Policy Matching
- Policy Trigger
- Healing

Collection of Alarms/Performance metrics

- Alarm & Performance from **VIM level**
- Alarm & Performance for **VNF level** via EMS

Steps of Model Design



Registration of Ext System

Home ESR-EMS x

Register EMS

name:Huawei-EMS

name:ZTE-EMS

Home ESR-SDNC x

Register SDNC

ZTE-DCI-Controller

IP-WAN-Controller

Home ESR-VIM x

Register VIM

Normal Cloud Owner:CORE-DC-... Cloud Region Id:RegionOne Cloud type: openstack Cloud region version: titanium_cloud

Normal Cloud Owner:vmware Cloud Region Id:vio Cloud type: vmware Cloud region version: 4.0

Home ESR-VNFM x

Register VNFM

zte_vnfm_core
type : ztevnfmdriver
URL : http://172.30.23.200:2324

NOKIA-VNFM
type : nokiavnfmdriver
URL : https://172.30.24.3

zte_vnfm_edge
type : ztevnfmdriver
URL : http://172.30.21.20:2324

HUAWEI-VNFM-CORE
type : huaweivnfmdriver
URL : https://172.30.20.530001

E2E Service Lifecycle Management

ONAP Portal Manage Support

Home UUI

Usecase UI

Services Alarm Performance

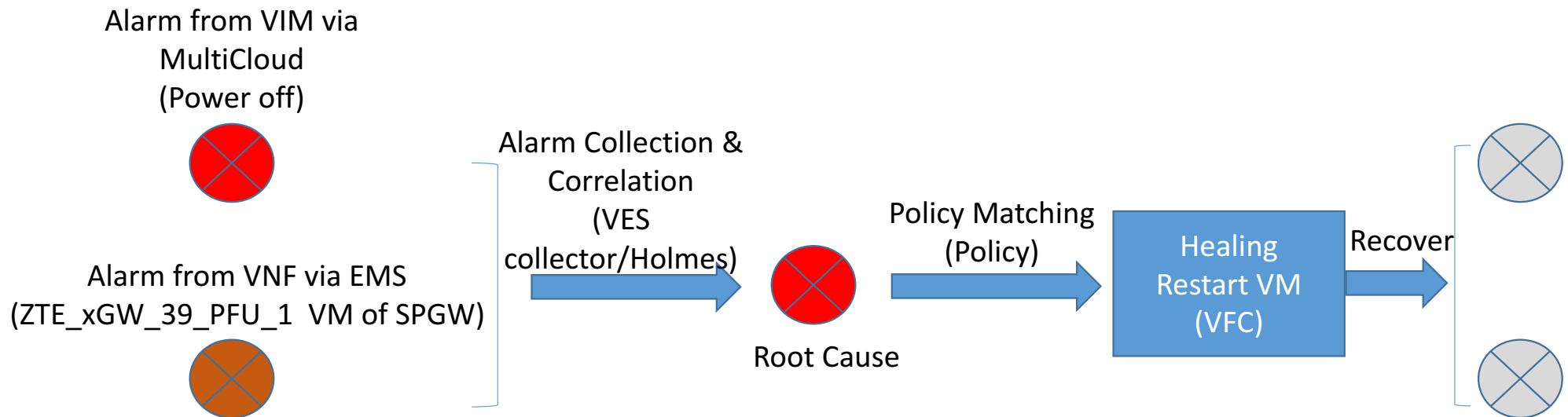
Life Cycle Manager

Services Vnf/NS Packages

Customer * Service Type *

Service Instance Id	Service Name	Service Type	Action
f9006540-c4a9-4fbf-bbae-461c57099b4e	demo_test5	voLTE type	<input type="button" value="Delete"/>
d550252f-c012-40e8-8e8d-7f3532b002ba	demo_irms_zte	E2E Service	<input type="button" value="Delete"/>
3ca7bdba-a12b-4c42-8889-e4e85276d5cb	test3	voLTE type	<input type="button" value="Delete"/>
70b596f9-50a0-4913-b81e-db2e5ce7e9fa	vims_demo_test5	NetworkService	<input type="button" value="Delete"/>
7c117751-1d6c-420e-b65b-587bafdb9cbe	vims_test3	NetworkService	<input type="button" value="Delete"/>
f811868c-4830-47a9-a97e-d6c69be85991	vims_onap_r1_demo_4	NetworkService	<input type="button" value="Delete"/>
339ff6a2-50e9-4c9b-ba0f-f395d96d1d5b	vims_demo_test10	NetworkService	<input type="button" value="Delete"/>

Control Loop Auto Healing



Display of Alarms/Performance

portal Manage Support Demo

UII

VNF Alarm

Source Id Source Name Priority

Query Result

eventName	Source Name	Reporting Entity Name	Start Time	Status	option
✓ Fault_MultiCloud_VM...	1cb7bbda-f839-4dfb-ac83-c0849928f41d	Multi-Cloud		Closed	Details
✓ Fault_IMSSBC_Back...	vmfaad51573-1716-4fc8-bf0d-73c	0000ZTHX1	2017-10-31 09:51:15	Active	Details
✓ Fault_MultiCloud_VM...	1cb7bbda-f839-4dfb-ac83-c0849928f41d	Multi-Cloud		Closed	Details
✓ Fault_MultiCloud_VM...	1cb7bbda-f839-4dfb-ac83-c0849928f41d	Multi-Cloud		Closed	Details
✓ Fault_IMSSBC_Back...	vmfaad51573-1716-4fc8-bf0d-73c	0000ZTHX1	2017-10-31 09:51:15	Active	Details
✓ Fault_MultiCloud_VM...	1cb7bbda-f839-4dfb-ac83-c0849928f41d	Multi-Cloud		Closed	Details
✓ Fault_MultiCloud_VM...	1cb7bbda-f839-4dfb-ac83-c0849928f41d	Multi-Cloud		Closed	Details

portal Manage Support Demo

UII

VNF Alarm Details

Header Information

Event Name	Fault_IMSSBC_Backup MPU is down	Event Id	1510564232034
Source Id	21949d42-ed16-4e94-8ac2-bc1a25d290ef	Source Name	vmfaad51573-1716-4fc8-bf0d-73c
Reporting Entity Id	0000ZTHX1	Reporting Entity Name	0000ZTHX1
Priority	Normal	Start Time	2017-10-31 09:51:15
NFC Naming Code		NF Naming Code	

Detail Information

Event Severity	NORMAL	Event Source Type	VirtualNetworkFunction
Alarm Category	vmf263ba4cd-4622-4a0a-ab7f-55a	Alarm InterfaceA	
Alarm Condition	Backup MPU is abnormal	Specific Problem	Backup MPU is abnormal

Additional Information

Item Name	Item Value
specificProblemID	0
locationInfo	rack=1,shelf=2,board=13,cpu=1
origSeverity	1
refID	0000ZTHX1SBGCK1PQ3
objectID	0000ZTHX1SBGCK1PQ3
addInfo	Aid:561306686;AlarmCode:23078;AlarmVMOst:aa;Cause:0;Remark:"PVFlag 0(PNF)JP IpType=IPv4-IpAddr=10.43.116.82.Port:331;Instance Id 1";

portal Manage Support Demo

UII

Performance

Source Id Source Name Priority

Query Result

Event Name	Source Name	Reporting Entity Name	Priority	Start Time	option
✓ Mvts_MMEEthnetPort	1101ZTHX1EPO1NK7E022	ZTE-CMBJ-BJ.SubNetwork=100001,ManagedElement=1000040_EthernetPort=40_65535_1_2	Normal	2017-12-01 10:15:00	Details
✓ Mvts_MMEManaged...	1101ZTHX1MNE1NK7E0	ZTE-CMBJ-BJ.SubNetwork=100001,ManagedElement=1000040_EthernetPort=40_65535_1_2	Normal	2017-12-01 10:15:00	Details
✓ Mvts_MMEEthnetPort	1101ZTHX1EPO1NK7E022	ZTE-CMBJ-BJ.SubNetwork=100001,ManagedElement=1000040_EthernetPort=40_65535_1_2	Normal	2017-12-01 10:15:00	Details
✓ Mvts_MMEEthnetPort	1101ZTHX1EPO1NK7E022	ZTE-CMBJ-BJ.SubNetwork=100001,ManagedElement=1000040_EthernetPort=40_65535_1_2	Normal	2017-12-01 10:15:00	Details
✓ Mvts_MMEEthnetPort	1101ZTHX1EPO1NK7E022	ZTE-CMBJ-BJ.SubNetwork=100001,ManagedElement=1000040_EthernetPort=40_65535_1_2	Normal	2017-12-01 10:15:00	Details
✓ Mvts_MMEEthnetPort	1101ZTHX1EPO1NK7E022	ZTE-CMBJ-BJ.SubNetwork=100001,ManagedElement=1000040_EthernetPort=40_65535_1_2	Normal	2017-12-01 10:15:00	Details
✓ Mvts_MMEEthnetPort	1101ZTHX1EPO1NK7E022	ZTE-CMBJ-BJ.SubNetwork=100001,ManagedElement=1000040_EthernetPort=40_65535_1_2	Normal	2017-12-01 10:15:00	Details
✓ Mvts_MMEEthnetPort	1101ZTHX1EPO1NK7E022	ZTE-CMBJ-BJ.SubNetwork=100001,ManagedElement=1000040_EthernetPort=40_65535_1_2	Normal	2017-12-01 10:15:00	Details
✓ Mvts_MMEEthnetPort	1101ZTHX1EPO1NK7E022	ZTE-CMBJ-BJ.SubNetwork=100001,ManagedElement=1000040_EthernetPort=40_65535_1_2	Normal	2017-12-01 10:15:00	Details

Total Items: 10

portal Manage Support Demo

UII

VNF Performance Data Details

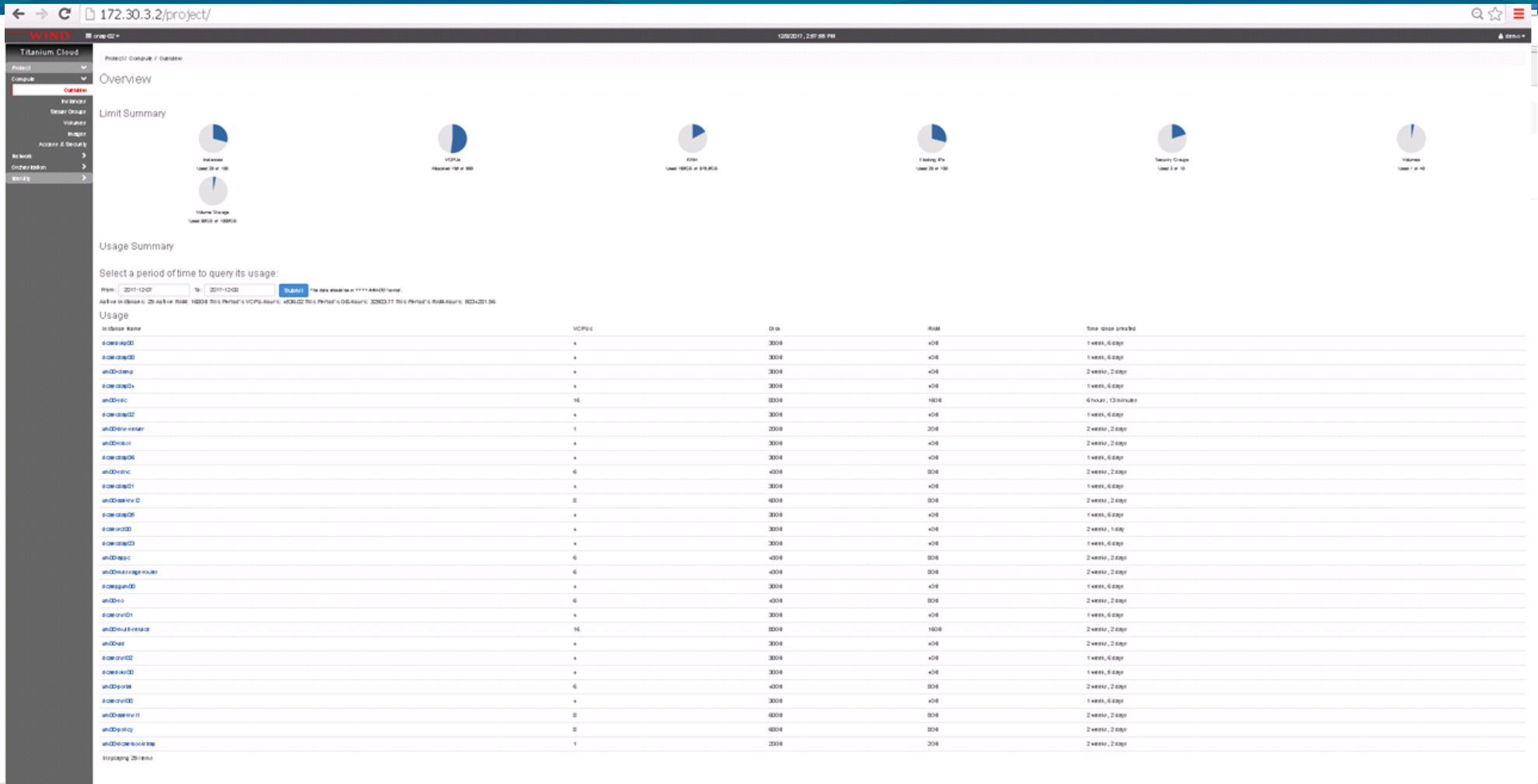
Header Information

Event Name	Mvts_MMEEthnetPort	Event Id	2017-12-01 10:15:00EthernetPort1101ZTHX1EPO1NK7E022
Source Id	1101ZTHX1EPO1NK7E022	Source Name	1101ZTHX1EPO1NK7E022
Reporting Entity Id	1101ZTHX1	Reporting Entity Name	ZTE-CMBJ-BJ.SubNetwork=100001,ManagedElement=1000040_EthernetPort=40_65535_1_2
Priority	Normal	Start Time	2017-12-01 10:15:00
NFC Naming Code		NF Naming Code	

Additional Information

Item Name	Item Value
EOPt_MacOctReceived	0.005
EOPt_MacOctSent	0.000
TimeStamp	2017-12-01T14:30:07
TimeZone	UTC+8
Period	15
VendorName	ZTE
ElementType	MME
PmVersion	V2.1.0
StartTime	2017-12-01T10:15:00
ObjectType	EthernetPort
refID	1101ZTHX1EPO1NK7E022
dn	ZTE-CMBJ-BJ.SubNetwork=100001,ManagedElement=1000040_EthernetPort=40_65535_1_2
UserLabel	40_65535_1_2
EOPt_MacOctReceived	0.005

ONAP Deployments



Core Cloud

← → ↻ 172.30.1.2/admin/?start=2017-10-07&end=2017-12-08

admin 12/8/2017, 3:50:39 PM C: 1 M: 2 m: 3 W: 0

WIND™
Titanium Server
aebd9fad-81cf-43f6-b144-42341a678d82

Project ▾
Admin ▲
Platform ▾
System ▲

Overview
Resource Usage
Hypervisors
Host Aggregates
Instances
Server Groups
Volumes

Overview

Usage Summary

Select a period of time to query its usage:

From: To: The date should be in YYYY-mm-dd format.

Active Instances: 55 Active RAM: 775GB This Period's VCPU-Hours: 337406.60 This Period's GB-Hours: 3171966.35 This Period's RAM-Hours: 1007910450.37

Usage

Project Name	VCPU	Disk	RAM	VCPU Hours ⓘ	Disk GB Hours ⓘ
huaweionap	156	870GB	513GB	220875.14	1263306.57
admin	6	400GB	12GB	7528.84	562447.30
Nokia_IMS	80	522GB	150GB	64127.52	449966.19
ZTE_EPC_PRO	42	818GB	100GB	44904.76	896518.92

Edge Cloud

vmware Default • ZTE_ONAP_PRO

Project > Admin / System / Overview

Admin >

System > Overview

Overview

Hypervisors

Host Aggregates

Instances

Volumes

Flavors

Images

Networks

Defaults

Metadata Definitions

System Information

Identity >

Usage Summary

Select a period of time to query its usage:

From: To: The date should be in YYYY-MM-DD format.

Active Instances: 52 Active RAM: 640GB This Period's VCPU-Hours: 7446.67 This Period's GB-Hours: 54433.16 This Period's RAM-Hours: 21594016.57

Usage

Displaying 3 items

Project Name	VCPUs	Disk	RAM	VCPU Hours	Disk GB Hours
huaweionap	64	200GB	204GB	2108.79	6589.97
ZTE_ONAP_PRO	152	1.2TB	416GB	5008.38	41253.22
admin	10	200GB	20GB	329.50	6589.97

Displaying 3 items