Open hybrid cloud network architecture based on SDWAN
Trend and Challenges

Network Challenges:

- **Long Open Cycle**
  (Dedicated line: months)

- **Operations**
  (thousands of network configurations)

- **Not Stable**
  (Delay, Jitter, Loss)

 Enterprise IDC

- Internet
- Intranet
  - Dedicated line
  - Dedication architecture

 Cloud

- Internet
- Intranet
  - Dedication architecture

 Star network architecture

 Flexible network architecture
Apsara Cloud Network Solution

- Cloud Network (LuoShen)
- Interconnected Cloud Network (Weaver Girl)
- Connect to Cloud Network (Chang E)

Key Components:
- HA, Large-Scale, Intelligent Network Solution
- Easy, Fast, Across the globe
- High-Speed, Stable, Secure

- Shared Data Plan, Shared Bandwidths
- EIP, NAT, SLB
- Express Connect (Dedicated lines)
- CCN, VPN

- Intelligent Network
- Real-time/Distributed Data Analysis
- Intelligent Maintenance
- Intelligent Operation
- Data Analysis

SDWAN Based Hybrid Cloud Network

- Mobile App
- Store 1
- Store 2
- IDC
- Headquarter
CCN - SDWAN Based Hybrid Network Architecture

- **Kinds of terminals**
  - Hardware: On Shelf box/Desktop
  - Software: Mobile App Client

- **Inter-connections Over Regions**
  - Connect to local POP
  - Virtual dedicated line over regions

- **Interconnect with Cloud**
  - Access to VPC worldwide
  - Cloud Service Acceleration

- **Cloud Network Integration**
  - Backup for dedicated line
  - Full network monitor

- **Gateway**: SAG-Hardware
- **Branches**: IPSEC
- **Mobile**: Broadband+ 4G
- **SAG-App**: Broadband+ 4G
- **Data Analysis**: Network Monitor / Alarm
- **CCN Controller**: CCN
- **EIP**: VPC China
- **SLB**: VPC Oversea
- **NAT**: VPC Oversea
- **Router**: VPC China
- **Switch**: VPC China
- **AZ1**: VPC China
- **AZ2**: VPC China
- **HeadQuater/IDC**: SAG-1K
- **Dedicated Line**: SAG-1K
**Characteristics**

**Simple**
- Zero Touch Provision
- Cloud Network Integration
- Easy configure on the cloud
- SAG plugin and play

**Open Ecosystem**
- Certified 3rd Party Box
- Carrier Partners
- ISV/MSP Partners
- Empower the network operation abilities

**Security**
- Tenant Isolation
- Encrypted Data Transfer
- Security Pop Site
- Anti-Attack/Tamper resistance

**Quality**
- Dedicated Line from POP to Region
- Global Wide POP Site
- Intelligent POP Selection
- Best Route Selection
- High Availability
Plugin and connect to the Cloud

• Automatic configuration
• Best pop site select automatically
• Link failure detection & alarm
• Traffic monitor
• Zero touch provision
• Free operation
End-To-End Security

- SAG Authentication/Lost Detection
- Tenant Isolation with private network
- Integrated Security Control
- Anti-Attack/Tamper resistance
- Traffic Encryption
Various terminals and way of connect to the cloud

Kinds of connection to cloud
- Internet
- Dedicated line

Kinds of terminals
- App client with ssl vpn
- Hardware box/3rd
- VM Images

Terminals:
- VPC1
- VPC2
- ABTN
- CCN Controller
- CCN
- Internet
- Dedicated line

Connections:
- VPC1 to VPC2
- ABTN to CCN
- CCN to Internet and Dedicated line
- App Client
- Hardware Box
- VM Images
Open Ecosystem

Cooperate and empowering
Cooperate on pop site
OpenApi – empower abilities to partners
3rd Party Box Certificate
High Quality Network and Services

**High Quality Networks**
- 19 Regions, 110+ POP
- Back-To-Source
- Dedicated line to Region
- Stable & Low Latency

**High Availability Services**
- AGW HA Clusters on POP
- SAG Device & Link HA
- POP site switchover

**Acceleration**
- SAG-AGW link Acceleration
- Optimized route in ABTN
HA Scenario – International Hotel
Normal traffic

1. Traffic from Hotel to IDC
2. Traffic from Hotel to Headquarter

Symmetric flow path
HA Scenario – International Hotel
SAG switchover

1. Traffic from Hotel to IDC
2. Traffic from Hotel to Headquarter

Symmetric flow path

Alibaba Cloud

CEN

CCN

AGW (Access Gateway) Group

Intranet
IPsec over Internet

Dedicated line

SAG (Internet + 4G)

master
standby

Hotel

PMS

CEN overseas link

VBR

Member System

Oversea Headquarters

SAG (Internet + 4G)

Backup (Internet + 4G)

IDC
HA Scenario – International Hotel
AGW switchover

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Symmetric flow path
HA Scenario – International Hotel
POP site switchover

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Symmetric flow path
HA Scenario – International Hotel
Dedicated line switchover

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Symmetric flow path
Our Mission
Simplify the Network!