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Worldwide Cloud Services Partner

Overview of Alibaba Cloud DNS

Linjian (Davey) Song
DNS Architect
linjian.slj@alibaba-inc.com

31st OARC @Austin, TX U.S

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A Internet surviving test 20 years ago

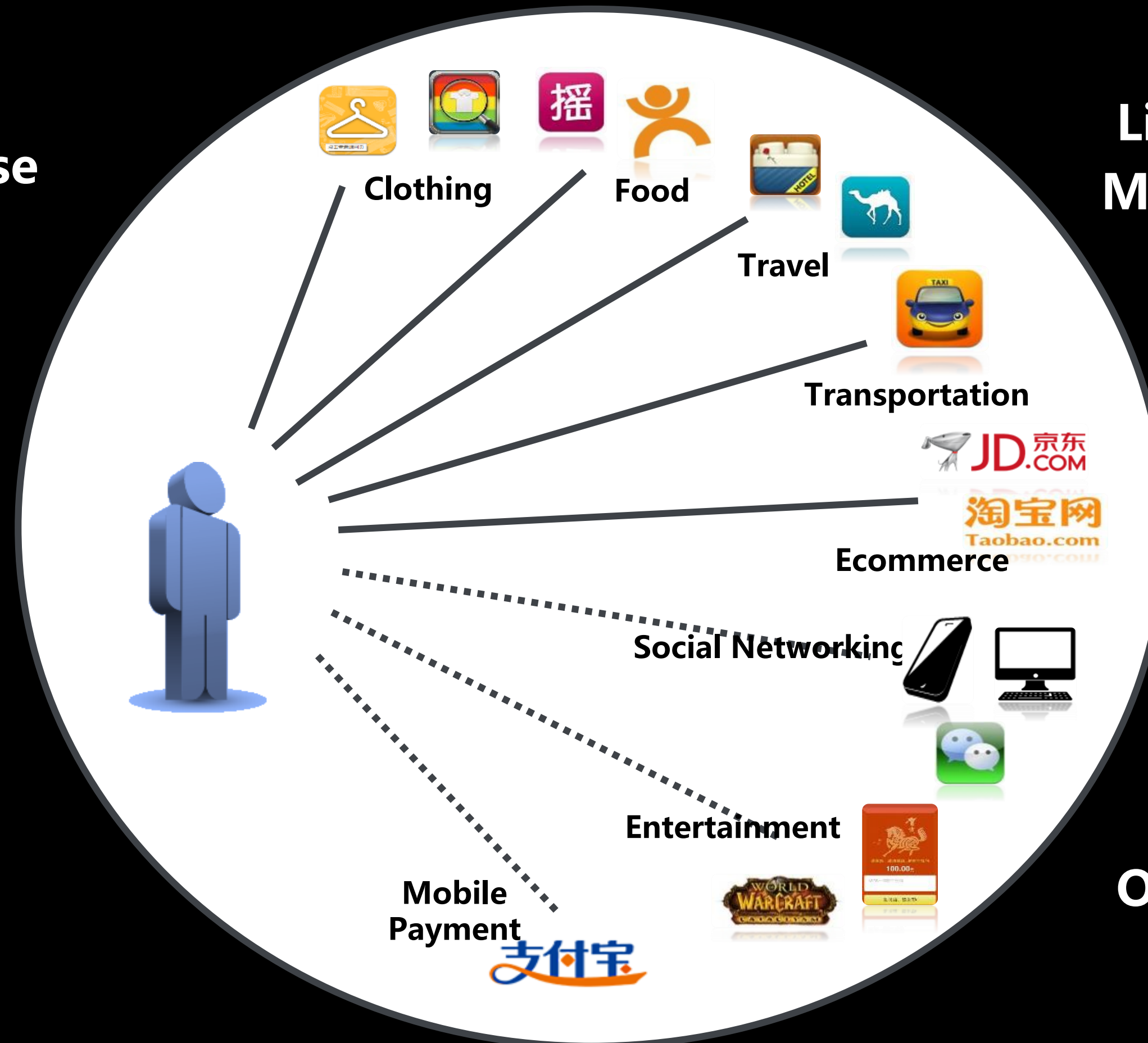1999 is the year in the eve of China's Internet booming. Most of people have no idea on Internet

Can you survive with only Computer and Internet in 72 hours?

China's Digital Economy- opportunity and Challenges

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91 Internet PLC (Public Limited Companies) in China, Market Value **5.4** trillion RMB

Top 10 Internet Companies, **3** Chinese Companies

Clothing   Food

Travel

Transportation

Ecommerce

Ecommerce Market size **428** billion USD Alibaba, JD

Social Networking

Mobile Internet Users **817** million

Entertainment

Mobile Payment

Online Entertainment Market size **30** billion USD Tencent, Netease

Alibaba is one of active Large Internet Companies which supports and contributes more than an half of China's Digital Economy and activates.

Alibaba Ecosystem

Alibaba's mission : To Make it Easy To Do Business Anywhere

Data Create and Refuel

Trust Building

Sellers

Buyers

CORE COMMERCE

淘宝网 Taobao.com · 天猫 TMALL.com · 聚划算 jushuasuan.com
Alibaba.com · 阿里巴巴 · 农村淘宝 cun.taobao.com
AliExpress · TMALL GLOBAL · LAZADA

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支付宝 ALIPAY · 蚂蚁金服 — **PAYMENT & FINANCIAL SERVICE**

CAINIAO 菜鸟网络 — **LOGISTICS**

阿里妈妈 Alimama.com — **MARKETING SERVICES DATA MANAGEMENT PLATFORM**

Alibaba Cloud — **CLOUD COMPUTING**

Some number of 2018 "Double 11" Festival: 10 billion GMV(RMB) in first 2 minutes, up to 490 k/s transaction
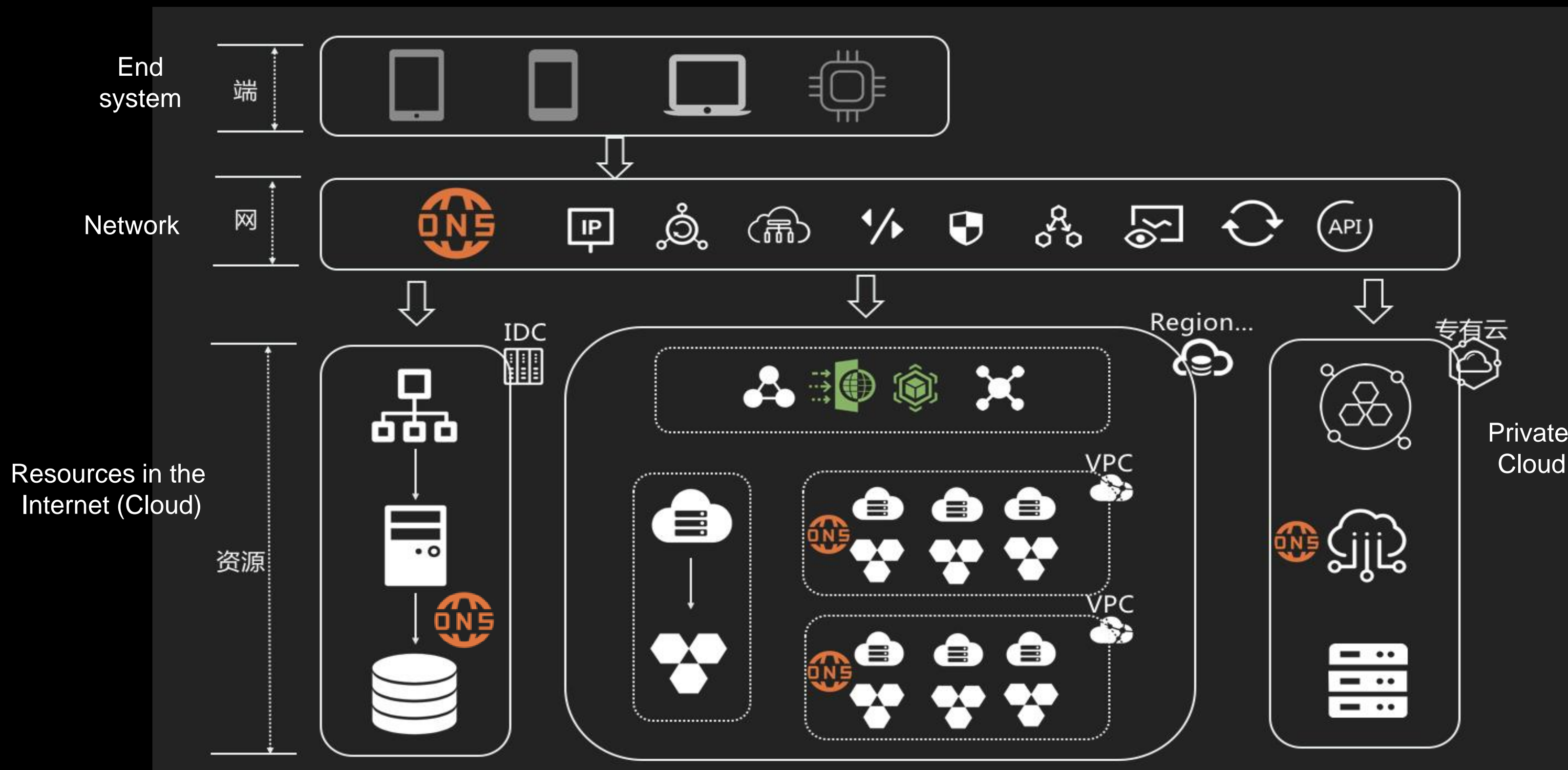
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China and Alibaba

Alibaba Cloud DNS
Introduction

Thoughts and Hopes

Alibaba Cloud DNS – the Role and Challenges

Alibaba Cloud DNS is a highly available and scalable Domain Name System (DNS) that provides authoritative DNS servers and DNS management services.

Challenges

Huge size and scale

(Serve ~1 billion users, 160 million queries per day, manage 20 regions and Millions VMs)

+

- High Performance (QPS)
- High availability (SLA)
- Accurate traffic scheduling and load balance (multi-policies)

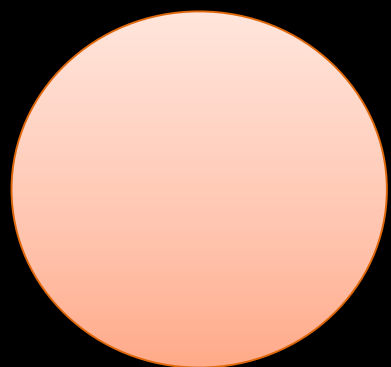Try to have control on every single loop in DNS resolution

What we do DNS in Cloud?
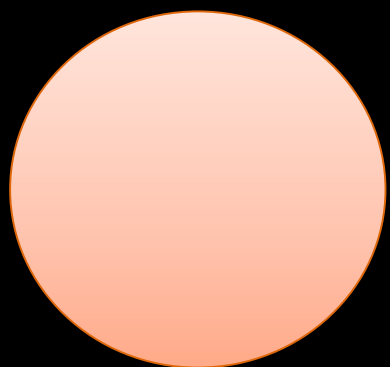
Mapping

Domain name,
Identifier

⟷

IP, Services,
Resource

Domain name Resolution

Use domain name to identify the servers in DC, and the Cloud service instances
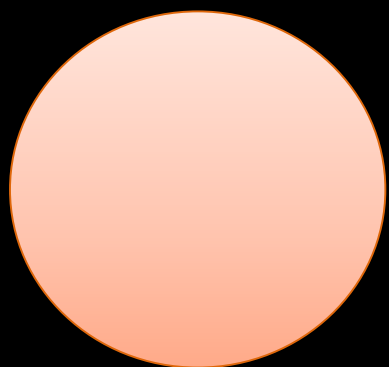
Self-developed Software with high performance

Network connection
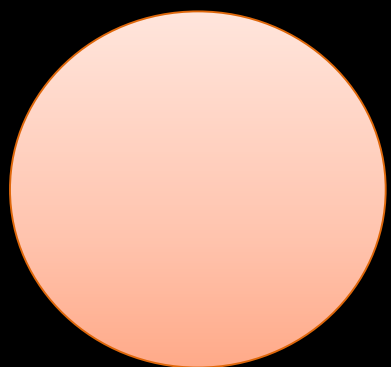
Provide connections inside and outside the cloud.

Private Zone and customized DNS technology to connect VPCs

Traffic scheduling

Traffic scheduling based on different weights, different regions and AZ

Abundant China ISP lines and World lines

Failover & Recovery

To provide high availability

with high redundancy

Alibaba Cloud monitoring platform

Alibaba Cloud DNS - the Products and Services

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Provide Managed DNS and GEO DNS in various networks and scenarios

Domain name Resolution

Private Zone

GTM

ASD

Managed DNS / Authoritative DNS

Hosting **20 million** zones

Inner DNS for VPC

10,000 PVT-Zones

Global traffic Management

for failover and recovery

ASD (Apsara Stack DNS)

DNS in Private Cloud

Alibaba Cloud DNS is the largest DNS provider in Asia
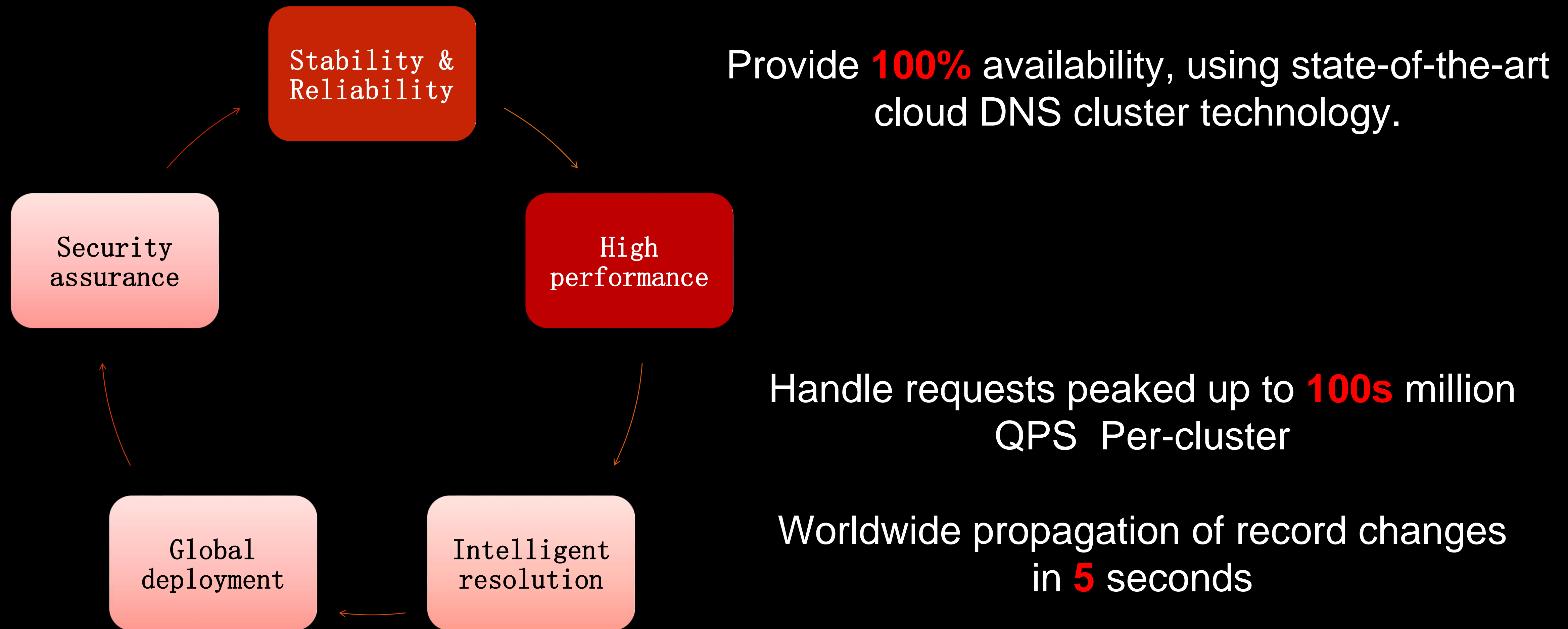
Alibaba Cloud DNS Global Deployment

Alibaba Cloud DNS fully uses the facilities and infrastructure of Alibaba Cloud

Global 20 Regions, 57 AZ

Benefits

Alibaba Cloud DNS offers the following benefits

Stability & Reliability

High performance

Intelligent resolution

Global deployment

Security assurance

Provide **100%** availability, using state-of-the-art cloud DNS cluster technology.

Handle requests peaked up to **100s** million QPS Per-cluster

Worldwide propagation of record changes in **5** seconds

https://www.alibabacloud.com/help/doc-detail/58166.htm?spm=a2c63.p38356.b99.4.703e3de9sz32av
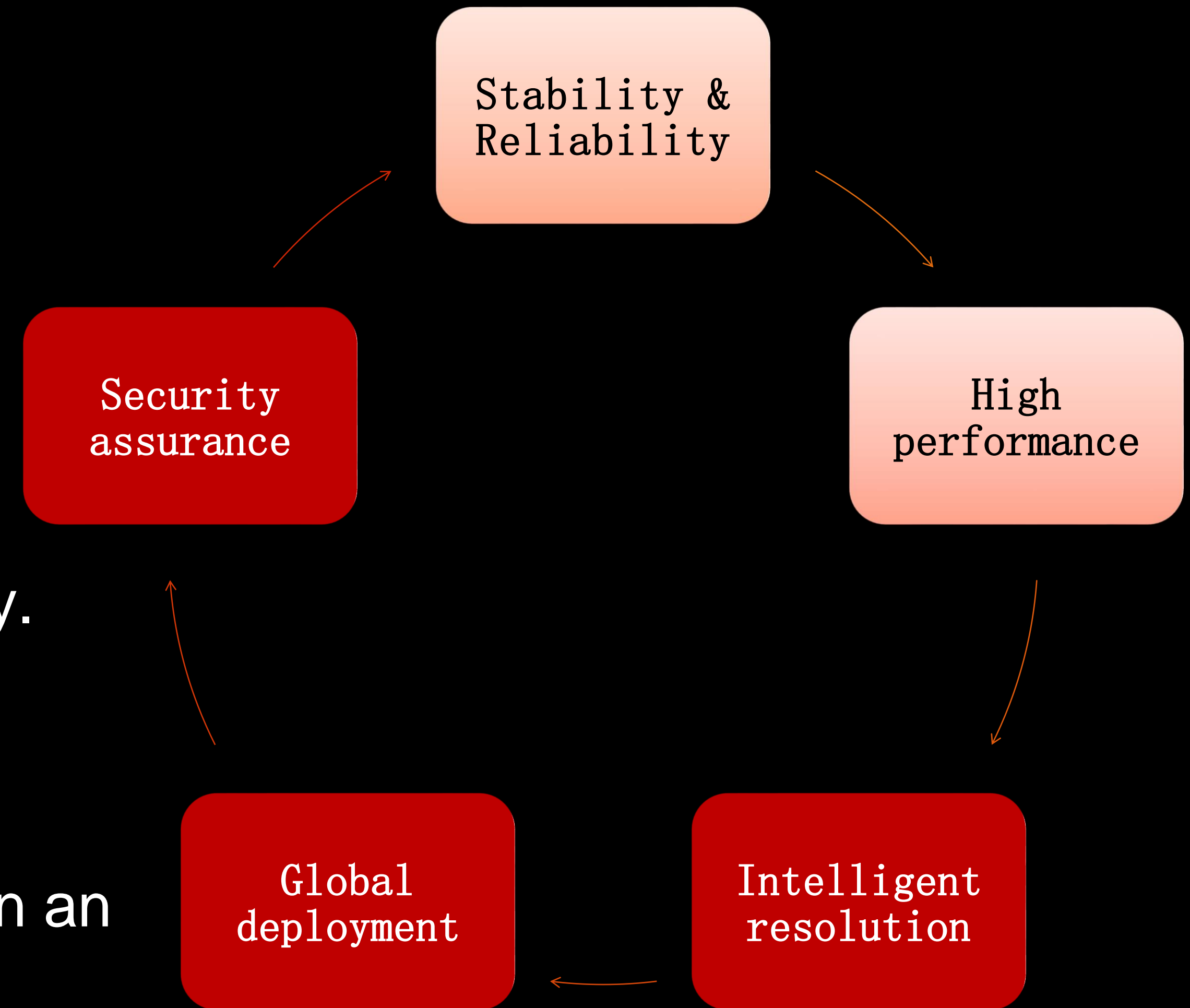
Benefits

Alibaba Cloud DNS offers the following benefits

Protecting your domain names from DDoS attacks up to **100s million** QPS

Globally distributed BGP data centers, DNS queries are responded to both smartly and rapidly.

With various resolution lines and advanced scheduling algorithm, Domain name resolution in an intelligent, fast, and accurate manner

Stability & Reliability

High performance

Security assurance

Global deployment

Intelligent resolution

https://www.alibabacloud.com/help/doc-detail/58166.htm?spm=a2c63.p38356.b99.4.703e3de9sz32av

More Capacities

Alibaba Cloud DNS developed the advance services based on customers' requirements

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IPv6

DNSSEC

DNS TCP

Localized Root Service

Authoritative DNS in June 2018

Public DNS in Oct 2019

Alibaba Public DNS: www.alidns.com

To be online
in the end of 2019

Supporter of DNS Flag Day

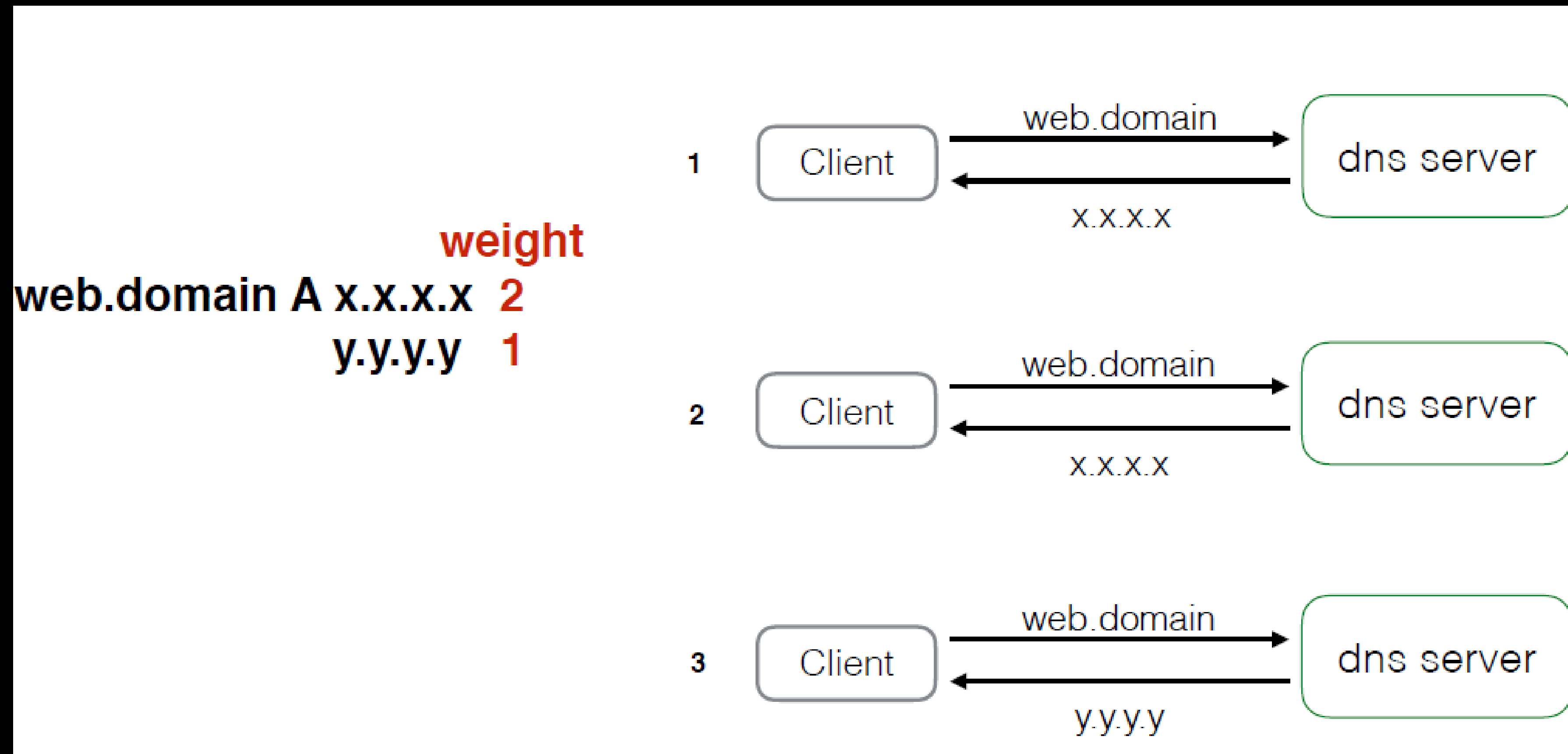Consideration on Data privacy,
fast failover and network autonomy

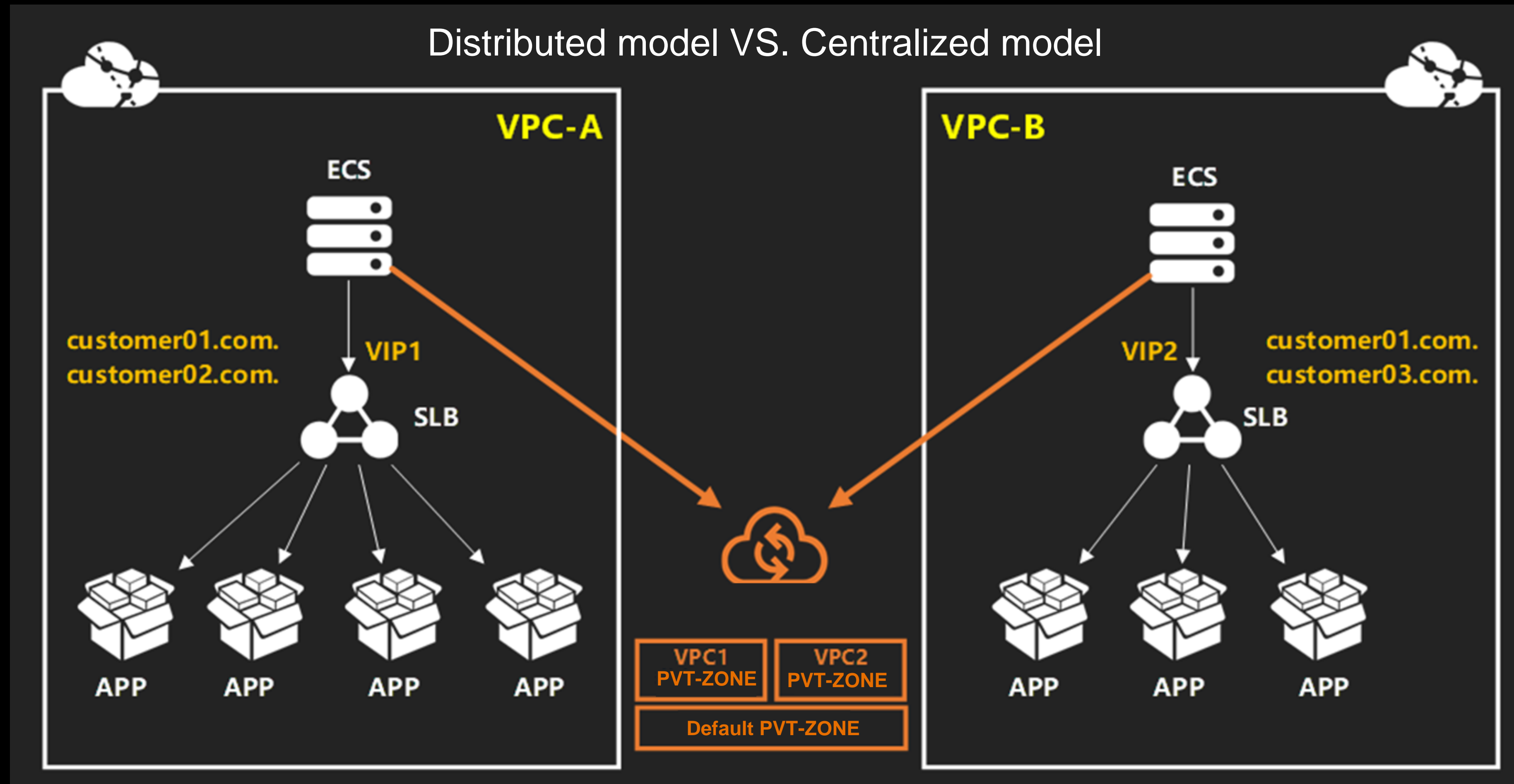RFC7706 VS. Root instance

Case 1: Traffic Scheduling

A simple case to use DNS weighted record for load balance

Three times query, there will be 2/3 return x.x.x.x, 1/3 return y.y.y.y

Case 2: DNS for VPC and Isolated Network

To provide private DNS resolution for each VPC in a scalable, stable and efficient approach

Distributed model VS. Centralized model

Provide private zones in a single common DNS which enable different VPCs and private namespace

Case 3: Application Do DNS

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To void interference from third party network and DNS. Have more control of the whole resolution loops
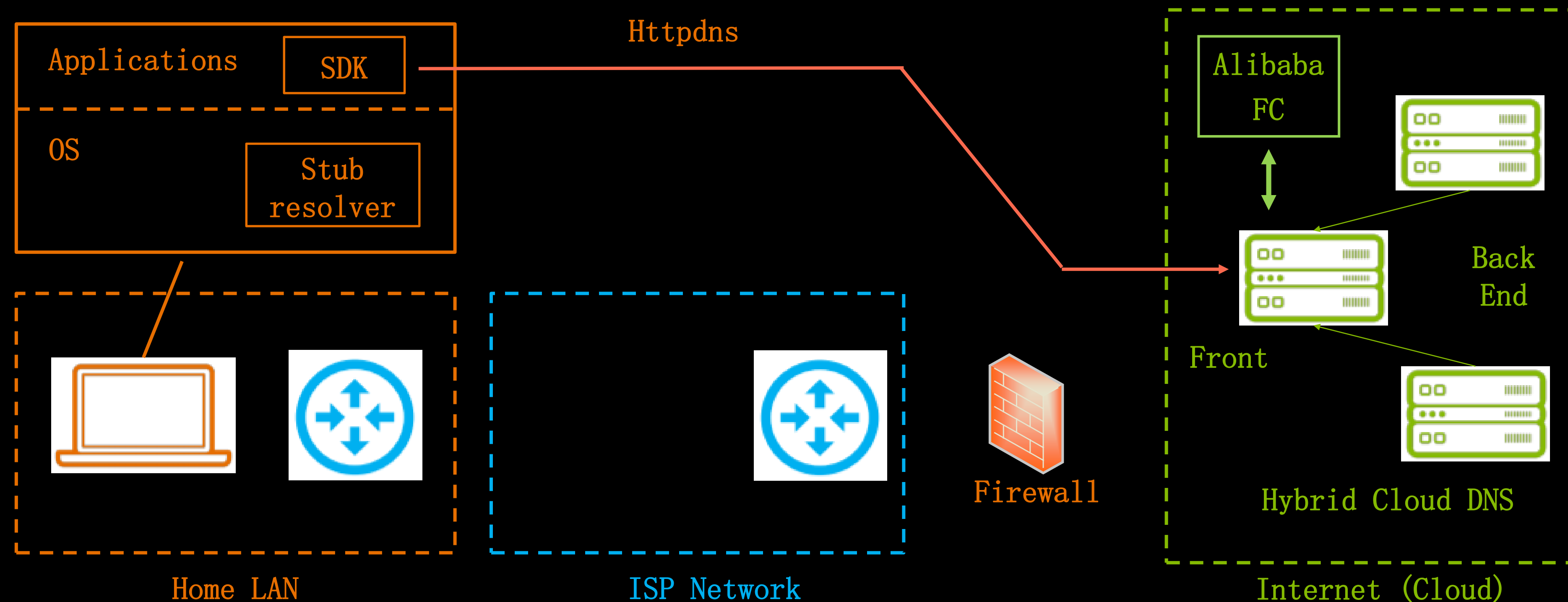
- Provide HttpDNS SDK for APP developers to enable the app do the DNS in application level

  Accurate Geolocation, avid domain name hijacking, no impact of TTL, act very quickly, gated launch

- Provide Software-defined DNS using FC which enables domain owners to response with more end user information

  Fast failover, Load balance scenarios

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Some Thoughts

Two driving force to DNS technology

- The evolution of Infrastructure Technology

  ADD, Edge Computing, IoT, Mixed network scenarios

- Internet governance policy enhancement

  Privacy, encrypted DNS. etc

Application-level DNS will change largely the diagram of DNS ecosystem

How to interoperate with different platform?

Hope for Future - Challenges and Collaboration

We see challenges and need collaboration in the community

Challenges

1. Security threat

2. Interconnection with mixed Cloud

3. Technology and Governance

Collaboration

1. To build trust & Consensus

2. Share best practice and information

3. Open source and standardization

Let's build a stable and secure infrastructure together!

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