



腾讯云游戏开发者技术沙龙

**GAME-TECH**

# 海外网络拓展和质量把控

演讲人：文景

2017.07.12

# 目录

- 网络拓展-布局先行
- 运营商互联-多维度推动
- 质量管控-工具化实现

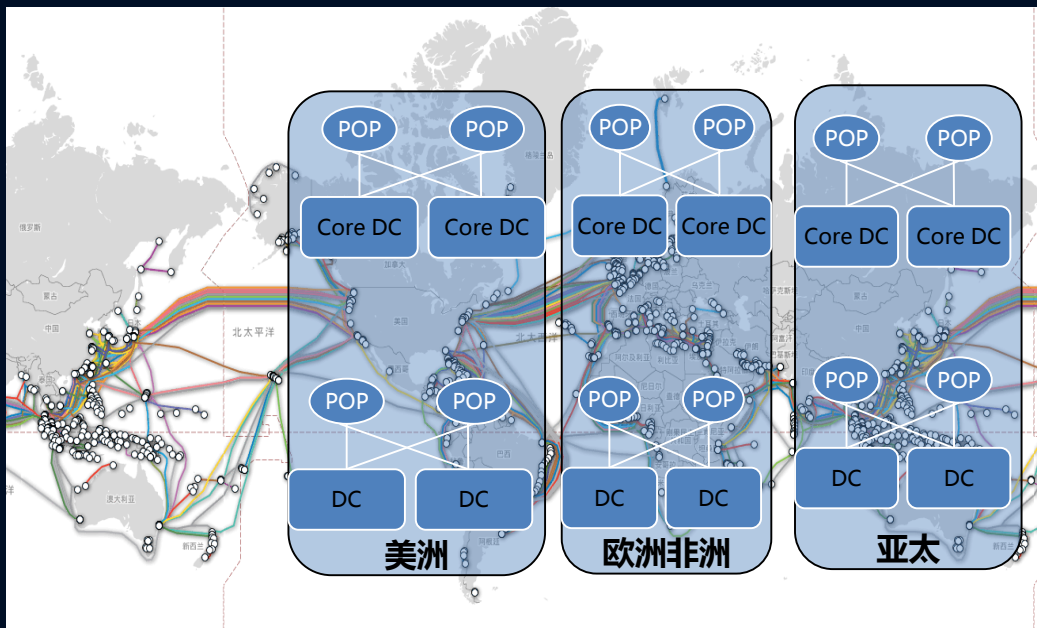
# 网络拓展-挑战

- 大环境
- 国情
- 运营商割据
- 建设周期
- 运维



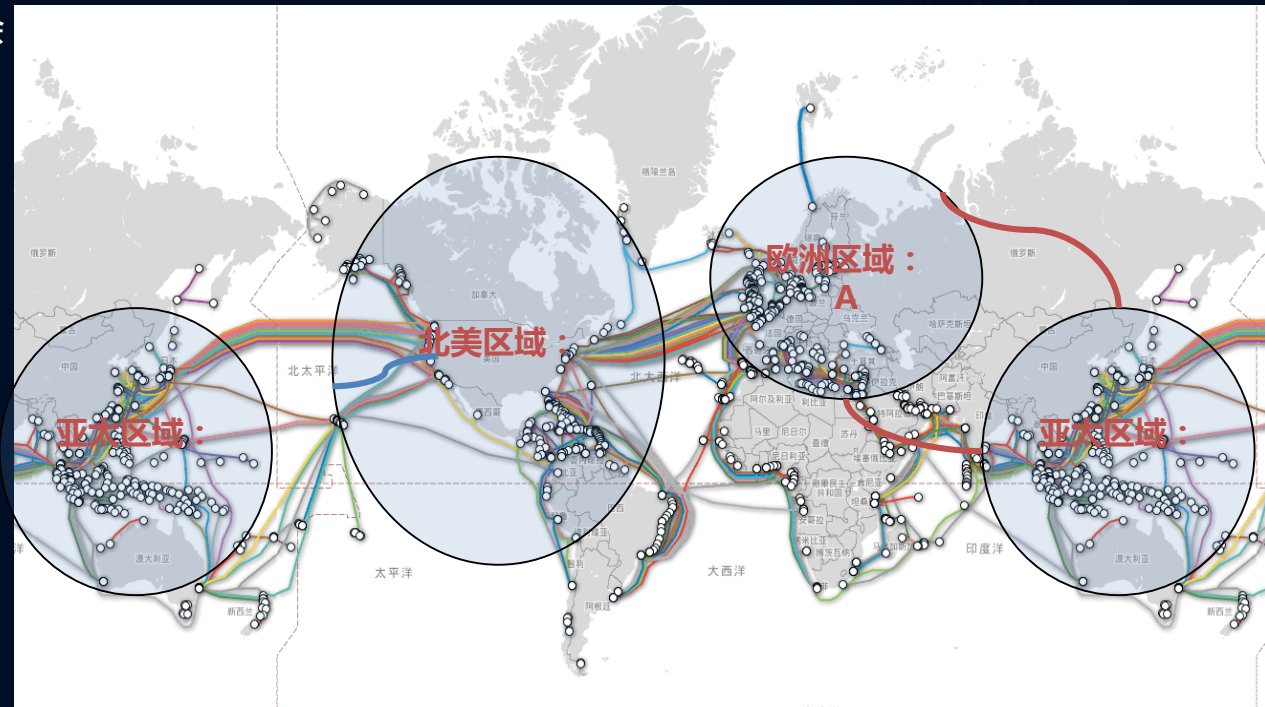
# 网络拓展-规模化部署

- 大区内Core DC布局
- 规模化部署



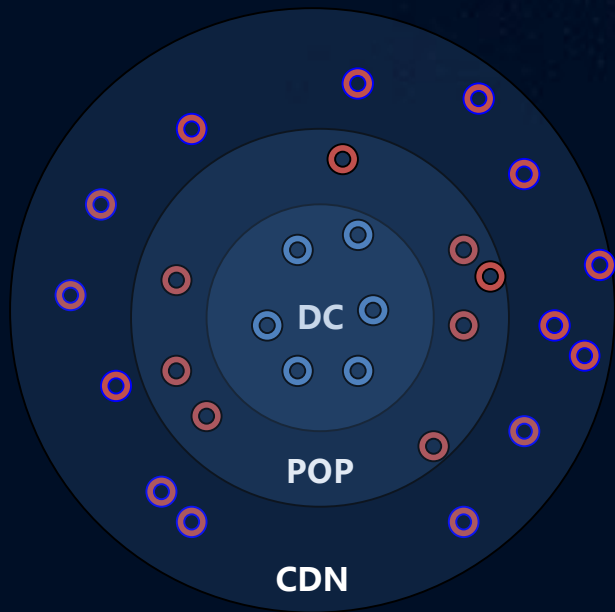
# 网络拓展-骨干架构

- 多级冗余的互联链路
- 端到端全程冗余
- 海缆冗余
- 海缆+陆缆冗余
- 跨洲跨洋冗余



# 网络拓展-多维布局

- 网点分层部署
  - POP先行
  - Core IDC 骨干架构
  - DC
  - CDN
  - 其他



# 网络拓展-效果

- POP先行
- 完成运营商出口资源-Ready
- 互连专线资源-Ready
- IXP互连资源-Ready
- 重点DC资源-Ready
- 业务快速部署
- 示意图（部份网络架构）



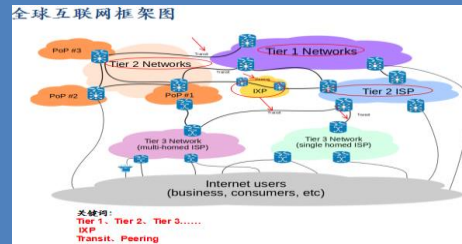
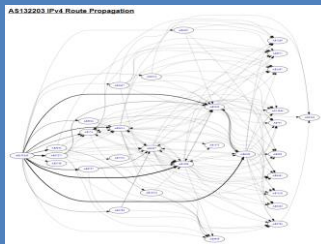


# 运营商互联-重点运营商

- Tier 1 运营商引入
- 区域重点运营商
- Peer 运营商
- IXP 互连

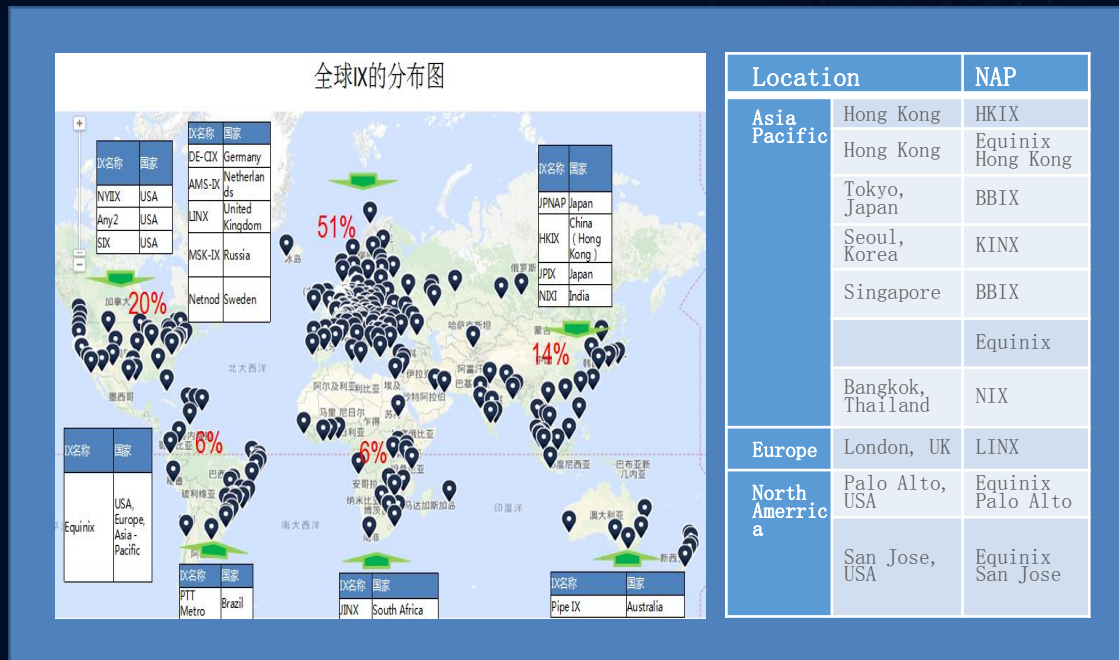
Country	Mobile Operator	GW Operator		
		Name	ASN	Peering Policy
Japan	NTT Docomo	NTT Communications	2914	Restrictive/Asymmetric
	SoftBank	SoftBank	17676	Selective
	KDDI	KDDI	2516	Restrictive/Asymmetric
Korea, South	SK Telecom	SK Broadband	9318	Selective
	KT	KT	4766	Selective
	LGU+	LGU+	3786	Selective
Taiwan	Chunghwa Telecom	Chunghwa Telecom	3462	Selective
	Taiwan Mobile	Taiwan Fixed Network	9924	Selective
	FarEastone	FarEastone	4780	Selective
Hong Kong	HKT	PCCW	3491	Selective
	Hutchison	Hutchison	9304	Selective
	SmarTone	SmarTone	17924	Selective

Rank	Global IPv4 Internet Index Ratings
1	Level 3
2	Telia
3	Cogent
4	NTT
5	Tata
6	GTT
7	HE
8	Verizon
9	Telecom Italia Sparkle



# 运营商互联-IXP

- IXP 互连
- 全球重点IXP
- 多点互连
- 冗余IXP架构



# 运营商互联-高效互连

- 工具化Peering部署管理
  - 线上自动申请
  - 半自动审核
  - 自动实施
  - Peering 自动管理
  - privatePeering 数量100+
  - IXP OPEN直连1000+
- 各国运营商 + 云服务提供商

Rank	Description
1	Telia Company ABSweden
2	Workonline Communications LtdSouth Africa
3	NSFOCUS, Inc.United States
4	Hutchison Global CommunicationsHong Kong
5	TATA COMMUNICATIONS (AMERICA) INCUnited States
6	Level 3 Communications, Inc.United States
7	TM Net, Internet Service ProviderMalaysia
8	NTT America, Inc.United States
9	Binariang BerhadMalaysia
10	Cogent CommunicationsUnited States
11	Telstra GlobalHong Kong
12	KDDI CORPORATIONJapan
13	PCCW GlobalUnited States
14	SingNetSingapore
15	HurricaneElectric, Inc.United States
16	Core-Backbone GmbHGermany
17	Hong Kong Internet Exchange--Route Server 1Hong Kong
18	ConsoleNetwork Solutions LtdUnited Kingdom
19	ALGAR TELECOM S/ABrazil
20	vanoppen.biz LLCUnited States
21	Vocus Connect International BackboneAustralia

peering(对等互联) [Peering failure notice]AS59318 at MyIX Peering ...

peering(对等互联) AS45629 at Equinix Singapore peering request is...

peering(对等互联) AS46489 at HKIX peering request is approved b...

peering(对等互联) AS4862 at HKIX peering request is approved by ...

request: #B.M.762V/BD (request: AS70040 + Equinix Sin...

腾讯云 Peering 管理工具 .com/21952

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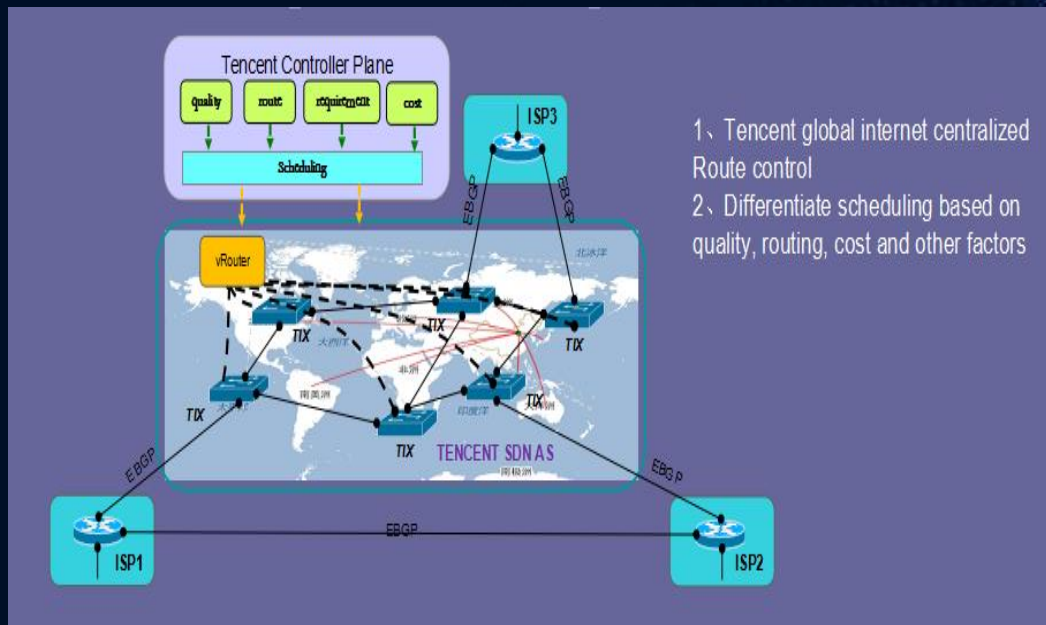
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Swisscom	3303	1G	Selective	入: 3.68M 出: 14.13M	
SoftLayer Technologies, Inc. (an IBM Company)	9651	10G	Selective	入: 172.59M 出: 201.73M	
Microsoft	8075	10G	Selective	入: 6.23M 出: 6.98M	
HKT Limited	4760	10G	Selective	入: 170.19M 出: 452.69M	
Facebook	32934	50G	Selective	入: 3.71M 出: 688.62M	

# 质量管控-全程工具化管理

- 立体数据采集
- 自动化运营及数据分析
- 智能调度

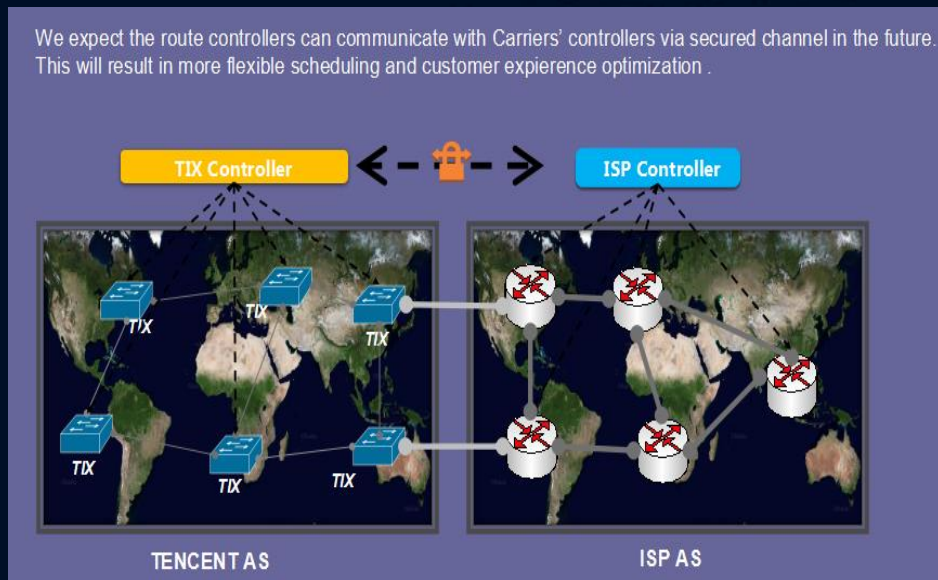
# 质量管控-智能调度

- 智能路由调度SDN
- 多元组自动调度



# 质量管控-智能调度

- 智能路由调度SDN
- 运营商级调度
- 始终保证最优路由



## 效果：全力以赴, 保证最优质量+最佳用户体验

- 网络拓展-布局先行
- 运营商互联-多维度推动
- 质量管控-工具化实现

未来：我们一起携手！

# Thanks !

