OneAsia Overview

Super Connector of Data x Cloud



OneAsia – The Flagship of Legan Group



Offering data center solutions, end-to-end cloud computing, and connectivity to business of all sizes.



Providing A to Z services for digital infrastructure from consultancy, design & build, project management to after-sales facilities management.



Specializing in hi-tech realty by way of providing build-to-specifications, cost-effective and hassle-free mission-critical infrastructure.



Offering a wide range of mission critical electrical, mechanical IT products and management systems for data center applications, with end-users spanning from multinational corporations to dynamic startups.





About Us

OneAsia is a leading Data Center and IT solution services provider in Asia.

OneAsia's top-tier rated data centers are located across Asia to keep our customers connected from anywhere in the world with consistent levels of quality, security, and service.

Key Product and Service Offerings

- ◆ Data center hosting services: high quality, secure and reliable infrastructure for customers' network and computing needs
- ◆ Business continuity planning & disaster recovery solutions
- Managed cloud services: offers a full range of cloud computing solutions, from infrastructure, management to application software to business of all sizes without additional capital investment or strong IT support
- Provide platform and solutions needed for high volume data collection and analysis
- ◆ Telecommunication connectivity across Asia





Our Achievements



































Completed Threat and Vulnerability Risk Assessment (TVRA)

Microsoft Partner













Digitalization

Our Milestones

OneAsia established and Cloud solution team setup

2009

DR Center on HK Island, HK – 1,500 sqm providing BCP & DC hosting services

2014

DC in Kowloon Bay, HK - 14,000sqm standalone building with the total capacity of 2,000+ cabinets

2018

2020

On-going

Nantong DC phase 2

commences.

Opens offices

and DCs in Japan,

Korea, and

Thailand

2011

Acquired PRC telecom service provider

DC in Shanghai – 26,000 sqm standalone building with the total capacity of 4,000+ cabinets

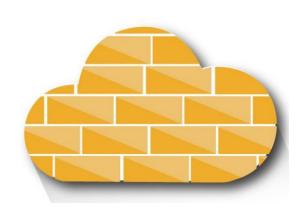
2016

DR Center in Kowloon, HK – 1,300 sqm providing **BCP** services

1st DC campus commenced in Nantong, PRC – 130,800 sqm for 5 DC buildings with the total capacity of 20,000+ cabinets



Three Major Pillars – 3C's



Center

Top tiered data centers with diversified geographical coverage across Asia.



Connectivity

Extensive global network outreach offers reliable, secure and flexible connectivity options.



Cloud

The comprehensive cloud offers to range from infrastructure, management, and applications.



Pillar One: Center

- 1.1 Overview DC & BCP Locations
- 1.2 Data Centers Introduction

1.1 Overview DC & BCP Locations Gateway to the world

Our Data Center & SD-WAN Coverage



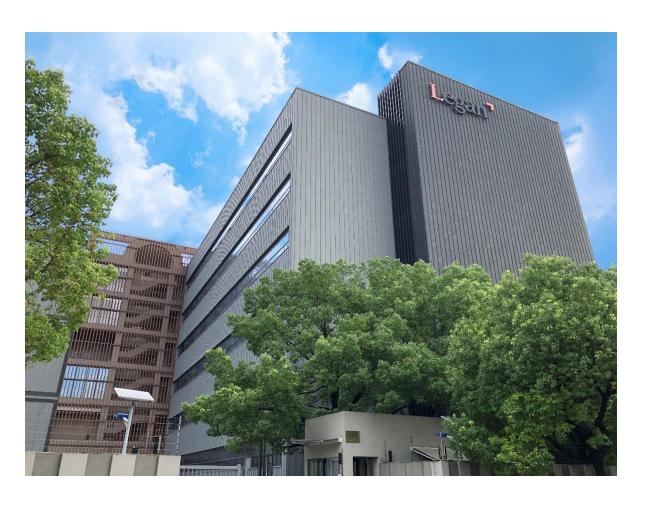


1.2 Data Centers Introduction

Green, Robust and Reliable



Shanghai WaiGaoQiao Data Center



- ◆ Refurbished six-storey facility
- ◆ 26,000 sqm
- ◆ 12MW IT power
- ◆ 2 x 20MVA from dual power
- ◆ Carrier neutral
- ♦ Tier 3+ / Tier 4 ready
- ♦ ISO 9001, 14001, 20000 & 27001
- ◆ Commenced operation in 2017



Nantong Industrial Park Data Center



- ◆ 5 x six-storey DC campus
- ♦ 130,800 sqm
- ♦ 80MW IT power
- ◆ 2 x 80MVA from dual power
- ◆ Carrier neutral
- ◆ Tier 3+ / Tier 4 ready
- ◆ ISO 9001, 14001, 20000 & 27001
- ◆ Phase 1 commenced operation in 2020
- ◆ Available with Phase 2 expansion



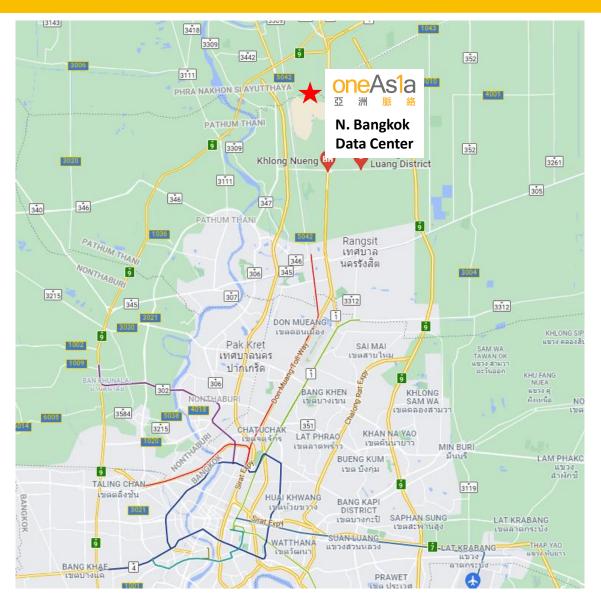
Hong Kong Kowloon Bay Data Center



- ◆ Refurbished six-storey facility
- ♦ 14,000 sqm
- ◆ 10MW IT power
- ◆ 2 x 16MVA from dual power
- ◆ Carrier neutral
- ◆ Tier 3+ / Tier 4 ready
- ◆ ISO 9001, 14001, 20000 & 27001
- ◆ Completed TVRA & PCI DSS
- ◆ Commenced operation in 2018



North Bangkok Nava Nakorn Industrial Zone (Pathumthani) Data Center



- ◆ At Tambol Klong Nueng, Amphur Klong Luang, Pathumthani Province, Thailand
- ◆ 50km from Bangkok city
 - Within one hour travel time by car
 - ◆ 1.5 hours travel time to Nava Nakhon station by train
- ◆ 24,912 sqm GFA
- ◆ 13.5MW IT power
- ◆ Served by 13 telecom services providers



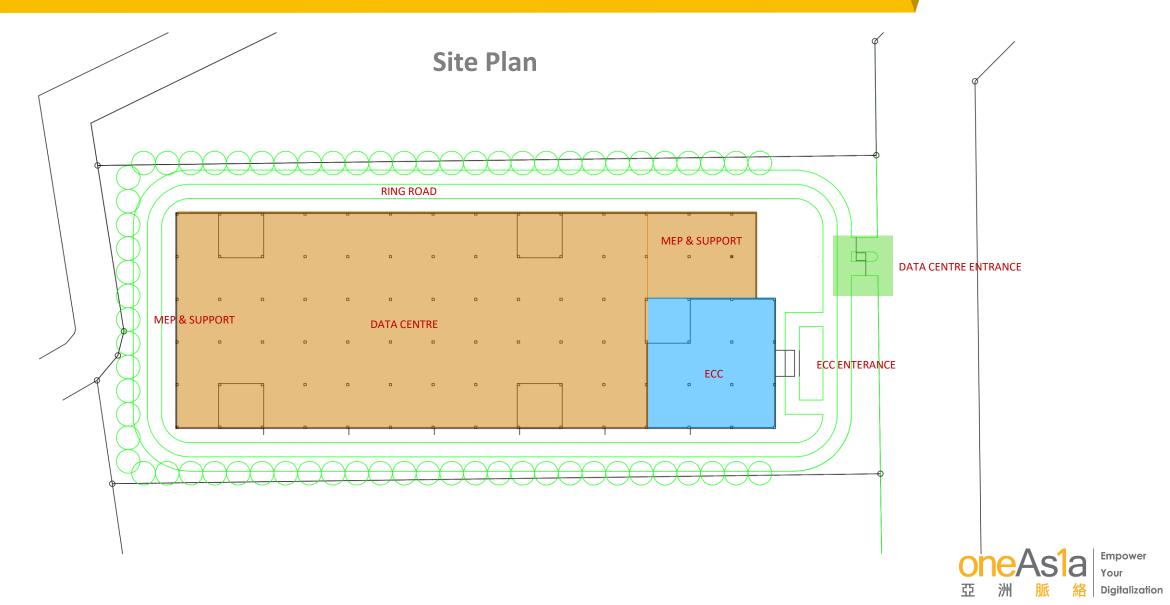
North Bangkok Nava Nakorn Industrial Zone (Pathumthani) Data Center



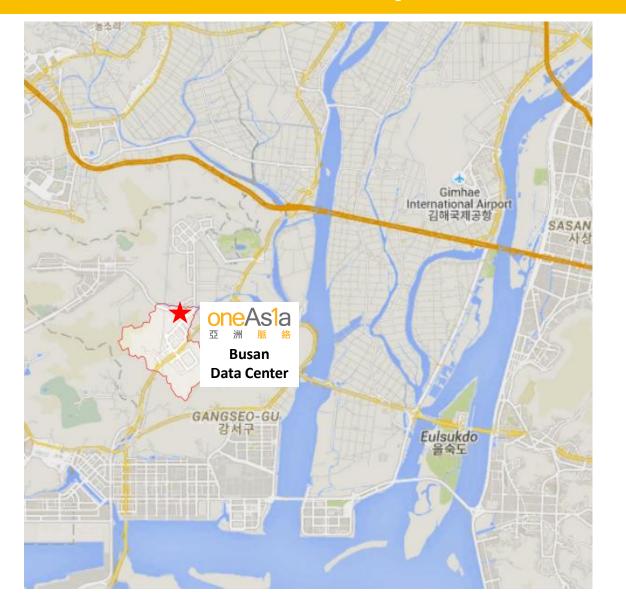




North Bangkok Nava Nakorn Industrial Zone (Pathumthani) Data Center



Busan Mieum Industry Park Data Center



- ◆ Located at Mieum Industry Park, Gurangdong, Gangseo-Gu, Busan
- ◆ 23km from Busan high-speed train station
- ◆ 16km and 24 minutes drive from Gimhae International Airport by private car
- ◆ Accessible by a major highway and railway
- ◆ About 30 40 minutes driving distance from the Busan city center
- ♦ 75,940 sqm GFA
- ◆ 74MW IT Power

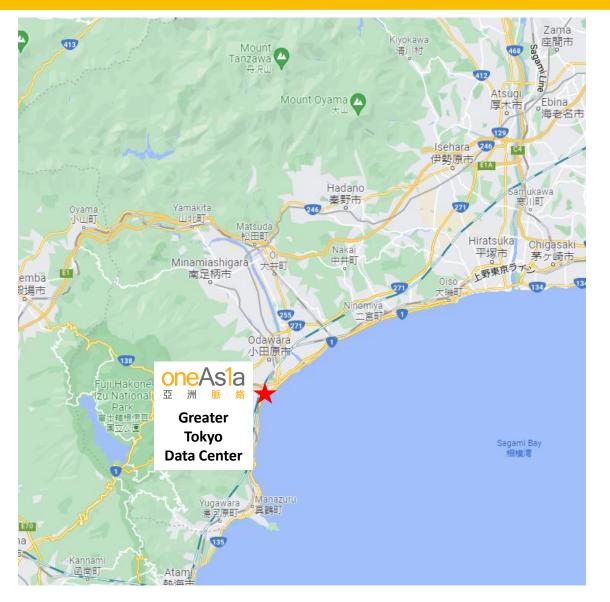


Busan Mieum Industry Park Data Center





Greater Tokyo Area Data Center



- ◆ At Kozu, Odawara City, Kanagawa Prefecture, Japan
- ◆ 65km from Tokyo Station to Odawara Station
- ◆ 40km from Yohohama Station to downtown of Odawara
- ♦ 58,480 sqm GFA
- ◆ 56MW IT Power
- ◆ Fibre available from KDDI, NTT, and So-Net



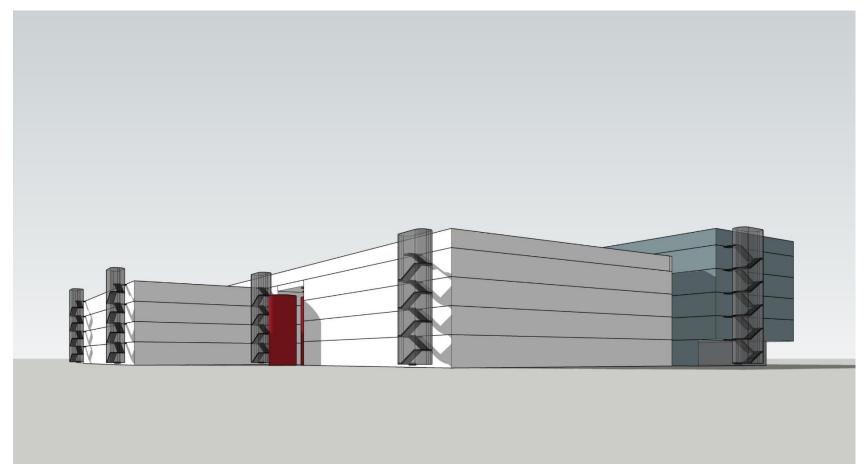
Greater Tokyo Area Data Center





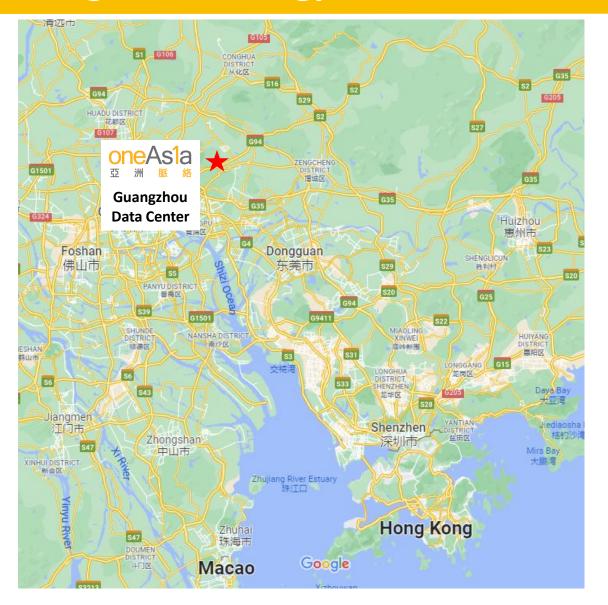
Greater Tokyo Area Data Center

Concept Design





Guangzhou Huangpu Data Center



- ◆ Located at China-Singapore Guangzhou Knowledge City, Huangpu, Guangzhou
- ◆ 35km from Guangzhou city center
- ◆ 25km from Guangzhou Baiyun Intl Airport
- ♦ 76,955 sqm GFA
- ◆ 42.5MW IT power
- ◆ To be connected with 3 telcos



Guangzhou Huangpu Data Center

Concept Design







Guangzhou Huangpu Data Center

Site Plan





Pillar Two: Connectivity

- 2.1 Cloud Connect
- 2.2 Fiber Network Coverage
- 2.3 One Asia's P8 SD-WAN
- 2.4 Express Internet



2.1 Cloud Connect

Extending the Global Reach

A Global Reached Data Center



- Asia Pacific SE1 (Singapore)
- Asia Pacific SE2 (Sydney)
- **CN-Hong Kong**
- EU Central 1 (Frankfurt)
- US West 1 (Silicon Valley)
- US East 1 (Virginia)



- Asia Pacific (Sydney)
- Asia Pacific (Singapore)
- EU (London)
- EU (Ireland)
- EU (Frankfurt)
- AWS GovCloud
- US (Ohio)
- US East(N. Virginia)
- US West (N.California)
- US West (Oregon)
- Canada (Central)



- **US East US**
- Central EU
- **US West**



Google Cloud Platform

- Asia East2 (Hong Kong)
- Asia Southeast 1 (Singapore)
- Australia South East 1 (Sydney)
- Asia East1 (Taiwan)
- Europe West2 (UK)
- Europe West3 (Germany)
- Europe West4 (Netherlands)
- North America-Northeast1 (Montréal)
- US Central1 (Iowa)
- US-East1 (South Carolina)
- US-East4 (Virginia)
- US-West1 (Oregon)
- US-West2 (Los Angeles)



IBM Cloud

- Asia Pacific South
- EU (UK)
- EU (Germany)
- **UK South**
- **US East**
- **US South**



- **APAC Sydney**
- **EMEA Frankfurt**
- **EMEA Slough**
- **EMEA Amsterdam**
- **US Ashburn**
- **US Chicago**
- **US Phoenix**



Cloud regions

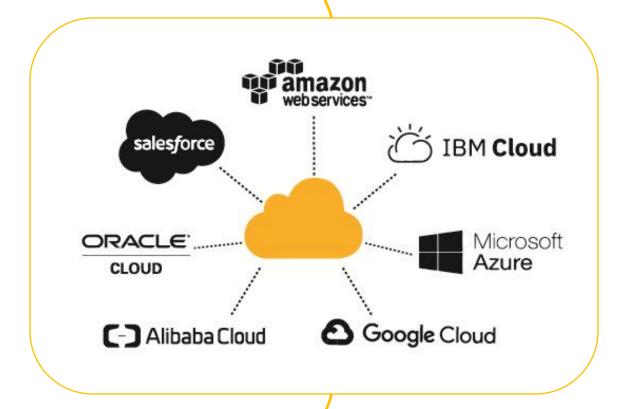
- Windows Azure
- Australia South East
- Australia East
- East Asia
- Southeast Asia
- **UK South**
- North Europe
- West Europe
- **Germany Central**
- **US DoD East**
- **US Gov Texas**
- US Gov Iowa
- **US West**
- West US 2
- South Central USI
- North Central US
- Canada East
- Canada Central

Empower

Digitalization

We make Connectivity Smart

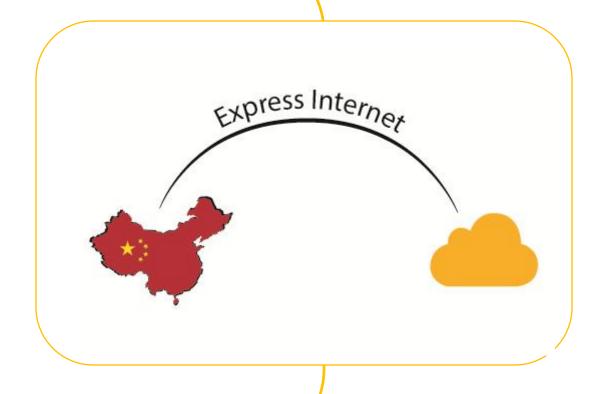
Our data center presence in Asia supports carrier neutral connection with leading service providers. It provides secure and on-demand hybrid, multi-cloud, and cloud to cloud connection. Customers can experience scalable strategies on the right cloud solution.





Express Internet Get Cloud Connection Across Any Boarders

Add-on internet service "Express Internet" utilizes self-owned SD-WAN and backbone infrastructure in China to bring 3 - 5 times faster overseas internet across time. It redirects international network traffic to OneAsia node through the non-congested international gateway on data layer connection.





Your Trusted Cloud Connector



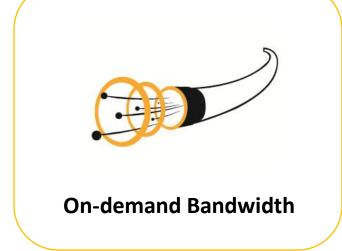
Global Cloud Connection

without Time constraints





Protect and Resilient Design







2.2 Fiber Network Coverage

Diversified Connectivity for Greater China



Fully Licensed Data Centre, ISP and Fixed Network Operator In People's Republic of China

Issued by The Ministry of Industry and Information Technology of People's Republic of China

- ◆ Type II Telecom Infrastructure Services Domestic Fixed Network

 Data Transmission
 - (第二类基础电信业务中的固定网国内数据传送业务)
- ◆ Type I Telecom Value-Added Services Domestic Internet VPN (第一类增值电信业务中的国内因特网虚拟专用网业务)
- ◆ Type I Telecom Value-Added Services Internet Data Center (第一类增值电信业务中的因特网数据中心业务)
- ◆ Type II Telecom Value-Added Services Internet Access Service (第二类增值电信业务中的因特网接入服务业务)

Issued by Office of the Communications Authority of Hong Kong SAR

- ◆ External Telecommunications Services (ETS)
- ◆ International Value-Added Network Services (IVANS) (include Internet Access Service











APAC Network Coverage

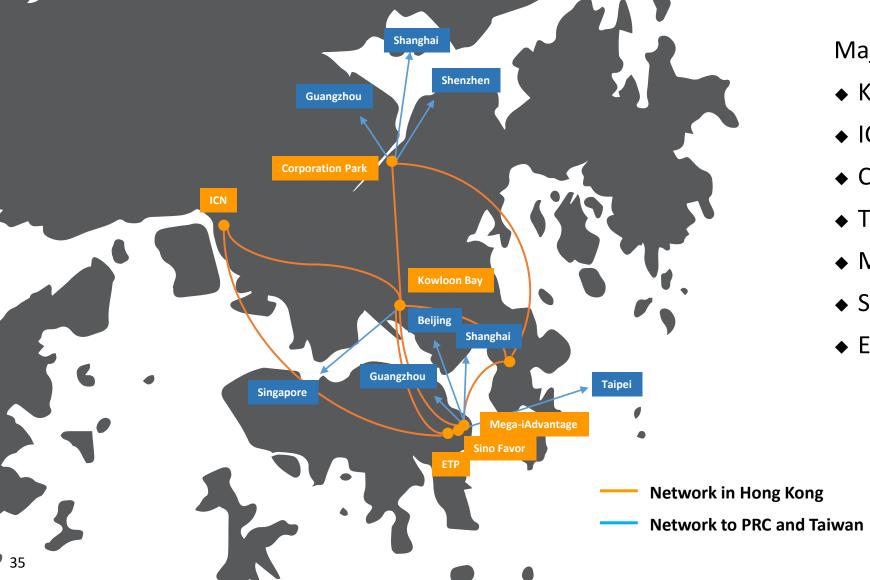


Through our fiber-optic network and collaborate with a number of operators, building covering the Asia-Pacific region and the number of cities in China's network, the major nodes include:

- ◆ Beijing
- ◆ Shanghai
- ◆ Guangzhou
- ◆ Shenzhen
- ◆ Chengdu
- ◆ Hong Kong
- ◆ Taipei



Hong Kong Network Coverage Fiber Connection and PRC Extension



Major nodes in Hong Kong:

- ◆ Kowloon Bay
- ◆ ICN
- ◆ Corporation Park
- ◆ TKO
- ◆ Mega-iAdvantage
- ◆ Sino Favor
- ◆ ETP

Shanghai Metro Network Coverage



Major nodes in Shanghai:

- ◆ STNC
- ◆ CITIC Plaza
- ◆ XinYe Bldg.
- ♦ GDS
- ◆ atHub
- ◆ SDS IDX
- ◆ CHJ Data Center
- ♦ WGQ Data Center
- ◆ Equinix SH5, SH2/3



China South Network Coverage



Major nodes in China South:

- ◆ Guangzhou
- ◆ Foshan
- ◆ Dongguan
- ◆ Huizhou
- ◆ Shenzhen



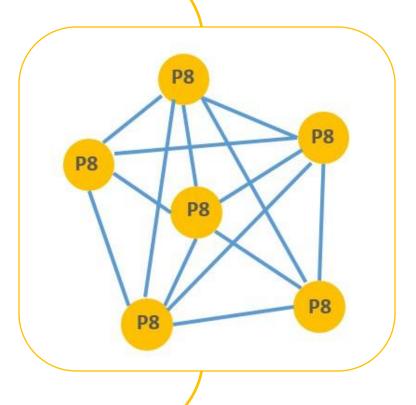
2.3 OneAsia's P8 SD-WAN

Fully mesh SD-WAN without Tunnels



Fully Mesh SD-WAN without Tunnels

- ◆ Fully meshed network, providing the access you need among all branches, DC and headquarter
- ◆ Session comprehensive routing keeps your sealed and secure by rejecting out of network traffic and un-authenticated access
- Multipath optimization selected the best route and direct traffic through waypoint metadata





Intelligence

Multipath Optimization

Upgraded from traditional SD-WAN, P8 next-generation SD-WAN uses Tunnel-Free technology to utilize WAN for connection. Its built-in intelligence feature chooses the best route available, providing performance that exceeds VPN

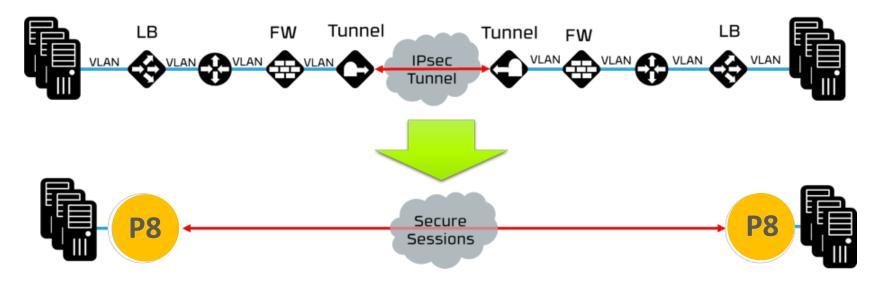
Bandwidth Efficient

Reduce the extra bandwidth cost of VPN and IPsec encapsulation for approximately 30%



Intelligence

Restructure



CAPEX/OPEX OneAsia's P8 SD-WAN technology added Load Balancer, Firewall, Wan-Optimization, and Deep Packet Inspection in one single SW to help enterprise customers to reduce network components, CAPEX and OPEX



Official certified for SD-WAN security ICSA Certified for firewall



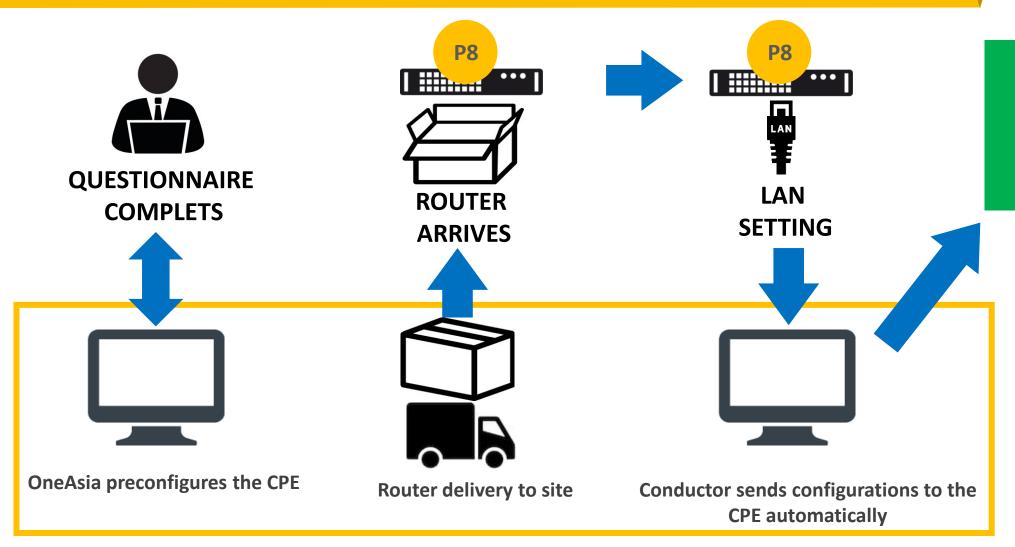
- US Canada Gov security certification NIST FIPS 140-2
- ONUG listed FIPS as SD-WAN requirement
- Only Cisco and VMware got this certificate
- Banks/Insurance companies require the certification



- ICSA Labs certified
- Category 1: Firewall (See below)
- Corporate Network Firewall
- Category 2: PCI DSS
- Payment Card Industry Data Security Standard



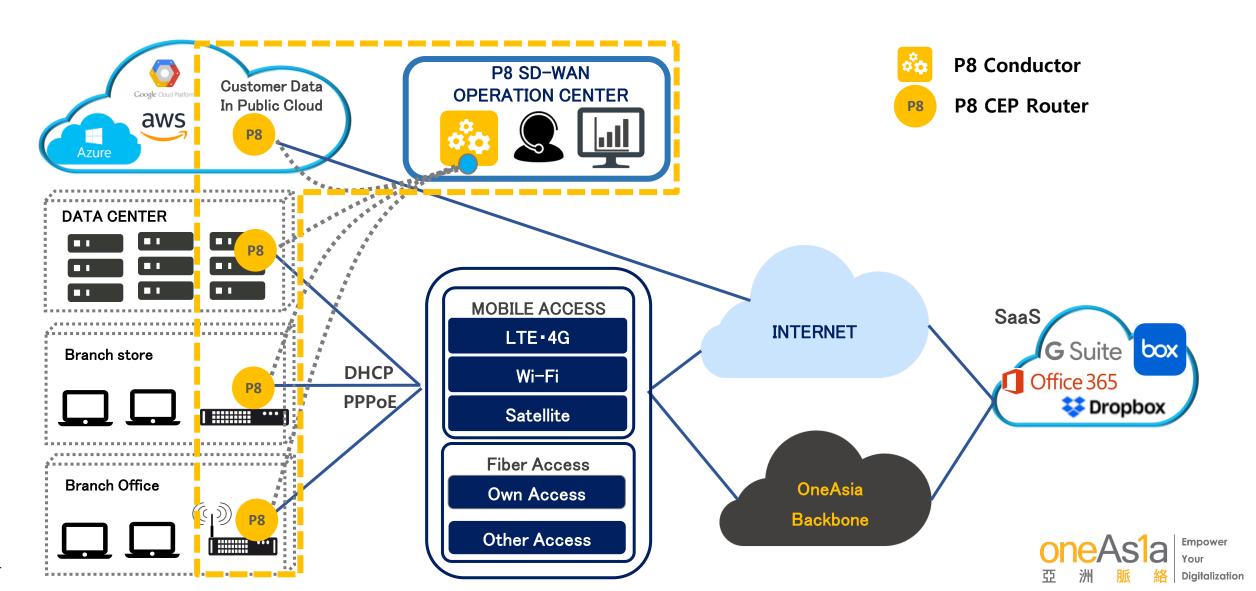
Delivery Flow for Zero Touch Provisioning



SERVICE STARTS



Service Image (inside the orange-dot-line)



2.4 Express Internet

Internet outreach from China



What is Express Internet?



3 – 5 x Improvement on accessing International Internet traffic from China.



How to achieve?

Utilize OneAsia SD-WAN and backbone infrastructure in China to redirect the international internet traffic to OneAsia Hong Kong node via a non-congested international gate. International internet is resolved in Hong Kong via various carriers.

Add-on to your existing internet service, no new provider is required.



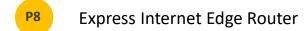
Who needs it?

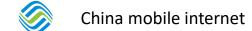
MNC or customer who need to have fast and reliable access to the internet outside of China.

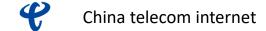
OneAsia Express Internet Topology











China Unicom internet

Special route arrangement through internet gateway to HK



Express Internet - Office 365 QoS

Office 365 Dedicated Quality of Service

P8 intelligent routing technology enables its CPE to examine user traffic on the application level. By identifying below O365 traffic types, Express Internet ensures the best route for O365 traffic with the highest priority, allowing the user to have top of the line experience when using O365 services.

O365 - Exchange

O365 - Common

O365 - SharePoint

O365 - Skype

Office 365 applications

Normal global internet access





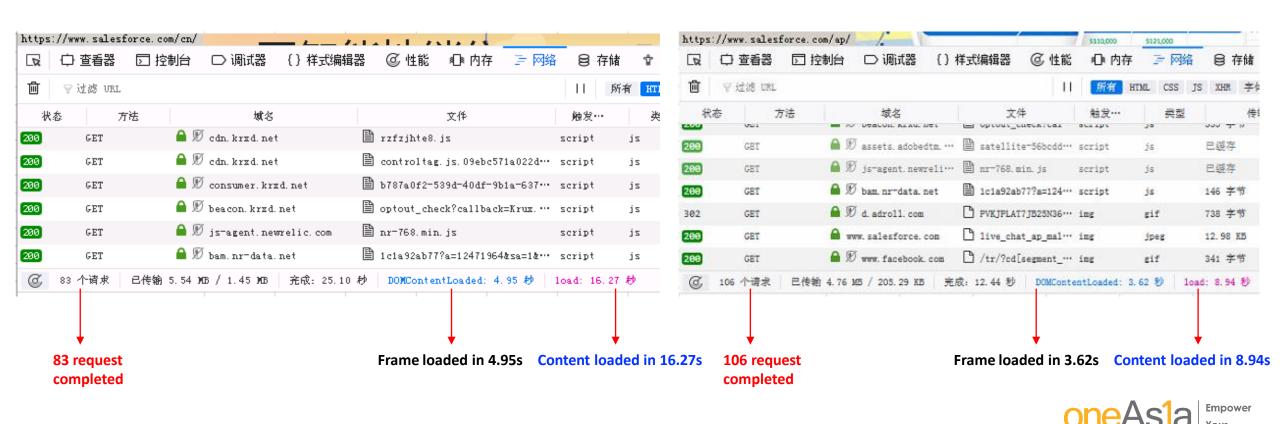
Express Internet Performance

The Test Result of salesforce.com

From BGP network

From Express Internet

Digitalization



Express Internet Performance

Page Loading Test Result Time: Feb 22 2019								
		Framework Load Time(s) 从服务器下载网页框架的时间			Content load(s) 页面所有的资源(图片,音频,视频等)加载完成的时间			
Website	IP	BGP	Express Internet	Improvement	BGP	Express Internet	Improvement	
	Time: Feb 22 2019	Time: Feb 22 2019	Time: Feb 22 2019 Fran 从服务	Time: Feb 22 2019 Framework Load Tim 从服务器下载网页框架的 Website IP BGP Express	Time: Feb 22 2019 Framework Load Time(s) 从服务器下载网页框架的时间 Website IP RGP Express Improvement	Time: Feb 22 2019 Framework Load Time(s) 从服务器下载网页框架的时间 页面所有的资源(图 Website IP BGP Express Improvement BGP	Framework Load Time(s) Content load(s) 从服务器下载网页框架的时间 页面所有的资源(图片,音频,视频等) Website IP BGP Express Improvement BGP Express Internet	

		Framework Load Time(s) 从服务器下载网页框架的时间			Content load(s) 页面所有的资源(图片,音频,视频等)加载完成的时间			
Website	IP	BGP	Express Internet	Improvement	BGP	Express Internet	Improvement	
www.amazon.com	54.182.5.180	3.35	1.51	221.85%	109.2	4.45	2453.93%	
www.wikipedia.com	103.102.166.224	3.63	1.35	268.89%	3.67	1.38	265.94%	
www.cnn.com	151.101.77.67	17.84	2.14	833.64%	707.4	10.32	6854.65%	
www.apple.com	96.16.171.65	1.43	1.47	97.28%	2.18	2.73	79.85%	
www.cbsinteractive.com	64.30.228.139	32.84	2.32	1415.52%	60	83.40	71.94%	
www.viacom.com	23.206.13.89	22.63	4.05	558.77%	22.8	4.26	535.21%	
www.demandmedia.com	23.227.10.178	43.68	1.61	2713.04%	50.44	4.73	1066.38%	
www.theguardian.com	151.101.77.111	8.6	0.682	1261.00%	70.8	6.88	1029.07%	
www.goo.ne.jp	153.254.170.223	11.55	5.65	204.42%	95.4	11.83	806.42%	
www.yahoo.co.jp	183.79.250.123	4.29	2.37	181.01%	20.23	5.22	387.55%	
www.citibank.com	118.215.10.191	5.33	4.88	109.22%	180	18.58	968.78%	
www.dbs.com	23.75.86.57	56.9	1.71	3327.49%	57.75	2.64	2187.50%	
www.tripadvisor.com	192.229.189.119	4.37	2.27	192.51%	66	23.53	280.49%	
www.virtuoso-composer.com	117.18.237.43	2.76	9.8	28.16%	49.95	16.91	295.39%	
www.travelclick.com	104.76.138.75	92.4	4.54	2035.24%	135	8.31	1624.55%	
www.virtuoso.com	54.192.73.203	2.76	1.69	163.31%	49.95	2.67	1870.79%	
www.oneas1a.com	103.9.245.29	50.07	2.96	1691.55%	50.09	5.66	884.98%	
www.chase.com	159.53.44.60	5.1	8.81	57.89%	8.67	12.96	66.90%	
www.cogentco.com	38.100.128.10	8.98	4.22	212.80%	33.6	6.86	489.80%	
www.salesforce.com	96.43.145.26	4.95	3.62	136.74%	16.27	8.94	181.99%	
Average		19.173	3.383		89.470	12.113		



5x improvement on Framework load time 7 x improvement on Content load time







Frequently Ask Questions

Q: Is Express Internet comply with China's communication law?

A: Yes, 100% as all internet traffic going through China's international internet gateway without additional encryption.

Q: Can Express Internet access to Google, Facebook?

A: No, the all-access limitation is the same as through Tier 1 carrier with a noticeable improvement on international traffic

Q: Performance compare with Hong Kong?

A: The performance is the same as traffic going from Hong Kong with an additional 10-20ms tag on between PRC to HK.

Q: Does Express internet ensure the shortest distance or delay?

A: Not necessary as the shortest distant may not equal to non-congested route.

Q: Do I need to switch to another internet service provider?

A: Express Internet is an "Add-on" to your existing ISP, no new provider is needed.



Pillar Three: Cloud Solutions

- 3.1 Multi-cloud Managed Services
- 3.2 Multi-cloud Management Portal
- 3.3 Multi-cloud Cost Analytic



What OneAsia provides? Multi Cloud Managed Services



Hybrid Cloud Management

- Management Portal integrated with Multiple Cloud Platform
- One Stop Solution: Planning, Design, Implementation, Migration, Support, and Operation
- Ongoing Cost and Resources Management
- ◆ Simplification by Self Service Interface
- ◆ Enterprise Self-service Appstore



Agile Cloud Connection

- ◆ Multi-Cloud Connect Gateway
- On-demand Bandwidth
- ◆ Reliable Performance
- ◆ Secure Connectivity
- ◆ Resilient Design

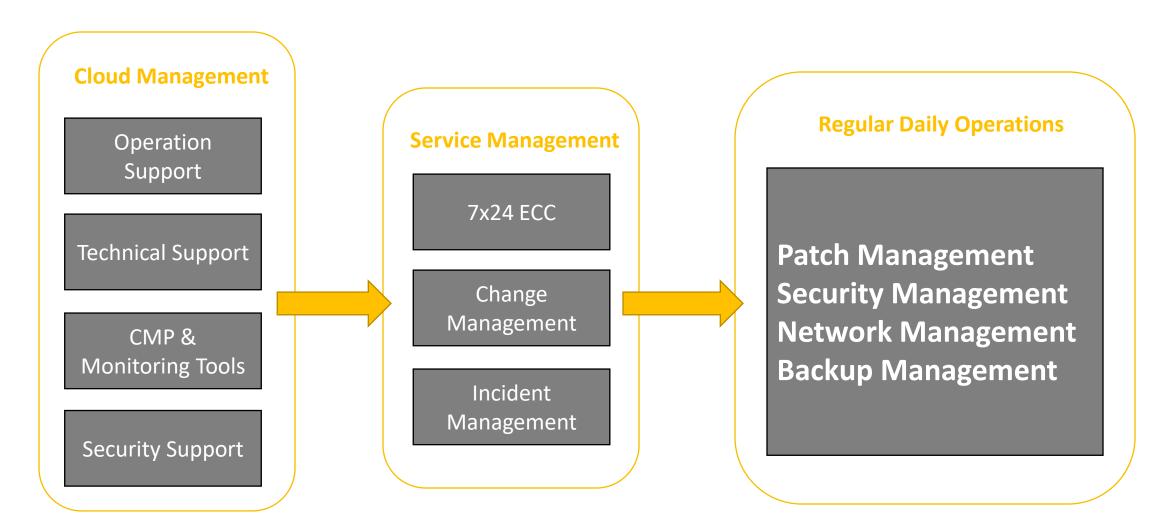


Secure Cloud & Business Continuity Solution

- Support Different Cloud Platform Backup Options
- ◆ Flexible Recovery Scenarios
- Various Recovery Models
- ◆ On-demand Subscription Based Model



Service Management Summary





3.2 Multi-cloud Management Portal An automated tool for multi-cloud deployment



Multi-cloud Management Portal (CMP)

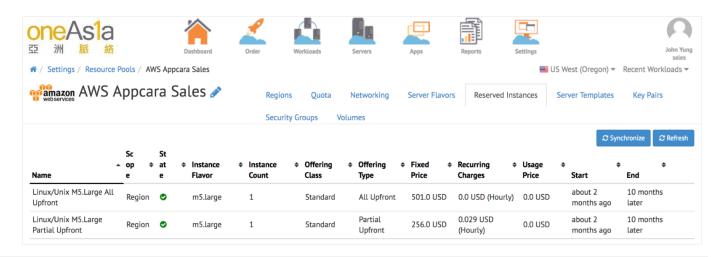
Use Cases

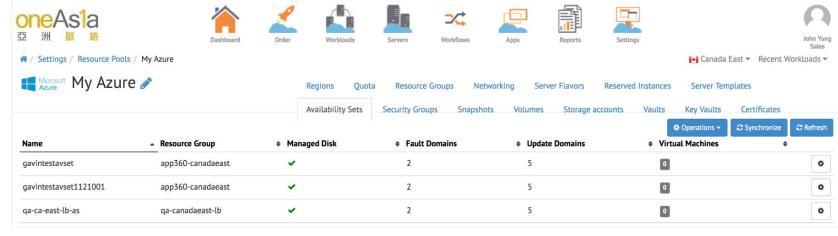
- ◆ Enterprises want to improve efficiency by centrally manage multiple virtual, public & private cloud environments
- ◆ It improves efficiency by centrally manage enterprise environments that compose of multiple virtual, public & private environments



Hybrid/Multi-Cloud (CMP)

- Easily integrate with existing virtual,
 public and private clouds
- Advanced cloud-native capabilities
 - ◆ Reserved Instances
 - Availability Sets
 - ◆ LB Services

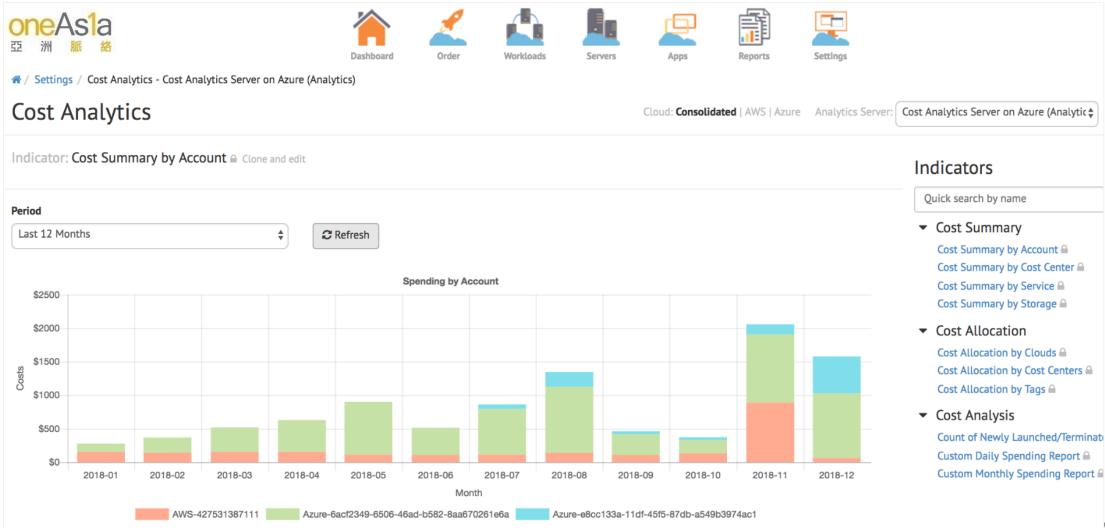






3.3 Multi-cloud Cost Analytic Drive the most out of Public Cloud

Cost Management on Public Cloud



Digitalization

Cost Analytics

Highly intelligent and interactive cost management platform:

- ◆ Cost center and cost allocation management
- Cost breakdown by cloud, account, service, region & instance type





- Identify on-demand instances to take advantage of RI saving
- A deep analysis of questionable expenses



Our Strengths



Local Experts & Support

- Deployment procedures
- Manage deployment of all equipment to multiple cloud sites
- ◆ Instruct onsite engineers on installation and configuration
- ◆ Local 7x24 support center



Global experience in cloud architecture design & implementation

- Multi-cloud management and orchestration
- ◆ Cloud management nodes
- ◆ Cloud compute nodes
- ◆ Layer 2/3 cloud network
- ◆ Firewall



Experience Sharing

- On-boarding training
- ◆ Best practice sharing
- Monitoring & billing integrations



OneAsia Competitive Edge

- ◆ Regional presence in Asia for over 20 years (15 years experience of Data Center operations)
- ◆ Strong technical and technology team in providing tailored Data Center and IT solutions
- Interconnected with full protected fiber network
- Cloud management capability
- ◆ Extensive customer base including top tiers FSI, Fortune 500 enterprises, and technology companies

OneAsia



Strong Client Portfolio

- Leading regional and multinational banks and insurance companies
- Global OTTs like cloud, online gaming, video streaming operators
- Local and international conglomerates
- Leading technology and media companies
- Major regional and international telecom carriers
- Transportation companies like global airlines and logistic companies
- Government bodies, quasi government agencies and utility companies



