China Unicom Global Smart Network takes the pain out of embracing the power of the cloud

Introduction

Global enterprises are increasingly moving to the cloud, but for many, cloud service connectivity is often costly, cumbersome and complex. Enterprises are presented with a myriad of cloud connectivity options, from public and private clouds to hybrid clouds and even multi-cloud scenarios across multiple cloud service providers, and those options are shaped (and sometimes constrained) by their budget, expertise and industry-specific needs.

China Unicom Global (CUG)'s Global Smart Network solution is designed to solve these problems with one-stop solutions that provide enterprises with flexible bandwidth, easy self-management and fast connection times, from a simple public cloud connection or a hybrid multi-cloud deployment.

In this article, three CUG customers from various industry sectors walk us through their journey to the cloud with Global Smart Network, and how China Unicom Global delivered a solution that fit their specific needs and took their pain out of getting connected to the cloud.

1. Global Smart Network, explained

CUG's Global Smart Network is a global cloud-based platform that provides cloud connectivity services and end-to-end networking management services. This network offers extensive global coverage with 48 global pre-connected PoP points outside of China, as well as PoPs in 336 cities within China.

Global Smart Network is designed by CUG to meet enterprise customer demand for hybrid cloud networking, whether they need cross-regional connections (cross-province / cross-border), cross-cloud connections (public / private / hybrid cloud) or private network interconnections.

Global Smart Network also provides enterprise customers with elastic bandwidth that allows them to adjust their bandwidth from 2 Mbps to 10 Gbps in a matter of minutes, and be billed on a daily-use basis.

The Tech Behind the Magic

The enabling technology that gives Global Smart Network its elasticity and flexibility is CUG's CloudBond technology, which is based on MPLS VPN and SDN technology.

Global Smart Network combines CloudBond with multi-technology products, including SD-WAN, smart terminals, multi-cloud, and dedicated internet access, to enable hybrid networking that can be applied simultaneously on and off the cloud network.

The end result is a one-stop solution for global enterprises who face issues such as data mismanagement and discrepancies between different branches and headquarters.

Two key components of the service are: (1) China Unicom's Provider Edge (PE) nodes – customer access points that connect the branch office to, for example, Alibaba Cloud Engine or AWS – and (2) an SDN controller that supports SR-TE dynamic routing and gives the customer 100% management control of the entire network.

Core functions of Global Smart Network include elastic bandwidth (see above) and guaranteed QoS with Level 3/Level 5 priority. Another key function of Global Smart Network is cross-border compliance with data regulations inside and outside of China, thanks to CUG's PoPs located in China, Hong Kong and Singapore,

and the ISO 27018 certification that ensured personally identifiable information (PII) was transferred securely across borders in compliance with international standards.

Value proposition

Whereas traditional dedicated leased lines use an N×(N-1)/2 long-distance architecture – which is expensive and complex to operate and maintain – CloudBond enables a fully meshed interconnection achieved via MPLS tunnels and accessed through China Unicom's provider edge (PE) nodes and carried by the China Unicom Industrial Internet Backbone (CUIIB). This architecture enables elastic connections and reduces latency by more than 30%.

2. Global Smart Network in action: three case studies

Since its launch in 2023, CUG's Global Smart Network has been road-tested and proven by enterprise customers of all sizes across multiple industries. Within China, Global Smart Network is being leveraged by companies in the medical, banking, large warehousing and logistics sectors, as well as by state-owned enterprises, while outside of China, communications firms, financial companies and governments are also using the service. Here are three recent case studies of how the tailor-made Global Smart Network has made a difference to enterprise customers of different industries.

Medical cloud resource allocation

A healthcare group decided to deploy a private healthcare cloud across its operations to support core systems such as Hospital Information System and anaesthesia systems.
The upgrade was sorely needed, as the group was weighed down by outdated IT infrastructure (including aging data centre equipment) and understaffed specialized operations team. The risk of data backup failures in its local internet data centre was a real worry.

According to the group's CIO, it was obvious from the outset that traditional MSTP dedicated lines were not up to the task. "Each new branch required a new leased line, driving costs through the roof," the CIO said. "Meanwhile, bandwidth adjustments required tedious and time-consuming multi-level approvals, and business departments constantly complained about system lag."

The healthcare group turned to CUG's Global Smart Network solution, which the CIO described as a game-changer.

"With two cloud hubs and 37 branch hospitals directly connected to the backbone network, we could configure different bandwidth requirements for each node with just a few clicks – 300 Mbps for headquarters and 10 Mbps- 50 Mbps for branches," the CIO said.

Even more impressive was the elastic bandwidth feature that enabled each branch to temporarily add bandwidth for things like teleconsultations or medical record retrievals with just a few clicks on Unicom's Cloud Manager platform, with costs settled by the day.

"That meant we don't have to buy yearly bandwidth plan based on what our peak speed will be just a few times a year." The CIO said. "We can just pay for what we use when we need it."

Meanwhile, CUG's 24/7 Cloud Manager service monitors network status in real time, with SD-WAN redundancy for critical nodes and automated weekly operations reports. That became a lifesaver (literally) when the company's Dongguan cloud hub line was disrupted during a typhoon in 2024. The Cloud Manager service enabled backup links to be switched over in seconds, so clinical operations experienced zero downtime.

"That would have been unthinkable before," said the CIO.

Bank branch surveillance

A regional bank in mainland China was faced with a fresh challenge after a new regulation from the China Banking and Insurance Regulatory Commission (CBIRC) required banks to implement independent security surveillance networks for each branch.

With hundreds of branches, sub-branches, and thousands of ATMs/savings outlets across the region, the bank needed a highly secure yet manageable dedicated network for video surveillance terminals.

According to the head of the bank's IT department, traditional networking solutions with multi-tiered relay architectures across prefecture-level nodes were slow and created bandwidth bottlenecks.

Meanwhile, expanding the capacity at each of its 256 nodes had to be done manually. "That kept our operating team in constant firefighting mode, because we had to be constantly ready for emergencies," said the head of IT department.

This was exacerbated by the fact that the bank's branches and ATMs' had varying bandwidth needs – anywhere between 2 Mbps and 10 Mbps – that couldn't be flexibly accommodated with MSTP leased lines, he added. "That took days of jumping through multiple management hoops."

China Unicom's CloudBond-powered Global Smart Network enabled the bank to leverage IPRAN for local PE node access, providing single-hop connectivity for all branches to the backbone network, thus completely bypassing the congested prefecture-level aggregation points.

That made it simpler and faster for each branch to manage its bandwidth, he said. "The elastic bandwidth feature is our favourite feature, because surveillance traffic spikes during holidays. So, we could temporarily boost speeds with just a few clicks on Unicom's self-service platform, eliminating tedious approval processes."

Today, all 256 network nodes benefit from CUG-managed unified platforms. The bank retains its own IP address planning, and a VLAN isolation ensures robust security boundaries between regions, greatly reducing operational complexity.

The bank's IT head adds that the upgrade did not go unnoticed by the CBIRC. "In its compliance review, CBIRC regulators specifically commended our "flattened architecture," recognizing its implementation as a benchmark for financial industry security network upgrades!"

Cross-border ERP migration

A leading international telecommunications manufacturer with factories in Singapore, Frankfurt, and Shanghai found itself faced with a challenge when headquarters decided to migrate its core ERP system to Azure Singapore.

As the APAC regional IT director of the firm explains, this would be extremely difficult to do with traditional cross-border leased lines because of their inflexible bandwidth adjustments and weeks-long provisioning cycles. As such, "this proved inadequate for our precision manufacturing needs."

With CUG's Cross-Border Dedicated Line powered by Global Smart Network, the company was able to achieve compliant Azure Singapore access in a single day, with dual-path architecture ensuring 99.99% availability.

"Through CUG's self-service platform, we can now dynamically adjust bandwidth in real time based on operational demands, all while enjoying end-to-end QoS guarantees," the IT director said. "Our Singapore, Frankfurt, and China Shanghai factories are seamlessly interconnected via Cloud Connect, fully aligning with our global networking mandate of 'same-day deployment and on-demand scalability'. And on top of that, we're saving over 30% on costs compared to international dedicated lines."

Conclusion

Enterprises have heard the touted advantages and benefits of cloud adoption for years – ease of use, flexibility, cost savings and scalability, etc – but realising those benefits has been easier said than done. For cloud adoption to accelerate, service providers need to reduce the cost and complexity of every cloud scenario, from simple one-hop connections to multi-cloud environments.

CUG's Global Smart Network, powered by its CloudBond mesh technology, offers a viable and reliable alternative to traditional leased lines that gives customers the flexibility to add and drop connections quickly, adjust bandwidth for each node with a few clicks, and pay only for the bandwidth they use. And it can do all this extensively inside and outside of China, all while being cross-border compliant.

Put simply, Global Smart Network delivers end-to-end innovative networking management services, solving pain points of high global networking costs, long delivery cycles, maintenance difficulties and the lack of collective security between the cloud and the network.

UniCom

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