

Application scene of Lossless Network

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Storage traffic

Server Type	Workload Composition
Web Server	512 KB 22%, 1 KB 15%, 2 KB 8%, 4 KB 23%, 8 KB 15%, 16 KB 2%, 32 KB 6%, 64 KB 7%, 128 KB 1%, 512 KB 1% random read pattern(read 100%)
File Server	512 KB 10%, 1 KB 5%, 2 KB 5%, 4 KB 60%, 8 KB 2%, 16 KB 4%, 32 KB 4%, 64 KB 10% random read/write mixed pattern(read 80%, write 20%)
Exchange Server	32 KB random read/write mixed pattern (read 68%, write 32%)



Storage traffic has a variety of packet size characteristics, so there are different transmission requirements for the network.



A typical example, such as a random 8K packet requires much less time delay than that of a sequential 1MB packet.



Only a lossless network based load sensing packet sharing technology can meet the requirements.

Storage Pool traffic

Due to the business peak is uncertain in a large pool of resources the traffic cannot always maintain a balanced distribution.

Guarantee the high priority application on latency and bandwidth, especially when they need to cross over a number of switches.

Remote replication and migration : When a storage cluster is in disaster, the load distribution of the whole network will change greatly, and there will be high traffic of storage access cross area

High performance database Based SDS

1

The high performance database of the bearing billing system and the CRM system has very high latency requirements for the SDS.

2

The RoCE network card on the host is difficult to achieve the bandwidth and latency guarantee comparable to the High-end Disk Array.

3

QoS of the whole course is important.

What is MIGU?



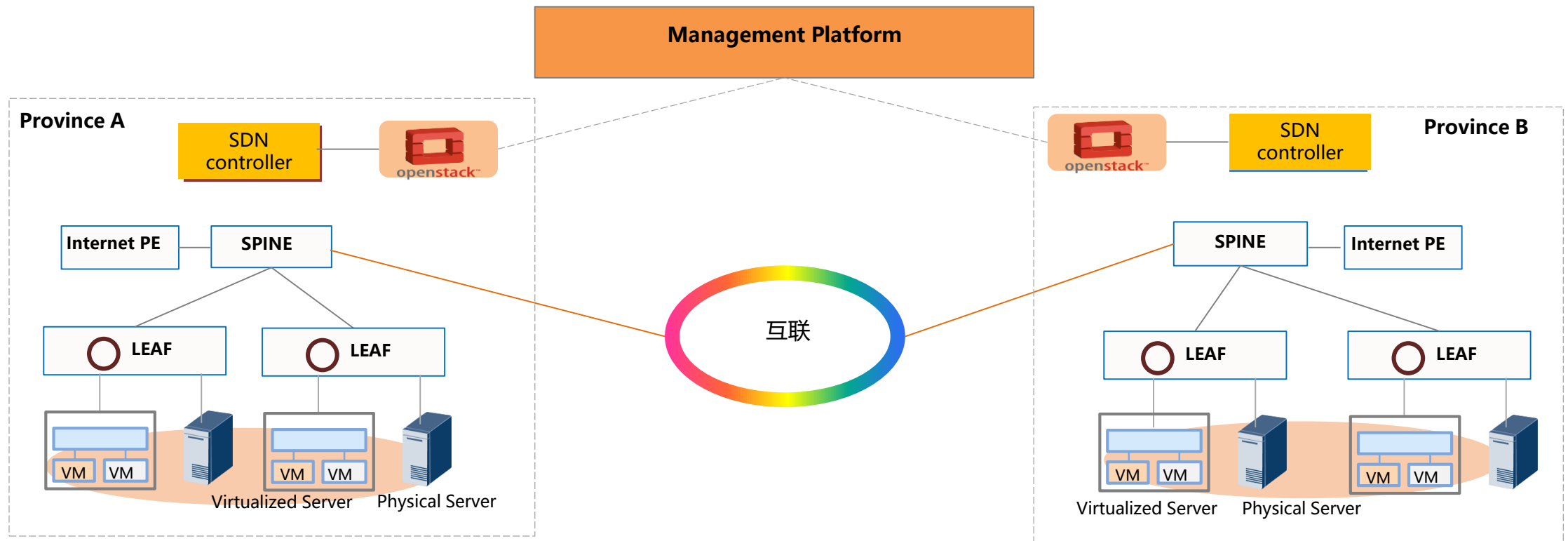
1

2

3

- China Mobile MIGU is an individual band aiming at providing Internet Content including **MIGU video**, **MIGU reading**, **MIGU music** and **MIGU AI**, etc.
- Cloud datacenters built based on SDN technology for **almost 10 thousand computing servers** distributed in five provinces have meet the requirements of **auto-deployment and flexibility** for almost all applications **except MIGU AI**.
- **MIGU AI** is designed to provide the **Artificial Intelligence Platform** in order to **build models through Deep Learning** for MIGU applications. **MIGU AI Platform** requires the network with zero loss-packet and low latency (nearly tens us level).

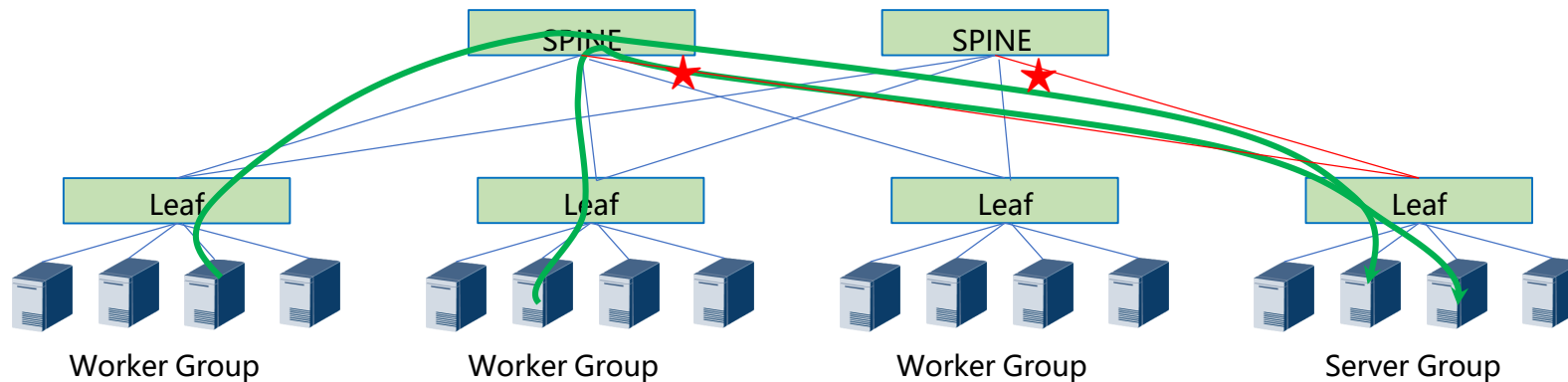
SDN based Cloud datacenter



SDN based Cloud datacenter built for MIGU Video\MIGU Reading\MIGU Music **except MIGU AI.**

Network designed for China Mobile MIGU AI

- On the first step, MIGU AI platform consists of **five hundred GPU-servers @ 25G**.
 - Distributed algorithm for AI leads to **Incast Problem** (Many to One communication).
 - **Large scales of worker servers and Burst traffic** become challenges to the network.
 - **Zero Packet-loss\Low latency\High throughput** are all required.
 - **End to End lossless** including Network adapter, Leaf and Spine switch are required.
- Next step, thousands numbers of GPU-servers @ 25G/40G/100G are planned.



Special Network built for **MIGU AI platform (Deep Learning)**



THANKS

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