Chinese Cable Operator Wasu Taps Cisco for 100 Gigabit Network

Cisco IP+100G DWDM network solution helps enable new services and opportunities for Chinese cable operator Wasu.

EXECUTIVE SUMMARY

ZHEJIANG WASU CABLE TV NETWORK CO. LTD.

- Cable TV operator in the eastern Chinese province of Zhejiang
- 13 million customers
- Second largest cable operator in mainland China

BUSINESS CHALLENGE

- Effectively compete with telcos, which are providing fiber to the home and buildings, for network services to consumers and small and medium-sized businesses
- Keep up with growing demand for high- speed networking services in China by delivering the best content and user experience
- Leverage existing cable infrastructure to cost-effectively enhance services

NETWORK SOLUTION

- Cisco ASR 9000 Series Routers with Cisco ONS 15454 MSTP 100 Gbps Coherent Detection DWDM Solution

BUSINESS RESULTS

- Successful deployment of 100G optical backbone for cable VoD and Internet services has led to cost efficiencies and new service offerings
- High-speed backbone helps enable cloud-based streaming of video content and traditional Internet access from TVs, PCs, tablet computers, smartphones, and other devices
- New high-speed backbone in development helped enable Cloud Desktop Service for small and medium-sized businesses.

Business Challenge

Over the past 10 years Wasu Cable has transformed itself, joining Hangzhou-based DTV and local cable TV operators to form the consolidated Zhejiang Wasu Cable TV Network Co., Ltd. (Wasu). It's grown rapidly to become China's second largest cable operator. Part of this growth has been fueled by a high performance network that's delivered a mix of cable TV and data services to its 13 million customers. Wasu was the first operator in China to deploy the Cisco® ONS 15454 Multiservice Transport Platform (MSTP), and in addition to the ONS 15454 platforms, they also purchased Cisco ASR 9000 Aggregation Services Routers for its IP backbone and was the first provider in China to use Multiprotocol Label Switching (MPLS) VPNs.

Wasu realized they needed a faster IP backbone to meet continuing customer demand for greater bandwidth and to reduce the operational costs of its content distribution network. At the Packet Optical Networking Conference (PONC) hosted by Cisco in May 2012, He Peizhong, Wasu's senior vice president and CTO, observed that cable multi-system operators (MSOs) such as Wasu are confronting multiple business and technological challenges. Cable MSOs are facing fierce competition from traditional telephone companies to provide fiber to the home and office and increasing challenges for supplying higher bandwidth to support the cloud-based providers of over-the-top (OTT) content. To add to the challenges facing Wasu, Wasu aimed to leverage its existing cable infrastructure to deliver the additional services while expanding bandwidth and storage fivefold to support high-definition video, and avoiding the expense of upgrading the 90 percent of its eight million customers' set-top boxes that are non-interactive.

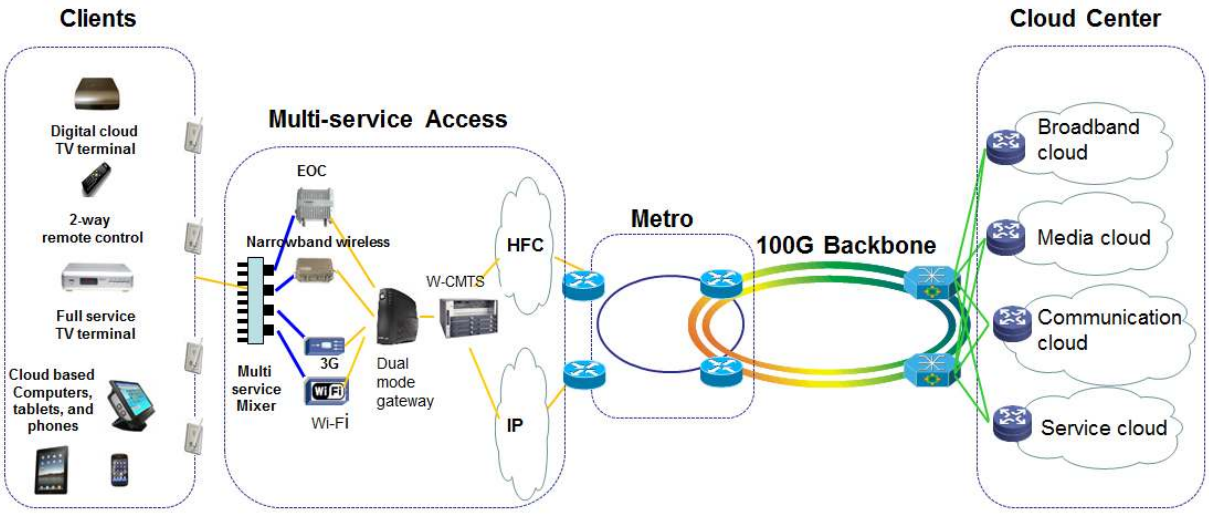
In meetings with Wasu, Cisco demonstrated the value in upgrading directly to 100G and avoiding short term alternatives which would be obsolete in a year. After extensive analysis considering both cost and performance, Wasu selected the 100G Cisco backbone dense wave division multiplexing (DWDM) solution.

Network Solution

Wasu was impressed with the Cisco solution and roadmap, which emphasizes fully converged IP and Optical layers using Cisco's nLight™ 100G coherent technology over its existing fiber infrastructure. Leveraging the acquisition of CoreOptics in 2010, Cisco has developed digital signal processing (DSP) solutions for high-speed optical networking, including advanced 40G/100G transmission technology that can operate at long distances over fiber engineered for only 10G services. This technology saves operators such as Wasu significantly on capital costs when upgrading to 100G by eliminating the need to re-engineer or re-install the fiber. Cisco also showed Wasu that they would not have to replace its existing ASR 9000 Series routers to take advantage of a converged IP and optical solution. Ultimately, Wasu decided that Cisco was the only company which could deliver dependable 100G backbone technology and that would help ensure its integrity in carrier-class environments.

The 100G optical backbone in operation since the summer of 2012 is based on the Cisco ONS 15454 100 Gbps coherent DWDM Trunk Card and Cisco ONS 15454 10-Port 10 Gbps Line Cards for aggregation of 10G signals. Figure 1 shows the Wasu network topology. Different clouds provide Ethernet over cable (EoC), narrowband wireless, 3G, or Wi-Fi to support multiple types of endpoints such as set-top boxes (both standard and HD), PCs, tablet computers, and smartphones.

Figure 1. Wasu Network Topology



Wasu has separated its video on demand (VoD) and Internet services into two data centers, which provide services in a logical hub and spoke topology. The company has invested heavily into a large and extensive video content library, and their new 100G backbone is playing an important role in making this content available to Wasu subscribers. The VoD streams are pushed via the 100G backbone to the end user. Using a DOCSIS 3.0 cable modem termination system (CMTS), each set-top box provides an average 200 Mbps video stream.

"With a cloud services model, the application servers are in our data center, encoding the streams to our eight million set-top boxes, and the set-top boxes decode the streams," says He Peizhong. This video cloud architecture relies on graphical processing in the data center, helping enable thin-client set-top boxes in homes for savings to both Wasu and its subscribers.

Business Results

Today, Wasu's Cisco IP+100G DWDM backbone is making possible various cost efficiencies and new services. One example of these new efficiencies is evidenced when comparing Wasu's previous content delivery network (CDN) that required an original file-copy to be replicated 99 times and stored in content caches to help ensure fast delivery to meet subscriber demands. With cloud streaming on the 100G backbone, Wasu now only needs to maintain two copies of content online in its data centers, resulting in a reduction of operational costs by 80 percent compared to their previous system.

PRODUCT LIST

Routing & Switching

- Cisco ASR 9000 Series Aggregation Services Routers

Optical

- Cisco ONS 15454 100 Gbps Coherent Detection DWDM System

Cisco's IP+100G DWDM backbone allows Wasu to introduce several new cloud based services. One new service, Wasu's "Cloud Broadband Machine," is designed to aggregate Wasu's own VoD content along with content from OTT providers, helping subscribers to access it all with high-speed, carrier-class efficiency on a range of network access devices, from TVs to smartphones to tablets.

Another new service in development is Wasu's "Cloud Desktop Service." Instead of enterprises deploying separate-similar virtual desktop infrastructures (VDI), they can save substantial capital and operational costs by subscribing to Wasu's network to quickly obtain access to their cloud based VDI. The cost savings will be attractive even to small and medium-sized businesses.

Wasu's selection of Cisco's converged IP and optical 100G solution is a reflection of the solution's quality and Cisco's commitment to its customer's success. Although some observers might wonder why Wasu chose Cisco, Cisco Director of Engineering Bing Yang affirms that "in the end Wasu became a believer in our superior 100G optical solution, which has helped simplify the Wasu network, bring costs down, and provides the flexibility for Wasu to architect many profitable new services."

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