Qingyuan Polytechnic Starts Cloud Education with Huawei FusionCloud Desktop Solution

Executive Summary

Industry
Education

Challenges
- A large number of multimedia classrooms and teaching software, regular demands for system upgrading of PCs, low efficiency, and negative effects on normal teaching
- Complexities and heavy workload of PC management, high costs of O&M, difficulties in eliminated PC disposal

Huawei Solution
- The Huawei FusionCloud Desktop Solution was used to construct multimedia training rooms and digital reading rooms, and replaced teachers' PCs step by step.
- Two Huawei E6000 blade servers were deployed for the computing platform and two Huawei S5500T devices were deployed for the storage platform.
- The virtualization software FusionSphere, desktop cloud software FusionAccess, and management software FusionManager were used.

Customer Benefits
- Desktop investment reduces by 30%
- Electricity consumption reduces by 70%
- O&M efficiency increases by ten times

Introduction
Qingyuan Polytechnic is a comprehensive public college founded in 2002, authorized by the People's Government of Guangdong Province, registered in the Ministry of Education, and sponsored by the People's Government of Qingyuan. The new campus of Qingyuan Polytechnic covers a construction area of 256,400 square meters. Qingyuan Polytechnic has comprehensive teaching and assisted-teaching facilities, including a provincial-level training base. The college has more than 600 teaching staff and about 17,000 students, including full-time ordinary secondary school students, vocational school students, and adult education students. Taking key majors and key major groups as the lead, Qingyuan Polytechnic has established a school-enterprise cooperation mechanism based on mutual benefits. Deepening school-enterprise cooperation and integrating work and study, the college has achieved significant success in co-establishing training base, constructing teaching team with dual professional degrees, optimizing the training of professional talents, reforming curriculum, improving "dual-certificate" education, developing "order-oriented" training, and promoting graduate employment.

Challenges
Qingyuan Polytechnic had many multimedia classrooms. PCs had been used for more than four years and the outdated hardware could not meet users' requirements. The high error rate of PCs affected the normal teaching. Eliminated PCs were piled up in the equipment room and were wasted. Students could operate PCs, modify system information, and install software randomly. As the PC load became heavier and heavier, the user experience was deteriorated.

Qingyuan Polytechnic planned to establish digital reading rooms for students to query, borrow, and browse e-books. The college wanted to establish the digital reading room with a new mode, instead of the traditional PC mode, to prevent problems such as difficulty in management, difficulty in O&M, and high error rate.

Huawei Solution
In 2012, Qingyuan Polytechnic learned about Huawei FusionCloud Desktop Solution, and considered it as a feasible solution to resolve problems of equipment rooms. After communicating with teachers from the information center of the college and clearing their specific requirements, Huawei organized a complete PoC test to verify whether FusionCloud Desktop Solution could meet the requirements of the college. Based on a complete test and experience tests form teachers teaching different courses, the college fully recognized Huawei FusionCloud Desktop Solution and expanded their user scale from 300 to 850.

In the early 2013, the project delivery was started. The launch of the first group of English classrooms was completed before the beginning of a term.
In June 2013, 180 VMs (Windows XP + Internet Explorer 6, the online examination system of the Ministry of Education was based on Internet Explorer 6) were provisioned in one day to meet the requirements of National English Level Test. The quick provisioning of desktop ensured the success of the test.

- Huawei products were used as major hardware and software of the desktop cloud system. Major hardware includes two Huawei E6000 servers and two Huawei S5500T storage devices. Major software includes cloud platform software FusionSphere, desktop cloud management software FusionAccess, and cloud platform management software FusionManager.

- The O&M platform of Huawei FusionCloud Desktop Solution realized the unified and centralized management of physical resources (servers, storage devices, and network devices), virtual resources (VMs), and desktop system. By visualized system running status reports, detailed resource usage reports, centralized maintenance of VMs, and alarm logs of the system, Huawei FusionCloud Desktop Solution realized centralized and efficient management of the system and desktop services. Compared with the office-scattered onsite O&M service by traditional PCs, FusionCloud Desktop Solution reduced O&M workload and improved efficiency by more than ten times.

- By using PVS (Provisioning System) and linked clone technology, FusionCloud Desktop Solution realized unified management and upgrade of image templates, quick desktop provisioning in batches, and unified upgrade of patches and software.

Customer Benefits

- **Lowered TCO**
  The resource utilization rate has risen from 10% to above 60%, and capital investment has been reduced. Compared to the average power consumption of more than 200 W for a PC (usually with 350 W advanced power configured), the power consumption of a VM is 60 W, thereby reducing 70% power consumption and the OPEX costs in lifecycle.

- **Simplified IT management**
  Unified O&M platform provides quick service provisioning and centralized management of software in office system. Compared to traditional office system on PCs, FusionCloud Desktop Solution improves O&M efficiency by more than ten times.

- **Cloud teaching platform construction**
  By deploying Huawei FusionCloud Desktop Solution, a cloud teaching platform in new mode is constructed, and a solid foundation for education cloud deployment is laid.