

# Xi'an Railways Bureau Enters the Cloud Office Age with the Aid of Huawei

"After Huawei virtualized servers and desktop cloud are deployed in the Ankang section of railways, the overall O&M loads are reduced and the O&M costs are decreased."

—by a frontline engineer of the Ankang section of railways

## Executive Summary

### Industry

Transportation

### Challenges

- Old equipment and paralyzed OA system
- PC software update not in time, resulting in security holes

### Huawei Solution

- Huawei FusionCloud Desktop Cloud Solution to construct a desktop cloud OA system
- E6000 blade server for computing and S5500T for storage
- FusionCompute, FusionAccess and FusionManager software

### Customer Benefits

- Enhanced control over unauthorized access
- Power consumption reduced by 70%
- O&M efficiency improved by 10 times

## Customer Overview

Xi'an Railways Bureau, located in the northwest of China, has Zhengxi (high-speed rail), Longhai, Baocheng, Baozhong, Baoxi, Ningxi, Xikang, Houxi, Taizhong, Xiangyu, Yang'an lines covering the whole Shaanxi Province, and reaching the Gansu Province, Ningxia Hui Autonomous Region, Nei Monggol [Inner Mongolia] Autonomous Region, Henan Province, Shan'xi Province, Sichuan Province, Hubei Province, and Chongqing. Xi'an railways are the traffic artery for entering Sichuan, Chongqing, Yunnan, and southwest of Guizhou areas, and also serve as hubs for distributing passengers and cargo nationwide, which play an important and strategic role in the west or even the nation railway network.

Xi'an Railways Bureau has four sections: Xi'an passenger, Xi'an East, Yulin, and Ankang. Historically, the Ankang section has been merged with another section. The new Ankang section was established in December 13, 2011.

## Challenges

- **Old equipment and paralyzed office automation (OA) system:** Historically, the Ankang section was once merged with the Xi'an East section in 2006. In this process, advanced automatic devices and facilities are all migrated to the Xi'an East section, leaving only backward devices. In addition, because the Ankang section is to be dissolved, no investment on information construction has been performed by the Xi'an Railways Bureau and Xi'an East section since the merge. As a result, no information device or facility such as server, switch, and video conference system can be found in the original office building. Till the new Ankang section is established, the OA system inside the office building is almost paralyzed and no web portal is available, hindering normal production and office work.
- **PC software update not in time, resulting in security holes:** PCs are necessary clients for maintaining and repairing train application systems. Key information assets about the section are stored in local PCs. If the security system is incomplete, key information may be leaked out. In addition, PCs are widely scattered and run in a severe environment within the section, and antivirus software update and patch installation of operating system (OS) and OA systems are not performed in time due to insufficient PC O&M labors. As a result, PC shutdown and paralyzing often occur.

In 2012, based on the analysis on severe information situation of the Ankang section, leaders of the Ankang section decide to start OA information construction from scratch and wish to adopt the most advanced technology to anticipate future data center development. To tackle preceding problems, leaders decide to replace conventional PCs with the desktop cloud

technology. Specifically, the desktop cloud technology uses a server system to carry desktop images. In this manner, resources can be centralized to improve the manageability of the desktop computing infrastructure.

## Huawei Solution

The desktop cloud solution for Ankang section uses a full set of Huawei devices, including server, access switch, storage device, virtualization software, desktop cloud software, and cloud terminals. E6000 blade servers are used as management and resource servers considering their sound heat dissipation, high reliability, and easy maintenance. OceanStor S5500T is used for providing system and data space for users. Huawei OceanStor S5500T is a new product oriented to high-/middle-end storage markets and features complete hardware specifications, high-density hard disks, TurboModule high-density IO modules, hot swappable design, threefold acceleration of TurboBoost performance, and enhanced data protection, efficiently ensuring service security and continuity.

- In terms of information security, Huawei FusionCloud Desktop Cloud Solution provides OA terminal access authentication, user rights authentication, user activity auditing, data transmission encryption, content encryption, and rights management. All OA data is centrally stored in the back-end data center, and OA terminals have no hard disks, ensuring the highest level of data security.
- In terms of reliability, Huawei provides a reliable carrier-class desktop cloud solution. This solution applies the 1+1 redundancy backup architecture to the network structure and 1+1 hot backup scheme to management nodes, efficiently ensuring reliability of the whole OA system.
- As for O&M, Huawei provides a unified desktop cloud O&M platform for unified and centralized virtual machine (VM) management. This platform features unified delivery and update of the Windows desktop, unified release and update of application software, and centralized configuration of VMs on the platform. Compared with the conventional PC system, the desktop cloud system has O&M efficiency improved by more than 10 times.

## Customer Benefits

After the Huawei Desktop Cloud Solution is deployed for the Ankang section, the OA information construction of this section immediately leads that of other sections in the Xi'an Railways Bureau. With the desktop cloud solution, unified O&M, software installation, and antivirus software update can be performed in the back end, greatly simplifying IT management.

- **New technological start point, bringing new level of information construction:** Along with stable running of the desktop cloud, the Ankang section is no longer a backward section with old OA equipment. The OA efficiency is greatly improved with the OA information construction based on the desktop cloud solution.
- **Enhanced control over unauthorized access:** The desktop cloud system is a closed system. All cloud terminals do not have local hard disks for storing data, and all data is stored in the cloud data center. By default, the data write function through a USB interface is disabled. Users can control the read and write function through FusionManager. These measures efficiently prevent unauthorized access through mobile storage media.
- **Simplified IT management:** The unified desktop cloud O&M platform enables quick service provisioning, centralized management of various office software. Compared

with the conventional OA system, this desktop cloud system improves the O&M efficiency by at least 10 times. After the desktop cloud is deployed, *"the overall O&M loads are reduced"*, as said by an experienced engineer of the Ankang section.

- **Power consumption reduction and eco-friendly:** A conventional PC consumes 200 W or more, while each VM on the desktop cloud system consumes about 35 W on average. Considering continuous running of the desktop cloud system, energy-saving technologies are adopted to save at least 70% power by each VM.

### Next-up

After entering the high-speed era, China Railways has higher requirements on quick repair, maintenance, and IT system with better performance, including quick service provisioning and better service continuity. Xi'an Railways Bureau with the aid of Huawei implements information construction of railways.

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