

## Sinopec Beijing Yanshan Company Realizes Efficient and Smart Operations with Cisco VXI



### Executive Summary

#### Challenges

- Ineffective management of the vast number of computers
- Burden of IT expenses grew annually
- Data security was a concern, with rampant problems
- Original solution unable to meet VXI expansion needs

#### Solution

- Cisco VXI Virtual Experience Infrastructure
- 72 Cisco UCS blade servers support 6,000 concurrency users
- Intelligent network constructed by Nexus 7000 and ASA core firewall
- Nexus 1000V and VSG provide network management functions under virtual network environment
- VCE solution from Cisco, VMware and EMC, and integrated with VMware and Cisco Validated Design (VDC)

#### Results

- Reduced the number of servers to 64% of the previous number
- Simplified IT management to a single platform
- Reduced IT overhead, freeing up capital for innovation and business development
- Enabled efficient management of entire network with Cisco's end-to-end solutions

### Challenges

Sinopec Beijing Yanshan Company is one of China's largest producers of synthetic rubber, synthetic resins, phenol-acetone, and other high-quality oil products. The company has more than ten thousand employees, 18 subordinate organizations and more than 6,000 computer terminals. Such a large number of computer terminals caused substantial difficulties for the company's day-to-day IT management and maintenance.

Due to limited human resources, the IT department struggled to provide efficient management and maintenance for the thousands of computer terminals. Upgrading operating systems and installing software patches were performed on each computer individually, a time-consuming approach that placed a burden on the IT staff and reduced the overall efficiency of all the company's employees.

The company's IT operating expenses and energy consumption were also excessively high. Each year, software upgrades and hardware maintenance of computer terminals would incur high costs, and the energy consumption from thousands of computer terminals was staggering. These costs were also rising with each passing year as the company expanded.

The thousands of computer terminals also presented a potential risk to the company's information security. Computer terminals are easily corrupted by viruses or malware, and furthermore a single infected computer represents a potential threat which can spread itself throughout the entire network.

Sinopec Beijing Yanshan Company resolved this growing problem by introducing desktop virtualization technology. The company replaced the original computers with thin client devices and transferred all computing and data storage tasks to servers and storage arrays. After the success of a pilot program that utilized 2,500 virtual desktop terminals, the company decided to further expand the program to an additional 3,500 thin client terminals, achieving a total of 6,000 virtual desktop terminals.

“We were deeply impressed by the characteristics of Cisco VXI virtual desktop solution. After VXI was deployed, it has created extraordinary results for us in terms of reducing IT investment, simplifying equipment management workflow, increasing IT deployment flexibility, and improving the overall security. This will also help to further improve the business management efficiency and business continuity for Sinopec Beijing Yanshan Company, and create great convenience for the everyday work of our employees.”

—Liu Yanbo

IT Project Leader, Sinopec  
Beijing Yanshan Company

However, they soon discovered that this created a new set of problems in that they then needed to considerably upgrade their server capacity to provide sufficient processing power to so many terminals. They would need to supplement the current infrastructure with an additional 50 servers and related hardware and software. Providing a unified server management system at a low cost became a major challenge for the company.

After careful evaluation of multiple virtual desktop solutions, Sinopec Beijing Yanshan Company decided to team up with Cisco and deploy Cisco's VXI (Virtualization Experience Infrastructure) solution. The implementation of Cisco's leading end-to-end virtual desktop solution satisfied the company's needs. Furthermore, Cisco's long-time partnerships with EMC and VMware in enterprise virtualization and Vblock virtual equipment also guarantee the high operability and availability of Cisco's virtual desktop solution.

### Solution

At the data center level, Cisco UCS B250 blade servers replaced the previous chassis servers. Cisco UCS servers are built with unique memory extension technology that enables a single server to support up to 192GB of memory. Compared to blade servers from other vendors, 60% or more virtual desktops can be supported. Cisco blade servers also perfectly integrate with VMware and other software in virtualization. The adoption of VM-FEX technology fully ensures end-to-end virtual network awareness, while providing higher reliability and security for the connection of the virtual machines and dramatically reducing the cable connections between servers and networking equipment. Today, with UCS server computing ability, Sinopec Beijing Yanshan Company's IT staff increased the speed of administrating, creating and configuring the desktops while ensuring that the back-office computing resources are dynamically allocated as needed.

Cisco tailor-made a data center for Sinopec Beijing Yanshan Company which uses just 72 Cisco UCS blade servers to support the workload of more than 6,000 employees. This has not only reduced the capital expenditure on servers and other accessory IT systems, but also reduced the floor space and energy consumption of the data center.

Now, Sinopec Beijing Yanshan Company's employees can quickly and conveniently do their everyday work through the thin client virtual desktops without having to worry about whether the machines are infected by viruses or if they will perform up to standards thanks to the powerful Cisco servers in the back office ensuring that all operations are executed smoothly.

To improve the customer's experience under concurrency for a large number of desktops at the network level, Cisco deployed Nexus 7000 for Sinopec Beijing Yanshan Company, which enlarged the connection between virtual desktop terminals and servers. Meanwhile, the application of Nexus 1000v and VSG (Virtual Security Gateway) consolidates the virtual machines' network awareness and security separation. With ESXi software switchers installed on the Cisco Nexus 1000V, the company is ensured a reliable and secure network. The powerful performance of Cisco Nexus 1000V in link convergence, QOS, ACL, port mirroring, NetFlow and other functions satisfied the relevant virtualization demand. The virtual machines within the data center were protected with a VSG that filtered the traffic of external equipment to the virtual machines as well as the traffic between the virtual machines themselves.

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Today, Sinopec Beijing Yanshan Company's IT staff maintains the company network with ease. The IT staff simply operates the servers to allocate computing, storage and network resources for each frontend terminal. With such an efficient network, the IT staff requires just a few minutes to resolve problems with virtual desktops, and this has tremendously improved the productivity and continuity of Sinopec Beijing Yanshan Company's employees.

The end-to-end integration expertise demonstrated by Cisco greatly impressed the customer with its market-leading technical advantages. Cisco has formed a unified architectural solution at three separate levels from the data center to the network and the terminal. The technologies at all three levels collaborate with each other to form a smart and interconnected overall architecture.