

05/03/2018

# **Huawei FusionAccess Desktop Cloud Solution**

## **6.2**

### **Technical Presentation**

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# New/Enhanced Features of FusionAccess 6.2

## A new class

Cloud classroom 2.0

## Six new scenarios

(The names of the new features are in the brackets.)

VM fault recovery and upgrade  
(VM Rebuild)

Physical graphics workstation reuse  
(Graphics Workstation Management)

Delivery display  
(Duplicate Display)

Cross-DC pool desktop  
(Unified Access to Desktop Pools)

PC-like operation experience  
(Linked Shutdown)

smooth video playback  
(Video Accelerator)

### Basic Capability

- ✓ Google ecosystem: Android TC (ZT3200) and Chrome OS client
- ✓ Multiple new TCs: CT3200/CT3200L, ST5110/ST6110;
- ✓ New gateways: hardware gateway F5 and soft gateway cluster vAG
- ✓ Windows Server 2016: The SBC supports Windows Server 2016 and interworks with the customer's Windows Server 2016 AD.

### Agility and Efficiency

- ✓ HDA coverage upgrade: You only need to restart the VM once, and the VM upgrade time is shortened by half.
- ✓ Task termination: You can forcibly terminate a task in the task center.
- ✓ Enhanced O&M: Wizard-based management, lazydesk emergency channel, user VM creation template, idle VM statistics sorting, Win10 minor version query, enhanced check items of connection diagnosis tools, message push to disconnected VMs, and VM query by template

General-purpose scenarios  
Basic Capability

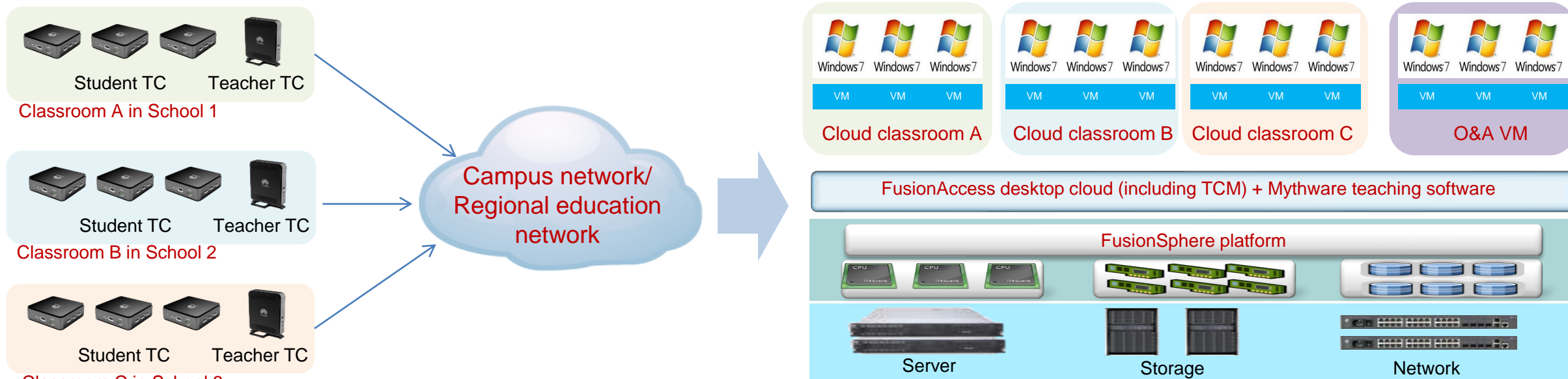
### Supreme Experience

- ✓ Single-account pooled desktop: Multiple users can use the same account to log in to a dynamic pool desktop.
- ✓ Video accelerator: Supports more video formats and better interface operation experience.
- ✓ Manual setting of resolution: Resolution setting on a VM is the same as that on a PC.
- ✓ SBC: Customized SBC application icon and multi-instance application tray

### Security and Reliability

- ✓ WI access verification code: Prevents external attacking and locking of user accounts.
- ✓ Desktop security watermark: full security watermark coverage
- ✓ USBkey login: The UNS supports USBKey login.
- ✓ Enhanced ITA password: Weak password dictionary, two characters are different between the old and the new passwords.

# Cloud Class 2.0: Centralized Sharing and Unified O&M



## ❑ Challenges

- ✓ Onsite maintenance is required for PCs in each classroom, which is inefficient and bears security risks.
- ✓ Desktop resources cannot be shared in a single classroom, and mobile office and mobile teaching are unavailable.

## ❑ Application Scenario

- ✓ A city/county education bureau or a school builds a cloud to meet the office and teaching demands of different schools. Time-sharing and reuse of resources, centralized O&M, and management realize mobile teaching.

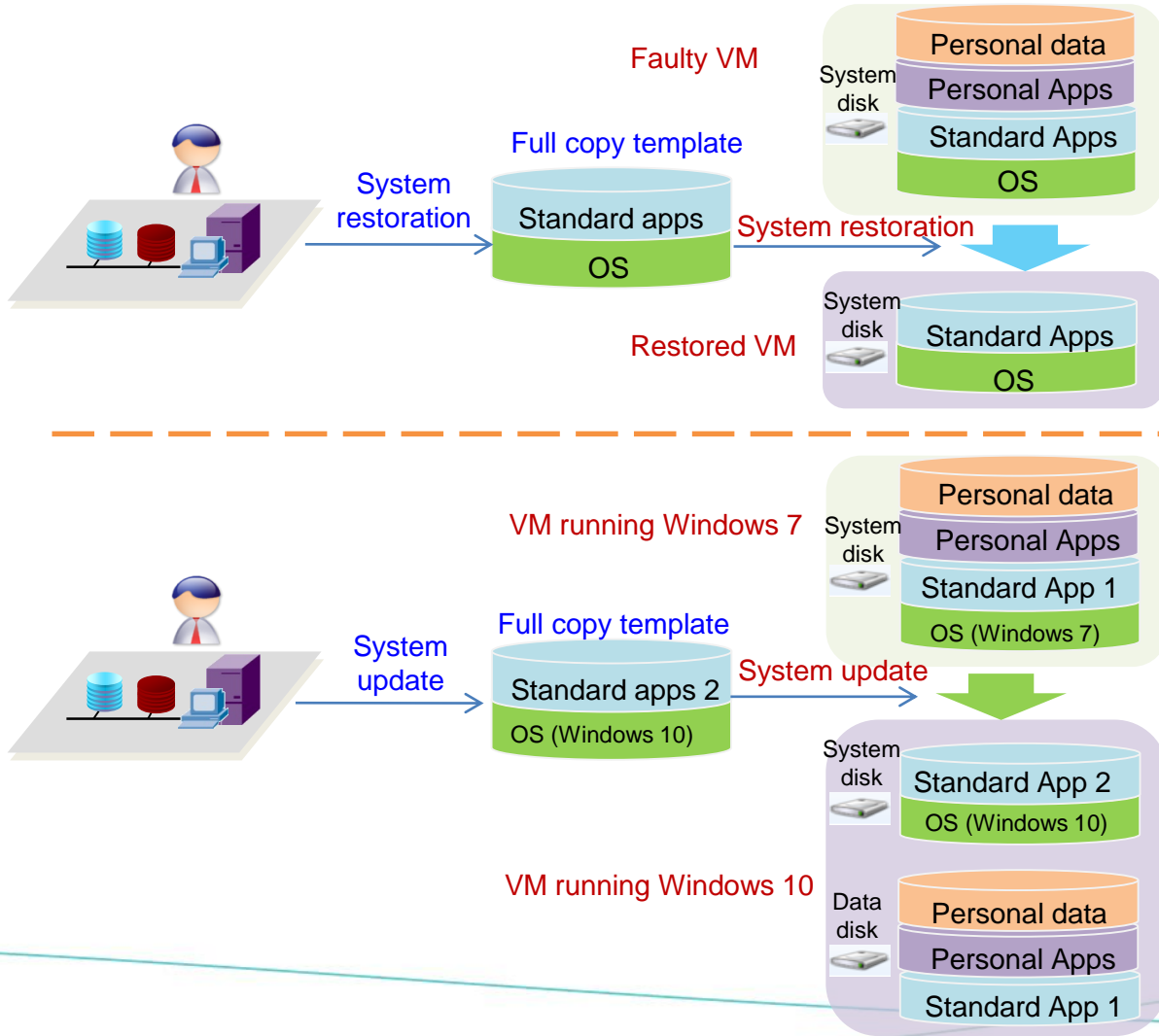
## ❑ Function Description

- ✓ TCs in each classroom are numbered and configured as planned.
- ✓ Classrooms are set up dynamically. Teachers use Mythware teaching software to broadcast the teaching screen based on the HDP proxy.
- ✓ After class, students' VMs are released back to the resource pool for the next class.

## ❑ Differentiated Competitiveness

- ✓ One cloud meets all the office and teaching requirements. VM is used by both teachers and students. The O&A VM can be used as the teaching VM.
- ✓ Supports HD video play during the class.

# VM Rebuilding: Quick VM Fault Rectification and OS Upgrade



## ❑ Challenges

- ✓ In case of a blue screen of death (BSOD) occurs, a new VM is provisioned to the user.
- ✓ After the OS is upgraded from Windows 7 to Windows 10, VMs need to be provisioned again. Users need to copy data, which is inconvenient and the administrator has heavy maintenance workload.

## ❑ Application Scenario

- ✓ After a BSOD occurs on a VM and cannot be rectified, the administrator can restore the VM to the template in one click.
- ✓ The administrator can upgrade VMs from Windows 7 to Windows 10 in batches.

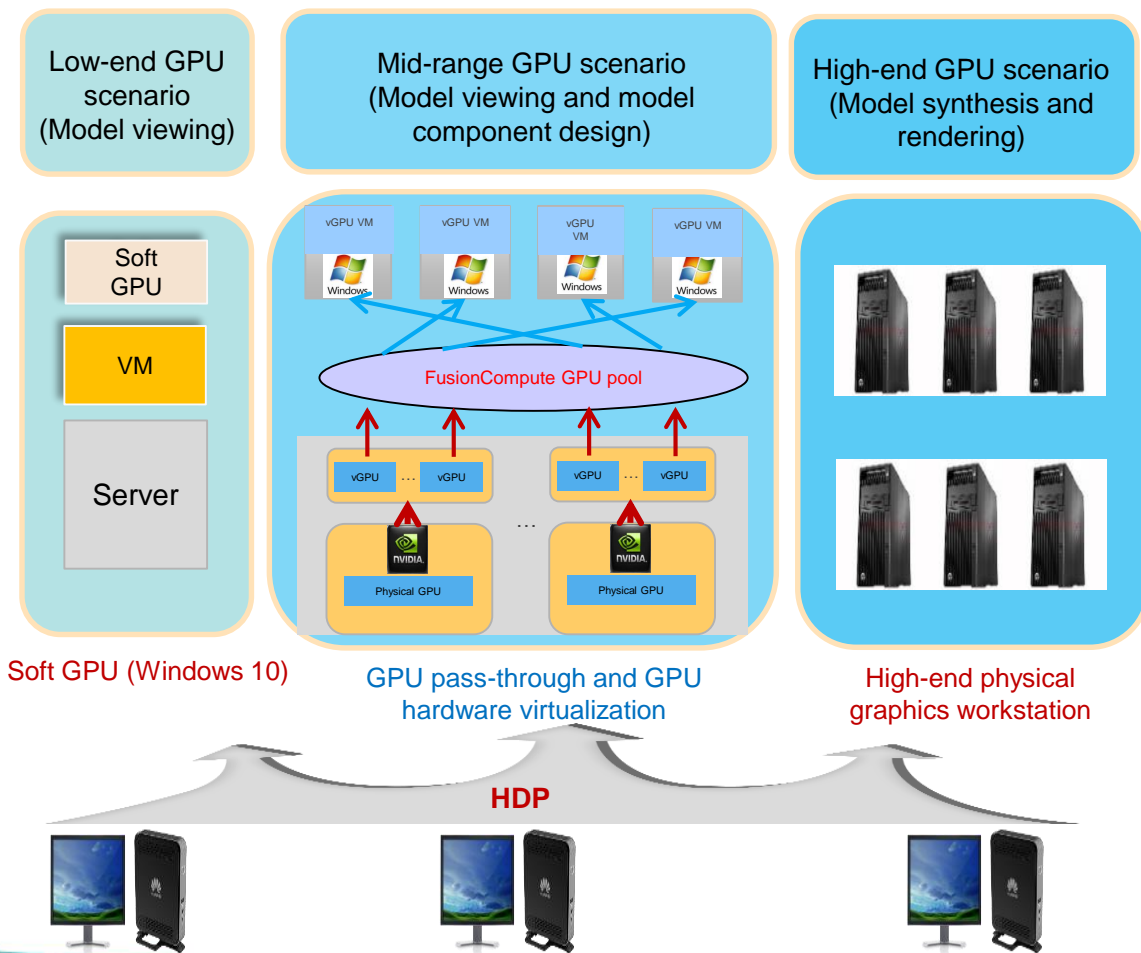
## ❑ Function Description

- ✓ Reconstruction of full copy VMs, including system restoration and system update
- ✓ After the reconstruction, the IP address and VM name remain unchanged.
- ✓ After the system is updated, the system disk or data disk of the original VM can be used as the data disk of the new VM.

## ❑ Differentiated Competitiveness

- ✓ Rebuilds full copy VMs.
- ✓ After the VM is rebuilt, the IP address and VM name remain unchanged, so the external system is unaware of the rebuilding.
- ✓ During reconstruction, the source VM disks can be retained as the data disk, facilitating data migration.

# Physical Graphics Workstation Management: Protecting Customers' Investment, Unified Provisioning and Management, Remote Access



## Challenges

- ✓ The budget does not allow full GPU VM deployment. The customer wants to use the existing physical graphics workstation.
- ✓ The customer wants to lower the cost by not purchasing GPUs for light-load scenarios such as model and drawing viewing.

## Application Scenario

- ✓ The existing high-end physical graphics workstation is added to the desktop cloud system for provisioning and management. Users can connect to the graphics workstation remotely through HDP on the TC/PC for drawing design.
- ✓ Windows 10 graphics VMs are provisioned without GPUs, meeting the light load model requirements.

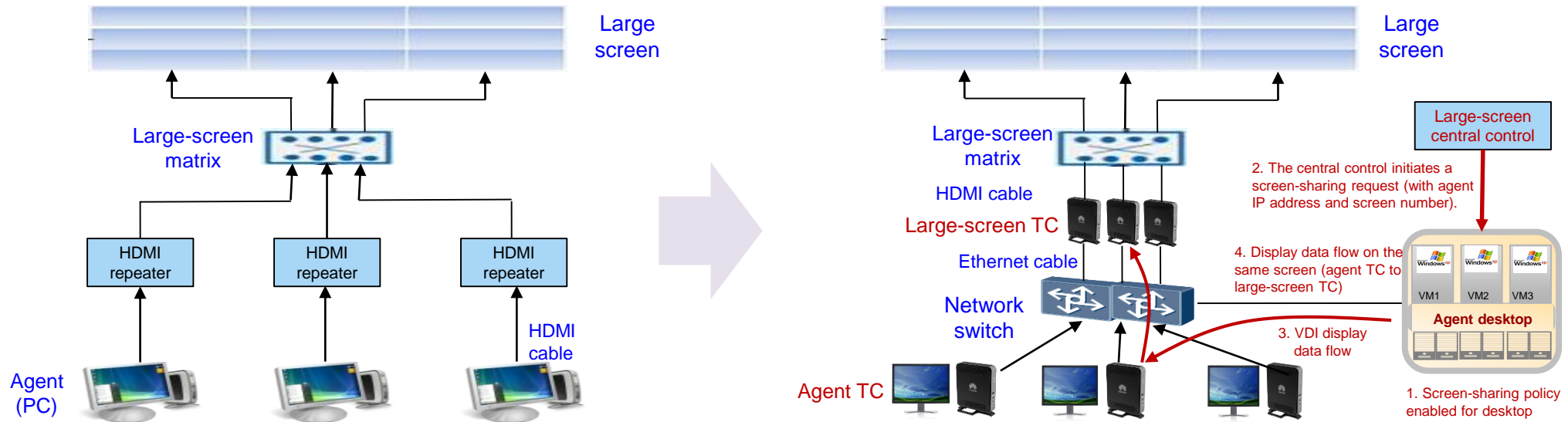
## Function Description

- ✓ The HDA is installed on the physical graphics workstation.
- ✓ The physical graphics workstation is added to the desktop cloud management system for unified allocation and management.
- ✓ Only Nvidia graphics cards are supported. The graphics cards include Nvidia Quadro M5000 and K2000. For other graphics cards, POC verification is required.
- ✓ For other functions and specifications, see the sales guide.

## Differentiated Competitiveness

- ✓ High-end, mid-range, and low-end scenario coverage: Manages soft GPUs (Window 10), vGPUs, GPU pass-through, and physical graphics workstations.

# Screen-sharing Display: Simplified Large-screen-to-Agent Connection, Flexible and Convenient



## Challenges

- ✓ HDMI cabling supports only single-route direct connection, which requires large number of HDMI repeaters to suppress the attenuation. The cabling is complex with high engineering cost. The maintenance and adjustment are difficult.
- ✓ Binding between personnel and PCs, between PCs and agents, and between agents and cables, hinder dynamic adjustment among multiple departments

## Application Scenario

- ✓ It is applicable to command centers for smart city and safe city projects.

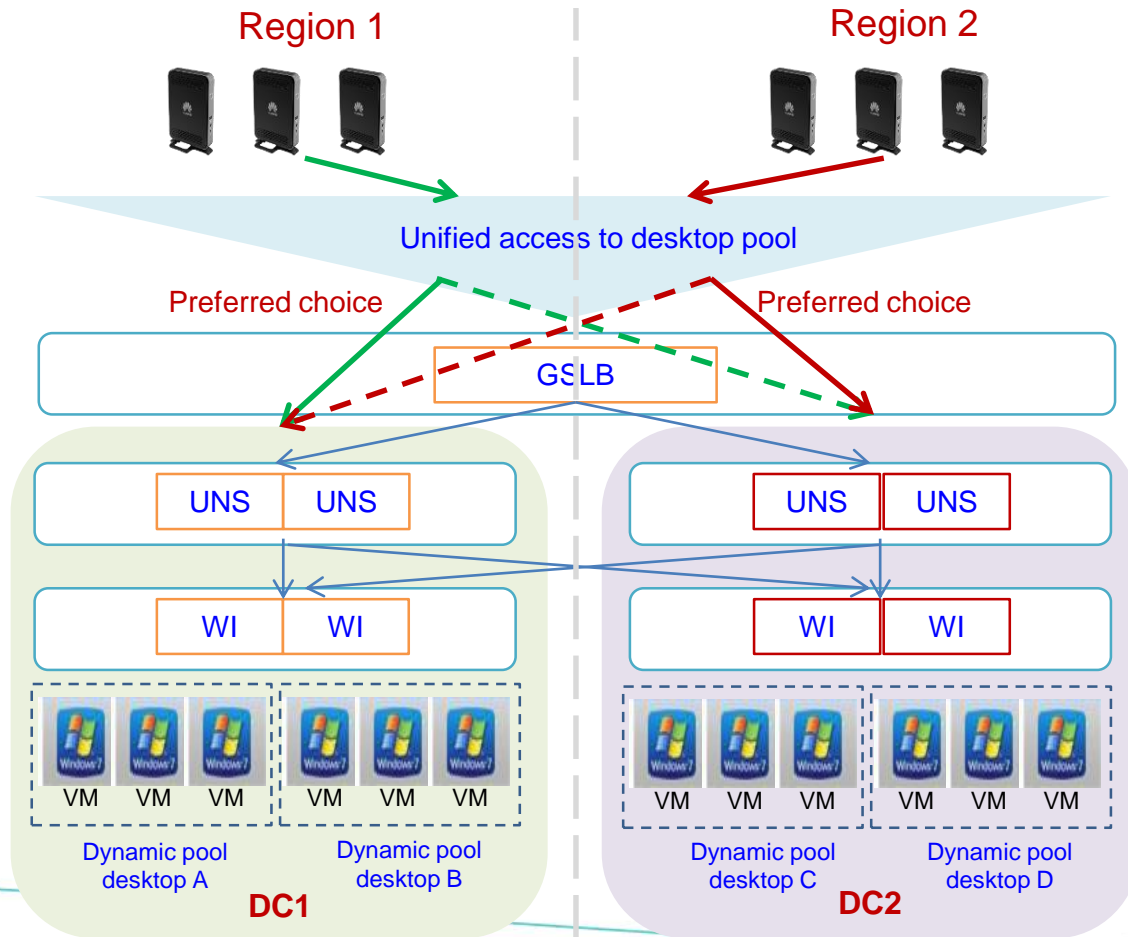
## Function Description

- ✓ The screen-sharing policy allows large-screen central control system to invoke the HDP interface to set the screen number and the target large-screen TC.
- ✓ The agent TC projects a specified screen to the large-screen TC, which is connected to the large-screen matrix and displayed on the large screen.
- ✓ The agent TCs and large-screen TCs must be Windows-version TCs of the same model.
- ✓ The agent TC is connected to up to two monitors. When only one monitor is connected, a maximum of 4K resolution is supported.

## Differentiated Competitiveness

- ✓ The only desktop solution that can provide such capability in the industry

# Unified Desktop Pool Access: Higher VM Usage, Better Access, Reduced Cross-domain Bandwidth, and Better User Experience



## Challenges

- ✓ Frequency personnel flow generates cross-domain accesses, increasing cross-domain bandwidth and costs, affecting user experience.
- ✓ With the GSLB+NAS DR solution, users can view the icons of the standby DR VMs.
- ✓ The desktop group supports a limited number of VMs. Multiple desktop groups are divided, and the user/VM multiplexing rate is low.

## Application Scenario

- ✓ The scenarios featuring multiple DCs in different regions and cross-regional personnel flows
- ✓ GSLB+NAS DR scenarios
- ✓ Common terminal scenarios, such as conference room terminals that used by all employees

## Function Description

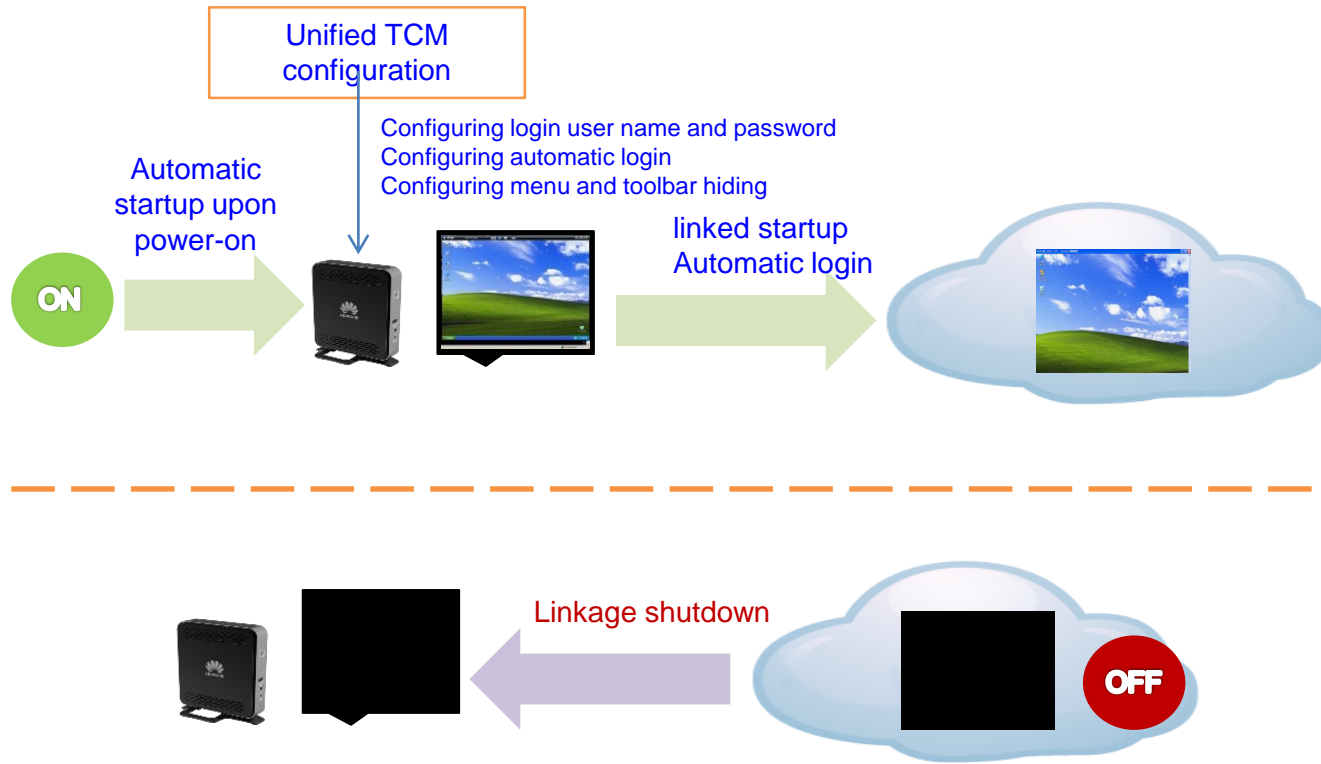
- ✓ Creates desktop group collections, including dynamic pool desktop groups of two DCs, with different priority sequences.
- ✓ When a user logs in to a TC in different areas, the desktop with the highest priority in the local area is preferred. If the desktop resource in the local area is insufficient, a desktop from another area is selected.
- ✓ If a user has a VM that has not been deregistered, the system prompts the user to log out of the VM first.
- ✓ In the GSLB+NAS DR scenario, TCs in different areas are configured to preferably access the desktop pool in the primary data center.

## Differentiated Competitiveness

- ✓ This feature can be deployed on the desktop cloud systems in use. It does not need to be planned during desktop deployment.
- ✓ Administrators can flexibly set desktop group priorities with affinity and anti-affinity modes.
- ✓ During cross-region access, if an unregistered VM is available, a message is displayed, improving user experience.



# Linked Shutdown: Excellent Power-on and Power-off Experience



## ❑ Challenges

- ✓ In public places such as electronic classrooms and libraries, the power supply is managed in a centralized manner. Administrators need to enter the user name and password to log in to the system after powering-on. The maintenance workload is heavy.
- ✓ Some enterprises require employees to shut down PCs and monitors. With FusionAccess Desktop Solution, TCs are working after VMs are shut down, potentially violating the regulation.

## ❑ Application Scenario

- ✓ Public terminals in cloud classrooms, call centers, electronic classrooms, reading rooms, and conference rooms

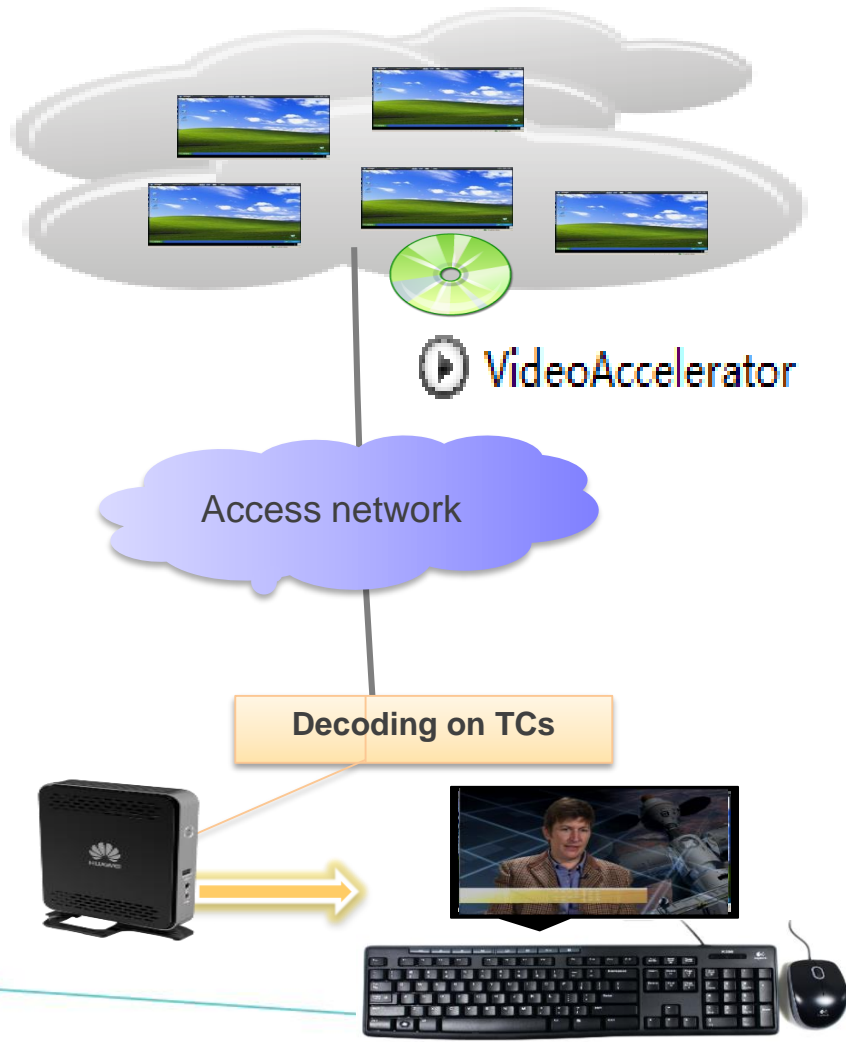
## ❑ Function Description

- ✓ TCMs are configured with automatic startup (TCs of the CT series with x86 chips), login user name and password, automatic login, and hiding TC start menu and client work bar.
- ✓ After a TC is powered on and automatically logs in to the virtual desktop, the VM that is shut down can be automatically started.
- ✓ When a user shuts down a VM, the TC is shut down, too.

## ❑ Differentiated Competitiveness

- ✓ Automatic startup upon power-on, automatic startup and linked shutdown for all scenarios, supreme power-on and power-off experience

# Video Accelerator: Better Video Playback Experience



## ❑ Application Scenario

- ✓ Local video playback on virtual desktops is redirected to the TC for decoding, reducing server pressure and improving playback experience.
- ✓ In EU and other regions where the Windows 10 N is used, the Media Player is not provided with the OS. The virtual desktop plays local videos.

## ❑ Function Description

- ✓ The independent Huawei video accelerator component supports video redirection to TCs for local decoding and playback.
- ✓ Full-screen playback of 4K videos is supported. (TCs must support 4K hardware decoding. Centerm C51 and 90B0Z TCs are recommended.)
- ✓ Supports mainstream video formats of MP4, flv, wmv, mkv, avi, rmvb, and mov. (CT3200 supports only MP4 and flv video files in H.264 encoding format with 720P/480P resolution.)
- ✓ Supports Windows TC and Linux TCs (Windows TC is required for 1080P videos).

## ❑ Differentiated Competitiveness

- ✓ Smoothly plays 4K video files.
- ✓ Video redirection without dependency on Media Player; supports more video formats and more TC types.

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## Solution Overview and Typical Application Scenarios

**1**

Solution Overview

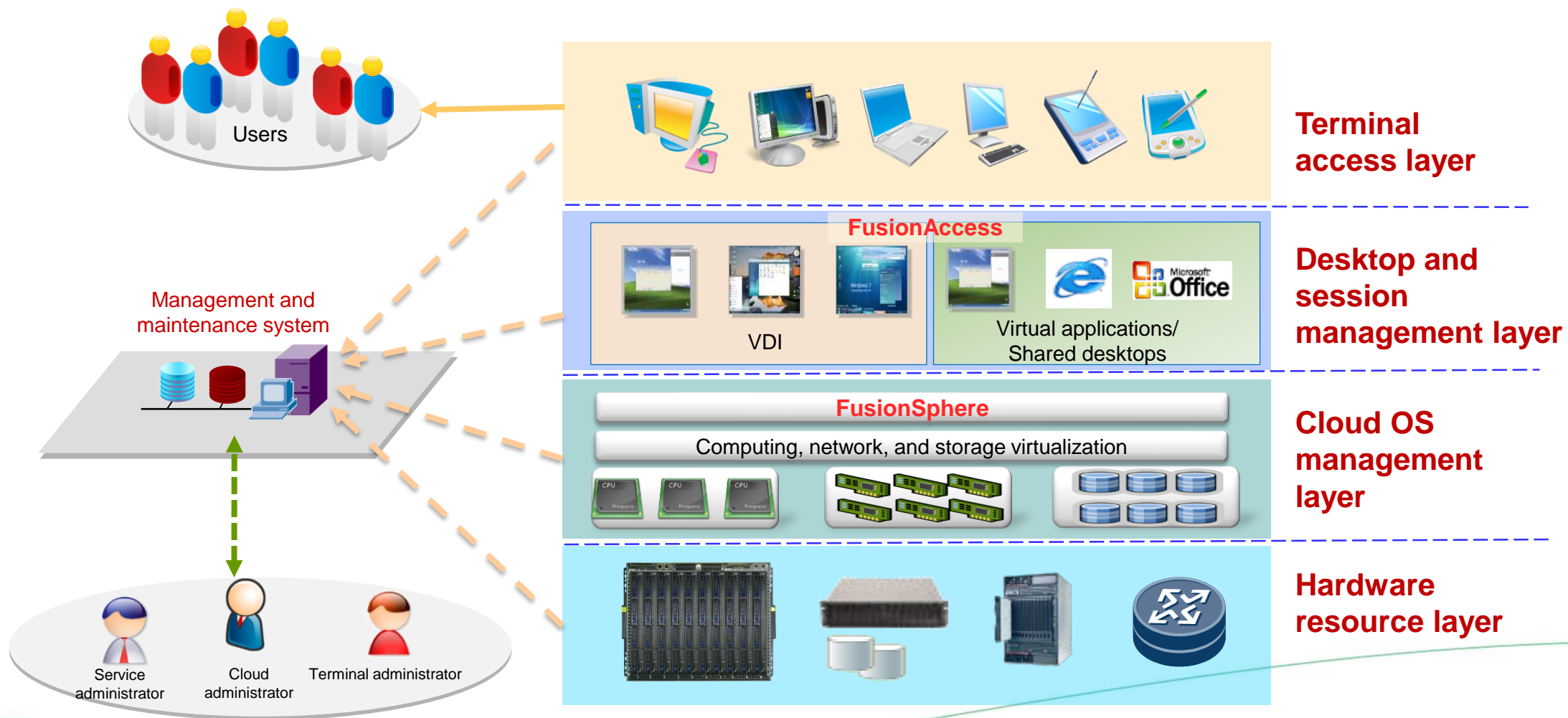
**2**

Typical Application Scenarios

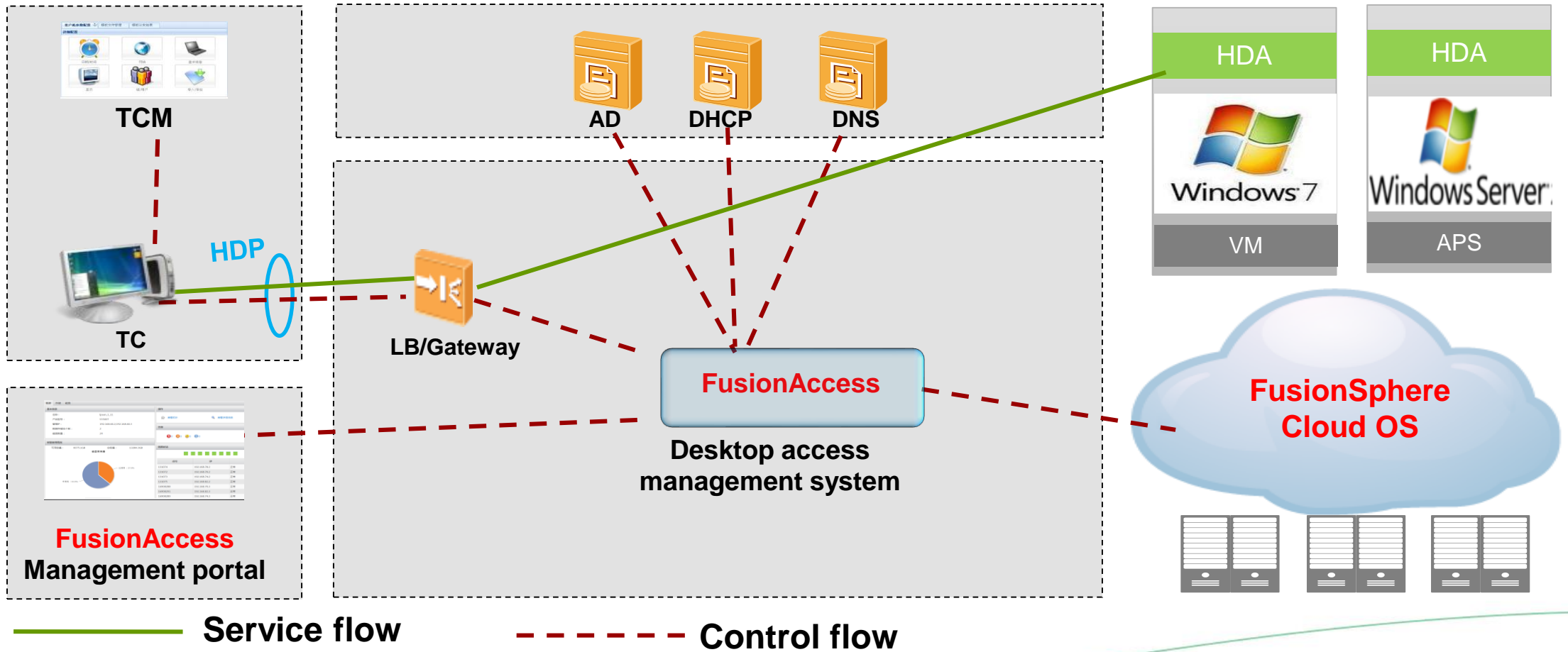
**3**

Introduction to Application Virtualization

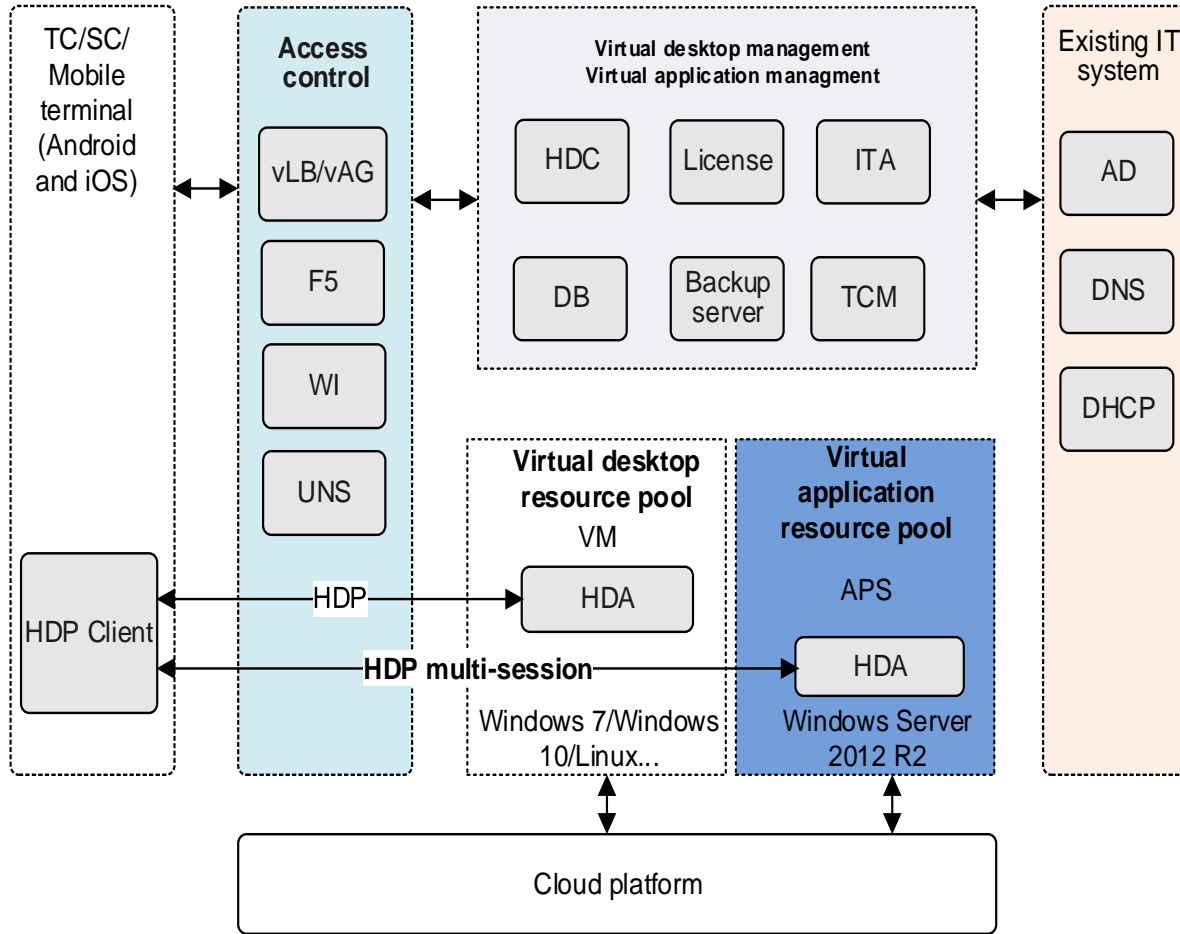
# Solution Architecture



# Connection Diagram

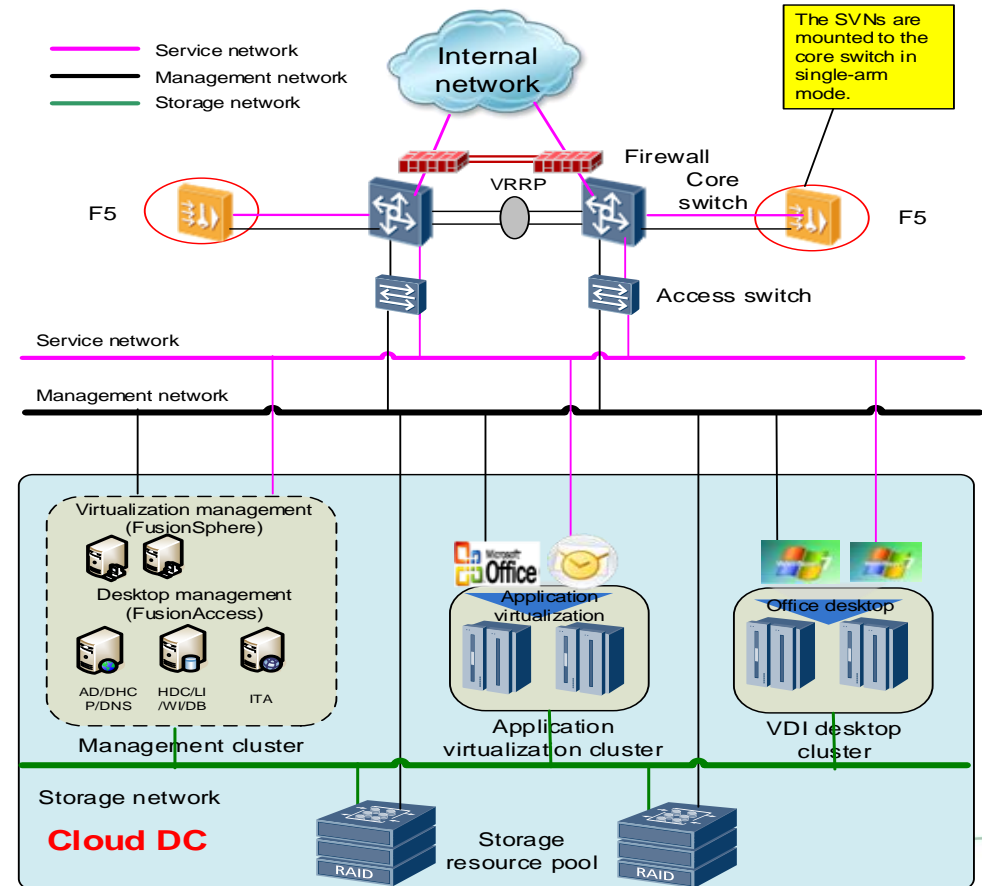
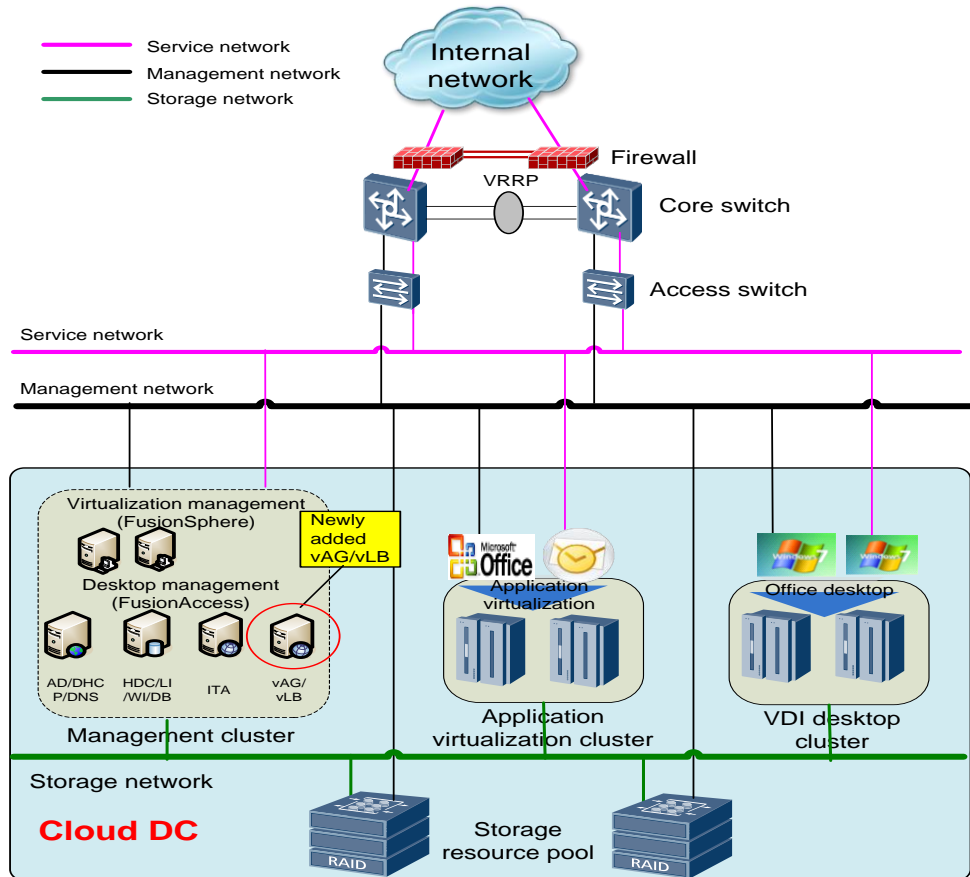


# Logical Architecture



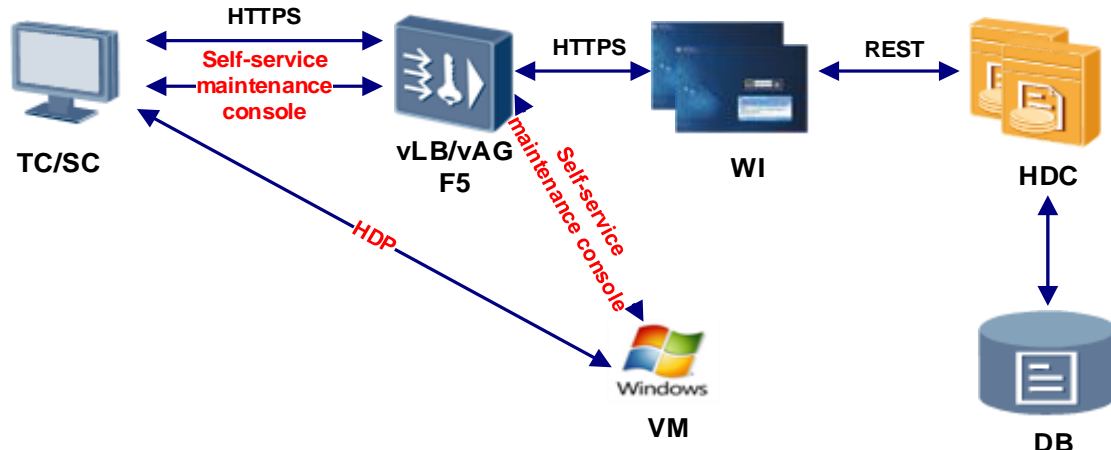
Component	Full Name	Remarks
HDC	Huawei Desktop Controller	Huawei desktop controller
LIC	License	Authorization management
ITA	IT Adapter	IT resource adaptation management
DB	Data Base	Relational database
AUS	Agent Upgrade Server	Agent upgrade server
TCM	Thin Client Management	TC management
vLB	Virtual Load Balance	Virtual load balancing
vAG	Virtual Access Gateway	Virtual access gateway
WI	Web Interface	User portal interface
UNS	Unified Name Service	Unified name service
HDA	HDP Agent	HDP agent
HDP Client	HDP Client	HDP client
APS	Application Server	Application server
TC	Thin Client	TC
SC	Soft Client	SC
Backup Server	Backup Server	Backup server

# Physical Networking (F5, vAG/vLB)





# Internal Network Access Scenario 1: No HDP Gateway



- ✓ In this scenario, no HDP gateway is deployed, and the HDP clients communicate directly with the virtual desktops.

## [vLB/vAG Deployment]

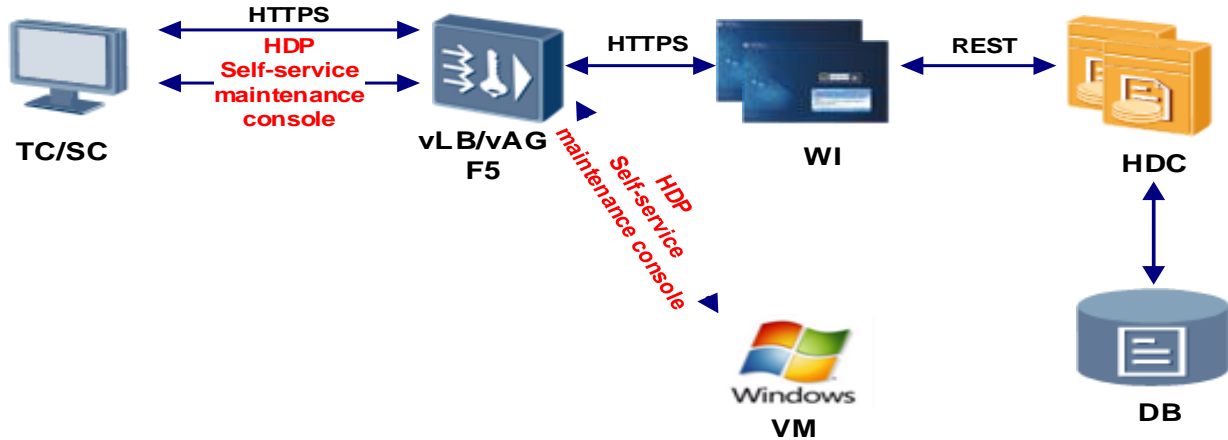
- ✓ The vLB implements load balancing among multiple WIs, and the vAG functions as the self-service maintenance gateway. In scenarios in which the user access network and the service network are not connected, an NIC needs to be added to the vAG to connect to the access network.

## [F5 Deployment]

- ✓ The F5 implements load balancing among multiple WIs, and functions as the self-service maintenance gateway. The F5 is mounted to the core switch in single-arm mode through the trunk port. Data packets of the virtual local area network (VLAN) on the management plane and service plane configured on the core switch can pass this trunk port. A service sub-interface is created on a service plane VLAN and a management sub-interface is created on a management plane VLAN.
- ✓ A virtual gateway is created on the F5, and a load balancing gateway and a self-service maintenance gateway are added to the virtual gateway. In this way, any request to access the IP address of the load balancing gateway is forwarded to the WI by the F5. Similarly, the F5 accesses the Virtual Network Computing (VNC) Server as an agent of the self-service maintenance client.
- ✓ If the management plane and the service plane are not connected, a router needs to be configured between them to ensure that the self-service maintenance data packets reach the management network.

Node	Recommended Deployment Mode	OS	HA Mode	Number of NICs and IP Address Type	Maximum Number of Users
ITA/WI/HDC/DB/ License	Deployed together VM: 4 CPUs and 12 GB memory	Linux	WI/HDC: load sharing DB: active/standby License: standalone	1 (service IP address)	5000
(Optional) ITA	Deployed independently VM: 4 CPUs and 4 GB memory	Linux	Active/Standby	2 (service IP address and management IP address)	20000
F5	-	-	Active/Standby	2 (service IP address and management IP address)	5000
vLB/vAG (self- service maintenance console)	Deployed together VM: 4 CPUs and 4 GB memory	Linux	vLB: active/standby vAG: load sharing	2 (service IP address and management IP address) Note: An extra floating IP address is required for active/standby deployment.	5000
(Optional) UNS	Deployed independently VM: 4 CPUs and 4 GB memory	Linux	Load sharing	1 (service IP address)	20000
(Optional) TCM	Deployed independently VM: 4 CPUs and 4 GB memory	Linux	Standalone	1 (service IP address)	20000
(Optional) AUS	Deployed independently VM: 4 CPUs and 4 GB memory	Linux	Standalone	1 (service IP address)	20000
(Optional) AntiVirus/Patch	Deployed together VM: 2 CPUs and 2 GB memory	Windows 2012	Standalone	1 (service IP address)	N/A
(Optional) AD/DNS/DHCP	Deployed together VM: 2 CPUs and 2 GB memory	Windows 2012	Active/Standby	1 (service IP address)	N/A

# Internal Network Access Scenario 2: HDP Gateway



- ✓ In this scenario, the HDP gateway is deployed, and the HDP clients communicate with the VMs through the gateway, and cannot communicate with the VMs directly.

## [vAG/vLB Deployment]

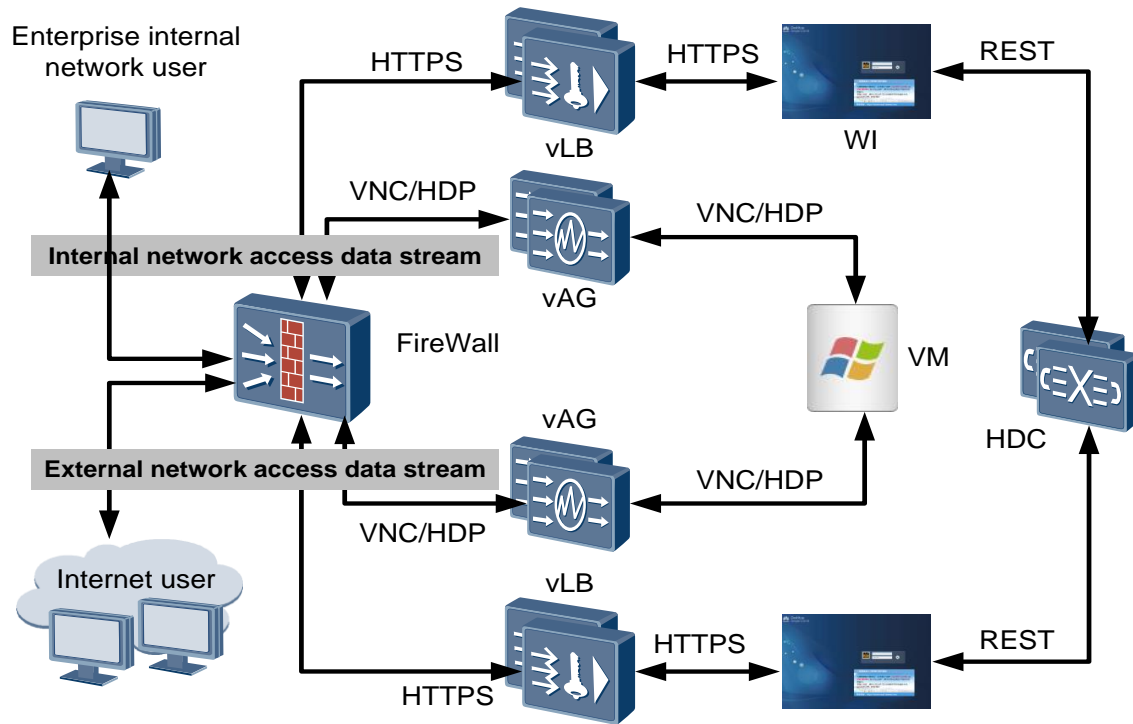
- ✓ When the number of users is greater than 1000, more than three vAGs are required. When the resources in the management cluster are limited, vAGs over three can be deployed in the user cluster. The number of vLBs required is not dependent on the number of vAGs. Deploy two vLBs on two vAGs that are deployed in the management cluster.
- ✓ In scenarios in which the user access network and the service network are not connected, an NIC needs to be added to the vAG to connect to the access network.

## [F5 Deployment]

- ✓ The F5 is mounted to the core switch in single-arm mode and is connected to the core switch through the trunk port. Data packets of the virtual local area network (VLAN) on the management plane and service plane configured on the core switch can pass this trunk port. A service sub-interface is created on a service plane VLAN and a management sub-interface is created on a management plane VLAN.
- ✓ A virtual gateway is created on the F5, and a load balancing gateway and a security cloud gateway are added to this virtual gateway. Any request to access the IP address of the load balancing gateway is forwarded to the WI by the F5. Similarly, the F5 accesses the HDP server and the VNC server on the unified virtualization platform (UVP) on the CNA as an agent of the HDP and self-service maintenance client.
- ✓ If the management plane and the service plane are not connected, a router needs to be configured between them to ensure that the self-service maintenance data packets reach the management network.

Node	Recommended Deployment Mode	OS	HA Mode	Number of NICs and IP Address Type	Maximum Number of Users
ITA/WI/HDC/DB/License	Deployed together VM: 4 CPUs and 12 GB memory	Linux	WI/HDC: load sharing ITA/DB: active/standby License: standalone	1 (service IP address)	5000
(Optional) ITA	Deployed independently VM: 4 CPUs and 4 GB memory	Linux	Active/Standby	2 (service IP address and management IP address)	20000
F5	-	-	Active/Standby	2 (service IP address and management IP address)	4000
vLB/vAG (self-service maintenance console and HDP gateway)	Deployed together VM: 4 CPUs and 4 GB memory	Linux	vLB: active/standby vAG: load sharing	2 (service IP address and management IP address) Note: An extra floating IP address is required for active/standby deployment.	500
vLB/vAG (self-service maintenance console and HDP gateway)	Independent server Deployed together VM: 8 CPUs and 8 GB memory	Linux	vLB: active/standby vAG: load sharing	2 (service IP address and management IP address) Note: An extra floating IP address is required for active/standby deployment.	1000
(Optional) UNS	Deployed independently VM: 4 CPUs and 4 GB memory	Linux	Load sharing	1 (service IP address)	20000
(Optional) TCM	Deployed independently VM: 4 CPUs and 4 GB memory	Linux	Standalone	1 (service IP address)	20000
(Optional) AUS	Deployed independently VM: 4 CPUs and 4 GB memory	Linux	Standalone	1 (service IP address)	20000
(Optional) AntiVirus/Patch	Deployed together VM: 2 CPUs and 2 GB memory	Windows 2012	Standalone	1 (service IP address)	N/A
(Optional) AD/DNS/DHCP	Deployed together VM: 2 CPUs and 2 GB memory	Windows 2012	Active/Standby	1 (service IP address)	N/A

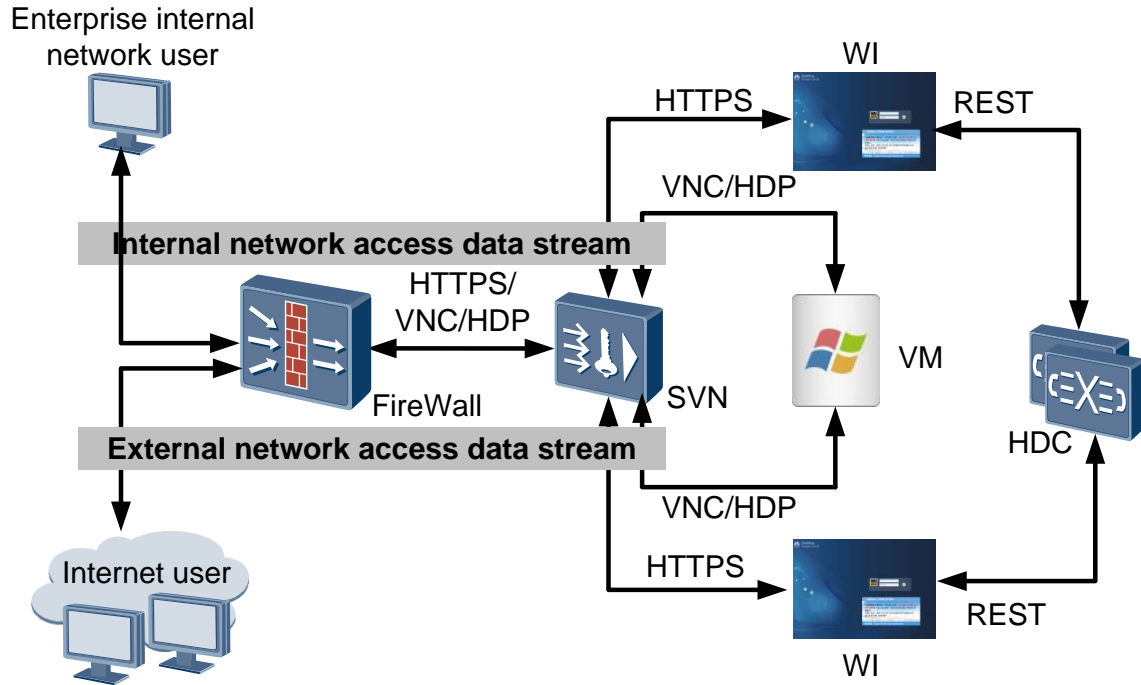
# Internet Access Scenario 1: VM Deployment (vLB/vAG)



Node	Recommended Deployment Mode	OS	HA Mode	Number of NICs and IP Address Type	Maximum Number of Users
WI	Deployed independently VM: 4 CPUs and 8 GB memory	Linux	Load sharing	1 (service IP address)	2000
vLB/vAG (self-service maintenance console and HDP gateway)	Deployed together VM: 4 CPUs and 4 GB memory	Linux	vLB: active/standby vAG: load sharing	2 (service IP address and management IP address) Note: An extra floating IP address is required for active/standby deployment.	500
vLB/vAG (self-service maintenance console and HDP gateway)	Independent server Deployed together VM: 8 CPUs and 8 GB memory	Linux	vLB: active/standby vAG: load sharing	2 (service IP address and management IP address) Note: An extra floating IP address is required for active/standby deployment.	1000

- ✓ A set of WI, gateway, and LB need to be deployed independently for the Internet access scenario. In this solution, the vAG and vLB are deployed.
- ✓ On the vLB, original addresses are hashed and then mapped to the WI. If network address translation (NAT) mapping is configured for the firewall, an original IP address connected to a desktop needs to be mapped to an IP address pool rather than an IP address. Different connections are distinguished by ports.
- ✓ The method for installing the vLB and vAG is the same as the method for installing the vLB and vAG for internal network access.

# Internet Access Scenario 2: Physical Gateway Deployment (F5)



Node	Recommended Deployment Mode	OS	HA Mode	Number of NICs and IP Address Type	Maximum Number of Users
WI	Deployed together VM: 4 CPUs and 8 GB memory	Linux	Load sharing	1 (service IP address)	2000
F5 (can be shared)	-	-	Active/Standby	2 (service IP address and management IP address) Note: An extra floating IP address is required for active/standby deployment.	4000

- ✓ A set of WI, gateway, and LB need to be deployed independently for the Internet access scenario. In this solution, the F5 is deployed.
- ✓ An extra virtual gateway needs to be created on the F5, and a load balancing gateway and a security cloud gateway are added to this virtual gateway. Any request to access the IP address of the load balancing gateway is forwarded to the WI by the F5. Similarly, the F5 accesses the HDP server and the VNC server on the UVP on the CNA as an agent of the HDP and self-service maintenance client.

# Performance Specifications

Management Capacity Item	Value (Reference Architecture)	Value (FusionCube)
Maximum number of users supported by a set of FusionAccess	20,000	5,000/per set
Maximum number of HDCs supported by a set of FusionAccess	16	16
Maximum number of users supported by an HDC	5,000	5,000
Maximum number of concurrent users supported by an HDC	10 users per second	10 users per second
Number of desktop groups supported by a set of FusionAccess	600	600
Number of VMs supported by a desktop group	600	600
Maximum number of clone volumes supported by a linked clone base volume	128	128
Number of VMs supported by GPU hardware virtualization (Tesla M60)	2 pGPUs/32 vGPUs	2 pGPUs/32 vGPUs
Time for concurrent startup of 50 full memory VMs on a server	< 5 minutes	< 5 minutes

# Virtual Desktop Specifications

Item	Value
OS	Windows XP 32-bit, Windows7 32-bit/64-bit, Windows 8.1 32-bit/64-bit, Windows Server 2008 R2 64-bit, Windows Server 2016 64-bit, Windows 10 32-bit/64-bit, RedHat Enterprise Linux 6.6 (RHEL) 32-bit/64-bit, Ubuntu 14.04 LTS Desktop 32-bit/64-bit, and NeoKylin) 6.0 Update1 64-bit
Number of vCPUs	1 to 64
Memory	1 GB to 4 GB (32-bit) 1 GB to 1000 GB (64-bit)
Number of vNICs	1 to 12
Number of mounted volumes	1 to 11 (at least one system volume)
System disk capacity	5 GB to 2 TB
User disk capacity	1 GB to 64 TB
Desktop color depth	24-bit/32-bit
Maximum resolution	3840 x 2160

## 2

## Solution Overview and Typical Application Scenarios

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Solution Overview







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# Typical Application Scenarios

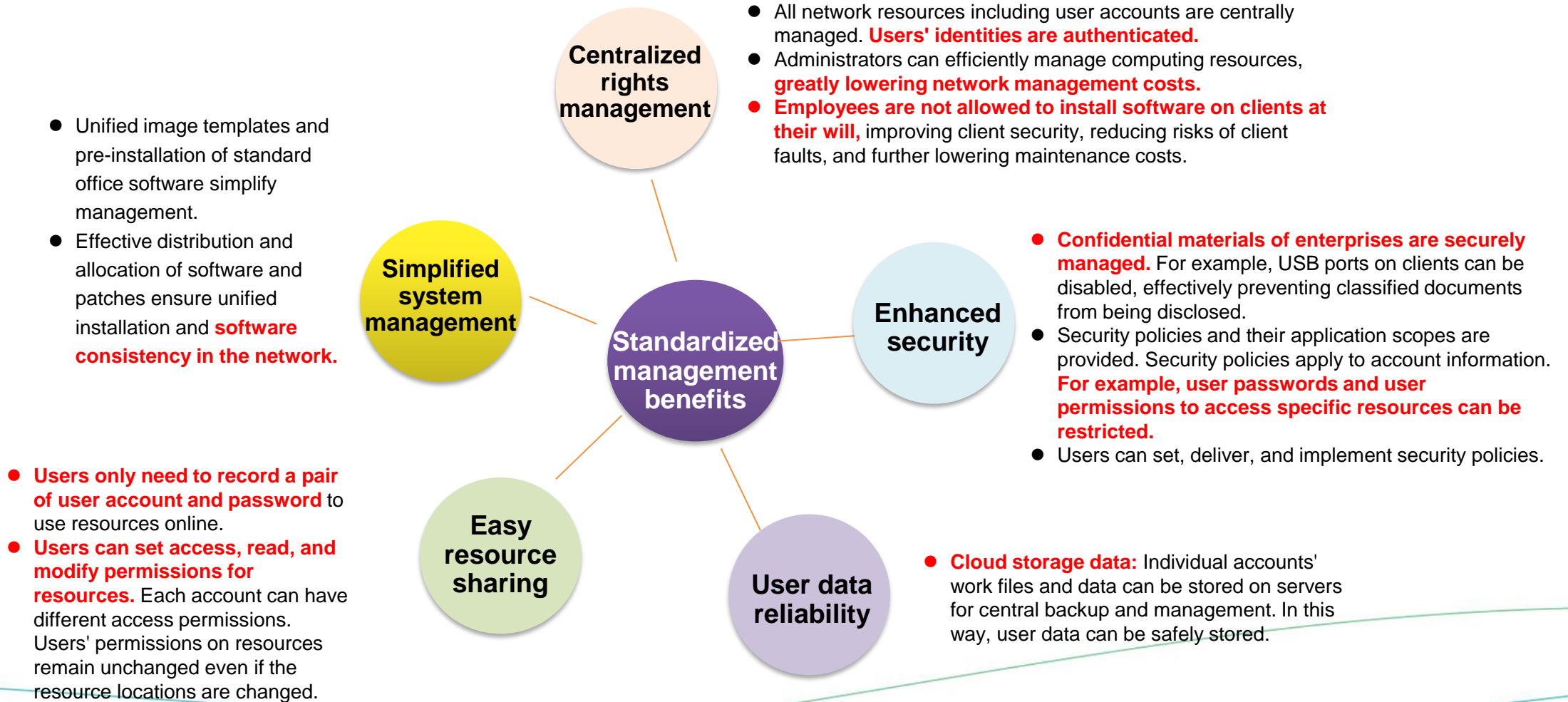
Common office	Secure office	Cloud workstation	Public terminal	Branch office	Call center
<ul style="list-style-type: none"><li>• Optimal experience</li><li>• Agility and efficiency</li><li>• All-round reliability</li></ul>	<ul style="list-style-type: none"><li>• Access security</li><li>• System security</li><li>• Network security</li><li>• Management security</li><li>• Internet access zones</li></ul>	<ul style="list-style-type: none"><li>• HD drawing</li><li>• 120 Mbit/s HD editing</li></ul>	<ul style="list-style-type: none"><li>• Full memory desktop</li><li>• Linked clone desktop</li><li>• LazyDesk</li><li>• single-account pooled desktop</li><li>• Linked shutdown</li></ul>	<ul style="list-style-type: none"><li>• Unified management</li><li>• Nearest access</li></ul>	<ul style="list-style-type: none"><li>• VM-based SoftClient</li><li>• TC-based SoftClient</li><li>• SoftClient-split architecture solution</li><li>• Hardphone</li></ul>
					



# Common Office

Optimal Experience, Agility and Efficiency, System Reliability

# Benefits from IT Office Standardization



# HD Display



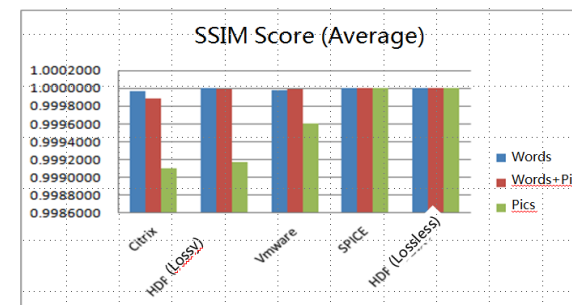
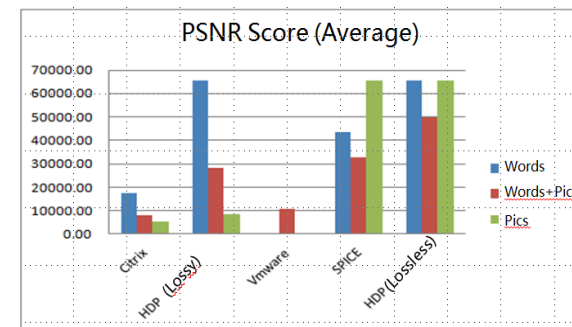
Huawei HDP display effect



Display effect of other VDIs

## □ HDP@Display key technologies

- ✓ **Lossless compression for non-natural images:** Automatically identifies non-natural images, such as characters, Windows frames, and lines and adopts lossless compression for such images. Uses a proper compression rate for natural images, such as photos and pictures. Human eyes are sensitive to characters.
- ✓ **No transmission of duplicate image data:** Automatically identifies unchanged parts in images and only transmits changed data, reducing bandwidth.
- ✓ **Support for multiple image compression algorithms:** Supports multiple image compression algorithms, and selects the best compression algorithm based on image characteristics and scenarios.
- ✓ **4K display:** The maximum resolution supported by the HDP is 3840 x 2160.

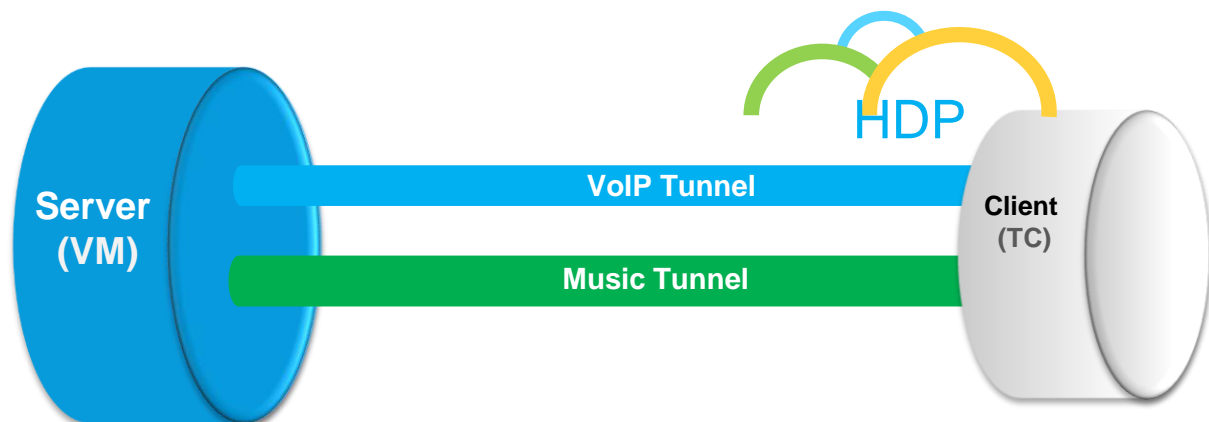


PSNR is one of the most popular methods for evaluating image quality.

SSIM is used to evaluate the similarity between two images. A larger value indicates better image quality. The maximum value is 1.

The processing effect of plain texts and characters plus images provided by the HDP is better than that of other desktop protocols. HDP obtains a high PSNR score and provides close-to-lossless images.

# High Voice Quality



**HDP PESQ: 3.4**



**PESQ of other VDIs: 3.0**

Carriers require that the perceptual evaluation of speech quality (PESQ) value of voice communication be greater than 3.3. If PESQ is lower than 3.3, the voice quality cannot meet commercial requirements.

## □ Key technology HDP@Media

- **Scenario-based algorithms:** HDP uses the telecommunication voice compression algorithm for human voice optimization in VoIP scenarios, and uses professional music coding and decoding algorithms for in music scenarios.
- **Voice optimization algorithm (automatic de-noising):** The de-noising algorithm is supported in VoIP scenarios to ensure excellent voice quality even in noisy environments.
- **Stereo mixing:** All input and output voices are mixed to improve onsite experience.
- **Low latency:** Voices on TCs are transparently transmitted to reduce latency due to voice buffer on TCs and ensure real-time performance for voice communication.
- **High sound quality:** A sampling rate of 44.1 kHz is used to prevent source voice loss. Our competitors use a sampling rate of only 16 kHz.

# Smooth Video Playback



	Huawei HDP	Other Desktop Protocols
Maximum frame rate	60	60
Maximum video resolution	<b>4 K</b>	1080 p
Automatic screen detection	<b>Be able to detect texts, pictures, and videos.</b>	Cannot detect characters and pictures
Dynamic frame rate adjustment	Supported	Supported
Application sensitivity	<b>Supported</b>	Not supported

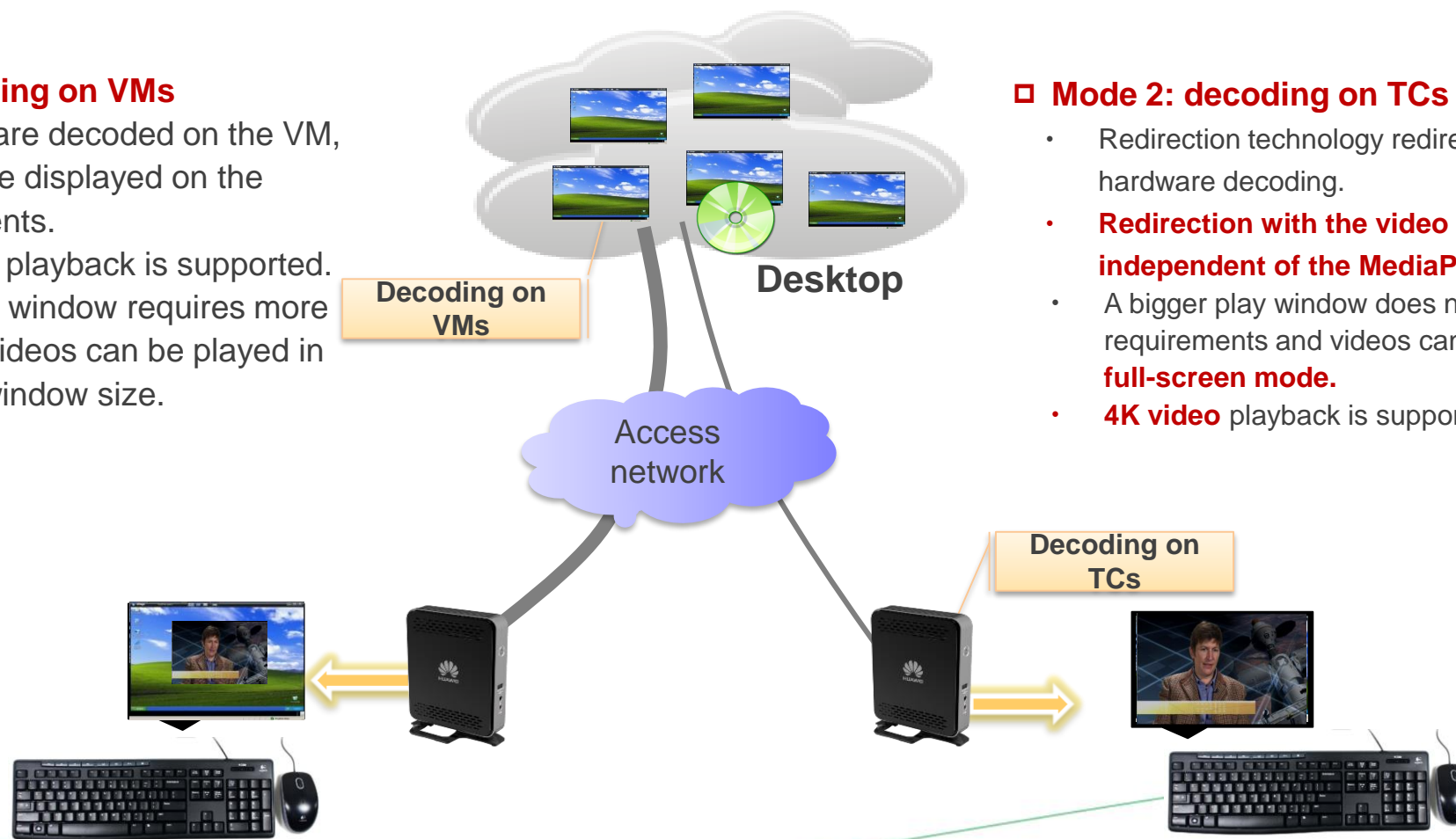
## Key technology HDP@Media

- ✓ **Intelligent identification of video data:** Automatically identifies video data or common GDI data. Video data is encoded using efficient algorithms and decoded using TC hardware capabilities.
- ✓ **Dynamic frame rate adjustment:** Dynamically adjusts the video playback frame rate based on the network quality to ensure smooth video playback.
- ✓ **Dynamic video data auto-negotiation:** Automatically adjusts video data flows based on the monitor resolution and video window size. When the player video window is minimized, no data is transmitted and almost no bandwidth is occupied, reducing CPU consumption and improving user experience.
- ✓ **Video acceleration:** Fully uses the TC hardware decoding capabilities to support automatic reconnection for playback upon network disconnection, dynamic flow adjustment, and 4K video playback, and provide better smoothness than ICA and PCoIP.
- ✓ **Flash redirection:** Redirects flashes and videos to TCs for playing, fully utilizing the TC hardware decoding capabilities and reducing processing capability requirements for virtual desktops.
- ✓ **Application sensitivity:** Optimizes commonly used playback software (such as Flash) and image processing software (such as Photoshop) based on customer demands, providing better smoothness than ICA.

# Diversified Multimedia Play Modes

## □ Mode 1: decoding on VMs

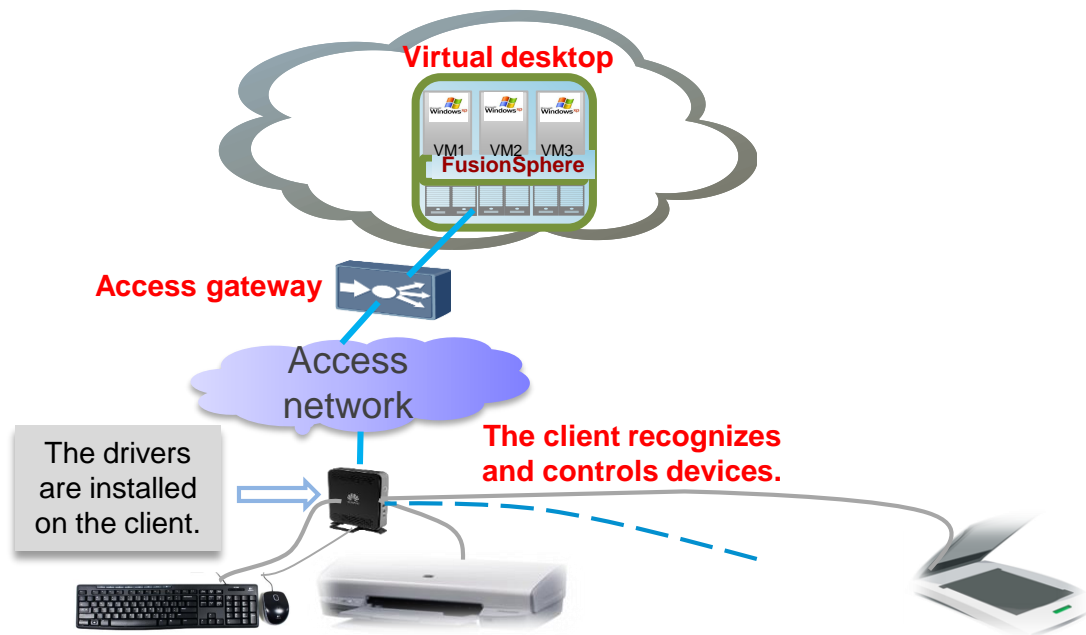
- ✓ After videos are decoded on the VM, the videos are displayed on the screen of clients.
- ✓ **1080p video** playback is supported.
- ✓ A bigger play window requires more bandwidth. Videos can be played in the original window size.



## □ Mode 2: decoding on TCs

- Redirection technology redirects videos to local hardware decoding.
- **Redirection with the video accelerator, independent of the MediaPlayer**
- A bigger play window does not increase bandwidth requirements and videos can be **played smoothly in full-screen mode.**
- **4K video** playback is supported.

# Better Peripheral Compatibility



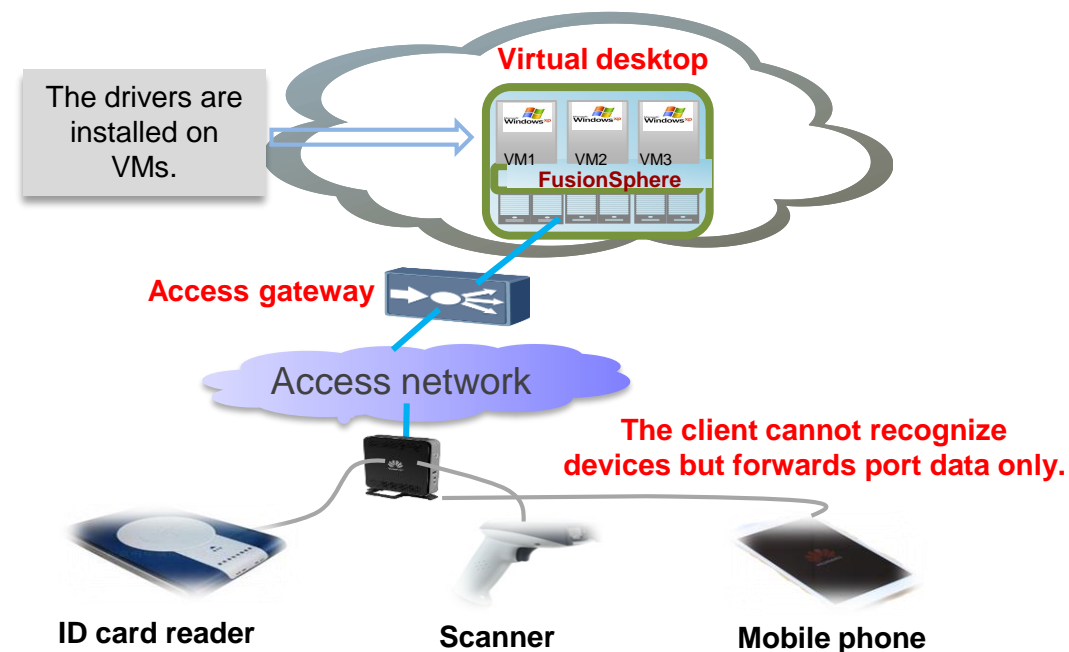
## ❑ Device mapping mode

In device mapping mode, the client detects devices connected to it and directly controls the devices (device drivers are installed on the client).

Advantage: **High-level control of devices in the desktop management system, such as print quality, image compression level, paper, color, and single-/double-side printing in printer mapping.**

## ❑ Supported devices

Common devices, such as keyboards, mouse devices, printers, Technology Without An Interesting Name (TWAIN) devices (such as scanners), PC/SC devices (such as PC smartcards), cameras, and USB flash drives.



## ❑ USB port mapping

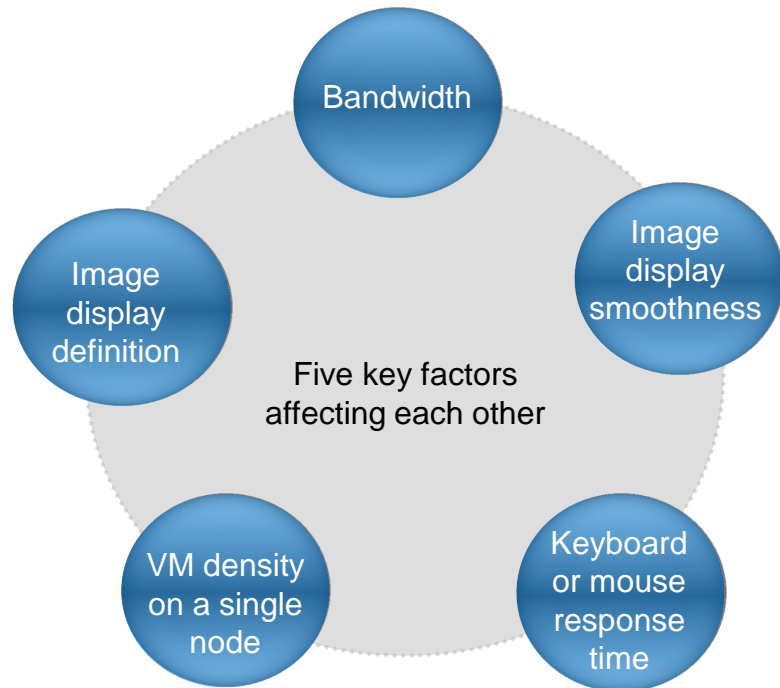
Clients do not need to recognize specific peripherals, so drivers are not installed on clients. Clients only map port data into VMs, and VM drivers detect peripherals. **The advantage is that many dedicated devices can be supported.**

## ❑ Supported devices

Various USB devices, such as ID card readers, and mobile phones, and scanners

# Diversified Protocol Policies Provide More Choices

- Relationship between bandwidth and other key factors



- Adjustable parameters, such as display grade and display frame rate

Desktop > Policy Management > Create Policy

Tips: The recommended settings can meet the QA requirements of most users. To meet the requirements of special scenarios, see the online help.

Create Template > Specify Policies > Specify Target > Complete

Category	Policy Item	Specify
Peripherals	Display Policy Grade	Grade 4 (recommended) <a href="#">Show Advanced Settings &gt;&gt;</a>
Audio	Image Cache Size (MB)	200
Flash	Bandwidth (Kbps)	20000
Multimedia	Frame Rate (fps)	25
Client	Video Frame Rate (fps)	30
Display		
VGPU		
File&Clipboard		
Access Control		
DXVA		
AutoDisconnection		

Cache: Saves bandwidth resources.

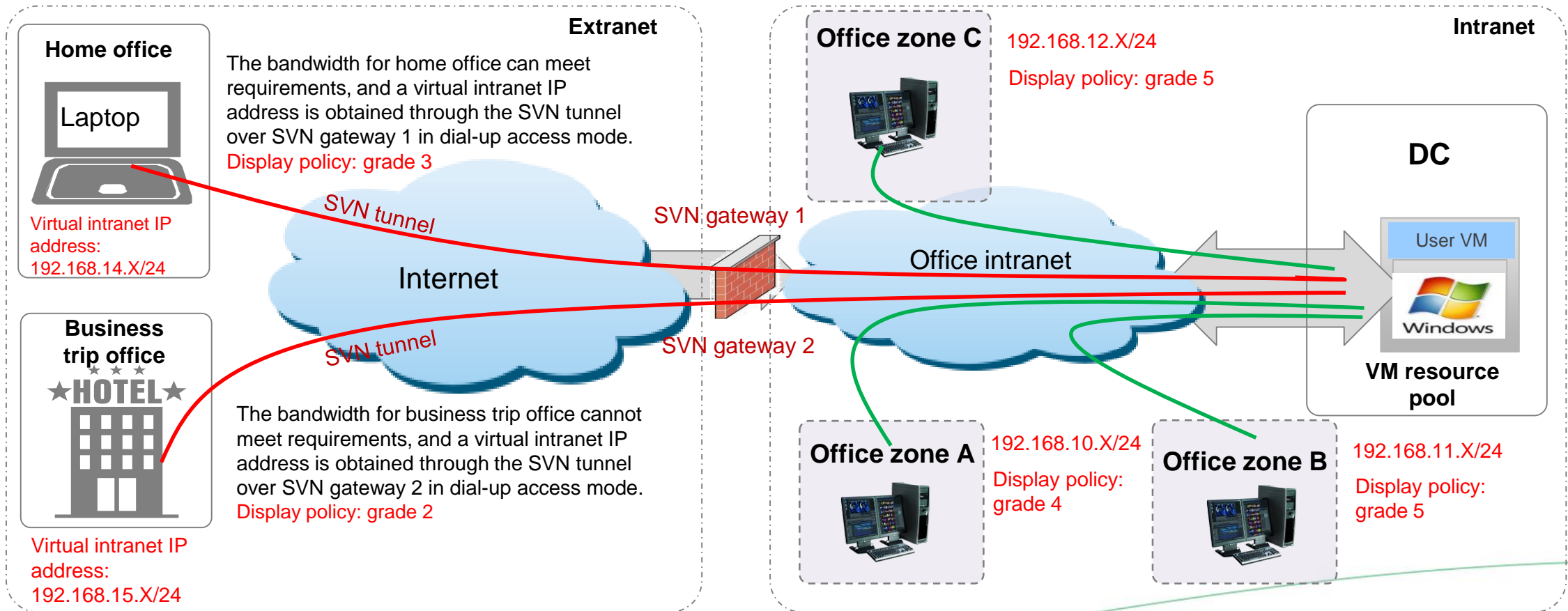
Bandwidth: Affects image display smoothness and definition.

Frame rate: Affects image display smoothness.

Image display policy: Affects user experience in image display. Five display grades from one to five are available.

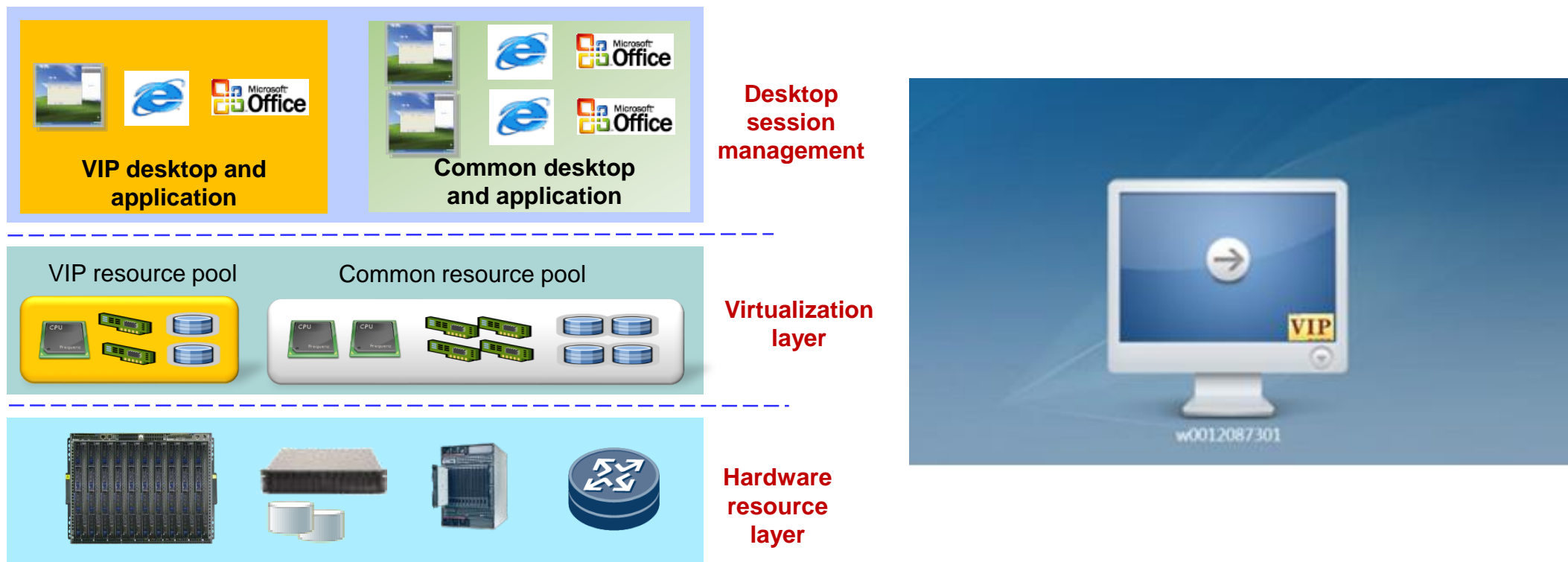


# Zone-based Display Policies Ensure Controllable Bandwidth and Experience



Network resources are shared by all services, which lead to bandwidth contention and service result unpredictability. This feature ensures controllable VDI bandwidth. In addition, the HDP also provides network auto-adaptation.

# VIP Desktops Ensure Optimal Experience

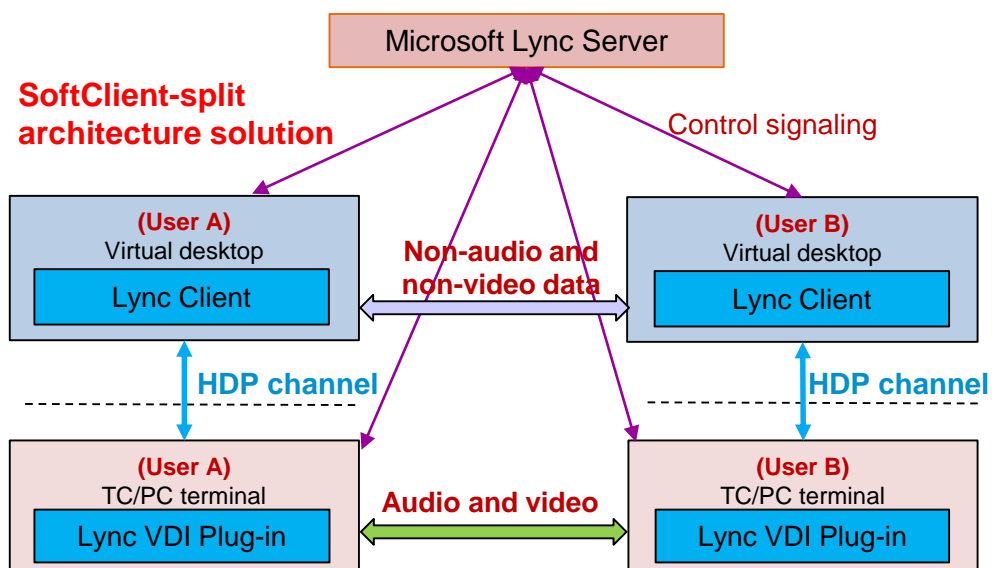


**Priority:** CPU and memory resource requirements of VIP desktops have the top priority to ensure optimal desktop experience.

**Reservation:** CPU and memory resources for VIP desktops are reserved according to the highest standard.

**Email notification:** Administrators are notified by emails of abnormal situations (such as abnormal status or resource overloading) on VIP desktops, so that the administrators can rectify the faults in real time.

# Enterprise Unified Communications Audio and Video Experience



## Application Scenario

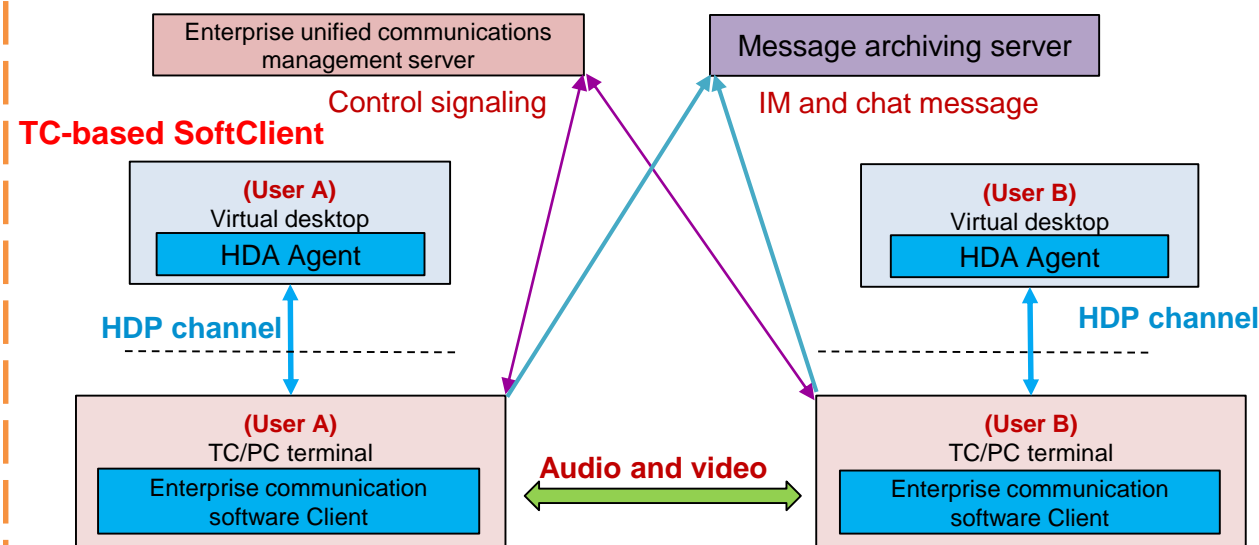
Skype for Business is widely used in enterprise offices. After users use the desktop, Skype video conference experience must be ensured.

## Skype version

- ✓ The Skype server supports Lync Server 2013 and Skype for Business Server 2015.
- ✓ The Skype client supports Lync 2013 and Skype for Business 2015.

## Terminal Requirements

- ✓ Only Windows TC (WES7 SP1 32-bit) is supported. ST5100 and ST6100 TCs require 4 GB memory and 16 GB storage space.
- ✓ SCs are supported (Windows 7 SP1 32/64-bit and Windows 10 32/64-bit).



## Application Scenario

Enterprise-class communication software, such as Jabber and eSpace, is widely used for enterprise offices. After users use the desktop cloud, audio and video experience of the communication software must be ensured without reducing the VM density.

1. The audio and video streams are directly routed from the calling TC/PC to the called TC/PC without passing through the virtual desktop.
2. IM and chat information are stored on the message archiving server and no information is stored on the TC/PC, meeting security compliance requirements.

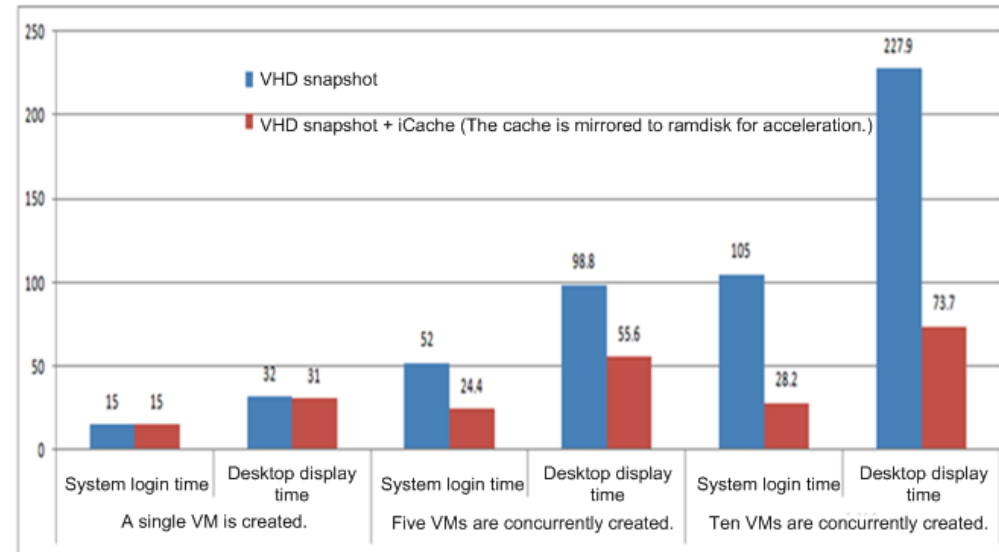
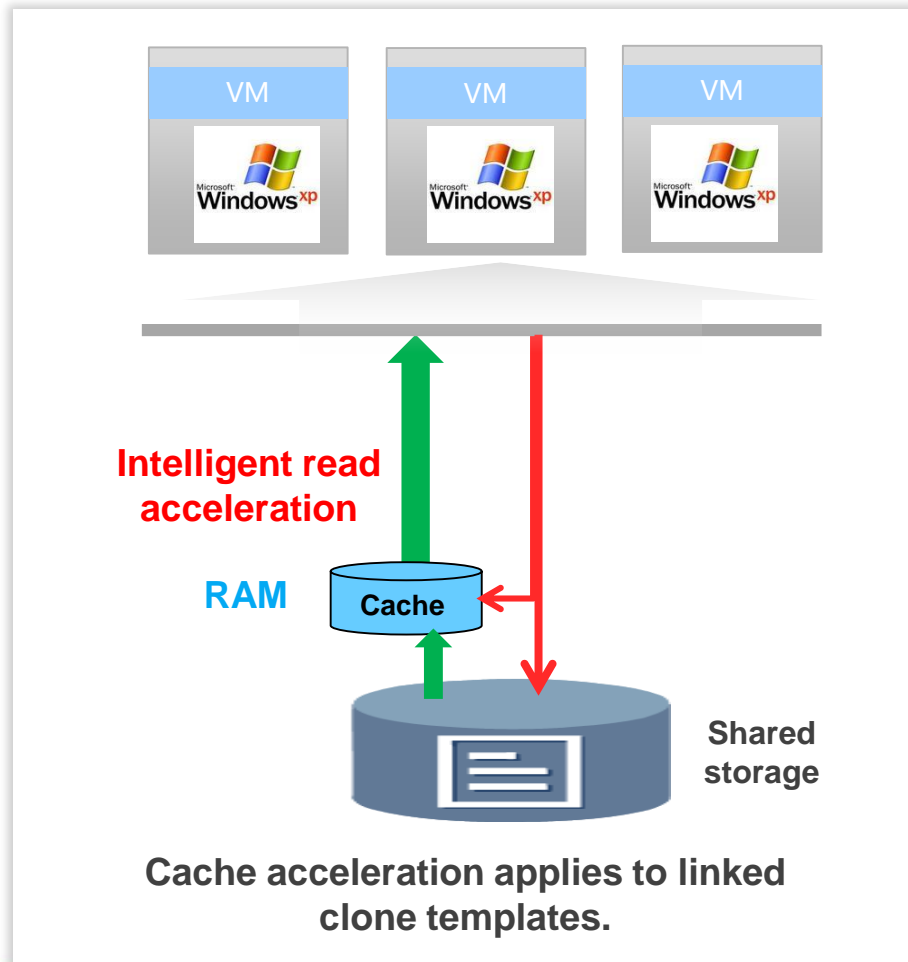
## Feature Specifications

- ✓ Supported OSs: Windows 7 32/64-bit and Windows 10 32/64-bit

## Terminal Requirements

- ✓ Only Windows TC (WES7 SP1 32-bit) is supported. ST5100 and ST6100 TCs require 4 GB memory and 16 GB storage space.
- ✓ SCs are supported (Windows 7 SP1 32/64-bit and Windows 10 32/64-bit).

# iCache Acceleration to Prevent VM Startup Storms



## Boosted Performance

- The VM startup speed increases **300%**.
- Data is read from the memory of servers, reducing the pressure on the shared storage.
- **Startup storms are prevented and network data traffic is reduced.**

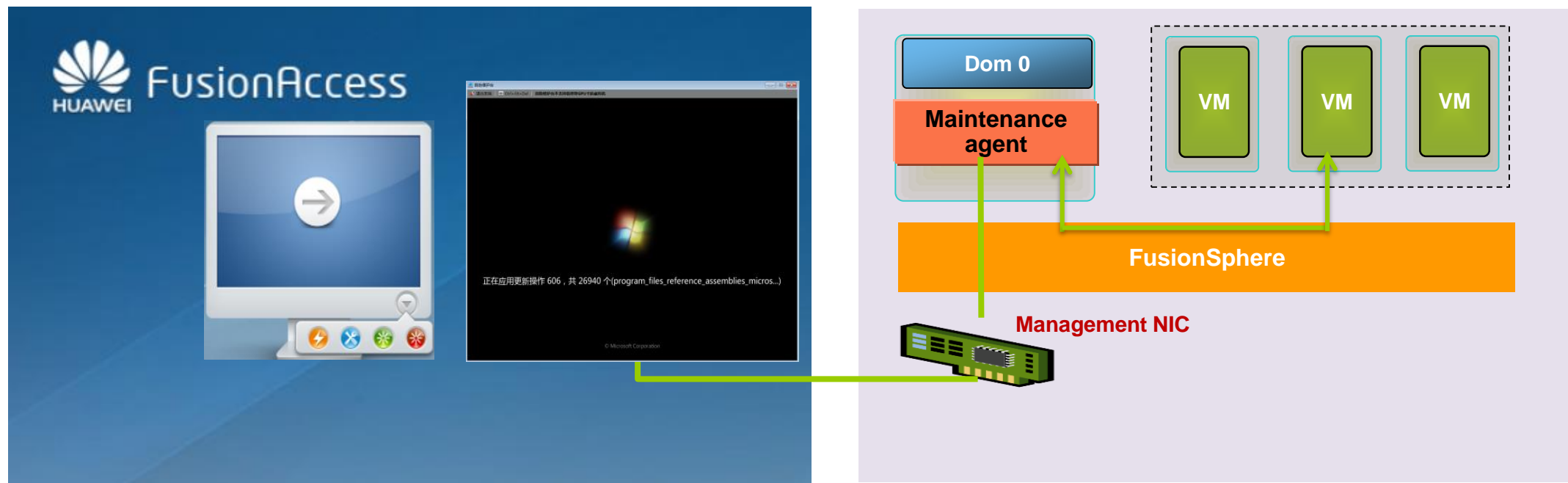
# User-Friendly Login Page

The image displays the FusionAccess user interface with several callout boxes highlighting key features:

- Network status indicator:** An intuitive virtual desktop status display showing icons for Network (网络), Settings (设置), and Disconnect (断开).
- Visualized startup:** A window showing the Windows boot process with the text: "正在应用更新操作 606, 共 26940 个(program, files, reference, assemblies, micros...)".
- Various power management policies:** A window titled "Power management:w0012087301" showing a dropdown menu with options: "Forbid automatic shutdown/restart/hibernation", "Allow automatic shutdown/restart/hibernation", "Allow automatic hibernation", and "Allow automatic shutdown/restart".
- One-click connection repair tool:** A window titled "Diagnostics--12.01" with the text: "Welcome to use Diagnostics tool. This tool can help you to check and repair the problem of connecting." and buttons for "AutoRecover" and "Diagnose".

The interface also includes the FusionAccess logo, a user ID "w00120873", and a circular menu with icons for EC, settings, a lock, and a person.

# Visualized VM Startup and Shutdown



## □ Principle

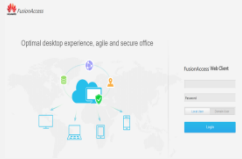
During VM startup or shutdown, the normal connection channel is unavailable because the desktop agent is not enabled. If a user clicks a VM during the process, the system automatically connects to the VM through the management channel, and the user can view the VM shutdown or startup process.

## □ Benefits

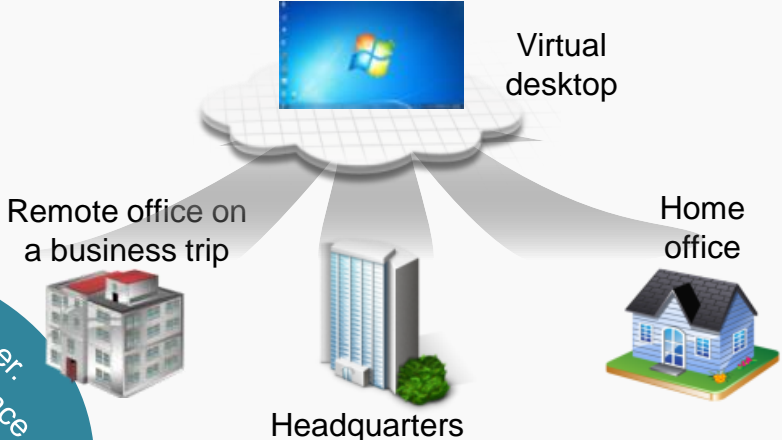
VM startup or shutdown is visualized. For example, it takes a long time to install patches on a VM. Users may mistake this for a VM fault and therefore forcibly restart the VM. As a result, the VM cannot be accessed. This function can resolve the problem.

# Efficient Office and O&M, High Resource Utilization

Unified O&M  
Simple installation



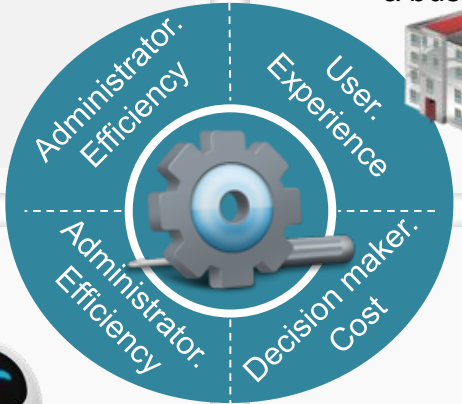
- Unified cloud and non-cloud management
- Desktop service and unified fault management
- Simplified installation package and optimized installation process
- Pre-installation and quick delivery for the appliance



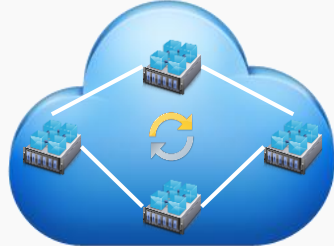
Mobile OA

Automatic O&M  
management tool

- Software/peripheral compatibility test tool
- Health check and log collection tool
- Connection repair tool
- User experience optimization tool
- One-click restoration tool
- Performance collection and analysis tool
- Self-service maintenance tool

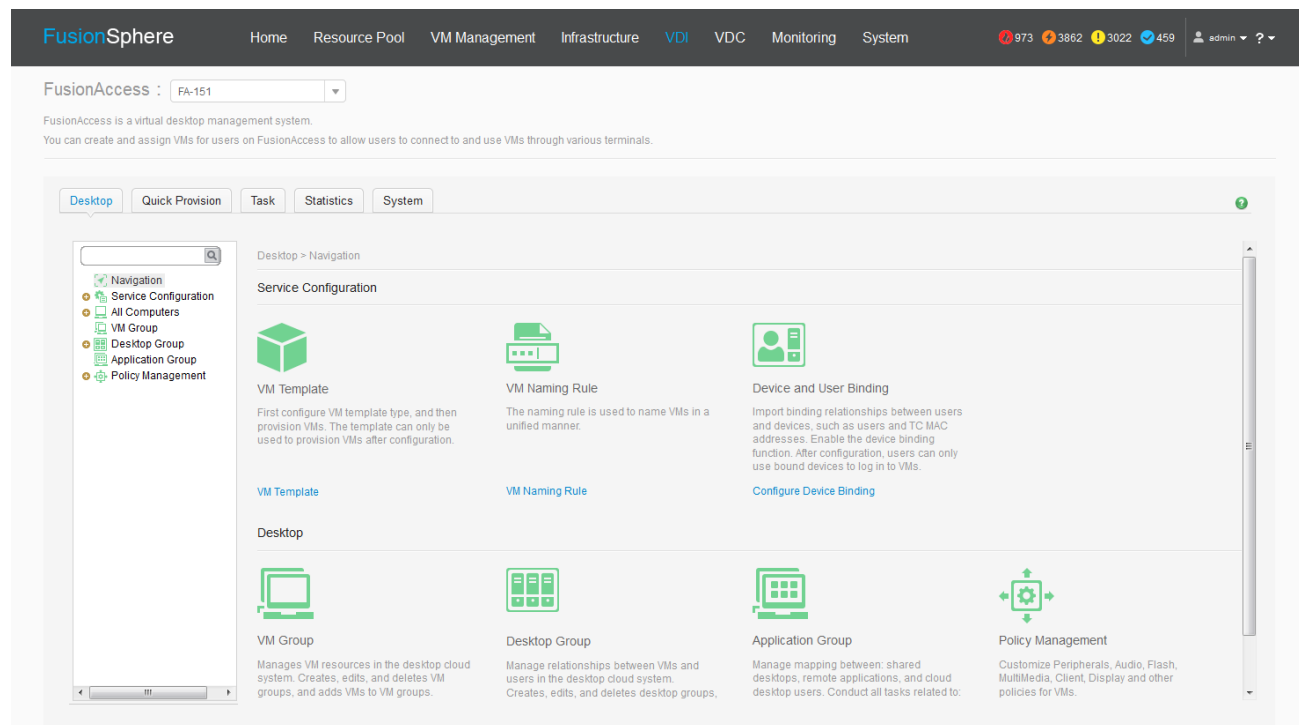



- Resource reuse
- Storage thin provisioning



High resource utilization

# Efficient O&M: Unified Management on FusionSphere



## □ Unified management

- ✓ Automatically detects and configures hardware devices.
- ✓ Centrally manages hardware devices, virtualization platforms, and the desktop.

## □ Automatic management

- ✓ Automatically provisions and deploys services.
- ✓ Adopts the design of separation of roles, reducing management risks.
- ✓ Supports customized management permissions for rights- and domain-based management.

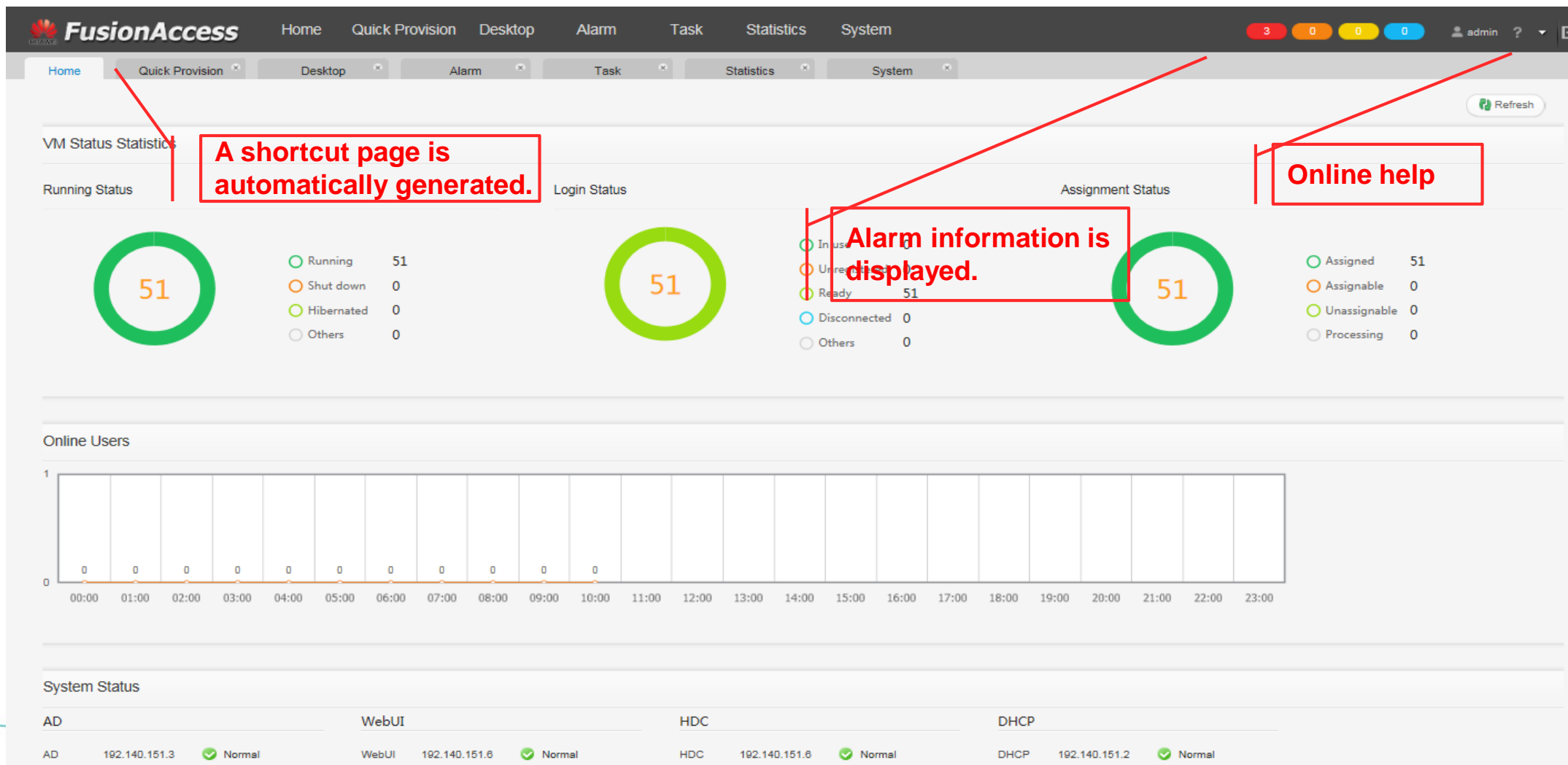
## □ Fault diagnosis expert

- ✓ Centrally manages software and hardware systems.
- ✓ Provides complete resource, topology, alarm, and log management and monitoring mechanisms for central interface display.

The FusionAccess portal can run independently or is integrated into FusionSphere to achieve end-to-end management of the desktop, virtual platform, and hardware system.



# Efficient O&M: User-Friendly GUI



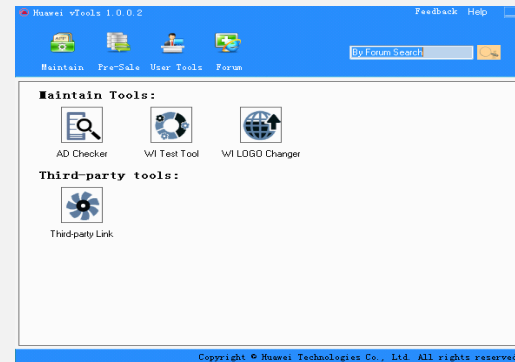
# Efficient O&M: Various O&M Tools

## Desktop series tools

### Huawei vTools

#### Experience from desktop construction

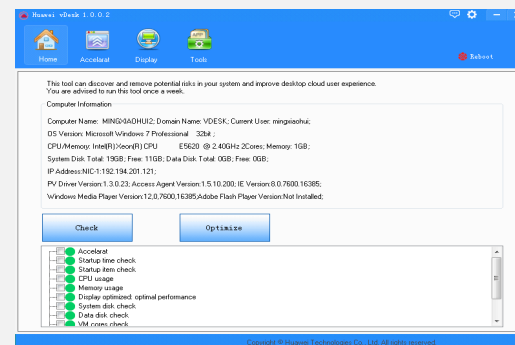
- Connection repair tool
- WI dial-up test tool
- AD check tool
- WI graphic tool
- Log collection tool
- Information collection tool
- Information analysis tool
- Process collection tool



## Experience enhancement tool

### Huawei vDesk

Provides risk check, software compatibility check, system optimization, voice quality optimization, and case libraries.



## Customer Benefits

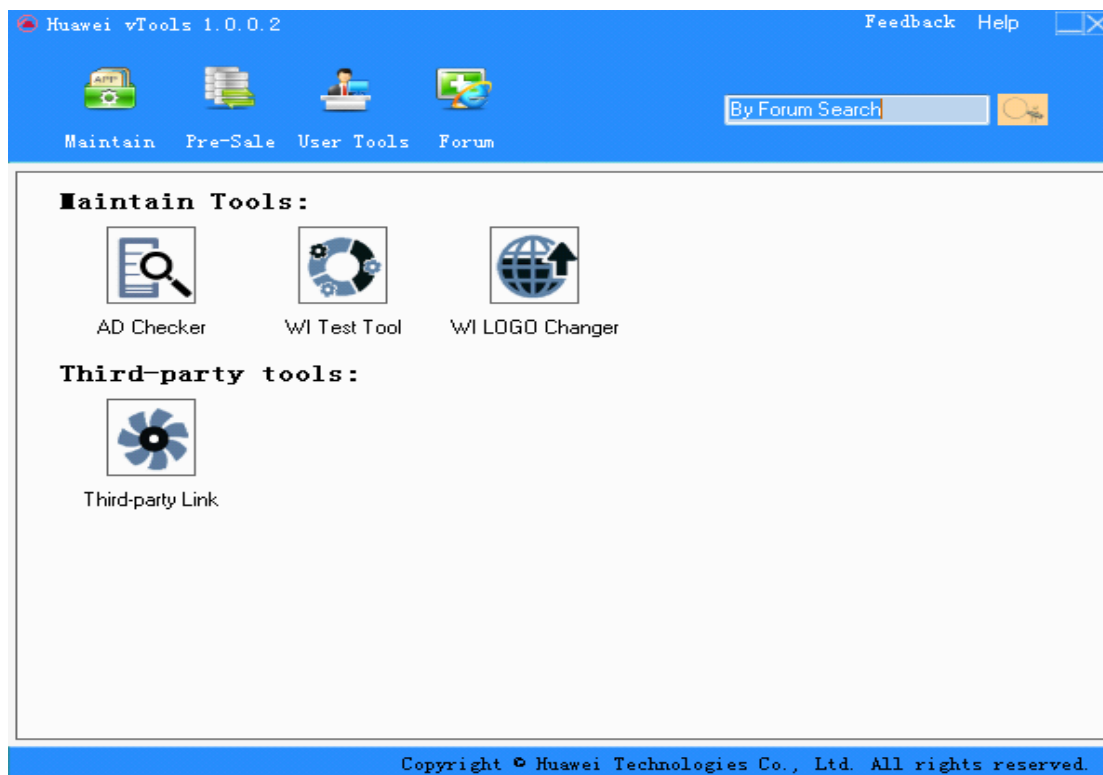
### Huawei vTools

- Improves user experience.
- Improves O&M efficiency, especially in large-scale desktop systems.

### Huawei vDesk

- Allows users to resolve desktop problems.
- Simplifies management.

# Huawei vTools: O&M Tool Series

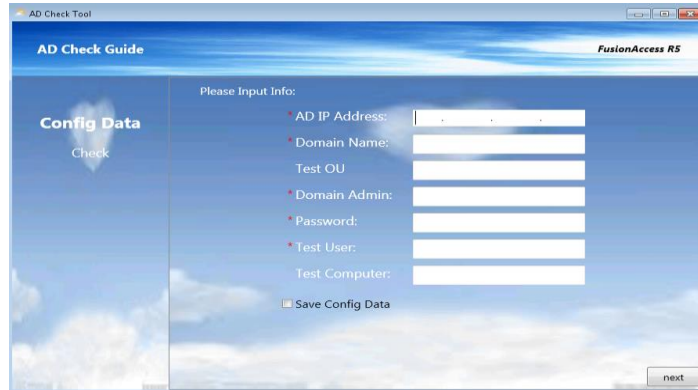


Tool	Description
AD Checker	Checks whether the requirements for AD are met such as rights during site desktop construction.
WI Dial Test	Checks WI status automatically by simulating user login over WI and sends reports to the system administrators by email.
WI LOGO Changer	Changes backgrounds and logos of WI.
FusionAccess Analyzer	Analyzes outcome from information collection tool and outputs compatibility status of software, peripherals and performance statistics.
Third-party Link	Provides links to third-party tools.
Online search	Enables users to search key words on cloud technical forums.
Others	Supports Huawei vDesk, online feedback, one-click forum visit, and Help.

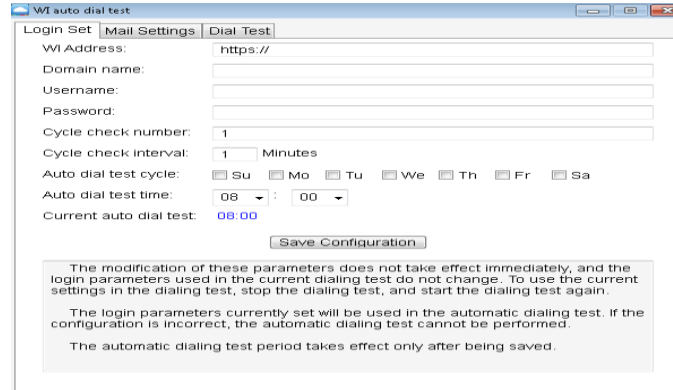
**Based on the long term and extensive experience, Huawei vTools greatly facilitates desktop O&M.**

# Huawei vTools: Improving Administrators' Efficiency

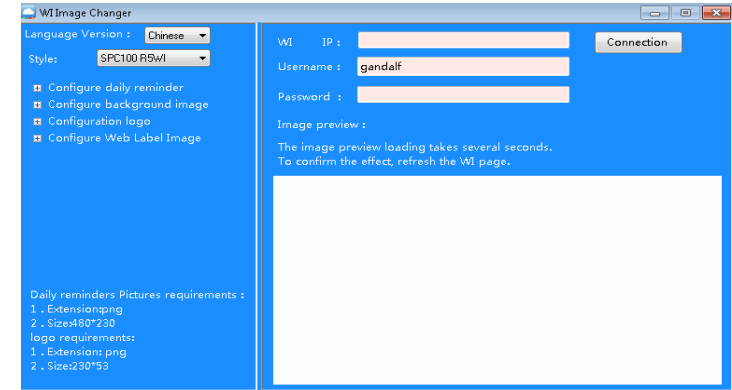
## AD Checker



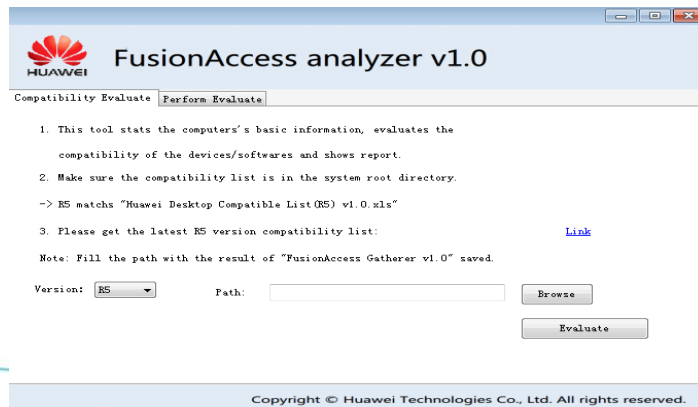
## WI Dial Test



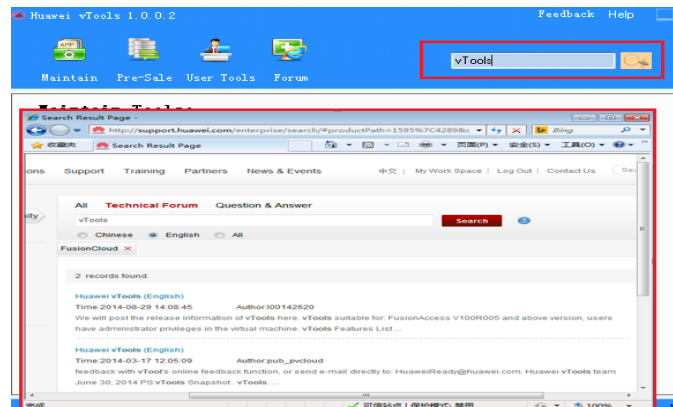
## WI LOGO Changer



## FusionAccess Analyzer



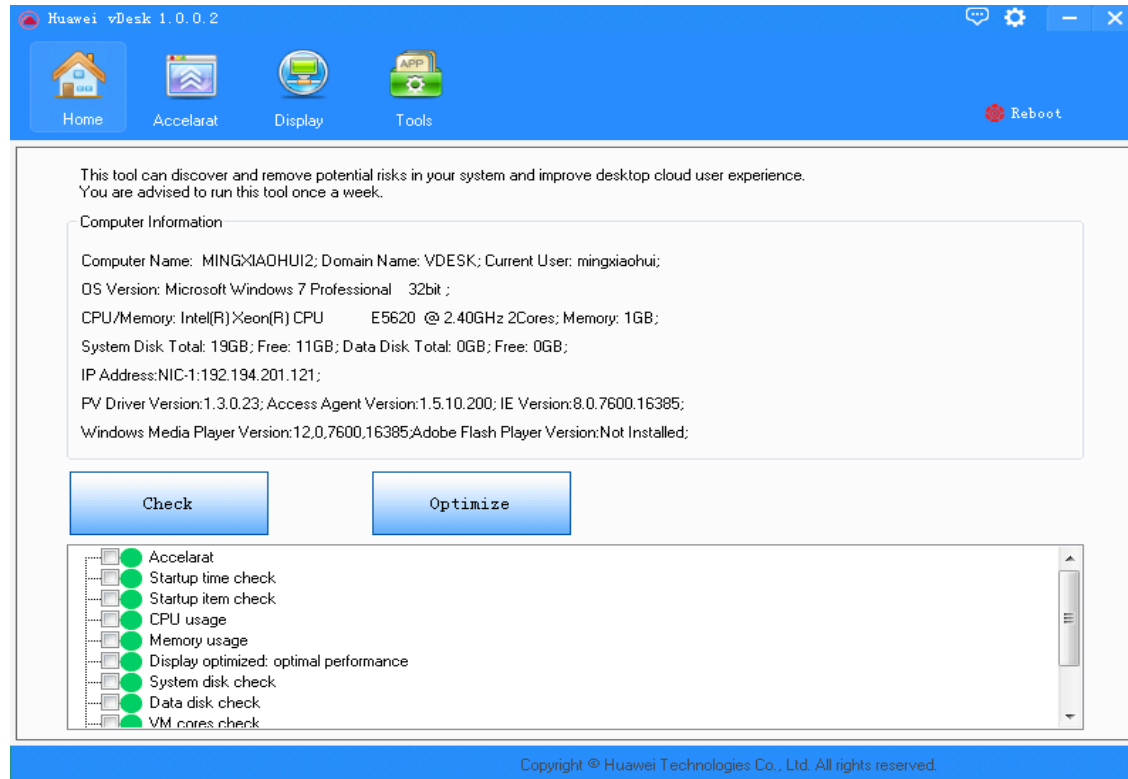
## Online Search



## Third-party Link



# Huawei vDesk: User Experience Optimization Tool

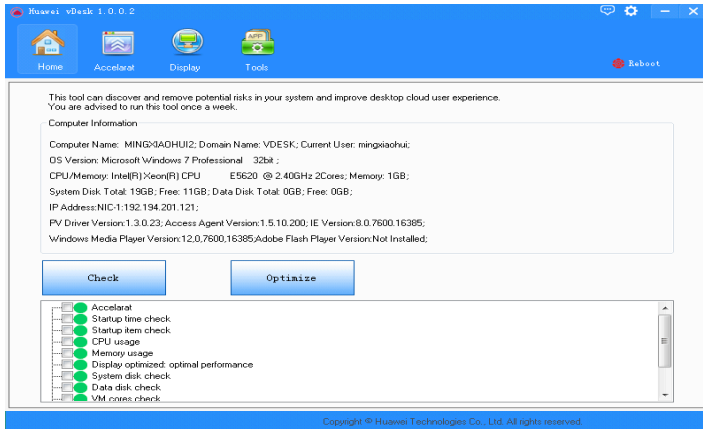


Tool	Description
One-click check and optimization	Checks and optimizes factors that affect VM user experience in a one-click manner.
System acceleration	Checks and optimizes factors that affect VM performance.
Display optimization	Checks and optimizes factors that affect VM display.
Performance statistics	Monitors and displays the network, CPU, and memory status in real time.
General tools	<ol style="list-style-type: none"><li>1. Connection repair tool: Checks and repairs connection problems automatically.</li><li>2. Log collection tool: Collects logs in a one-click manner to locate faults.</li><li>3. FusionAccess Gather: Collects data of software, peripherals, and performance.</li></ol>
Others	Reminds users of rebooting systems after the systems are running over 10 days and supports online feedback, version update, one-click forum visit, configuration, and Help.

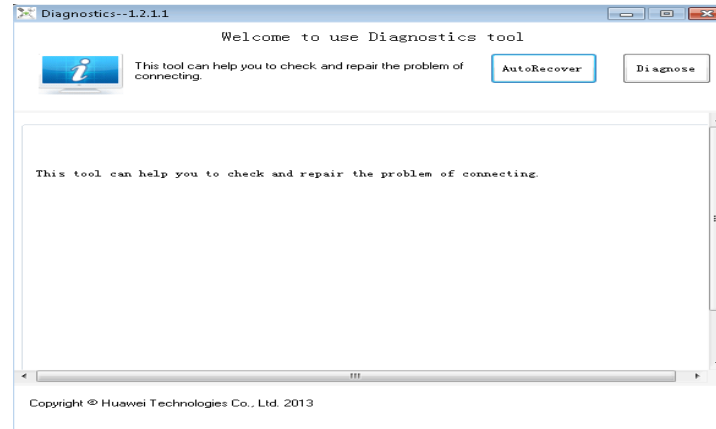
**Based on the long term and extensive experience, Huawei vDesk improves user experience of desktop.**

# Huawei vDesk: Optimizing User Experience in Desktop

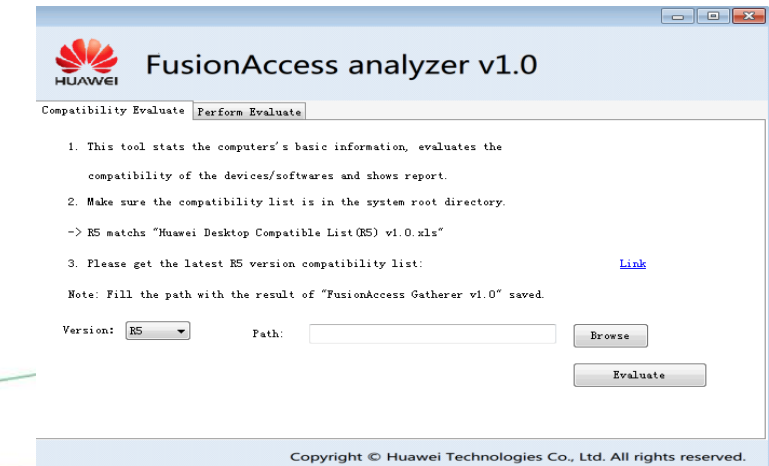
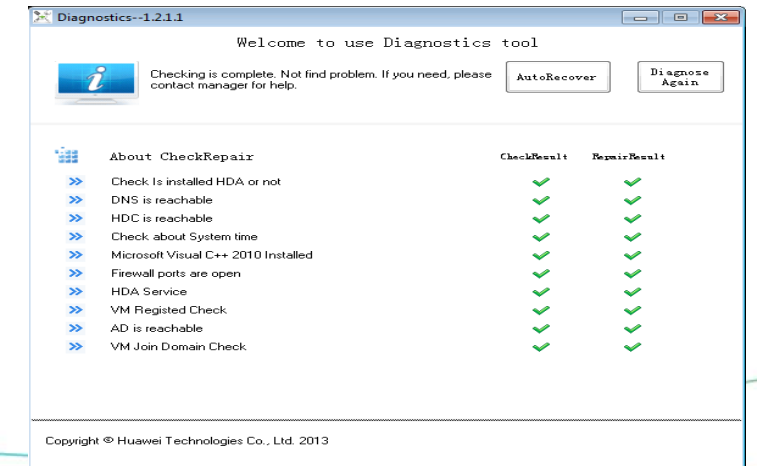
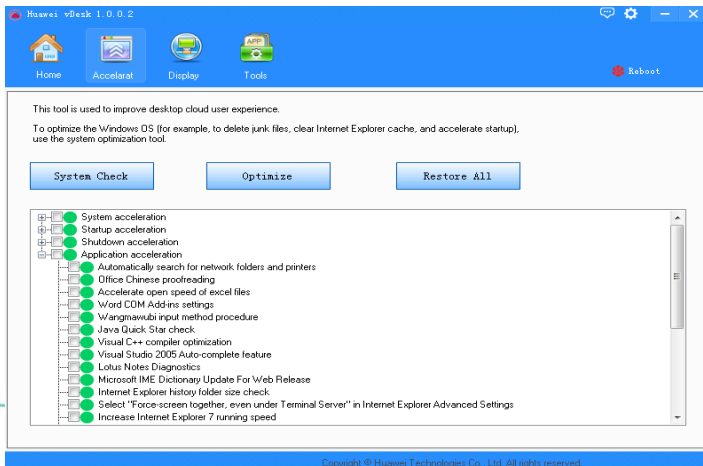
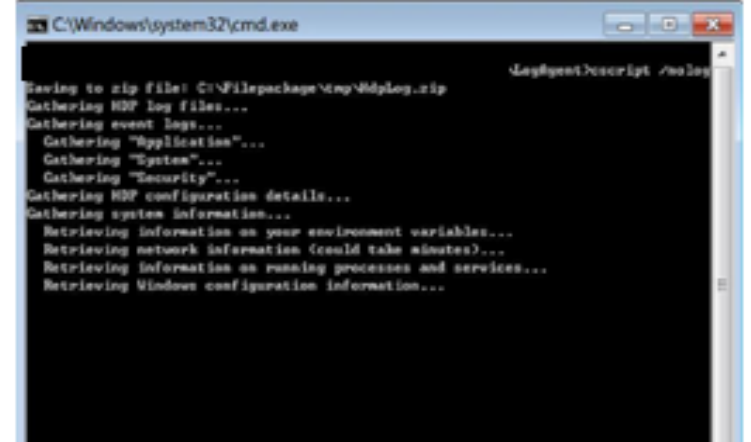
## One-Click Experience Optimization



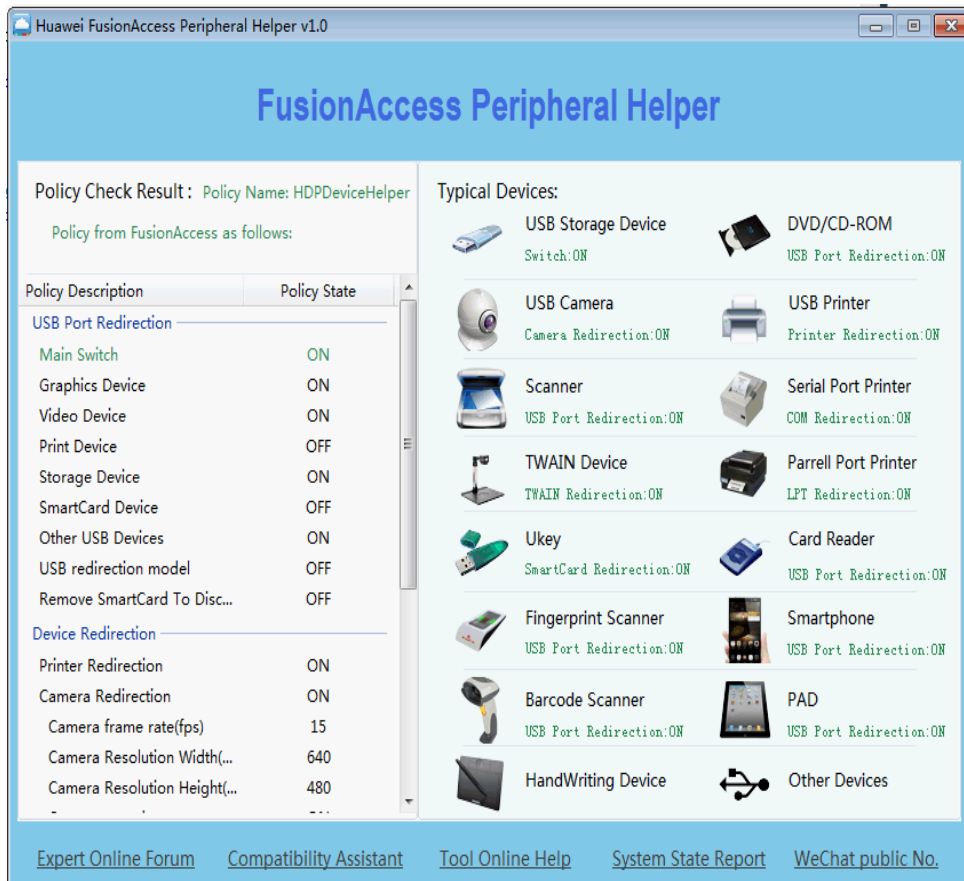
## One-Click Connection Repair



## One-Click Log/Data Collection



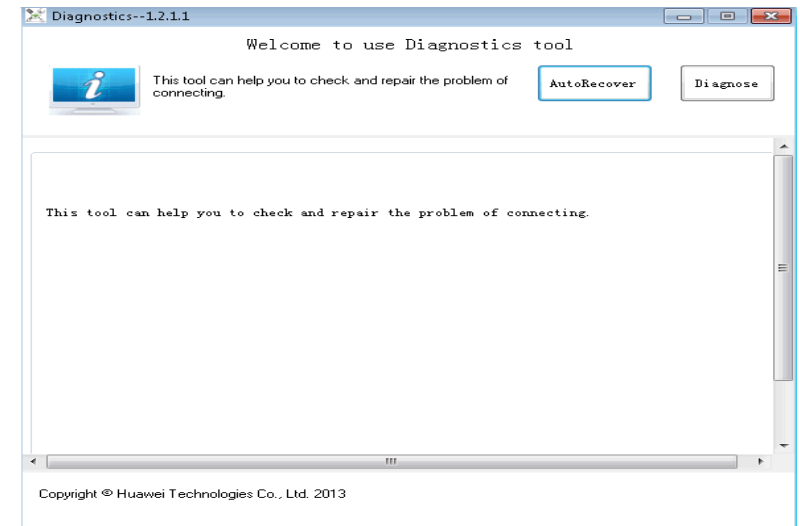
# Huawei vDesk: Peripheral Helper



The peripheral helper is a tool for locating faults on desktop peripherals and provides step-by-step fault locating and diagnosis when desktop peripherals are faulty. The peripheral helper provides the following functions:

- **Policy self-test:** automatically detects real-time VM peripheral policies in real time and intelligently identifies typical device redirection modes.
- **Configuration wizard:** displays the redirection mode of the current peripheral in a wizard.
- **Regular analysis:** provides automatic or manual regular analysis depending on redirection modes.
- **In-depth analysis:** performs one-click in-depth peripheral fault diagnosis and analysis based on key log processes.

# Self-service Maintenance Console: Quickly Repairing Connection Interruptions



## □ Principle

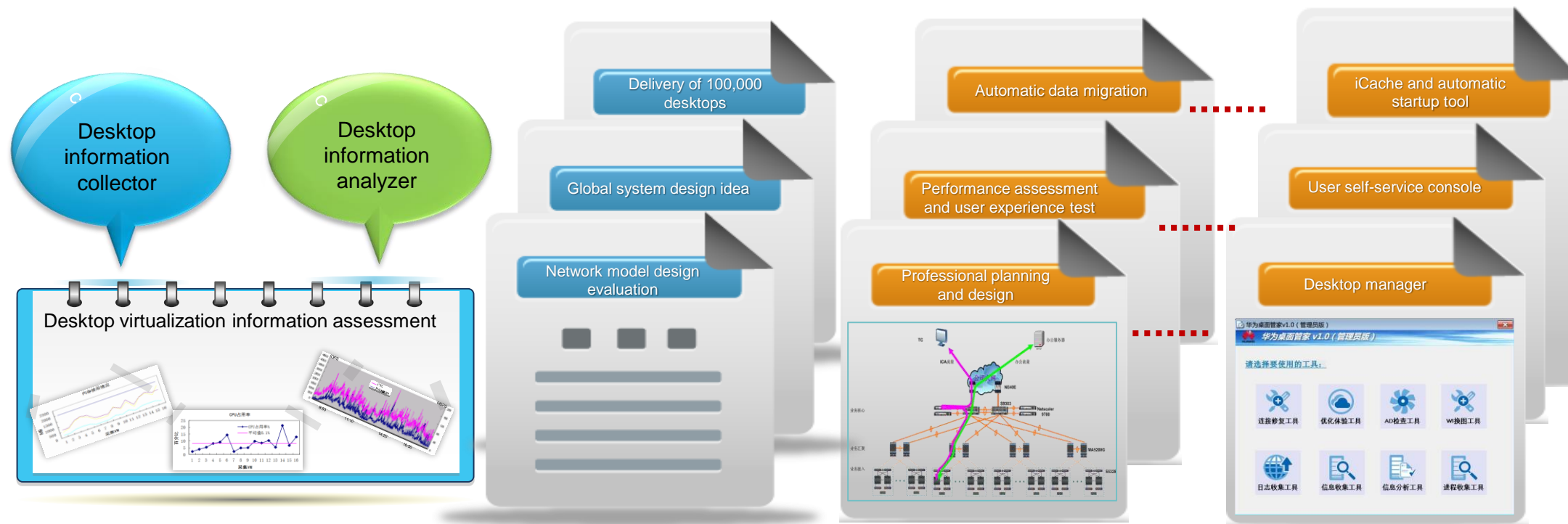
When the NIC or desktop agent service stops working, a user cannot connect to the VM. In this case, the user can enable the self-service maintenance function, and the system connects to the VM through the **management channel**. The **desktop connection repair tool** of the VM automatically locates and rectifies the fault.

## □ Benefits

Users can solve common disconnection problems by themselves, reducing the service downtime as well as system management and maintenance costs.

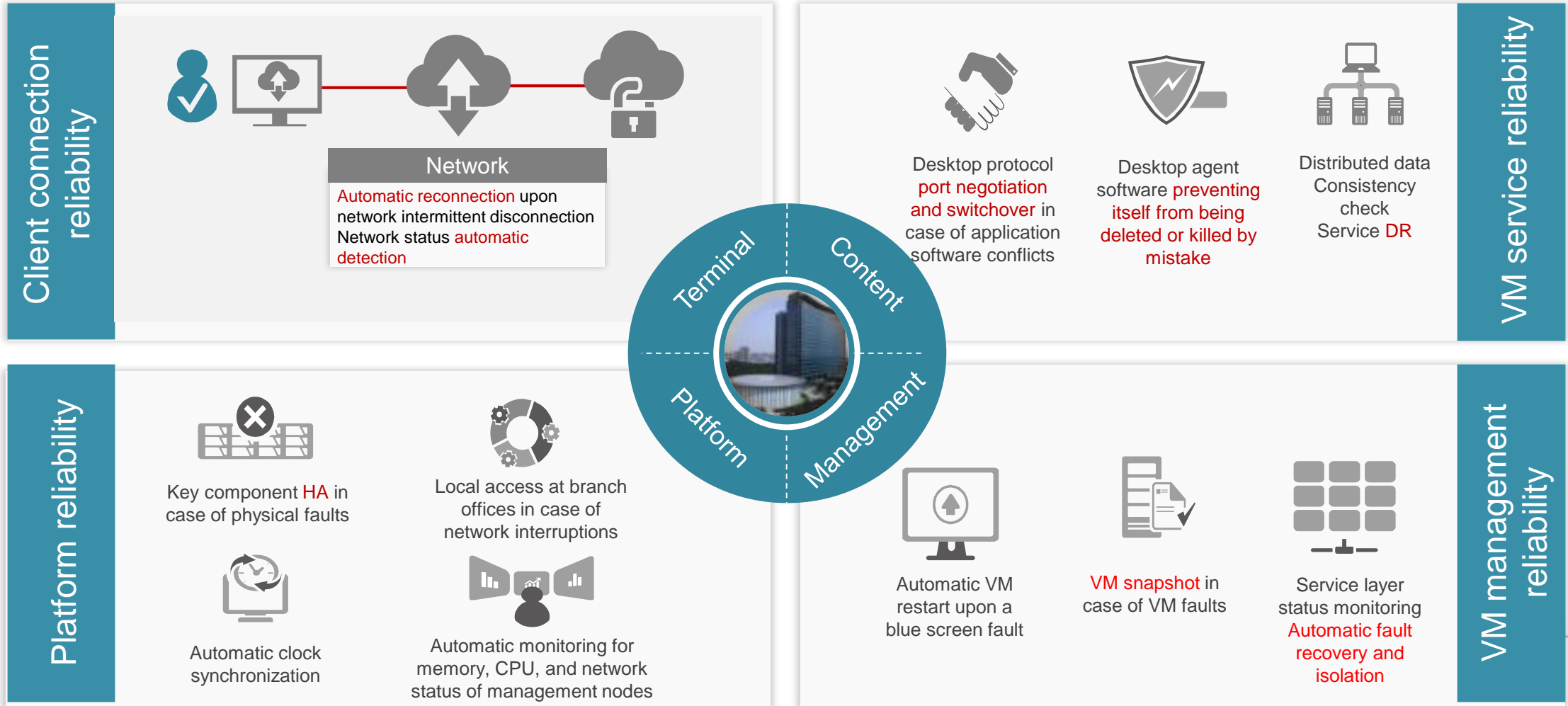


# Efficient Service Delivery from Design Survey to O&M Management

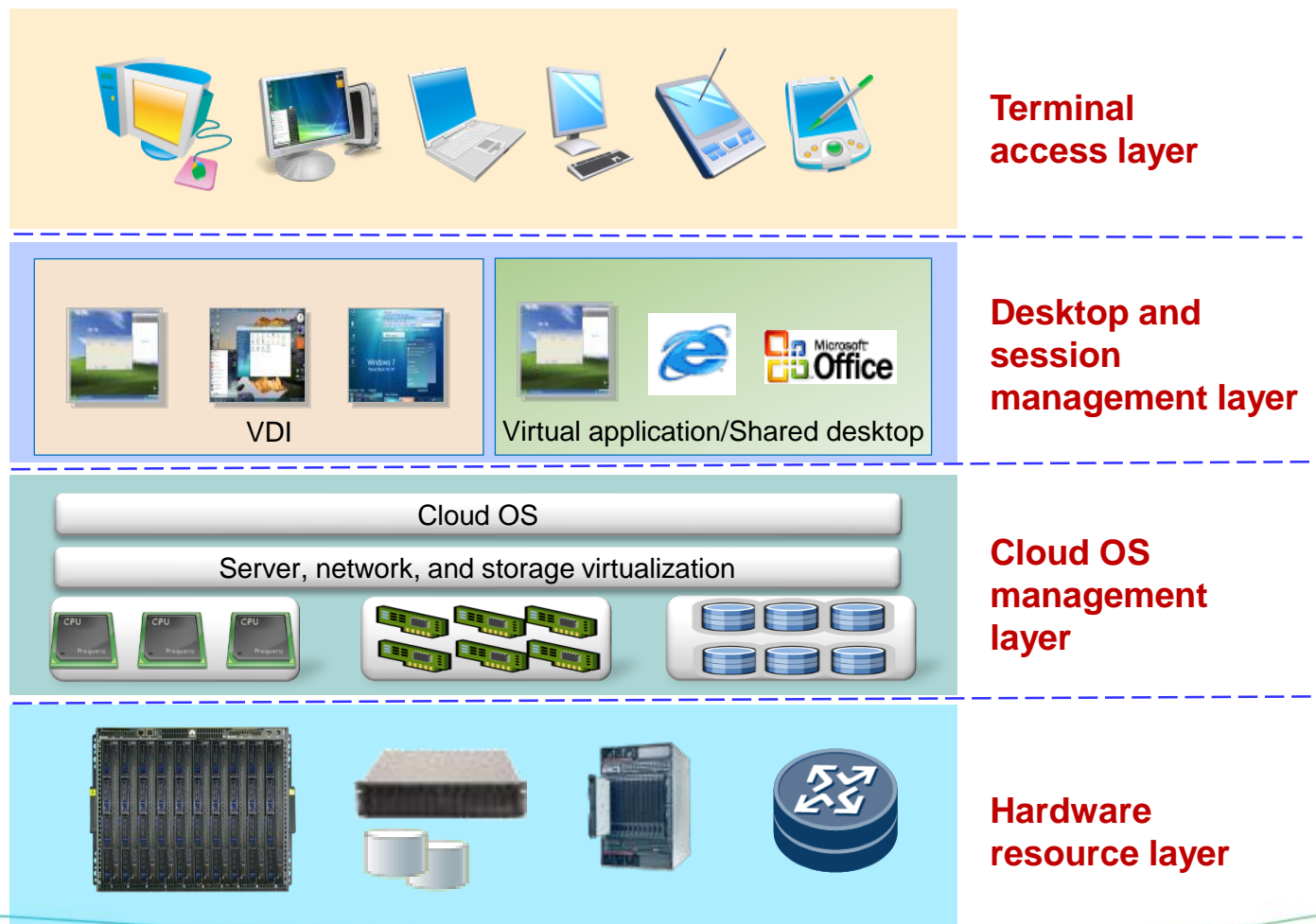


**Based on the large-scale delivery of desktops and summary of processes and typical scenarios, Huawei has formed a complete and efficient delivery process.**

# All-round Reliability Mechanisms



# User Connection Reliability Plan



## □ User connection reliability enhancement

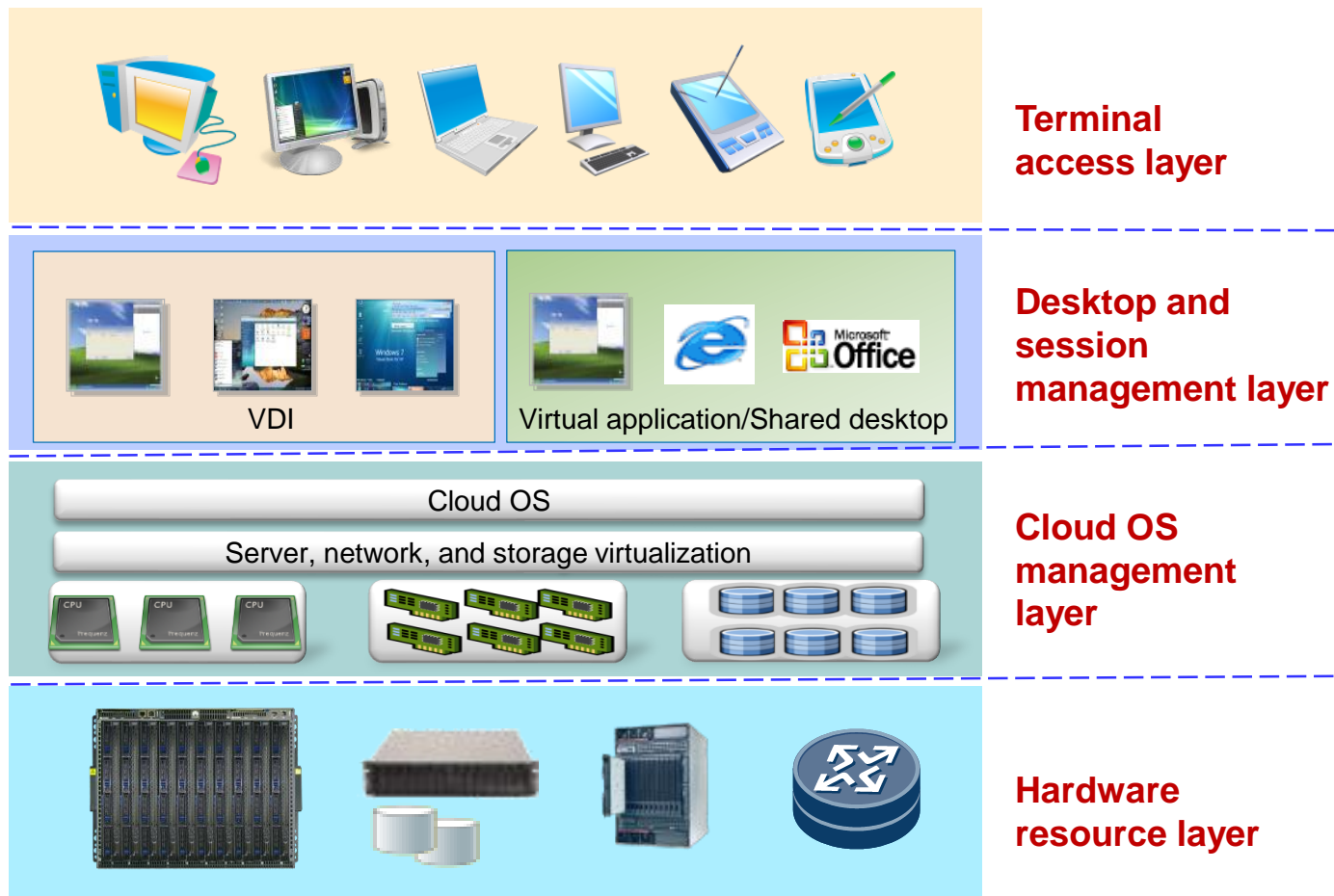
### Client

- ✓ Automatic reconnection upon network intermittent disconnection
- ✓ Network status automatic detection

### Server

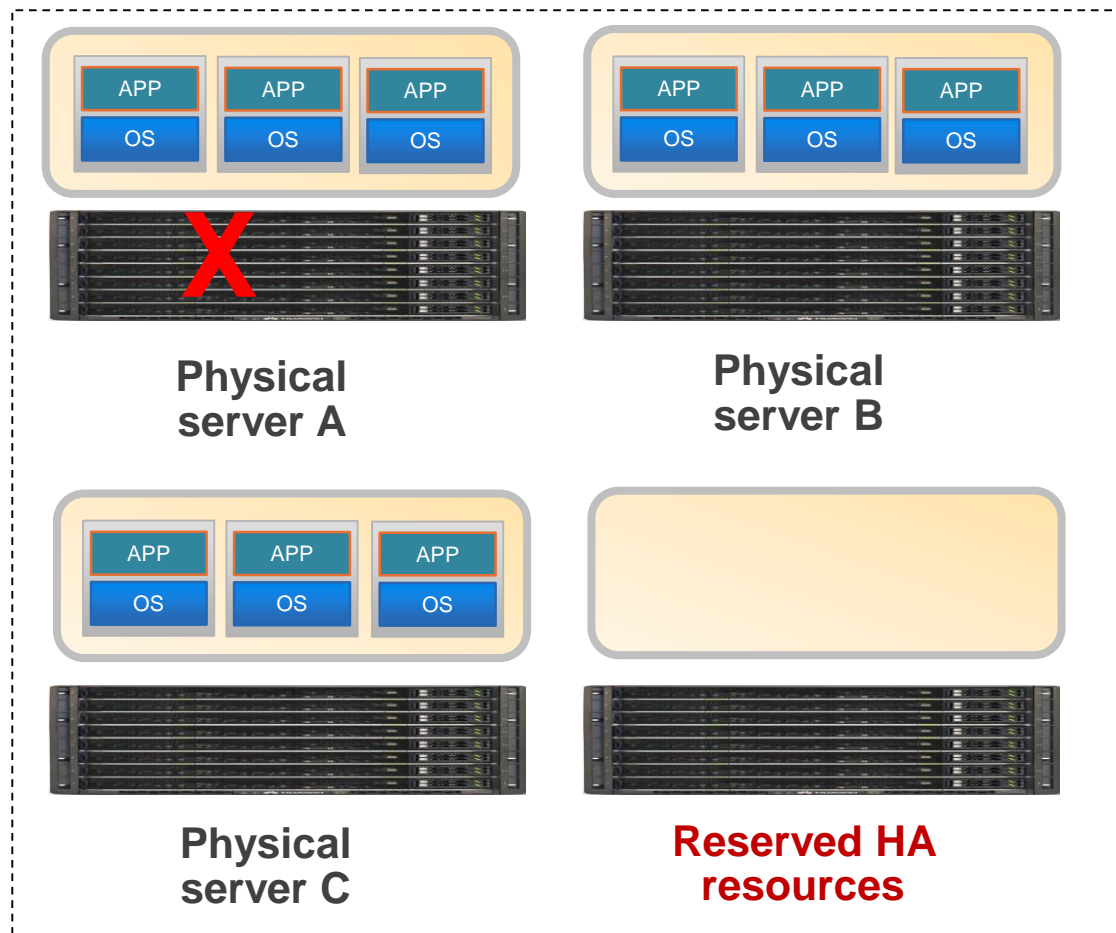
- ✓ Automatic port switchover upon desktop agent port conflicts
- ✓ Desktop agent software prevented from being deleted or killed by mistake
- ✓ Desktop agent software prevented from being killed by mistake
- ✓ Process file protection
- ✓ Automatic VM restart upon a blue screen fault
- ✓ Independent of WCF and quick VM registration

# Management Node Reliability Plan



- **Management node reliability enhancement**
  - Architecture level**
  - Key nodes are independent of Microsoft products** and do not depend on AD domain control.
  - Node and process level**
    - ✓ **Redundancy** of key components
    - ✓ **Automatic monitoring** for memory, CPU, and network status of management nodes
    - ✓ Service layer status detection and **automatic fault recovery**
    - ✓ Service layer status detection and **automatic fault isolation**
  - Consistency check**
    - ✓ Data consistency checks by ITA among distributed systems
    - ✓ Automatic clock synchronization
  - Management data backup**
  - Management data backup

# Virtual Desktop HA



- ✓ Fault detection for hosts, the virtualization platform, and VMs
- ✓ Reserved HA resources ensure that VMs have available resources in case of physical host faults. This ensures **minute-level recovery** for the virtual desktop.

## Fault recovery time

2-4 hours



Conventional  
PC desktop

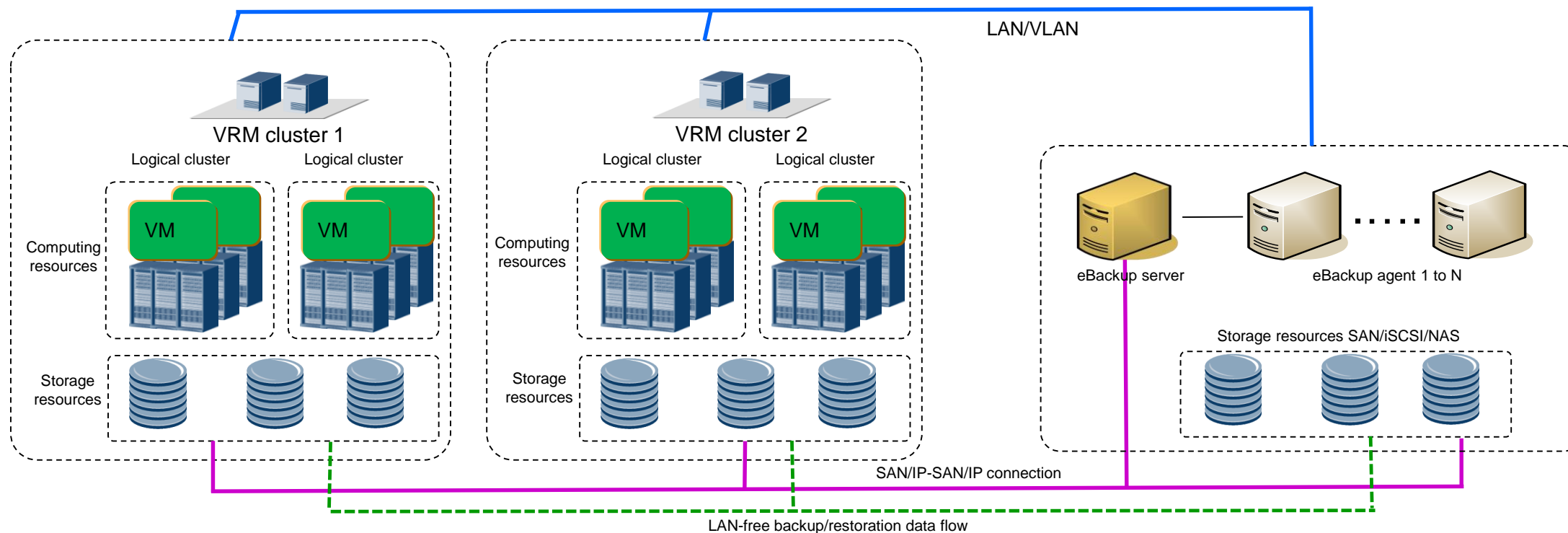
3 minutes



Cloud OA  
desktop

Shortens fault recovery time, reduces service interruption duration, ensures service continuity, and improves working efficiency.

# eBackup



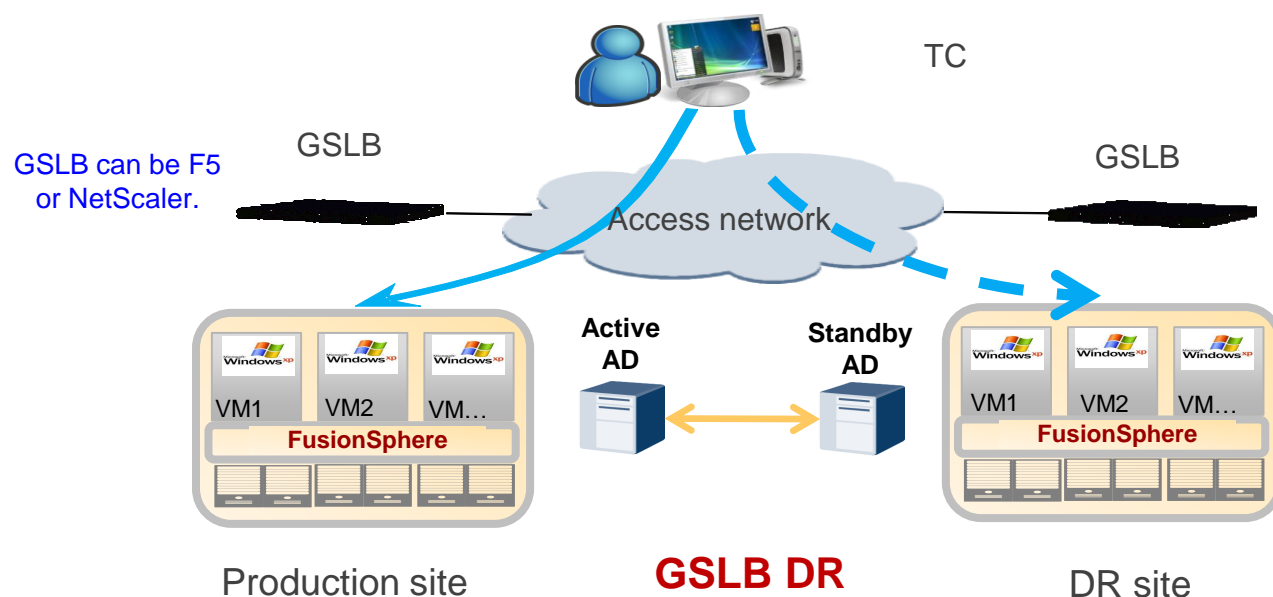
## ◆ Technical Features

- Flexible backup policies: Periodical full backup and incremental backup, reducing backup data sizes
- Flexible data restoration: Backup snapshots restored to the original location or a specified location
- A maximum of 10000 VMs and 64 servers per eBackup system
- SAN or LAN-free transmission mode (new), supporting multi-site data backup

## ◆ Customer Benefits

- Flexible data backup is supported.
- Management efficiency of data backup systems is improved.

# GSLB DR and TC DR Solutions

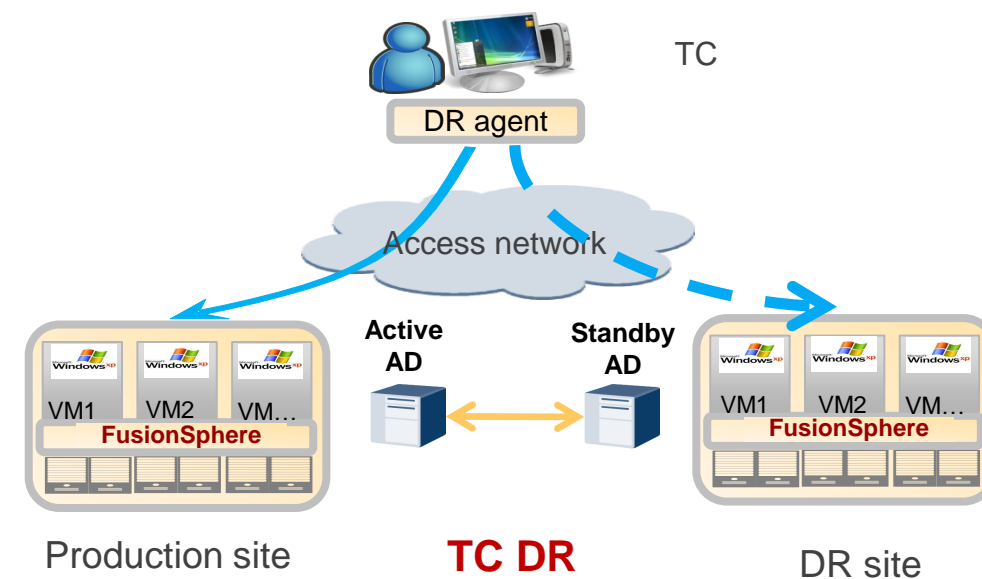


## DR Principles

- A GSLB device resolves portal domain name addresses of desktop services on TCs based on the running status of cloud desktop systems. Under normal circumstances, an address is resolved to the portal address of the active data center of a user. If the active site malfunctions, subsequent DNS requests of the user will be resolved to the portal address of the standby desktop.
- After DNS resolution policies are configured, GSLB devices can resolve DNS requests based on the source IP segments of TCs, balancing loads between desktop systems.
- To prevent GSLB single points of failure, one GSLB device is deployed at the production site and disaster recovery site respectively. In addition, the active and standby DNS addresses of the TC point to the two GSLB devices.
- Data is synchronized between the production site and disaster recovery site to ensure that VM user names and passwords are the same between data centers.

## Solution Limitations

This solution is applicable only to scenarios where service disaster recovery is required but data backup is not necessary, such as business halls and customer service agents.



## DR Principles

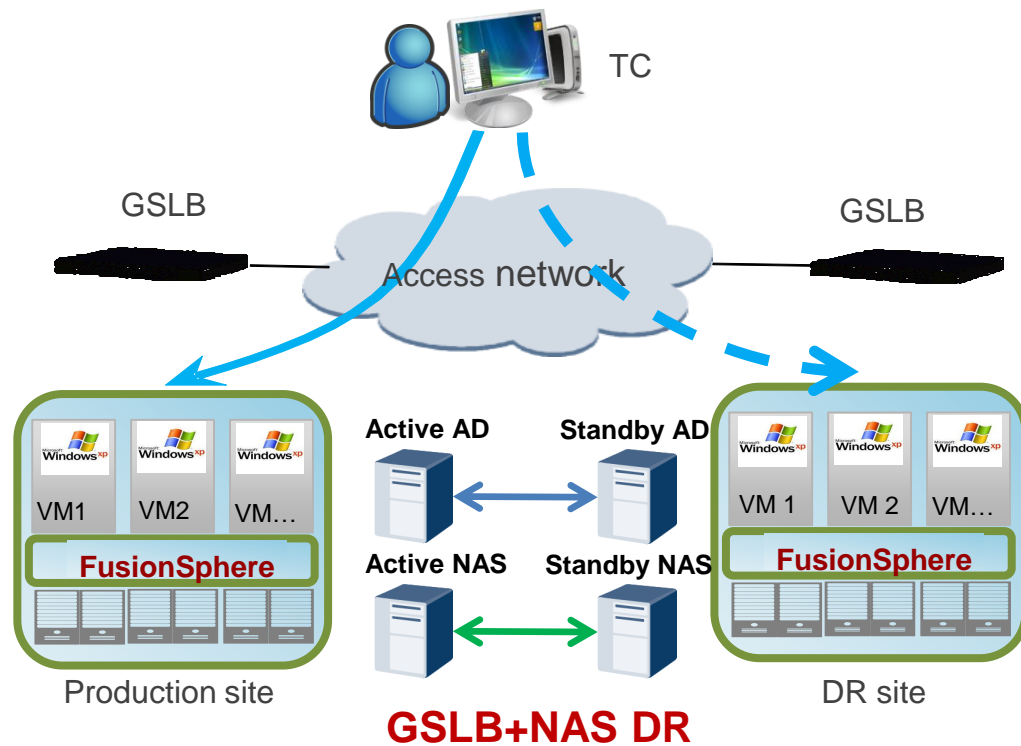
- TCs use a disaster recovery agent to detect the status of the production and disaster recovery sites. If TCs detect that the production site malfunctions, the TCs automatically access the disaster recovery site.
- GSLB devices are not required for this solution.

## Solution Limitations

- This solution is applicable only to scenarios where service disaster recovery is required but data backup is not necessary, such as business halls and customer service agents.

# Data DR Solutions: GLSB+NAS DR and Metropolitan Active-Active DR

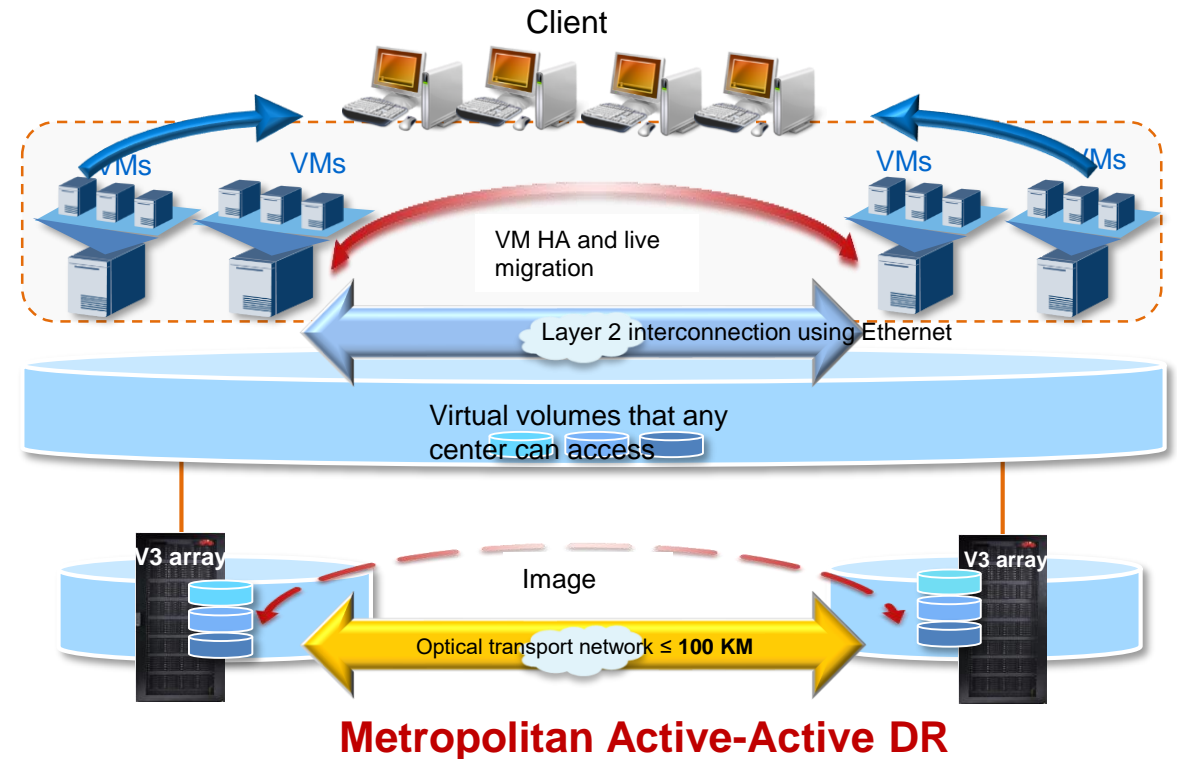
Scenario: Data disks or system disks need DR.



## DR Principles

1. GSLB parses the domain name address of the desktop service entry, shares loads, and implements active/standby switchovers.
2. AD data is synchronized between the production site and the DR site, ensuring that VM usernames and passwords are the same in the two data centers.
3. Two sites assign a VM to the same user. NAS data is synchronized between the two data centers using the NAS replication mechanism.

Scenario: Both system and data disks need DR.

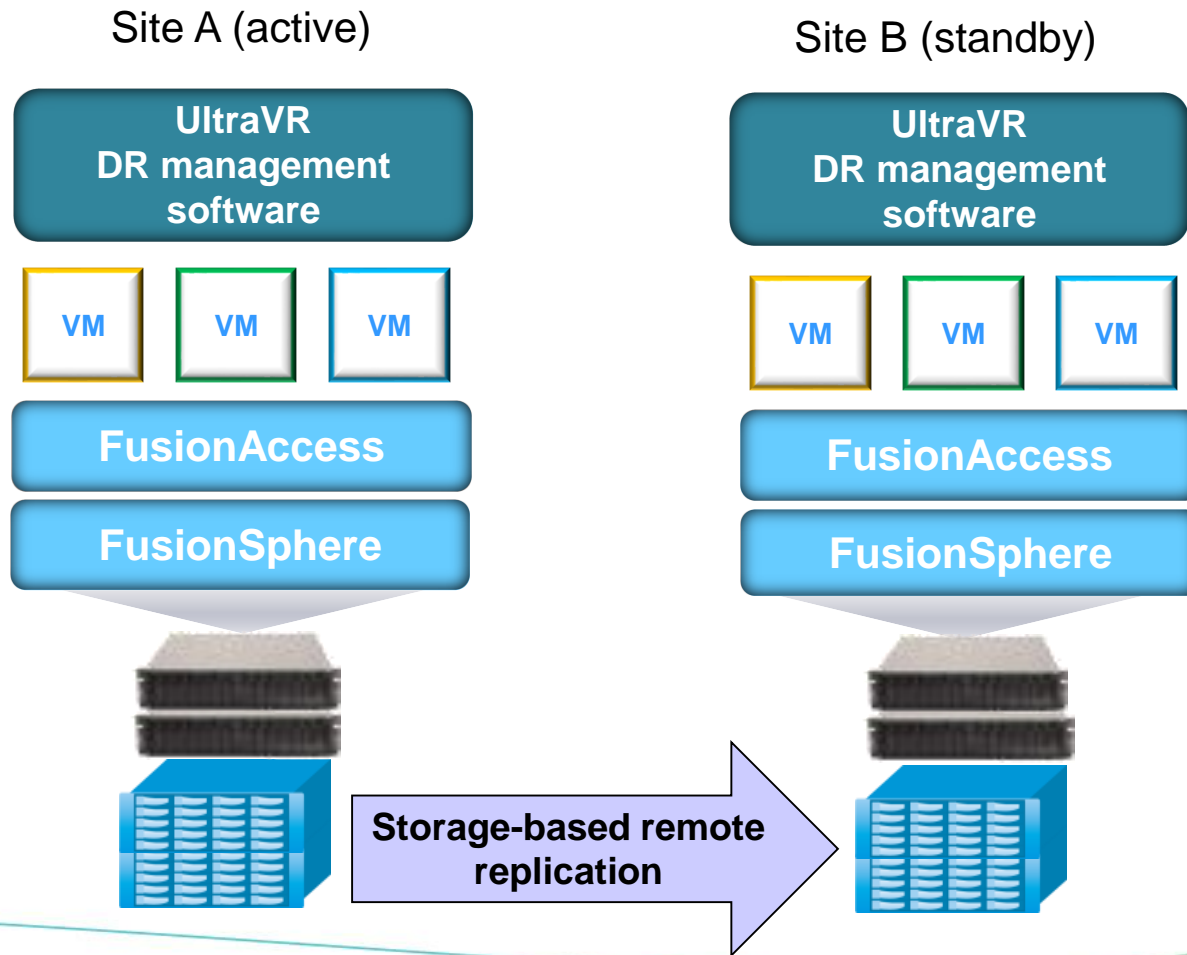


## DR Principles

1. Images are synchronized in real time between two data centers based on the active-active capabilities of Huawei OceanStor V3 storage.
2. When a VM in any of the two centers is faulty, services on the faulty VM are automatically switched over to another local VM to ensure HA.



# UltraVR DR Solution



## DR Principles

- VM data is replicated in logical unit numbers (LUNs) from the production site to the DR site using the storage-based remote replication function.
- DR management software is used on the DR site to register VMs in the DR storage system to the virtualization platform and automatically start the VMs.
- Existing user VMs are configured on the ITA management interface to be managed by the FusionAccess.

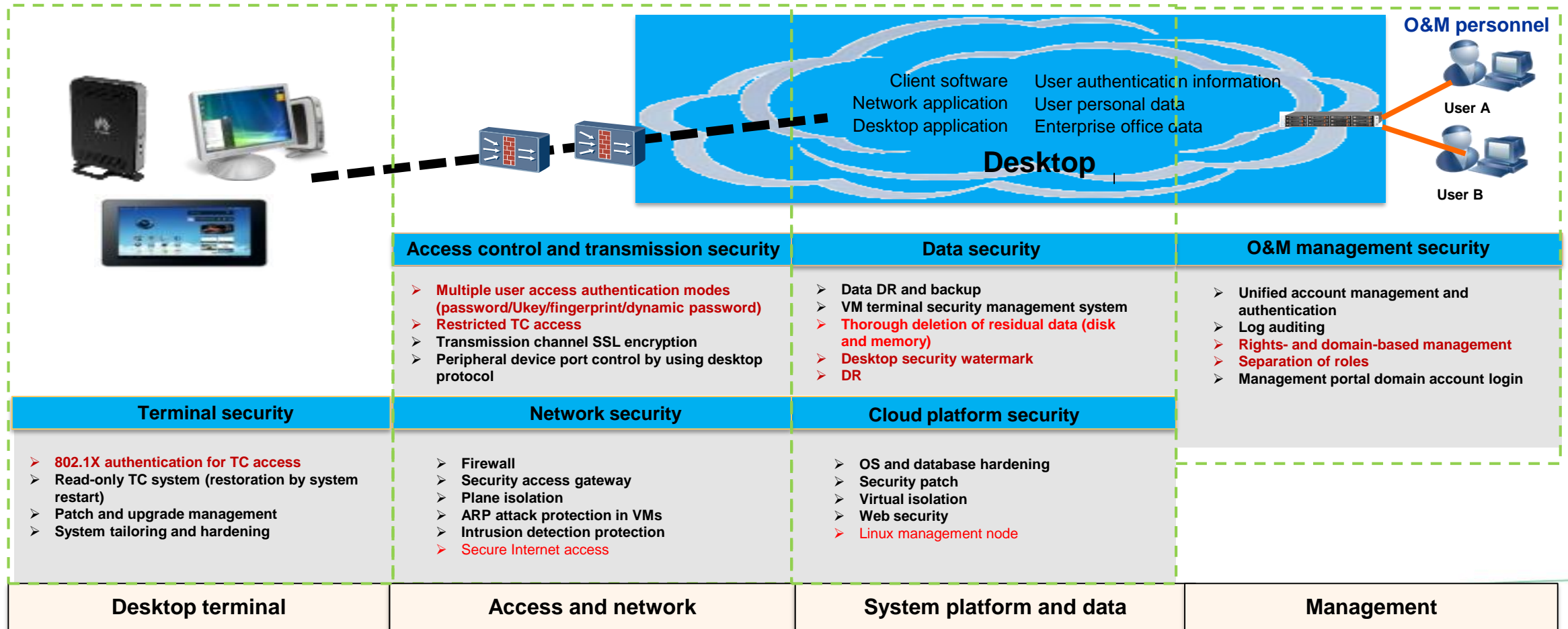
## Solution Limitations

- This solution supports only Huawei storage area network (SAN) devices, and the production site and the DR site are connected by an IP network.
- Only 1:1 active/standby DR and 1:1 asynchronous DR are supported.
- This DR solution is inapplicable to linked clone desktops.

# Secure Office

All-round Terminal, Channel, Cloud, Management  
Security

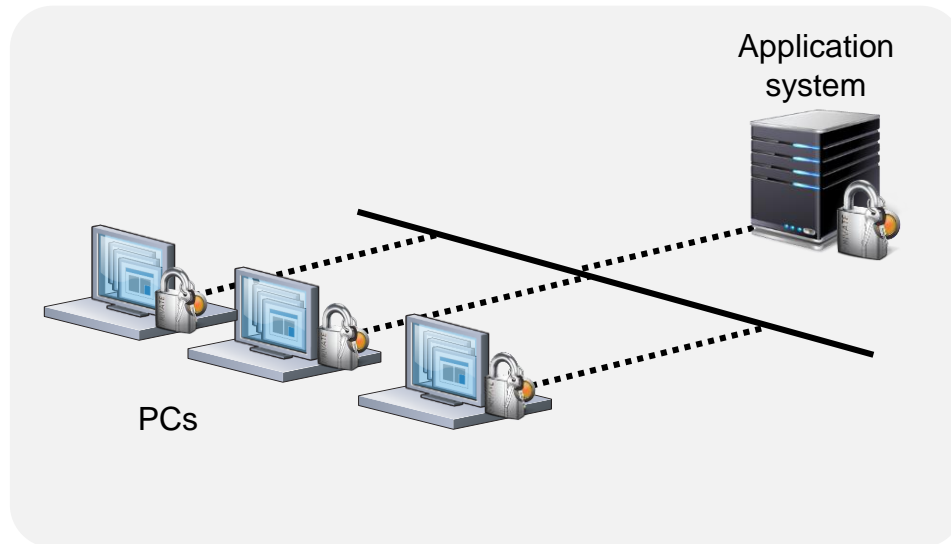
# Security Schemes for Huawei FusionAccess Desktop Solution



Comprehensive security measures ensure that data is stored on the cloud, behavior can be traced, and operations can be audited.

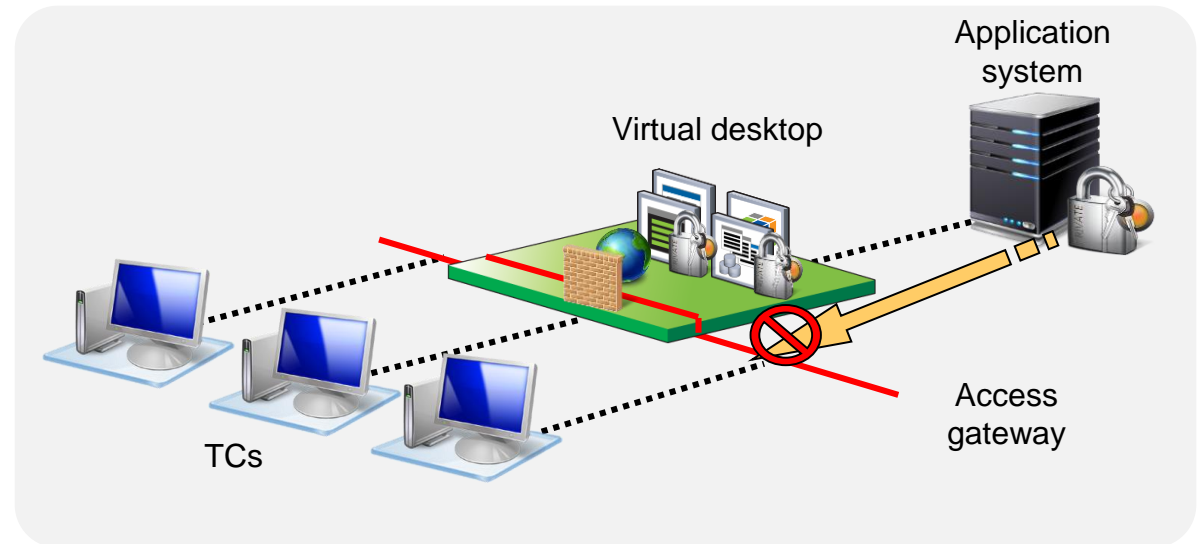
# Centralized Data Management and No Data Running on Terminals

## Data dispersed on various terminals



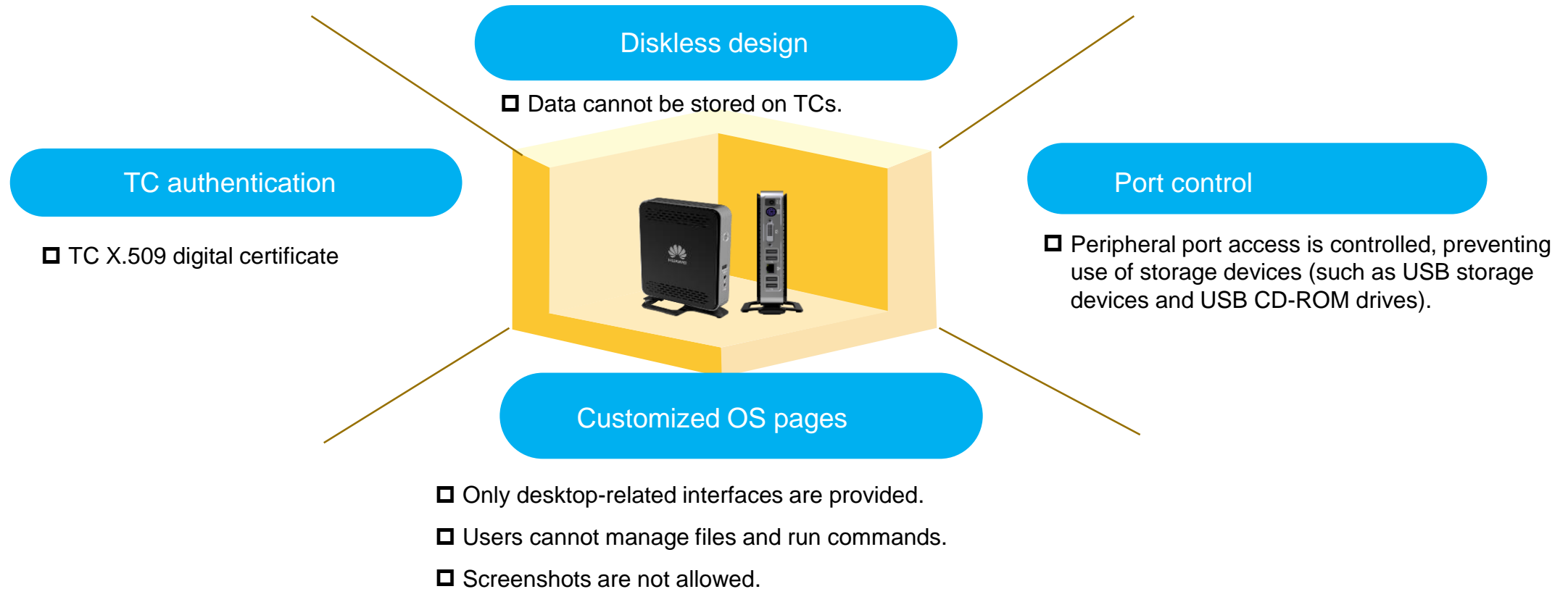
OSs, applications, and data are locally deployed on terminals and easy to be attacked and intercepted.

## Centralized management of applications and data



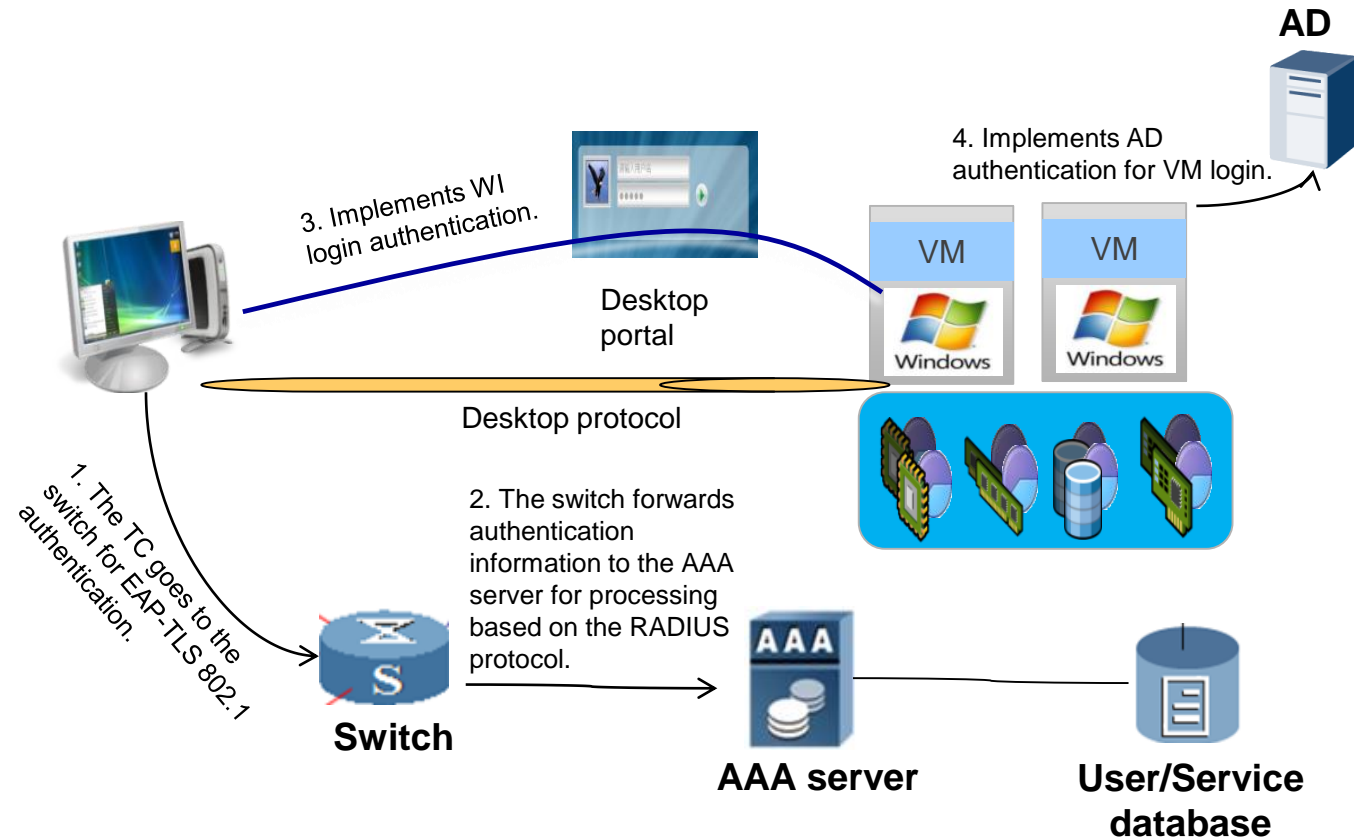
Desktops and data are separated from terminals and centrally stored and processed in the background. Only screen refresh information is transmitted to terminals.

# TC Hardening



**TCs use simplified OS firmware, making systems safer and more reliable.**

# Terminal Access Security: 802.1X Authentication for TC Network Access



**Only TCs that pass identity authentication can connect to the desktop network.**

#### □ Features

1. Two-way certificate authentication based on Extensible Authentication Protocol Transport Layer Security (EAP-TLS) is adopted.
2. The TC goes to the switch for two-way EAP-TLS 802.1x-based certificate authentication, and the switch forwards authentication information to the AAA server using the RADIUS protocol.

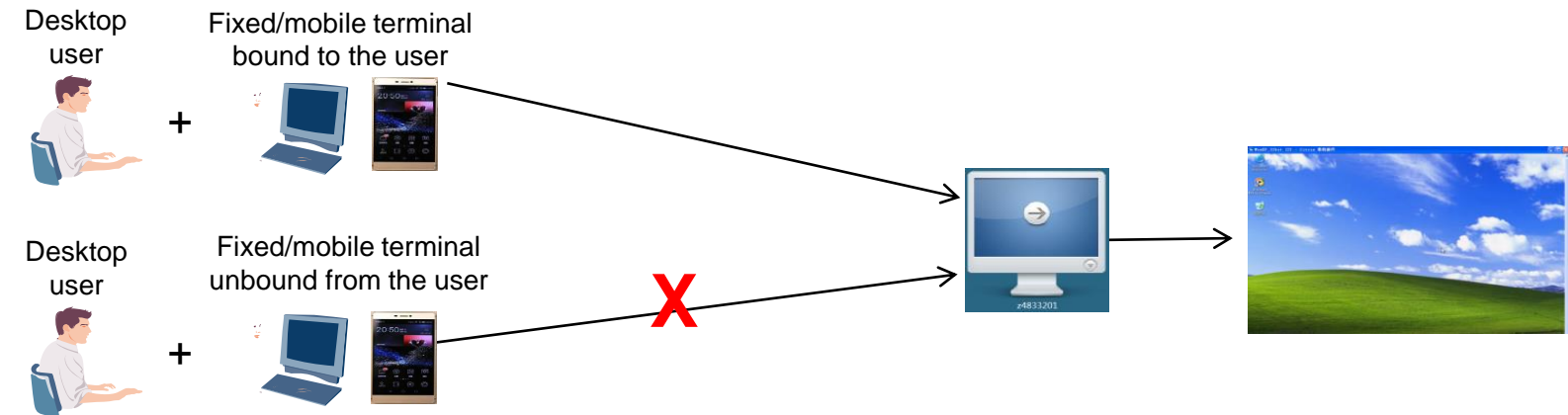
Note: If customers have low security requirements, EAP-MD5-based username and password 802.1x authentication can be adopted, which is easy to deploy. To use the certificate authentication mode, enterprises need to deploy a certificate system.

# Terminal Access Security: Special Users Process Services on Fixed Locations and Devices

- **Restricted terminal access:** Binding relationships are established between terminals' MAC addresses/MAC address groups and domain users/domain user groups, so that domain users/domain group members can access desktops from restricted terminals/terminal groups. The restricted terminal access feature can be used with any WI authentication mode.
- **Specified IP segment access:** Access permission can be configured for clients' IP segments. In this way, users can only access virtual desktops using specified IP segments including IP addresses and subnet masks.
- **Application scenario:** The restricted terminal access feature applies to scenarios in which high information security is required and users can access virtual desktops that contain sensitive information only from restricted terminals.

- The desktop administrator can enable the terminal binding and automatic binding functions on the ITA portal so that users are automatically bound to the terminals' MAC addresses when they log in to the terminals for the first time.
- The desktop cloud administrator can enable the terminal binding function but disable the automatic binding function on the ITA portal to manually import the mapping relationships between terminals' MAC addresses and users one by one or in batches.

## Login experience

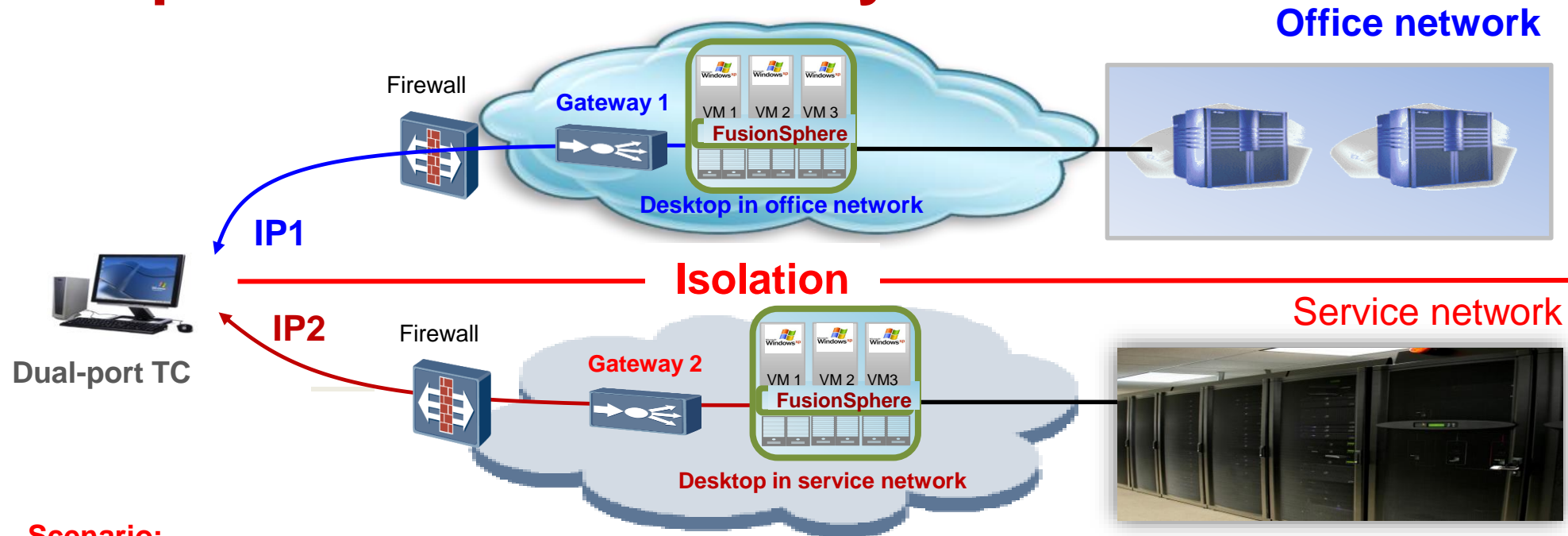


1. When a user logs in to WI, the terminal sends the username, domain name, and MAC address to the desktop system to check whether the terminal is bound to the user.

2. If the information matches the binding information saved in ITA, AD authentication is implemented, and login is allowed.

3. The user logs in to the VM.

# Single-Terminal Dual-Network Isolation: Accessing Desktops of Different Security Levels



## Scenario:

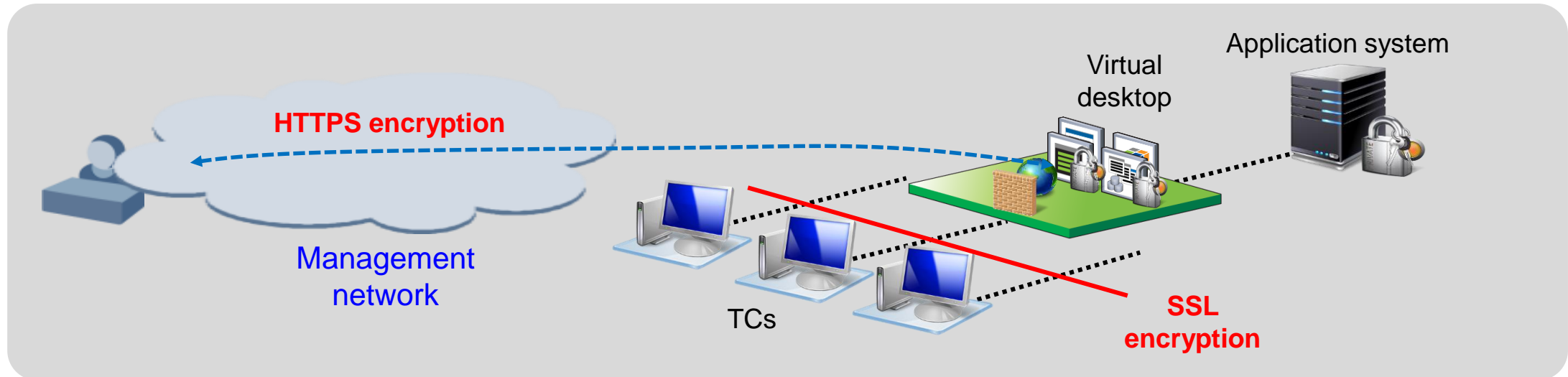
A single terminal connects to two desktops of different security levels, ensuring ease-of-use and security.

## Functions:

- ✓1. The TC supports two GE NICs. DVI-I ports support dual-screen display. The office network and service network are physically isolated.
- ✓2. No software can be installed on the hardened Linux OS running on the TC, which prevents residual screenshot software and Trojan horses. The TC system is read-only and restorable by system restart. Temporary files are cleared.
- ✓3. After a user logs out of the desktop, all memory is cleared.



# Transmission Channel Encryption Preventing Interception and Data Theft



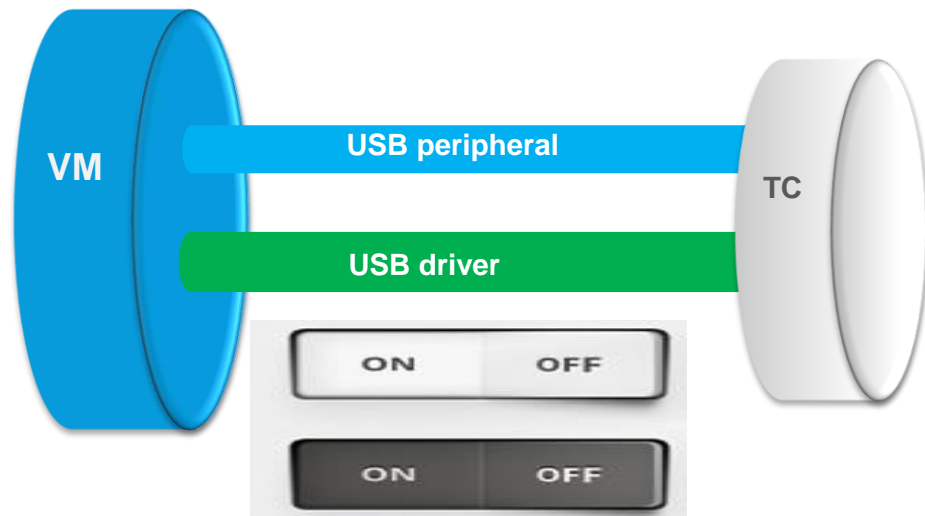
## ❑ Management portal over HTTPS

Access transmission channels over the portal are encrypted.

## ❑ HDP over SSL

The SSL encryption is implemented between the trusted domains and the untrusted domains on the management plane.

# Peripheral Device Port Control on Virtual Desktops



The HDP protocol independently controls various peripheral channels, ensuring information security.

❑ **Local USB driver**

Mappings of local drivers can be disabled.

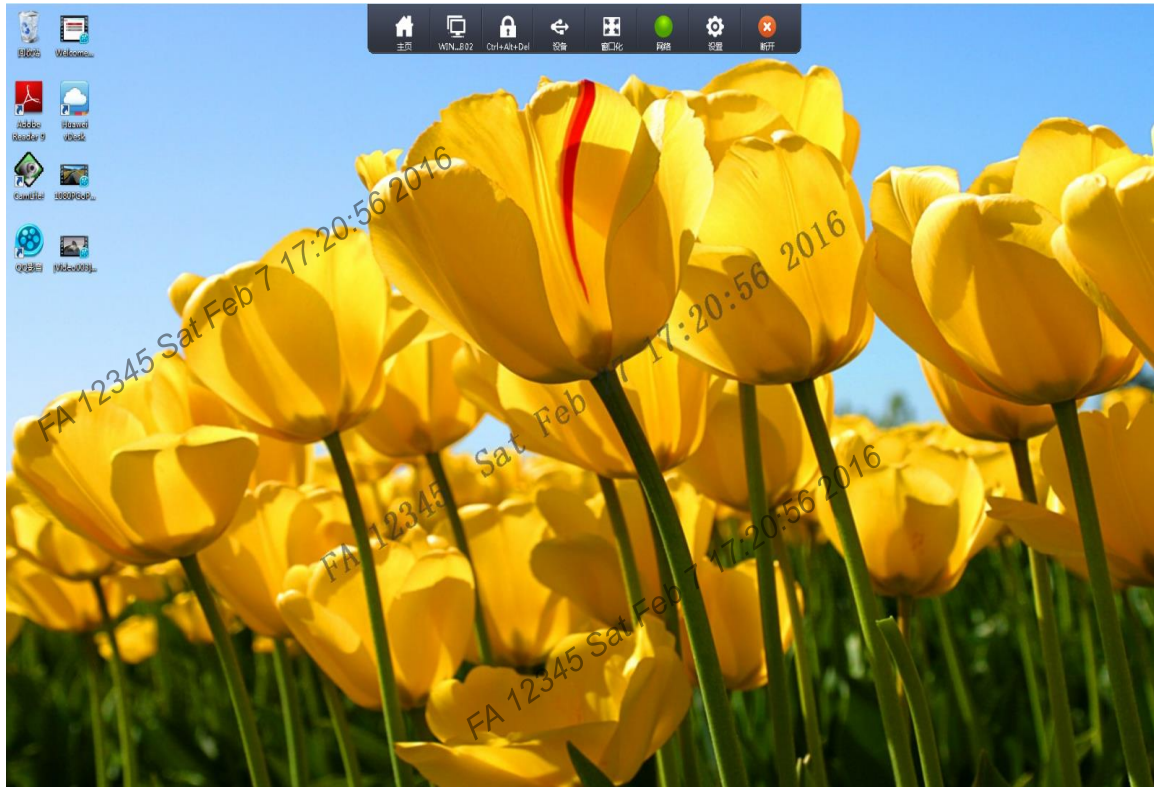
❑ **USB device control**

USB ports can be enabled or disabled.

Switch policies can be applied to multiple objects such as desktop groups, VMs, users, user groups, terminal IP addresses, OUs, and WIs.

Various ports serve as independent virtual channels to implement flexible and independent port control policies.

# Desktop Watermark: Prevents Users from Photographing Desktop Content



## ❑ Different watermark display

- ✓ **Fixed mode:** One watermark is displayed along the diagonal from the lower left corner to the upper right corner on the screen.
- ✓ **Random mode:** A horizontal watermark is displayed and moves randomly every two seconds on the screen.

## ❑ Custom watermark application objects

You can set policies to apply watermarks to desktop groups, VMs, users, and terminal IP addresses.

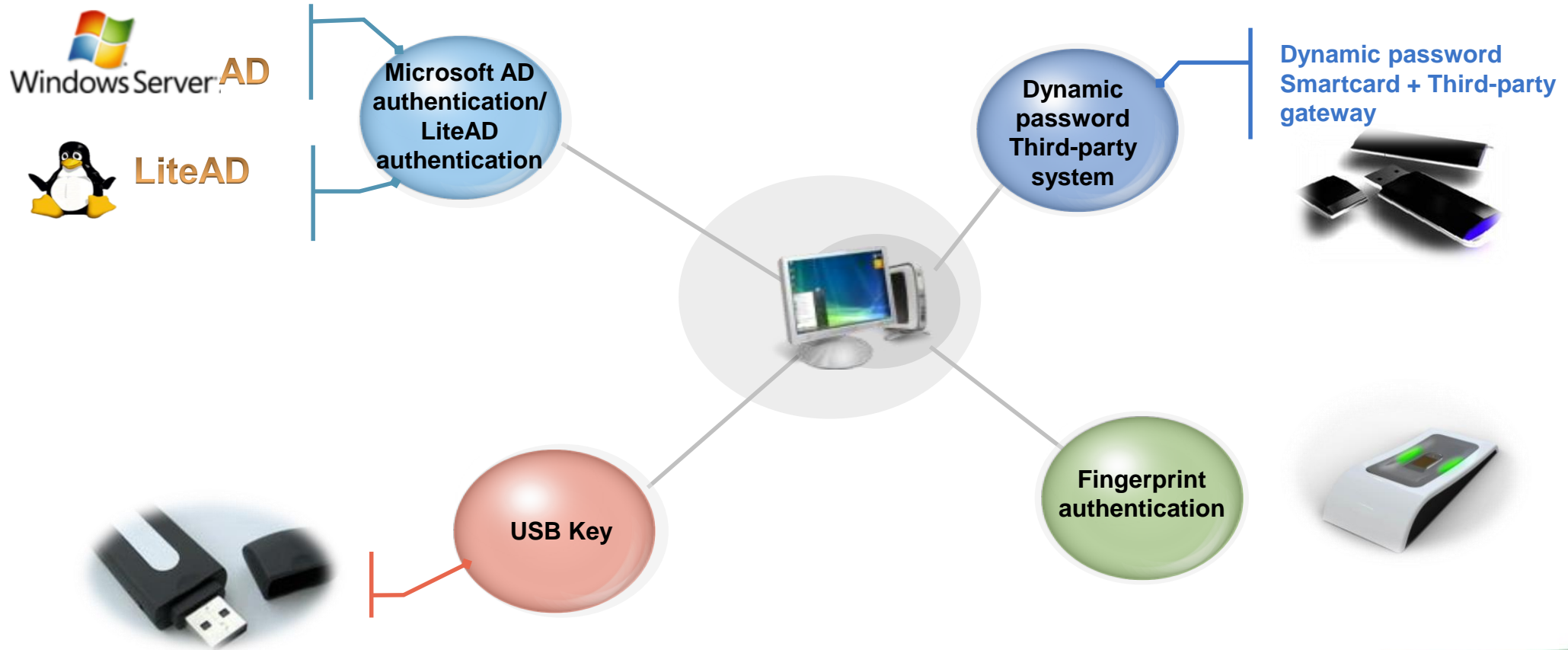
## ❑ User-defined watermark

You can specify the watermark content. The default content is login username + time and the maximum number of characters is 64.

## ❑ Custom watermark color

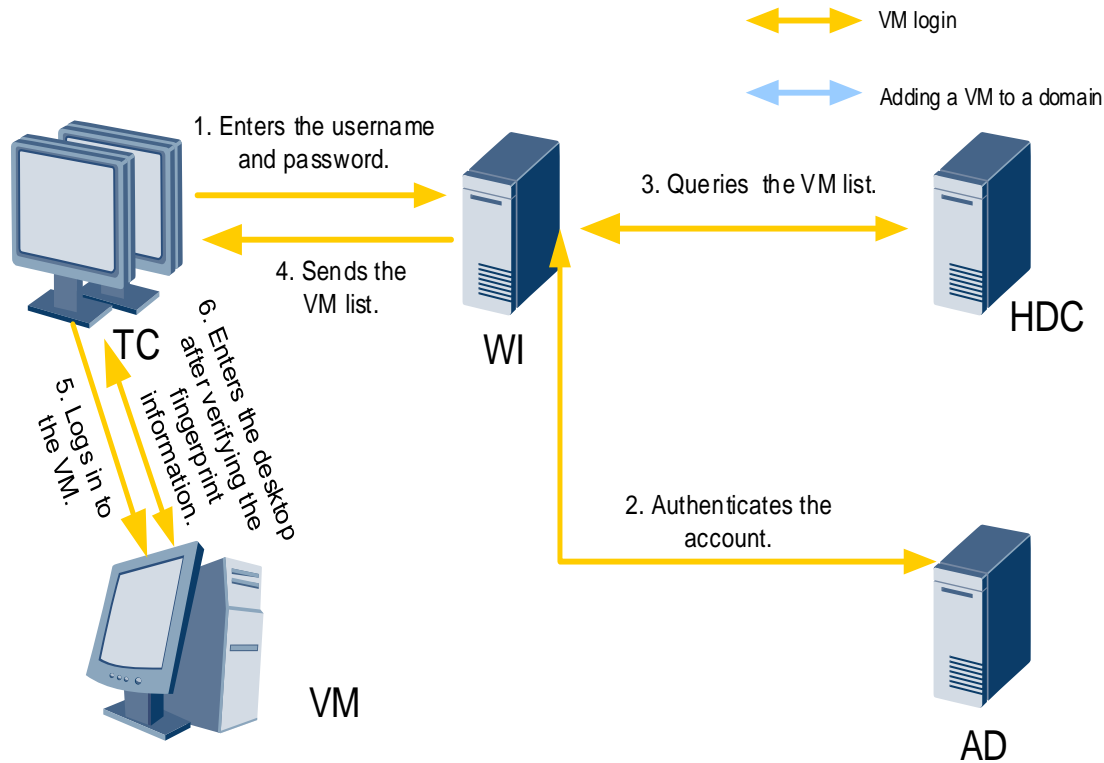
You can change the watermark color by adjusting RGB values.

# Complete User Access Authentication



Various authentication modes are supported, such as the multi-level authentication and two-factor authentication.

# Fingerprint Authentication Mode



## □ Technical features

- ✓ Fingerprint authentication must work with AD username and password authentication. To log in to a VM, the user must enter the AD username and password, and then enter the fingerprint information when accessing the VM.

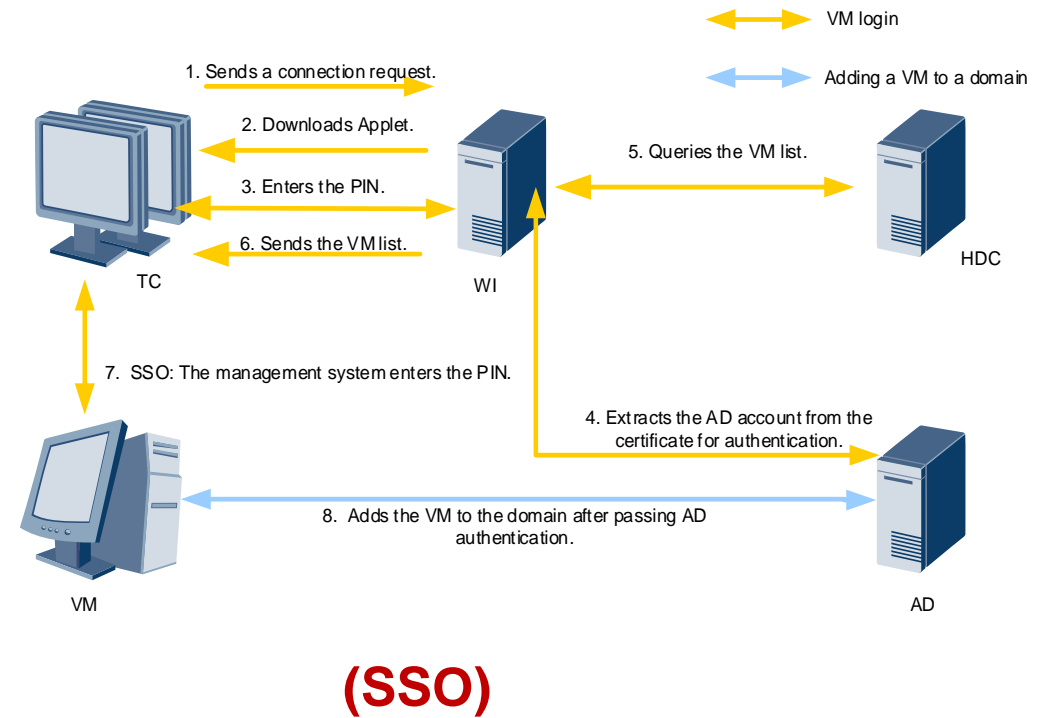
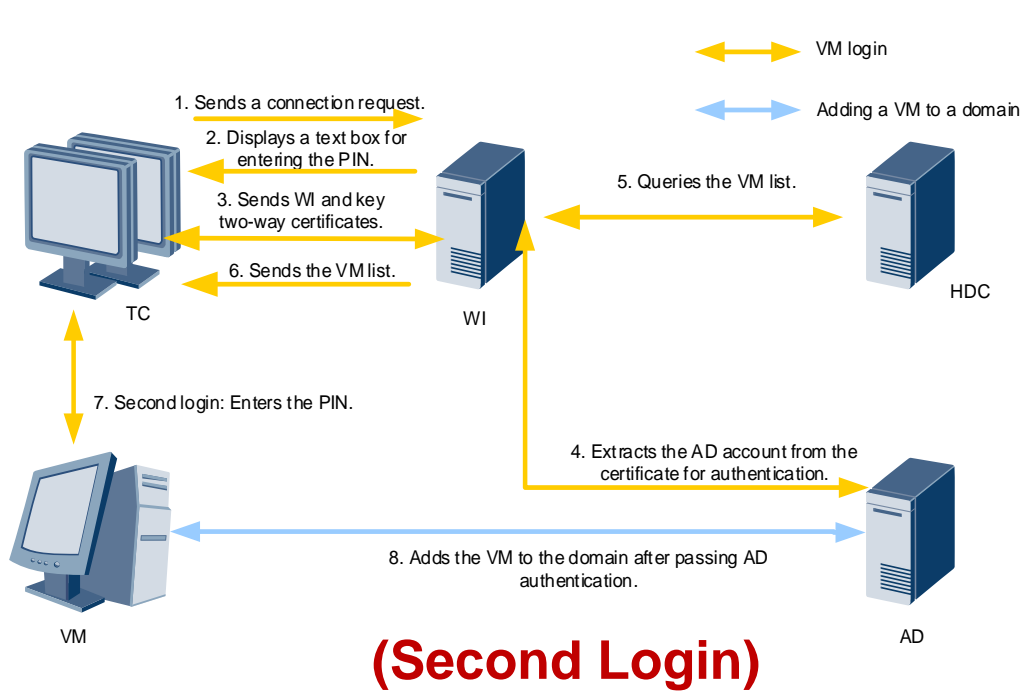
## □ Constraints

- ✓ Only Biocomme fingerprint readers are supported. Customization development needs to be performed for other fingerprint readers to support this mode.

## □ Benefits

- ✓ The fingerprint authentication uses fingerprints to verify user identity. It is protected from forging and decoding and is easy to use.

# USB Key Authentication Mode



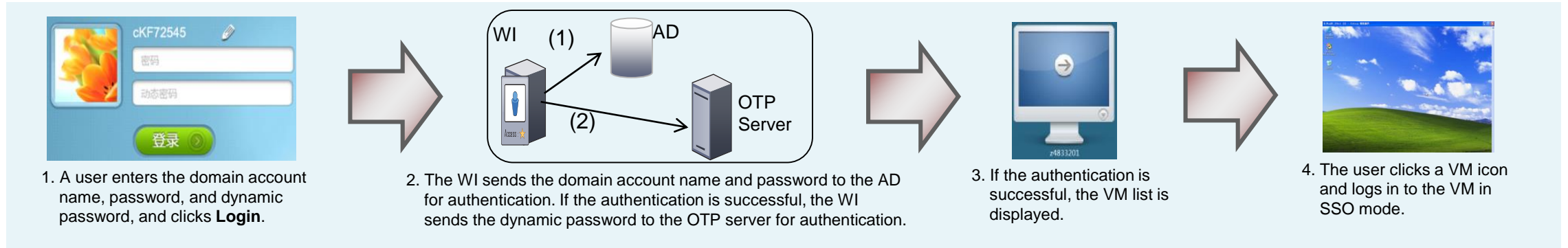
## Advantages

- The USB key is a type of smartcards. USB key authentication provides dual protection mechanisms through hardware and the personal identification number (PIN). A user can log in to the VM only after obtaining the USB key and PIN.
- When the USB key is removed, the connection with virtual desktops is automatically interrupted.

## Constraints

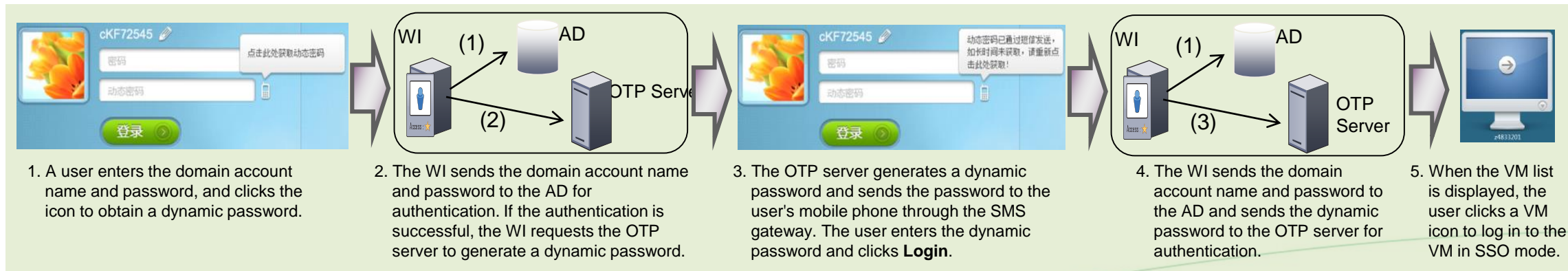
TCs must be the CT5100 or CT6100 and run on the Windows or Linux OS.

# Dynamic Password Authentication



## Dynamic Password Card

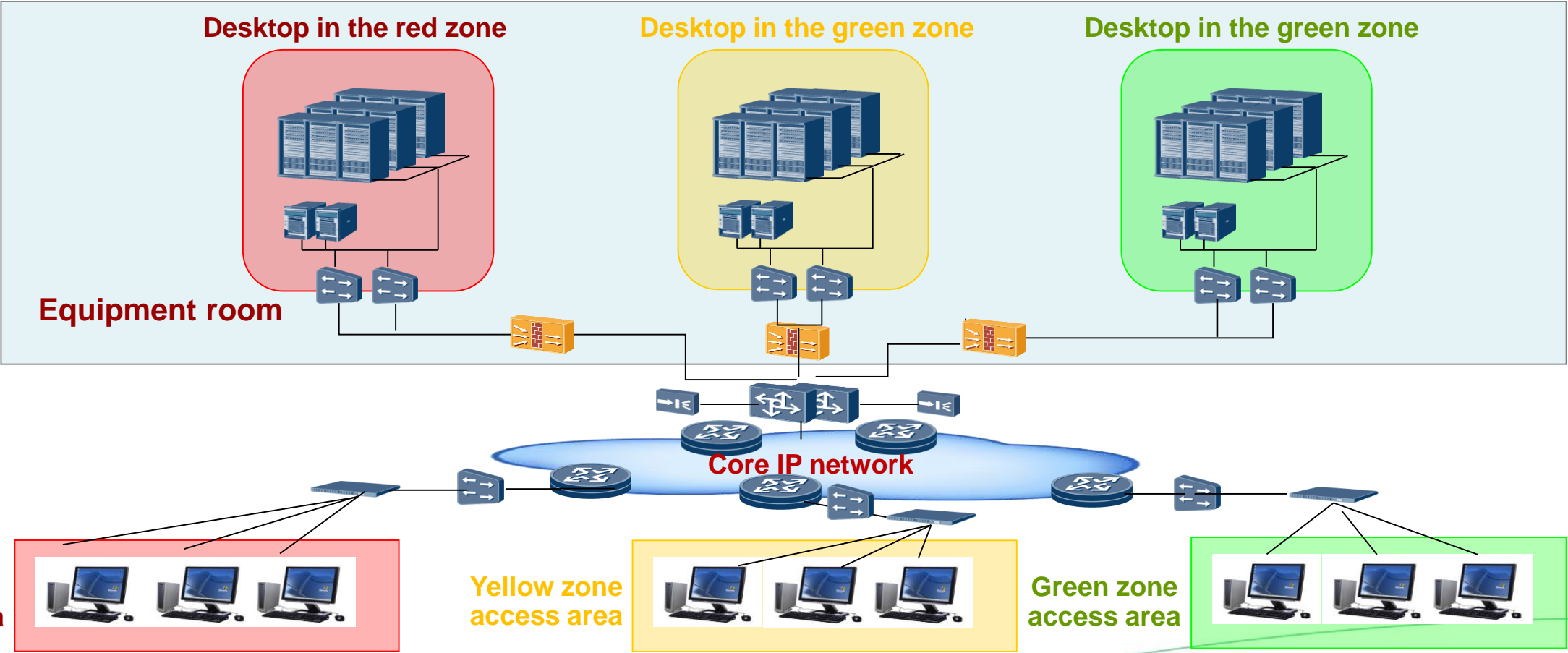
- ✓ Domain account password + software/hardware dynamic password card authentication: To log in to the WI, the user must enter a domain account name, password, and dynamic password. The user must have a software/hardware dynamic password card.
- ✓ The dynamic password authentication server can be connected through RADIUS (PAP) or API.



## SMS Dynamic Password

- ✓ Domain account password + SMS dynamic password: Mobile phones are used instead of dynamic password cards.
- ✓ The dynamic password authentication server can be connected through RADIUS (PAP) or API.

# Construction Solutions in Red, Yellow, and Green Zones

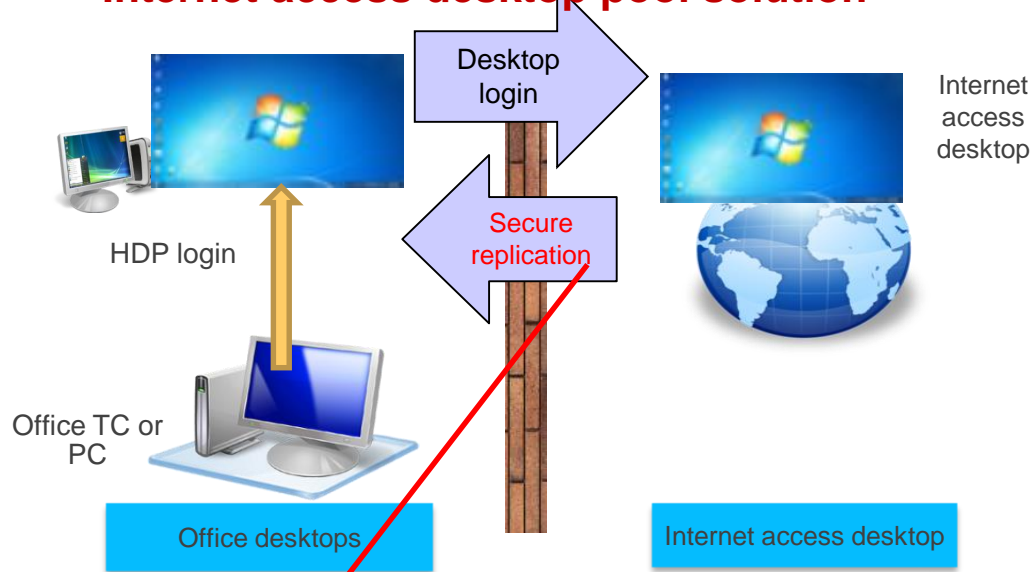


Deploy red-yellow-green desktops based on different security requirements. Different zones cannot access each other.



# Secure Internet Access Desktop

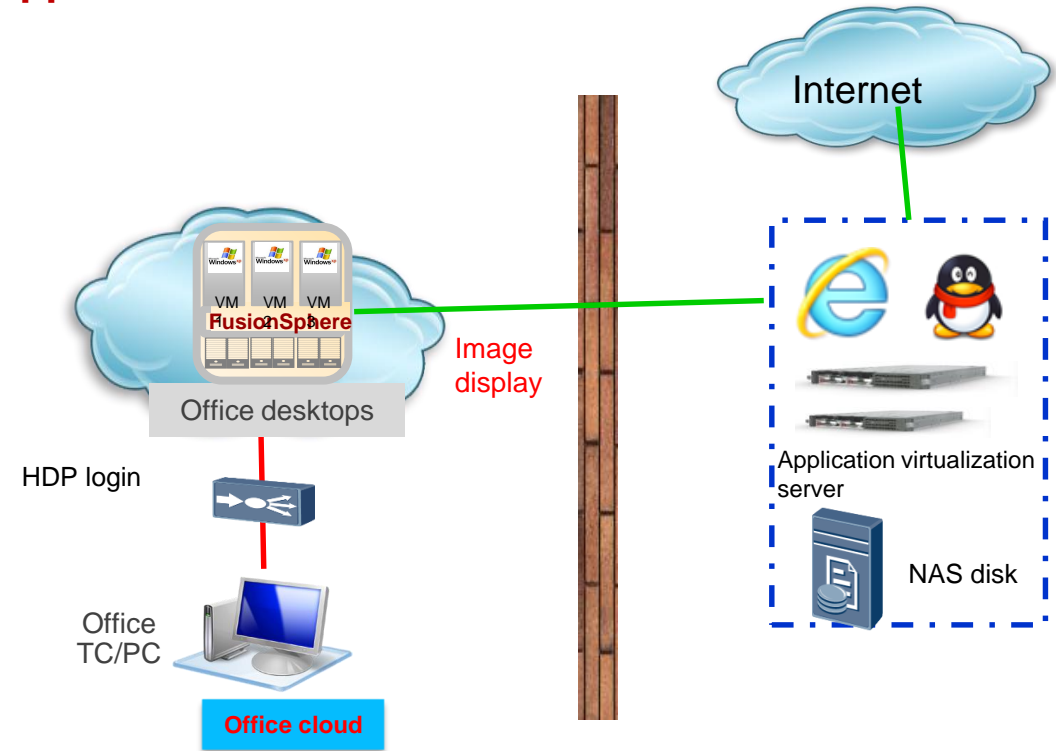
## Internet access desktop pool solution



1. Enable the function of sending files from VMs to the client.
2. Right-click to send files.
3. Transmit files.

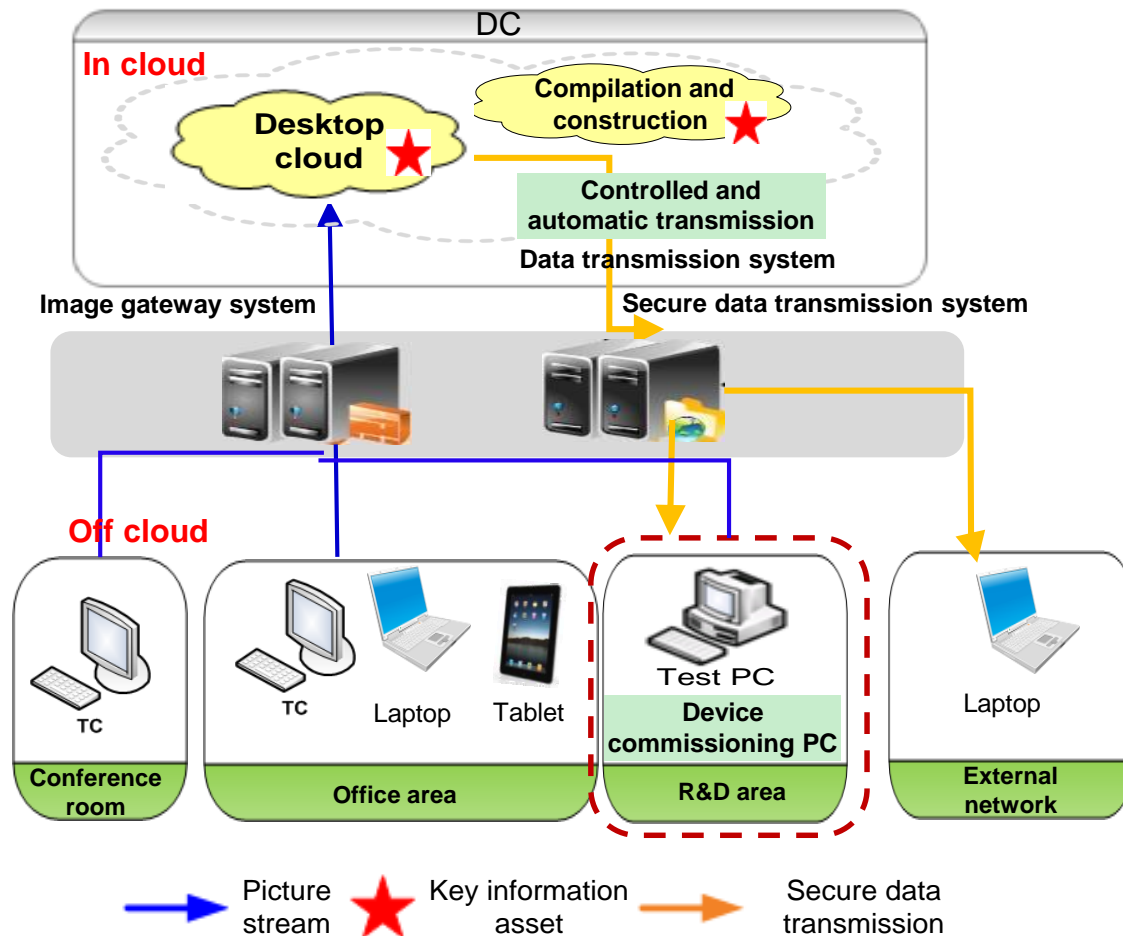
- ✓ Pool-based network access improves resource reuse rate, enables restoration after shutdown, and prevent Trojan horse residing.
- ✓ The Internet access desktop and office desktop are physically isolated and only desktop protocols are supported.
- ✓ Files can be transmitted to office PCs unidirectionally to ensure security. to the office through the security channel. The data exchange system can also be used to detect and transfer data between the Internet desktop and office desktop.

## Application virtualization-based secure Internet access



- ✓ The SBC applications and office desktop are physically isolated and only desktop protocols are supported.
- ✓ The SBC releases applications to the office desktop and Internet data cannot be transmitted to the office network, ensuring intranet security.
- ✓ Internet access data is stored on the NAS network-disk, and data is transmitted to the office intranet through the data exchange system.

# In-cloud and Off-cloud Secure Data Transmission System



## Management and control of data transmission to external

- ✓ Data transmission from the cloud to off-cloud machines needs to be approved and scanned for security.
- ✓ Data transmission from off-cloud machines to the cloud does not need to be approved or scanned for security.
- ✓ Files that do not meet the security policies can be intercepted, to prevent information leakage.

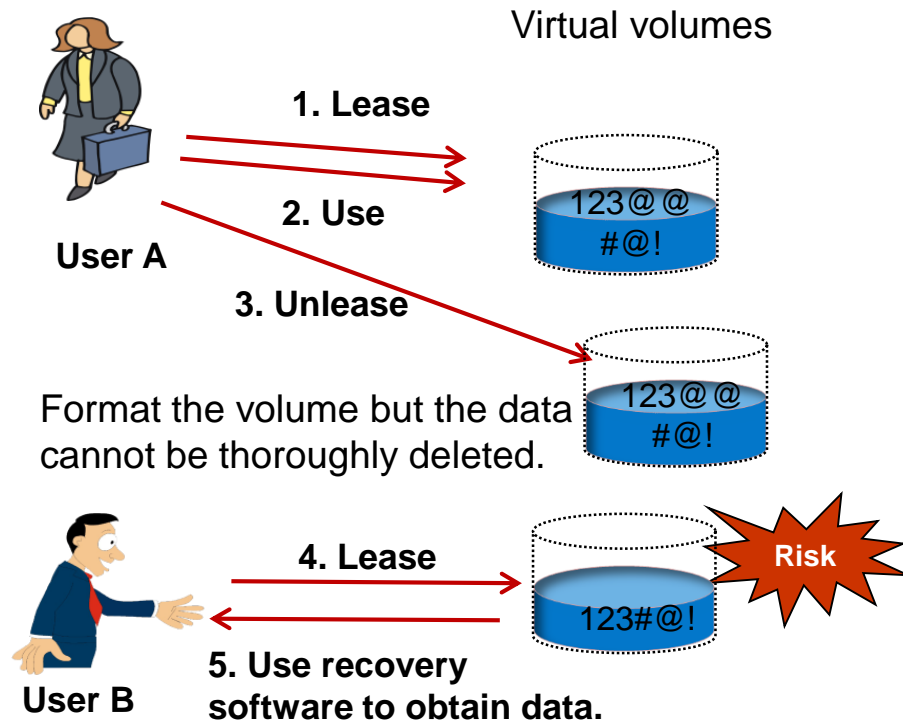
## Flexible security policies

- ✓ Different security policies can be configured for information assets of different confidentiality levels.
- ✓ The security policies include: file type blacklists and whitelists, warning and interception policies, and whether supervisor approval is required.

## Alarm and log auditing, traceability

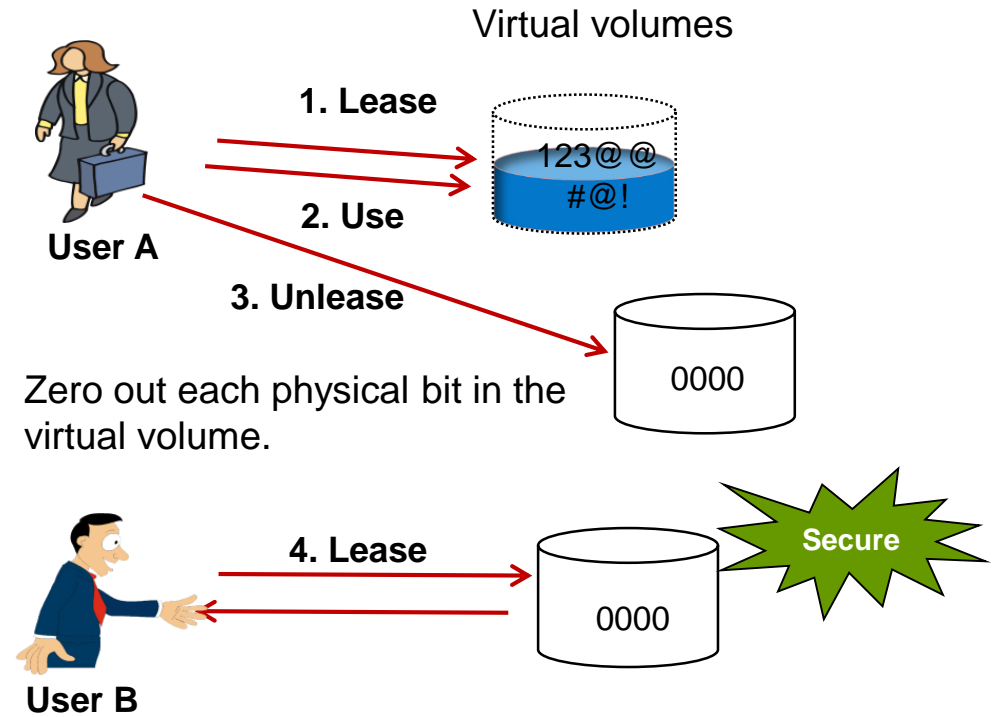
- ✓ File transmission information and approval operations are all recorded in logs.
- ✓ Alarms are sent immediately when events not in compliance with the security policies occur.
- ✓ Files uploaded against regulations are backed up, facilitating examination and backtracking.

# Secure VM Deletion



### Industry mode:

Clear data by formatting the virtual volume. Data can be restored and hence information leakage may occur.



### Huawei mode:

Zero out each physical bit in the virtual volume to ensure no data can be restored.

# Management Security: Role Separation, Mutual Supervision, Minimum Authorization, and Behavior Auditing

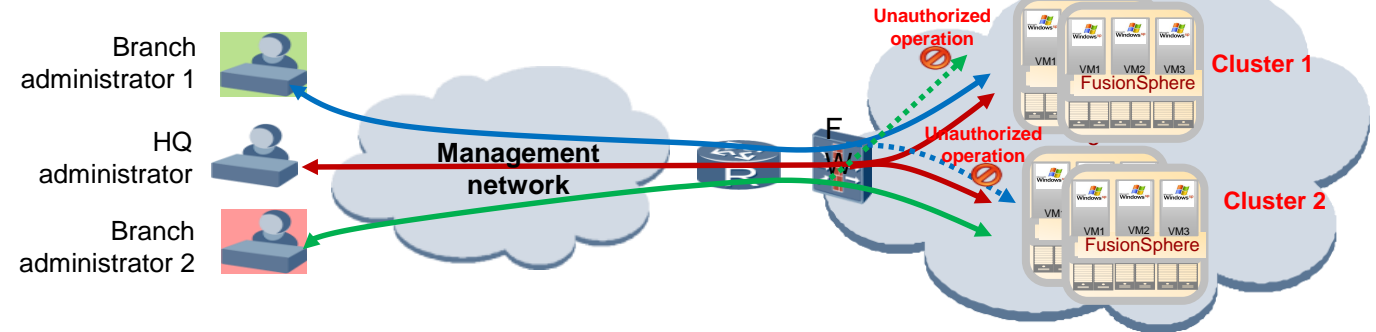
## Role separation and mutual supervision

<b>Security Auditor</b>	
Log viewing Log exporting	
<b>System management</b>	<b>Security management</b>
User creation VM management Storage management Network management ...	User approval Permission management Security policy management ...

- ✓ Separation of roles, meeting BMB17 protection standards
- ✓ The three roles restrict and supervise each other, preventing security risks caused by centralized rights.

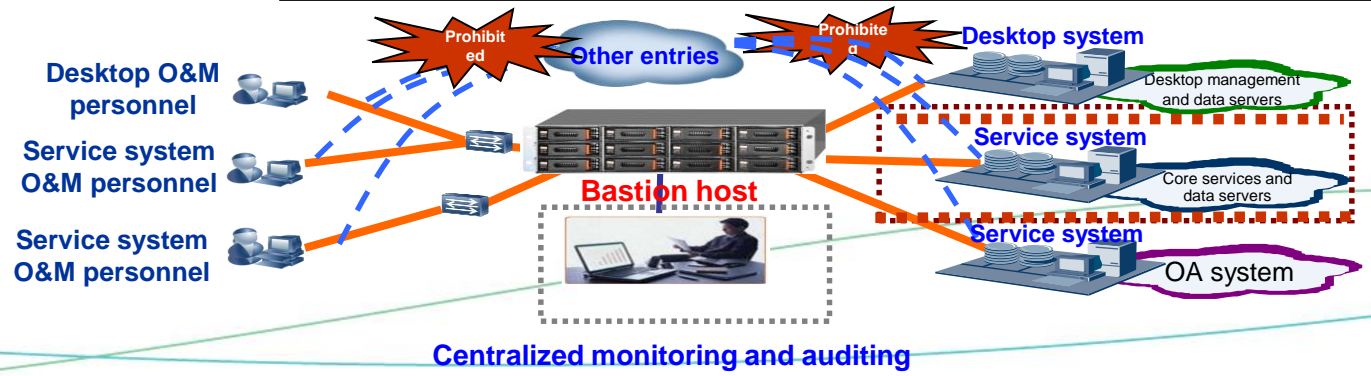
## Minimum role authorization

- ✓ Rights- and domain-based management: Comply with the NIST standard RBAC model and the minimum permission for roles can be set to prevent unauthorized management.
- ✓ The access time and access area of desktop management can be controlled based on IP address segments and time segments.



## O&M operation auditing

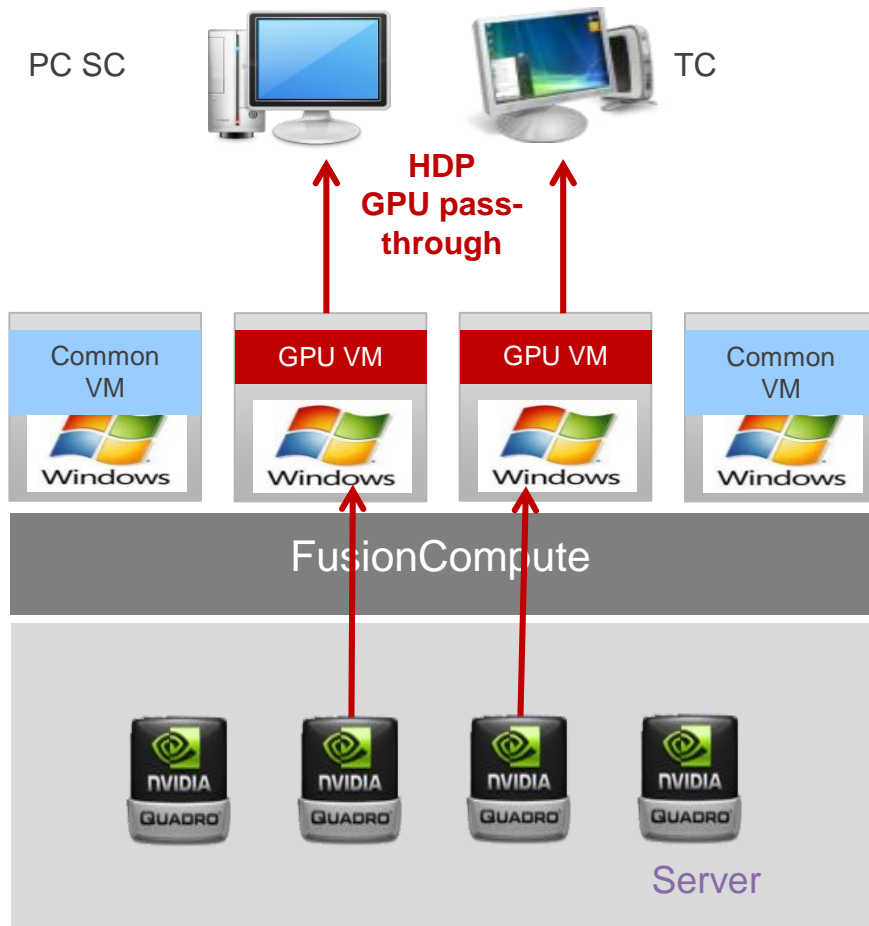
- ✓ Unified management entry, preventing illegal access
- ✓ Audit logs of graphics/character terminals, database applications, and file transfer, providing real-time video surveillance and screen recording
- ✓ Operation logs and user access logs of the desktop system



# Cloud Workstation

HD Graphics Processing, Omnimedia Editing

# Multi-GPU Pass-through Technology



## Pass-through principles

GPUs on servers are assigned to VMs in pass-through mode, which enables VMs to use GPUs to obtain 3D acceleration capabilities.

Advantage: Provides good compatibility and excellent performance.

Disadvantage: Requires high costs.

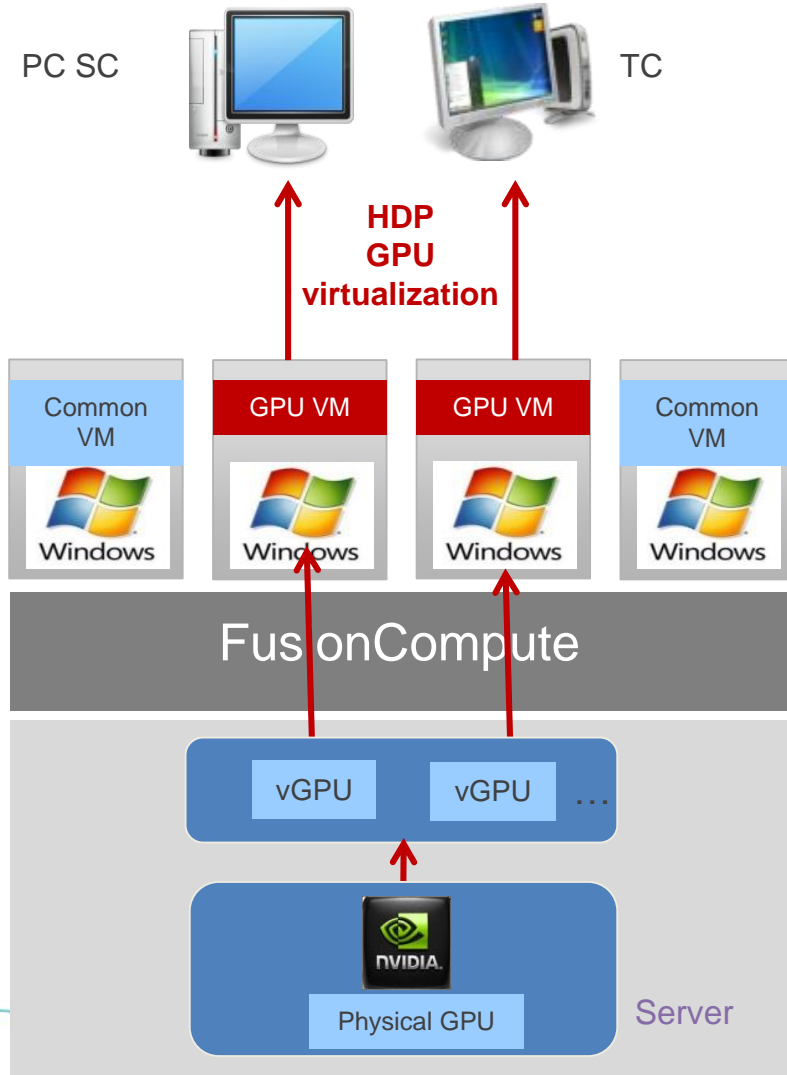
Recommended scenarios:

1. HD videos are rendered and processed in omnimedia editing or multi-rack 120 Mbit/s and 4K HD videos are edited.
2. Complex drawing editing, assembly, or high experience needs are required.

## Specifications

- ✓ Support M60 graphics cards.
- ✓ Support Windows 7/Windows10 desktops. GPU VMs do not support HA.
- ✓ Both E9000 and RH2288H V3 support one Tesla M60 card.

# GPU Hardware Virtualization Technology



## □ Technical principles

1. A virtualization platform virtualizes a physical graphics card into multiple virtual graphics cards and each GPU VM can be bonded to a vGPU to meet rendering requirements of 3D applications.
2. Similar to GPU pass-through VMs, GPU hardware virtualization VMs can use NVIDIA graphics cards to directly access GPU hardware resources and obtain the same performance and compatibility as PCs.

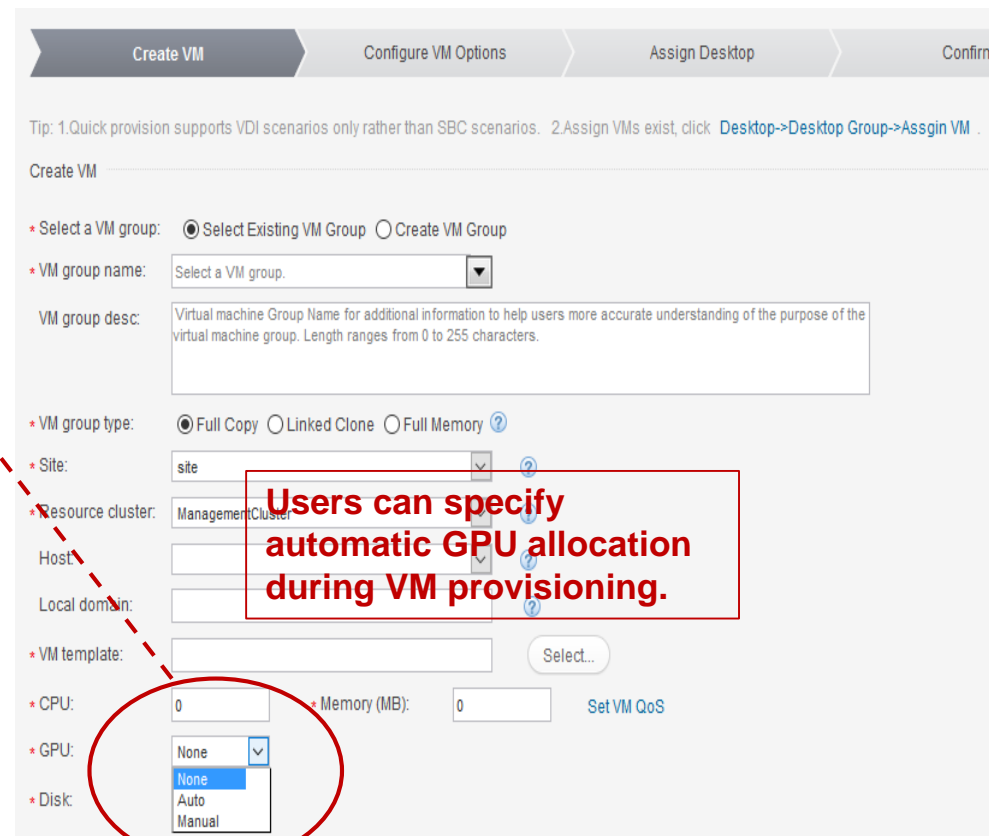
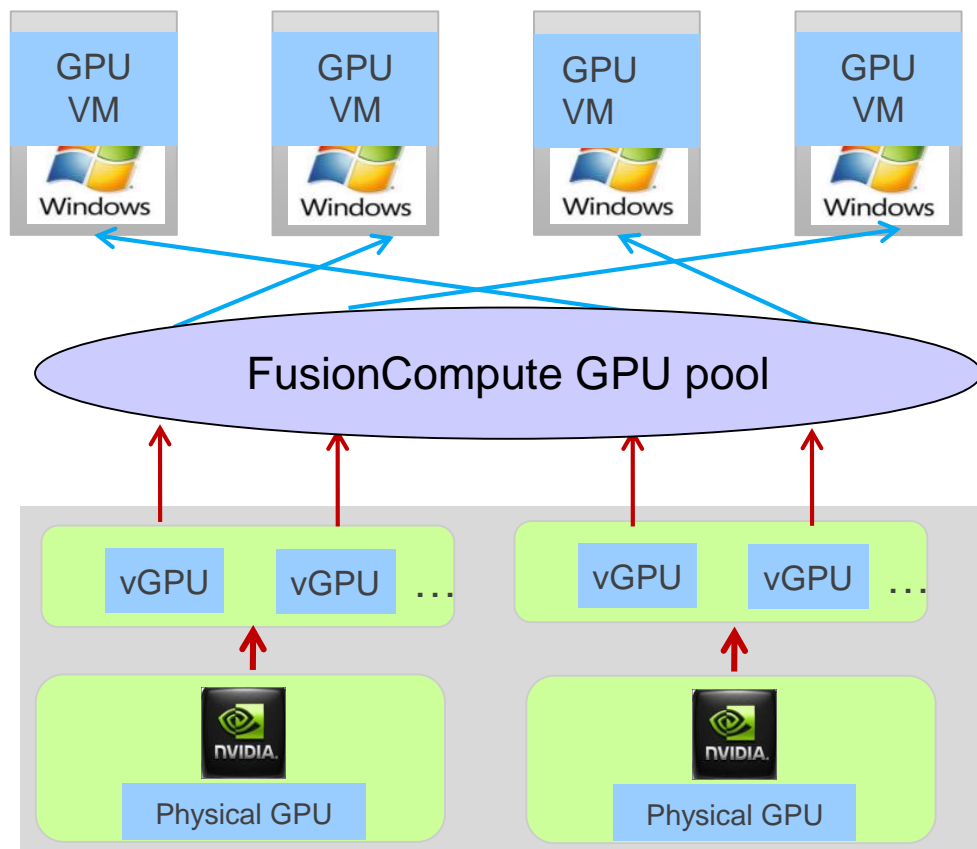
## □ Advantages

1. Implemented based on hardware graphics cards, GPU hardware virtualization provides the same performance and compatibility as PCs.
2. GPU hardware virtualization delivers high-density concurrency and lowers GPU user costs with one K1 graphics card supporting up to 32 entry-level and mid-range users. You are advised to use this solution to satisfy entry-level and mid-range 3D application and standard definition (SD) video editing requirements.

## □ Limitations

1. Currently, NVIDIA Tesla M60 graphics card supports GPU hardware virtualization. Each CH221 blade or RH2288 V3 server supports only one NVIDIA Tesla M60 graphics card.
2. GPU hardware virtualization VMs do not support HA.

# GPU Pooling: Fully Exploiting Existing GPU Resources



## □ Application Scenario

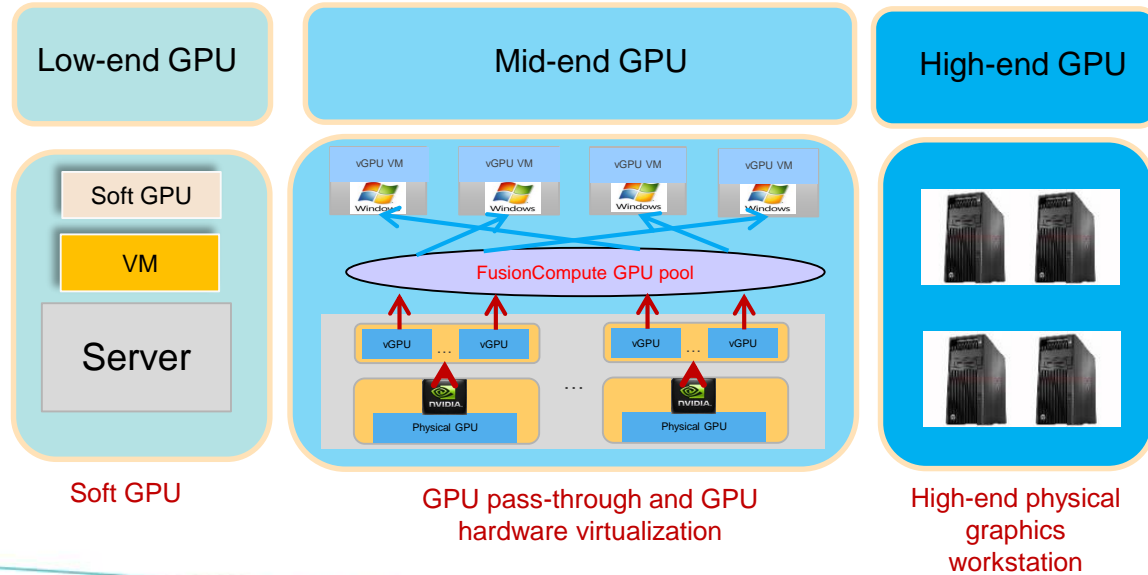
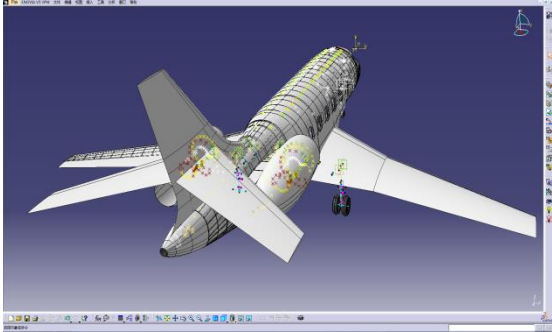
- ✓ Drawing simulation and rendering are used temporarily by designers, but high-end GPU resources are used universally.
- ✓ When multiple tasks of an organization are running concurrently, GPU resources can be used in different periods of time.

## □ Function

GPUs in a cluster are automatically bounded during VM startup and GPU resources are released to the pool after VM shutdown. vGPU and GPU pass-through pooling is supported.



# Industry-leading Cloud Workstation Technologies



- ❑ **Covering all scenarios: four technologies**

  - ✓ High-, mid-, and low-end GPU scenarios: Manage soft GPUs (Window 10), vGPUs, GPU pass-through, and physical graphics workstations.
- ❑ **Smooth experience from HDP: lossless, 100 Mbit/s HD editing, up to 60 fps, 4K video**

  - ✓ Lossless static image: intelligent identification of static images such as circuit boards/circuit diagrams, lossless compression algorithms, and 100% restoration of image details
  - ✓ Non-linear HD editing: Supports 100 Mbit/s HD video editing (up to: Sobey 1080P/14 tracks, Dayang 1080P/8 tracks).
  - ✓ Dynamic video frame rate adjustment: The video frame rate can be adjusted based on the network quality. A maximum rate of 60 fps (720p) is supported. 4K video playback is supported.
- ❑ **Powerful compatibility assurance: 30+ applications**

  - ✓ Compatible with the special mouse working mode: Compatible with the special mouse working mode of multiple drawing software to restore PC operation experience.
  - ✓ Application sensitivity: Optimizes commonly-used playback software (such as Flash) and image processing software (such as AutoCAD), offering higher smoothness than playing of other similar desktop protocols.
- ❑ **Minute-level fault recovery: Efficiency improved by more than 20 times**

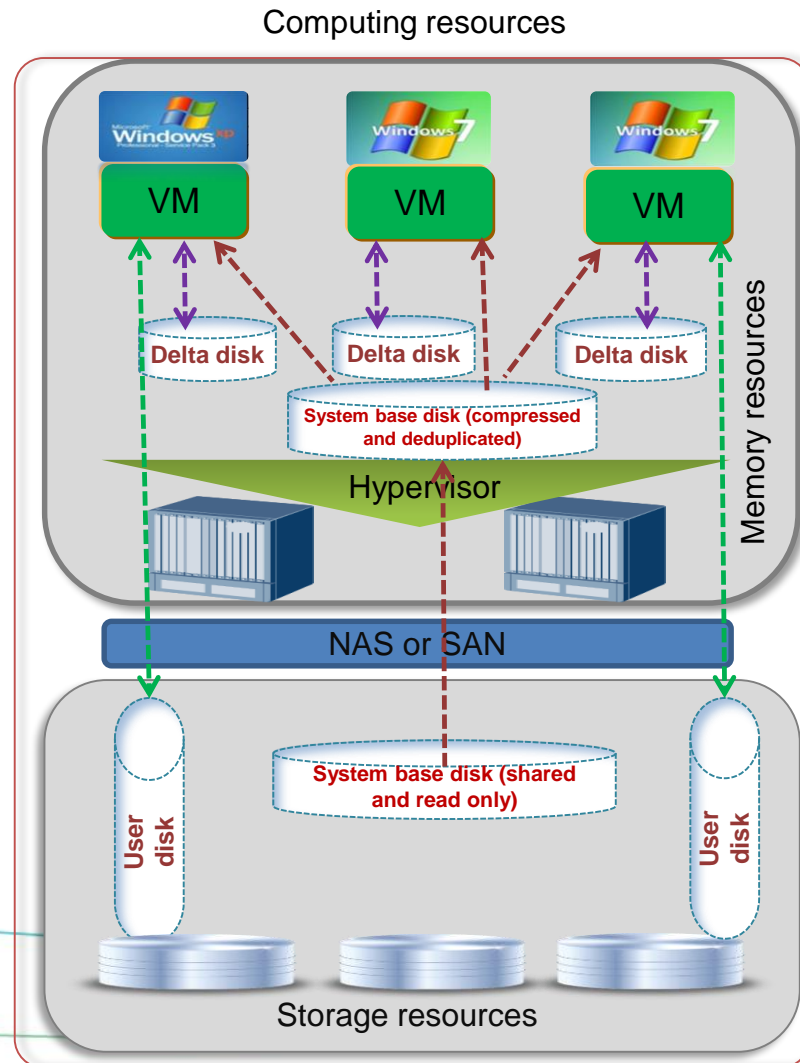
  - ✓ Minute-level fault recovery: The workstation fault is rectified in 2 to 4 hours, and the VM fault is rectified within five minutes.
  - ✓ vGPU/GPU pass-through and pooling: Dynamic scheduling of the GPU resource pool, automatic binding/unbinding of VMs, and quick fault recovery

**Note: For details, see the POC test conclusion.**

# Public Terminal

Ease of Use, Simple O&M

# Full Memory Desktop Solution Providing Excellent User Experience



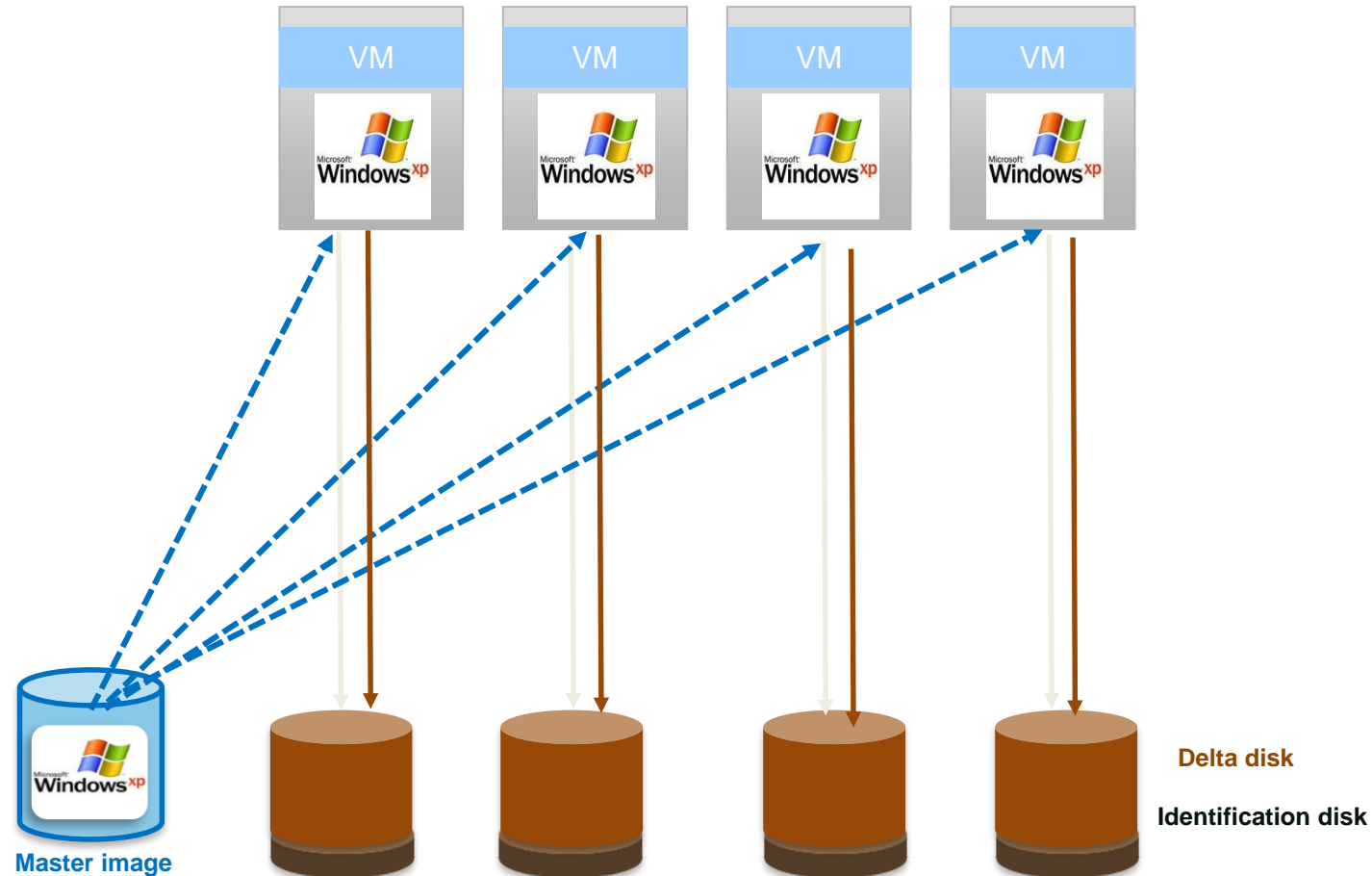
## Principles

1. Memory data de-duplication compression and memory overcommitment technologies are used to store all system disk data of desktop VMs in memory, so that read and write operations on disks of desktop VMs are converted to in-memory operations. This provides user experience higher than that of local PCs.
2. VMs that support linked clone do not store personalized data on system disks and apply to various scenarios, including Internet bars, multimedia classrooms, school computer rooms, and electronic reading rooms.

## Advantages

1. Full memory top speed desktops not only have the advantages of linked clone desktops, but also have high read/write performance. On full memory top speed desktops, VMs can be started or restarted quickly.
2. Administrators can centrally deploy, update, and restore VM templates.
3. Full memory desktops can be quickly created and provisioned in batches.

# System Disk Linked Clone VMs



## □ Technical features

- ✓ Multiple VMs that have the same OS share the same master image. The master image can be upgraded and maintained in a unified manner.
- ✓ Each VM saves differentiated virtualization images.
- ✓ Automatic restoration after shutdown can be implemented.
- ✓ Storage costs are reduced.
- ✓ It takes short time to create a linked clone VM.

## □ Application scenarios

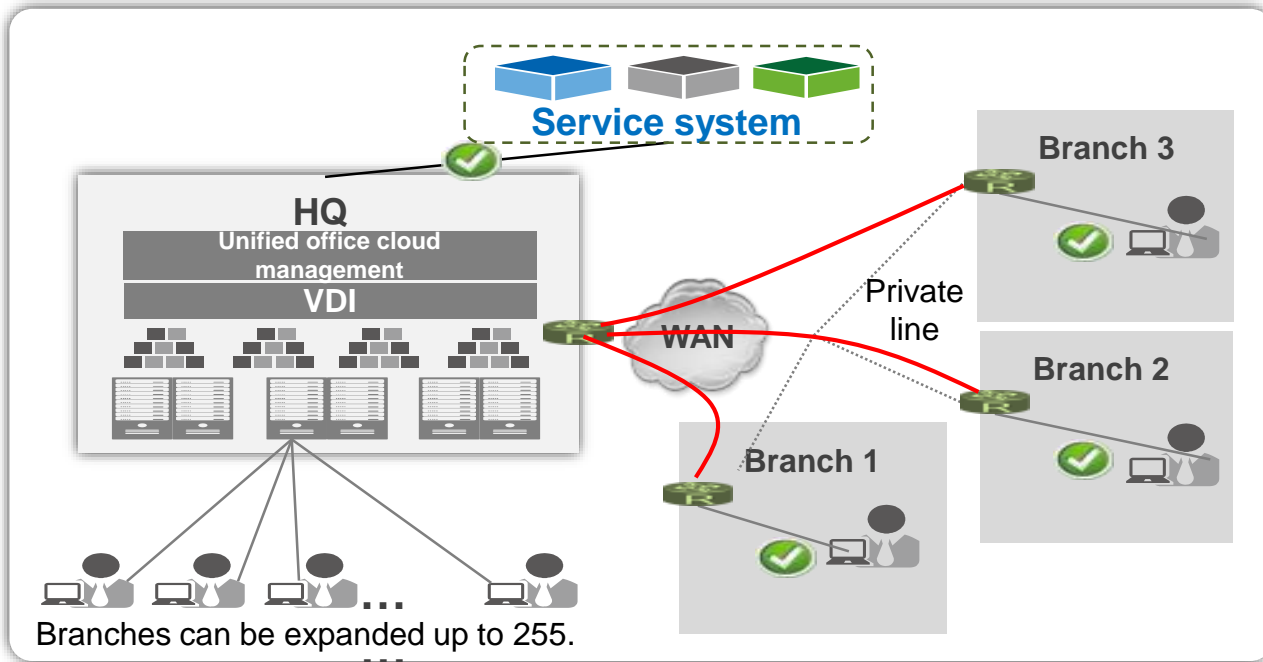
- ✓ Task-based desktops or scenarios where only personalized data rather than personalized programs exists. (Personalized programs can temporarily exist before master images are updated.)

Greatly improving management efficiency and reducing storage costs

# Branch Office

Centralized Management and Nearby Access

# Branch: Centralized Management and Nearby Access



## Technical features

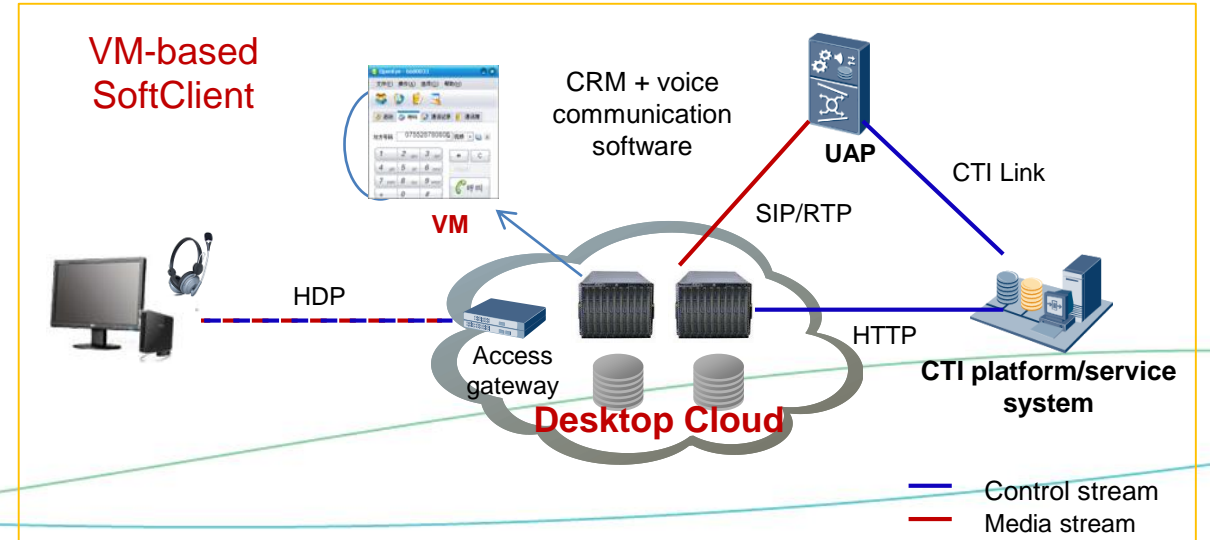
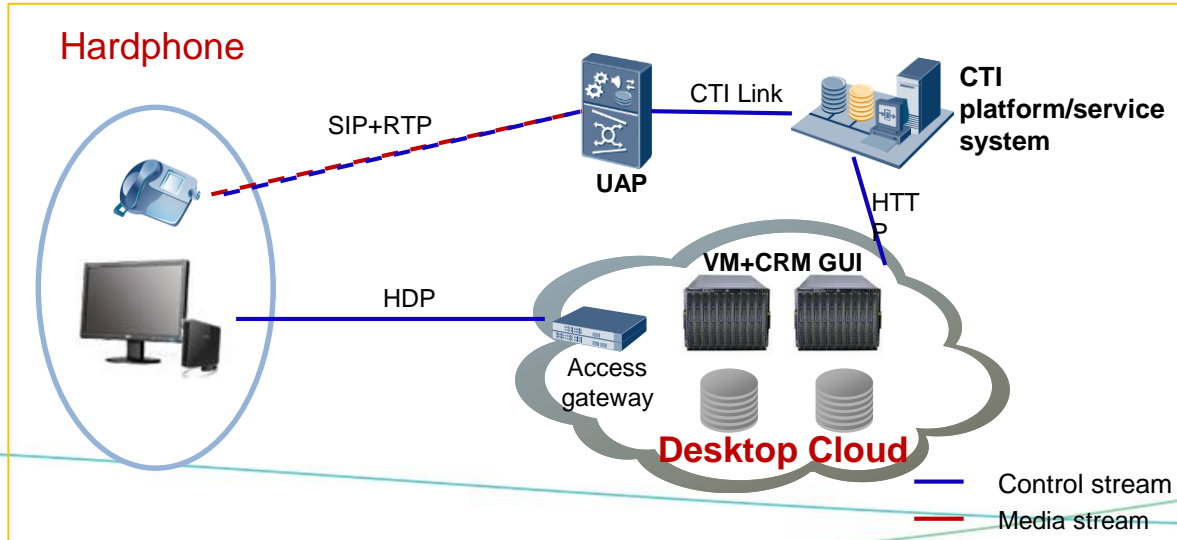
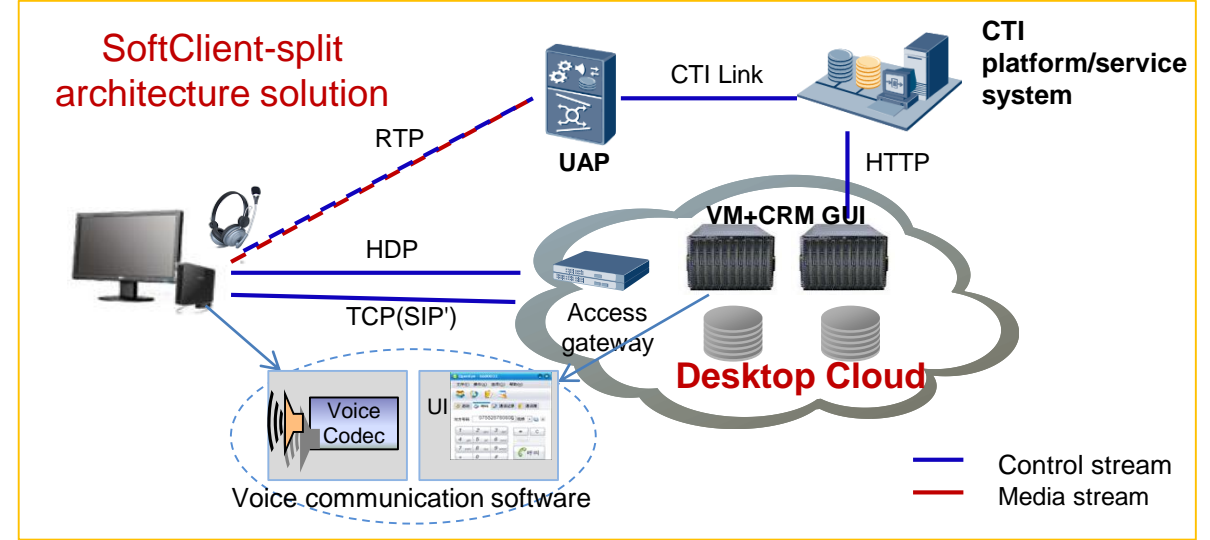
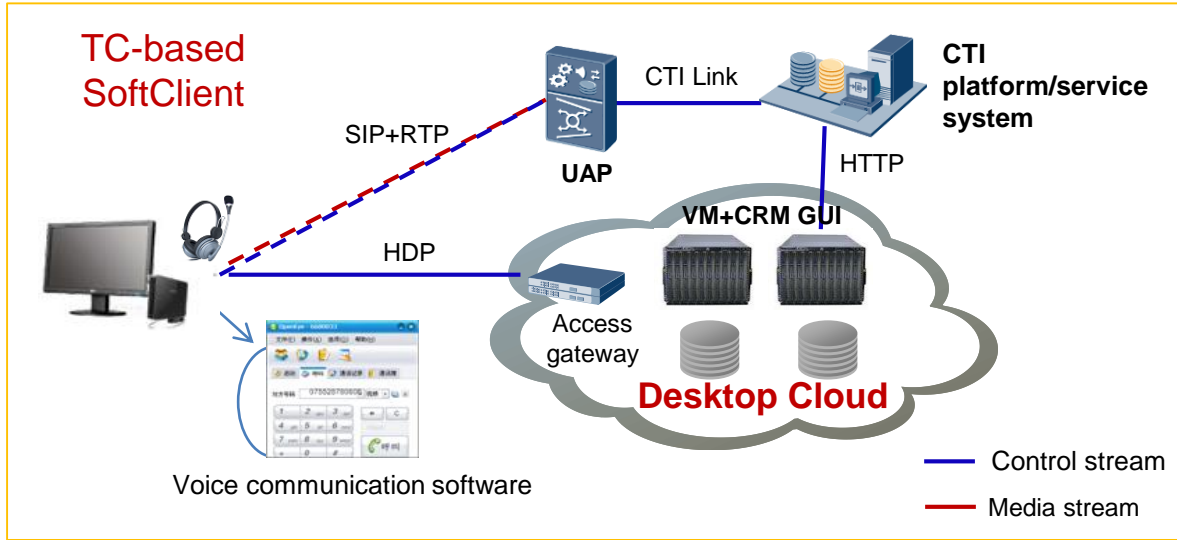
- ✓ **Reduced network reconstruction costs**  
Only 2 Mbit/s network bandwidth is required between branches and the center, eliminating the requirement for high bandwidth in the case of remote access to the center.
- ✓ **Enjoyable experience**  
Local resources (including servers, storage devices, network devices, virtualization platforms, and desktop management systems) are provided for branches. Users locally access the desktop system, ensuring good service experience. In addition, local access is not affected even when the network between branches and the center is interrupted.
- ✓ **Unified O&M management**  
VDIs of branches and the center are centrally managed and maintained, ensuring standard compliance of desktops. Alarms and logs of branches are reported to the center. The center then can remotely access branches through the unified management portal for centralized management.

	Solution 1: Distributed Deployment	Solution 2: Centralized Deployment
Deployment Mode	Complex deployment Desktop centers are locally deployed.	Simplest deployment Centralized deployment in the headquarter is adopted and branches access the headquarter's desktop center through the private line.
Private Line Bandwidth	Only 2 Mbit/s management bandwidth	Number of users x Per-user bandwidth
Latency	Locally less than 30 ms	This mode depends on the leased private line and is hard to ensure that the latency is always less than 50 ms.
Maintenance	Centralized O&M by headquarters + Local O&M by branches	Centralized O&M by headquarters
Expense	Expense of FusionAccess Desktop Cloud Solution + Costs of 2 MB private line connection from the headquarter to branches	Expense of FusionAccess Desktop Cloud Solution + Costs of the private line connection from each branch to the headquarter
Summary	<ul style="list-style-type: none"> <li>✓ In terms of private line latency, QoS latency requirements cannot be always met (&lt; 30 ms).</li> <li>✓ In terms of expense, the private line connection is too expensive.</li> <li>✓ Based on the preceding comparison in every aspect, the distributed deployment mode is recommended.</li> </ul>	

# Call Center

High Voice Quality

# Multiple Solutions Providing High Voice Quality





**2**

## Solution Overview and Typical Application Scenarios

**1**

Solution Overview

**2**

Typical Application Scenarios

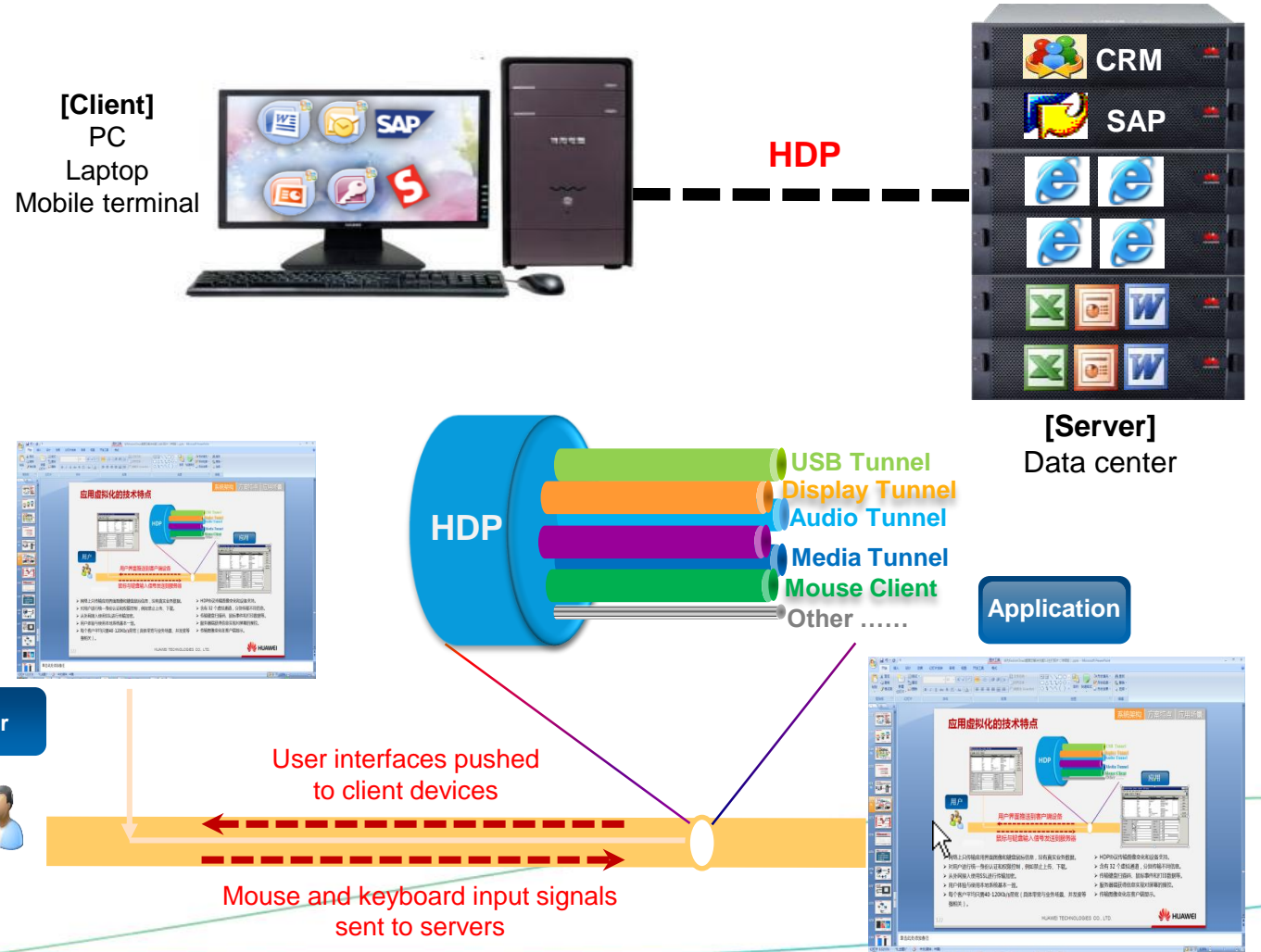
**3**

Introduction to Application Virtualization

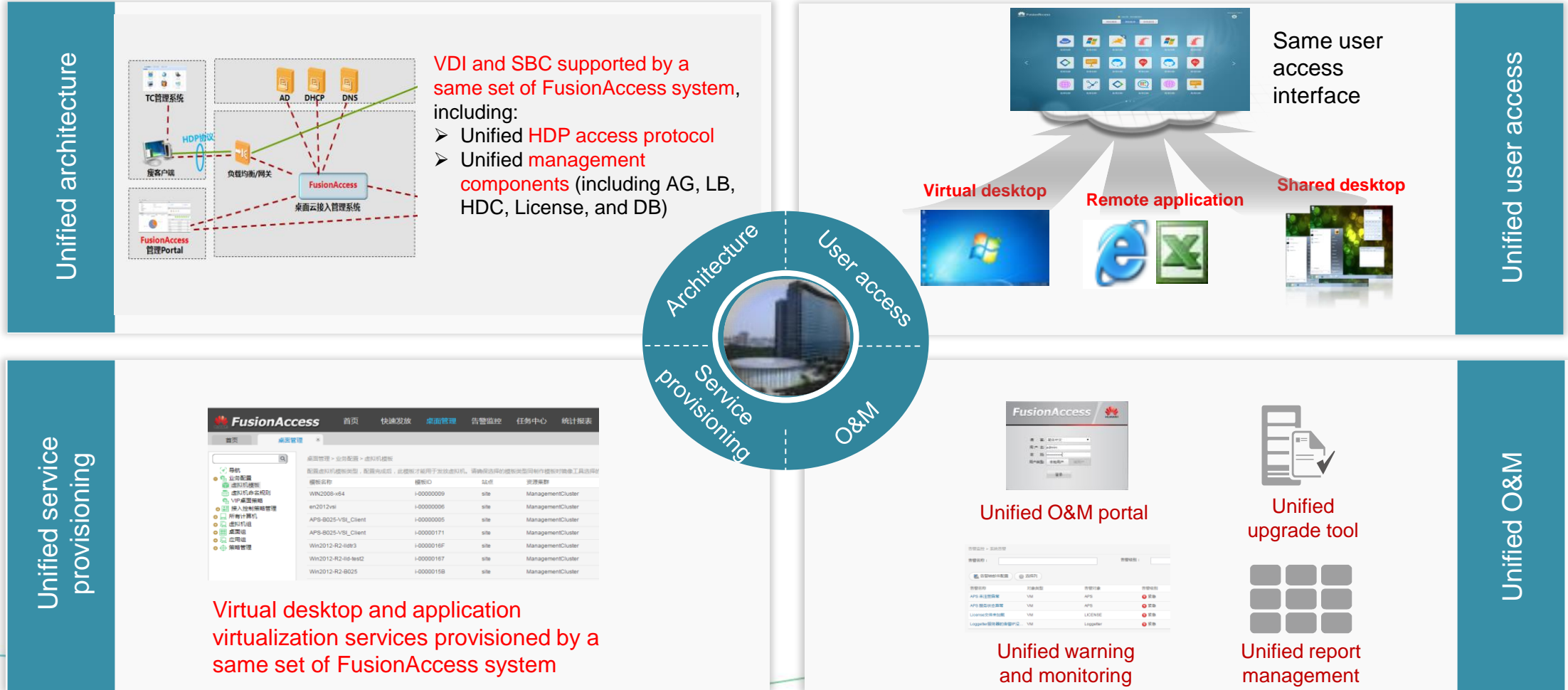
# Application Virtualization Technologies

The HDP protocol connects the server running environment and client input/output, facilitating human-machine interaction between the client and server. The application running environment and use environment are isolated and centralized computing is implemented, simplifying client management and protecting enterprise information security.

- Only application interface images and keyboard and mouse information instead of real service data are transferred on the network.
- Unified identity authentication and rights control are performed for users, such as forbidding uploading and downloading.
- Secure Sockets Layer (SSL) is used to encrypt transmission from the external network.
- User experience is the same as that of using the local system.
- The HDP protocol is used to transfer image changes and device supports.
- 64 virtual channels are provided for transferring different information.
- Keyboard scanning codes, mouse events, and printed data are transferred.
- Servers obtain information and implement control on screens.
- Changes of transferred images are displayed on clients.

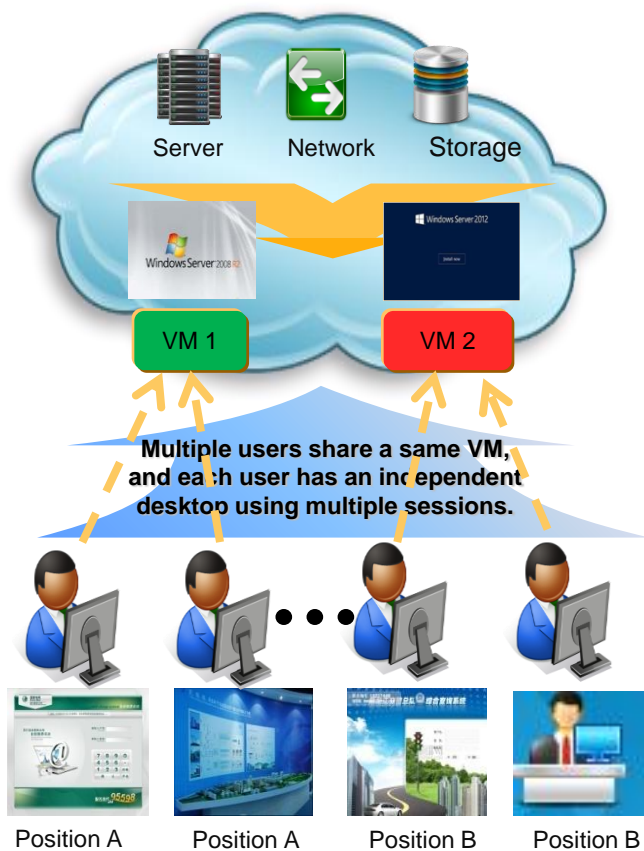


# Architecture Advantage: Actual Unification of VDI and SBC

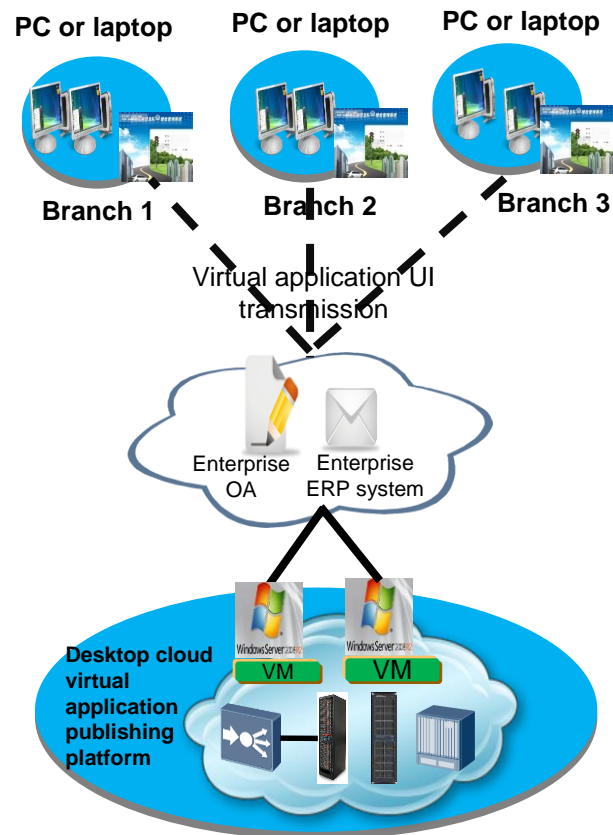


# Four Scenarios of Application Virtualization

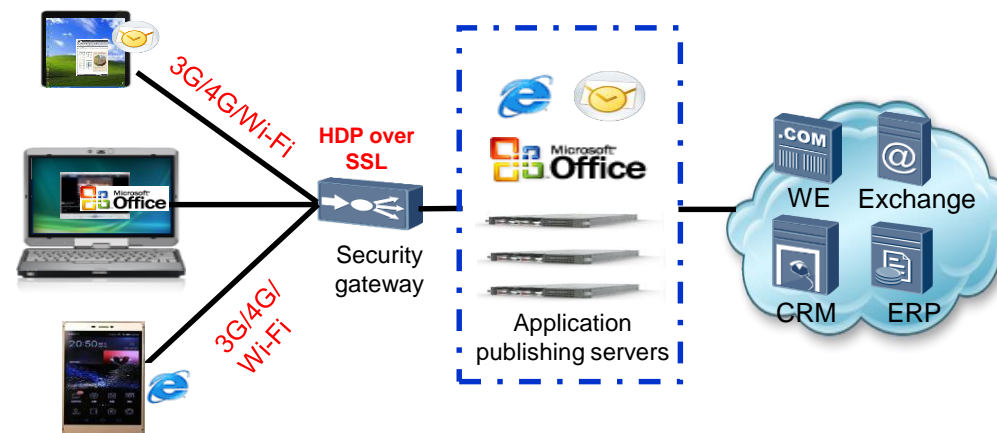
## Task-based Office



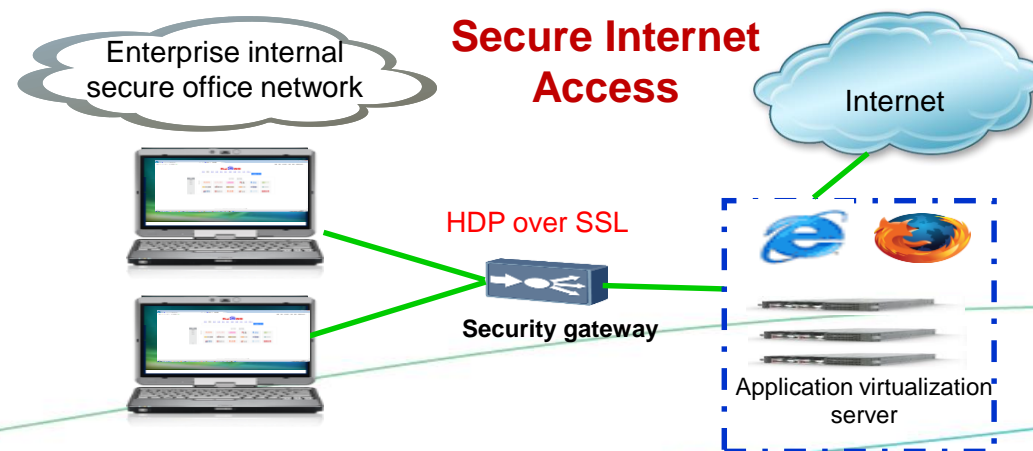
## Branch Office



## Mobile Office



## Secure Internet Access



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# Huawei FusionAccess Highlights

## Optimal Experience

- Optimized audio and video services, improving user experience
- GPU pass-through meeting graphics processing requirements
- User-friendly login page



## Agility and Efficiency











- Unified O&M management platform
- Various maintenance tools for improving the services
- Desktop cloud appliance quick delivery and smooth capacity expansion

## Security and Reliability

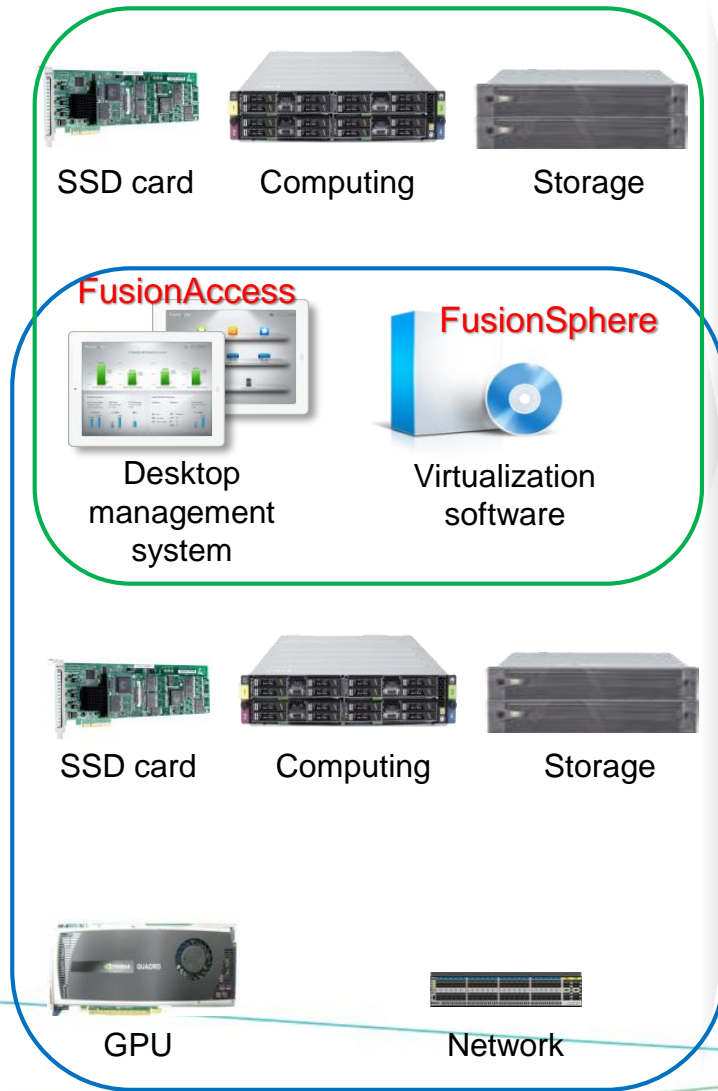
- Complete product forms and flexible deployment
- Comprehensive and flexible E2E security
- All-round reliability

Committed to creating a better experience, easy to deliver, easy to manage, and cost-effective enterprise virtual desktop architecture.

# Desktop Sales Modes

	Compact VDI	FusionCube			FusionAccess Standard		Software + TC
Number of Users	Less than 100	100 to 5000			100 to 20000		Unlimited
Application Scenario	Task-based desktop	Common OA Call center, customer service center, or HD graphics			Common OA Call center, customer service center, or HD graphics		Common OA Call center or customer service center
Product Form	RH2288H  <ul style="list-style-type: none"> <li>• One or two RH2288H servers</li> <li>• Local hard disks as storage devices</li> </ul>	FusionCube 6000  <ul style="list-style-type: none"> <li>• X6800 server</li> <li>• GE or 10GE networking</li> </ul>	FusionCube2000  <ul style="list-style-type: none"> <li>• RH2288H server</li> <li>• GE or 10GE networking</li> </ul>	FusionCube 9000  <ul style="list-style-type: none"> <li>• E9000 server</li> <li>• 10GE networking</li> </ul>	E9000  Dorado V3  <ul style="list-style-type: none"> <li>• E9000/RH2288H servers</li> <li>• IP SAN/NAS/Dorado V3</li> </ul>	RH2288H  SAN  	FusionAccess  TC  <ul style="list-style-type: none"> <li>• Software + TC</li> </ul>
Sales Strategy and Limitation	<ul style="list-style-type: none"> <li>• Channel delivery</li> <li>• Capacity expansion not supported</li> </ul>	<ul style="list-style-type: none"> <li>• Channel or Huawei delivery</li> <li>• GE networking for a small number of users, a maximum of 12 servers supported, and preferred for low-cost scenarios</li> </ul>		<ul style="list-style-type: none"> <li>• Channel or Huawei delivery</li> <li>• Channel marketing</li> <li>• High costs</li> </ul>	<ul style="list-style-type: none"> <li>• Channel or Huawei delivery</li> <li>• Optimal deployment density, applicable to large-scale deployment</li> <li>• Most cost-effective</li> </ul>		<ul style="list-style-type: none"> <li>• Only TC hardware and software licenses</li> </ul>

# FusionCube Hardware Architecture for Rapid Deployment



**FusionCube 6000**  
(based on X6800)



**FusionCube 2000**  
(based on RH2288H)



**FusionCube 9000**  
(based on E9000)

## □ Technical Features

- ✓ **Hardware and software preinstallation**  
Virtualization platform hardware and software are installed before delivery, notably improving deployment efficiency.
- ✓ **Converged computing and storage hardware platform**  
The servers provide computing and storage resources, eliminating the need for SAN storage devices. This simplifies management and reduces costs. **Three copies** ensure high reliability.
- ✓ **Flexible configuration**
  - FusionCube 6000 uses high-density X6800 servers that use SATA disks and SSDs as the primary storage. This offers high cost-effectiveness in desktop scenarios.
  - FusionCube adopts E9000 blade servers that use SAS disks and SSDs as the primary storage to provide higher performance. No external switches are required. FusionCube 9000 incorporates GPUs and is applicable to HD graphics processing.

## □ Application Scenario

**Hardware and software convergence**



# Reference Hardware Architecture for Common Deployment

**High-performance blade server**



**Enterprise-class IP SAN/FC SAN Dorado all-flash storage**



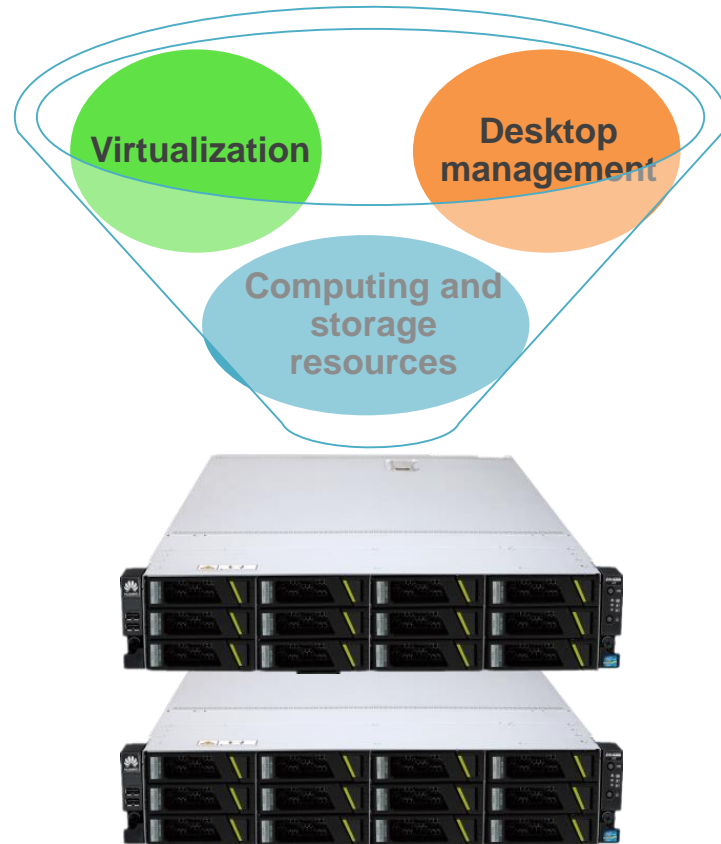
## □ Technical Features

- ✓ **End-to-end design**  
An end-to-end design covers overall system performance, reliability, availability, and security.
- ✓ **High compatibility and scalability**  
Universal servers and storage devices facilitate interconnection with third-party devices.
- ✓ **High O&M efficiency**  
The unified cloud management platform implements unified management of physical and virtual resources and service-oriented desktop lifecycle management.

## □ Application Scenario

Deployment based on common hardware

# Compact VDI for Simple Task Desktops and Channel Delivery



## ❑ Hardware

- ✓ One to two standard 2U RH2288H rack servers
- ✓ Local hard disks as storage devices

## ❑ Software

- ✓ Cloud platform software (FusionCompute)
- ✓ Desktop connection management software (FusionAccess)
- ✓ Cloud management software (FusionManager)

## ❑ Specifications

- ✓ Two servers support a maximum of 100 medium load users.
- ✓ Management component HA and storage redundancy are supported.
- ✓ Capacity expansion is not supported.
- ✓ GPUs are not supported.

# Terminals of Various Specifications for Different Application Scenarios (1)

## More TC types for different scenarios



CT3200

- ❑ The function is the same as that of CT3100.
- ❑ ARM architecture with cost-effective TCs, supporting 1080P HD videos, energy conservation, and 7 W low power consumption.
- ❑ Applies to common offices



CT3200L

- ❑ Similar to that of CT3200L, the function does not support advanced functions such as dual-screen display, media accelerator, and digital watermark.
- ❑ ARM Linux operating system and 6 W low power consumption
- ❑ Applies to common offices

	CT3200	CT3100
CPU	RK3288 ARM Cortex A17 1.8 GHz quad-core	Hi3716CV200 ARM Cortex A9 1.5 GHz dual-core
Memory	1 GB DDR3	1 GB DDR3
Storage	4 GB eMMC	4 GB eMMC
Network Port	One GE network port (RJ-45)	One GE network port (RJ-45)
Wireless	Not support	Not support
USB Port	Four USB 2.0 ports	Four USB 2.0 ports
Graphics Card	One DVI-I port, supporting extended dual-screen display: 1920x1080@60 Hz	One DVI-I port, supporting extended dual-screen display: 1920x1080@60 Hz

	CT3200	CT3200L
CPU	RK3288 ARM Cortex A17 1.8 GHz quad-core	RK3288 ARM Cortex A17 1.6 GHz quad-core
Memory	1 GB DDR3	1 GB DDR3
Storage	4 GB eMMC	4 GB eMMC
Network Port	One GE network port (RJ-45)	One 100 Mbit/s port (RJ-45)
Wireless	Not support	Not support
USB Port	Four USB 2.0 ports	Three USB 2.0 ports
Graphics Card	One DVI-I port, supporting extended dual-screen display: 1920x1080@60 Hz	One DVI-D port, supporting single-screen display: 1920x1080@60 Hz

Flexibly choosing different types of access terminals, supporting consistency of desktop display, and achieving flexible and efficient mobile office

# Terminals of Various Specifications for Different Application Scenarios (2)

## More TC types for different scenarios



ZT3200

- ❑ ARM architecture with cost-effective TCs, energy conservation, and 5 W low power consumption
- ❑ Based on the Android system
- ❑ Advanced features such as dual-screen display, automatic monitor shutdown, and TWAIN peripherals are not supported.
- ❑ Applies to common offices

	CT3200L	ZT3200
CPU	RK3288 ARM Cortex A17 1.6 GHz quad-core	Hi3798MV200 ARM Cortex-A53 quad-core 2.0 GHz
Memory	1 GB DDR3	2 GB DDR4
Storage	4 GB eMMC	8 GB eMMC
Network Port	One 100 Mbit/s port (RJ-45)	One 100 Mbit/s port (RJ-45)
Wireless	Not support	2.4 GHz 802.11 b/g/n
USB Port	Three USB 2.0 ports	One USB 3.0 port and four USB 2.0 ports
Graphics Card	One DVI-D port, supporting single-screen display: 1920x1080@60 Hz	One HDMI, supporting single-screen display: 1920x1200@60 Hz

Flexibly choosing different types of access terminals, supporting consistency of desktop display, and achieving flexible and efficient mobile office

# Terminals of Various Specifications for Different Application Scenarios (3)

## More TC types for different scenarios



ST5110

- ❑ The function is the same as that of CT5100.
- ❑ Supports the Windows 10 IoT and Linux operating systems.
- ❑ Applies to **R&D centers and customer service centers**.



ST6110

- ❑ The function is the same as that of CT6100.
- ❑ Supports the Windows 10 IoT and Linux operating systems.
- ❑ Applies to **industrial graphics processing and multimedia** scenarios.

	ST5110	CT5100
CPU	Intel Baytrail 2.41 GHz Dual Core	Intel Baytrail 2.41 GHz Dual Core
Memory	4 GB DDR3	2 GB DDR3L
Storage	16 GB SSD	8 GB SATA
Network Port	One 2.4G NIC supporting 802.11 b/g/n	None
Wireless	One USB 3.0 port and seven USB 2.0 ports	One USB 3.0 port and five USB 2.0 ports
USB Port	VGA: 2560x1600@60 Hz DVI: 1920x1200@60 Hz DP: 2560x1600@60 Hz	VGA: 1920x1200@60 Hz DVI: 1920x1200@60 Hz

	ST6110	CT6100
CPU	Intel Baytrail 2.41 GHz Dual Core	Intel Baytrail 2.41 GHz Dual Core
Memory	4 GB DDR3	2 GB DDR3L
Storage	16 GB SSD	8 GB SATA
Network Port	One 2.4G NIC supporting 802.11 b/g/n	None
Wireless	One USB 3.0 port and seven USB 2.0 ports	One USB 3.0 port and five USB 2.0 ports
USB Port	Two GE network ports, two PS2 ports, one parallel port, and four serial ports	Two GE network ports, two PS2 ports, one parallel port, and four serial ports
Graphics Card	VGA: 2560x1600@60 Hz DVI: 1920x1200@60 Hz DP: 2560x1600@60 Hz	VGA: 1920x1200@60 Hz DVI: 1920x1200@60 Hz

Flexibly choosing different types of access terminals, supporting consistency of desktop display, and achieving flexible and efficient mobile office

# Terminals of Various Specifications for Different Application Scenarios (4)

## More TC types for different scenarios



CT5100

- Intel Bay Trail two-core processors offer high **performance**
- Applies to **R&D centers and customer service centers**.



CT6100

- Intel Bay Trail two-core processors provide outstanding **graphics processing**. It provides a wide variety of **peripheral ports** and dual network ports.
- Applies to **industrial graphics processing and multimedia** scenarios.

## PC reuse

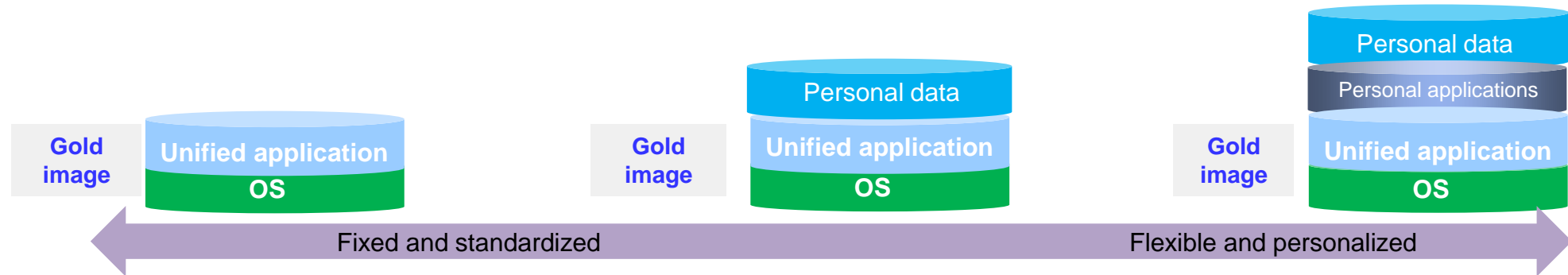


## Extensive mobile platforms



Flexibly choosing different types of access terminals, supporting consistency of desktop display, and achieving flexible and efficient mobile office

# Desktop Deployment Modes



Scenario	Application Description	Deployment Mode
No personalized programs and data	<ul style="list-style-type: none"> <li>● Users do not install applications.</li> <li>● Users do not store personal data.</li> <li>● Typical application scenarios: public training classrooms and reading rooms</li> </ul>	<ul style="list-style-type: none"> <li>● <b>Full memory desktop (recommended)</b></li> <li>● <b>Linked clone desktop + Pool + Automatic restoration after shutdown (recommended)</b></li> <li>● Independent data disks are not required.</li> </ul>
Personalized data but without personalized programs	<ul style="list-style-type: none"> <li>● Users do not install applications.</li> <li>● Users need to store personal data.</li> <li>● Typical application scenarios: task-based employees and window offices</li> </ul>	<ul style="list-style-type: none"> <li>● <b>Linked clone desktop + Pool (recommended): reduces storage space and frees users from installing applications.</b></li> <li>● SBC desktop: Desktops are shared, free users from installing applications. SBC requires application software to support the multi-user access mode. Not all application software can be used in SBC mode. Peripheral redirection is not fully supported.</li> <li>● System configuration data: Profile roaming redirection + Data disk</li> <li>● Data disks meeting requirements of personal data storage</li> </ul>
Personalized programs and data	<ul style="list-style-type: none"> <li>● Users need to install applications.</li> <li>● Users need to store personal data.</li> <li>● Typical application scenarios: office and R&amp;D</li> </ul>	<ul style="list-style-type: none"> <li>● <b>Full copy desktop (recommended): allows users to install applications.</b></li> <li>● 1:1 dedicated virtual desktop (Each person has an independent desktop.)</li> <li>● 1:N shared desktop (Several persons share a desktop.)</li> </ul>

**Various deployment modes meet requirements of different application scenarios.**

# Desktop Software Forms: VDI and SBC

Version	Deployment Mode	Scenario Feature	Application Scenario
Standard Edition	TC+VDI	<ol style="list-style-type: none"> <li>1. Full clone desktop: individualized office desktop</li> <li>2. Linked clone desktop: unified application upgrade</li> </ol>	<ul style="list-style-type: none"> <li>▪ Common OA</li> <li>▪ Secure OA</li> <li>▪ Public terminal</li> <li>▪ Cloud workstation</li> <li>▪ Branch</li> </ul>
Enhanced Edition	TC+VDI+SBC	<ol style="list-style-type: none"> <li>1. Individualized OA and unified application upgrade</li> <li>2. Unified application upgrade implemented using SBC</li> </ol>	<ul style="list-style-type: none"> <li>▪ Common OA</li> <li>▪ Secure OA</li> <li>▪ Public terminal</li> <li>▪ Cloud workstation</li> <li>▪ Branch</li> </ul>
SBC Standard Edition	PC+SBC Mobile terminal + SBC	<ol style="list-style-type: none"> <li>1. Centralized application management</li> <li>2. Current PC office architecture maintained, and PCs reused</li> </ol>	<ul style="list-style-type: none"> <li>▪ Branch (PC reused)</li> <li>▪ Mobile OA</li> <li>▪ Secure Internet access</li> <li>▪ Simple task OA (requiring a few peripherals)</li> </ul>



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# Product Sheets, Technical White Papers, and Application Cases

<http://e.huawei.com/en/cloud-computing/desktop-cloud>

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- 2017H1 IDC**  
Huawei Continues to Rank No. 1 in China's Virtual Desktop Market
- 2016 IDC**  
Huawei Ranked No.1 in China's Desktop Virtualization Market
- 2016 IDC**  
Huawei Named as Major Player in Global Desktop Virtualization Sector
- 2016 Gartner**  
Huawei Critical Capabilities Ranked No. 3 for Virtual Desktop Infrastructure

# Product After-sales Support Documents (Installation, Test Acceptance, Maintenance, and Troubleshooting)

<http://support.huawei.com/enterprise/en/index.html>: Support > Cloud Computing > FusionCloud > FusionCloud Desktop Solution

<http://support.huawei.com/enterprise/en/index.html>: Support > Cloud Computing > FusionCloud > FusionAccess

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All	Product Documentation	Learn About Products	Installation/Upgrade
Operation/Maintenance	Fault Management	Reference Guides	API Documentation
Marketing Materials			


Recommended

- FusionCloud Desktop Solution Documentation-(V100R006C10\_07)
- FusionAccess V100R006C10 Upgrade Guide 02
- FusionAccess V100R006C10 Acceptance Test Guide (SBC)
- FusionCloud Desktop Solution Documentation-(V100R006C00\_09)
- FusionAccess V100R006C10 Version Mapping
- FusionAccess V100R006C10 Acceptance Test Guide (VDI)

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## FusionCloud

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