

# Deskpool

## VDI solution for SMB



**Simple:** Very easy deployment and management

**Professional:** Open architecture for various hypervisors

**Cost Efficient:** Really cheaper than PC solution

# Content

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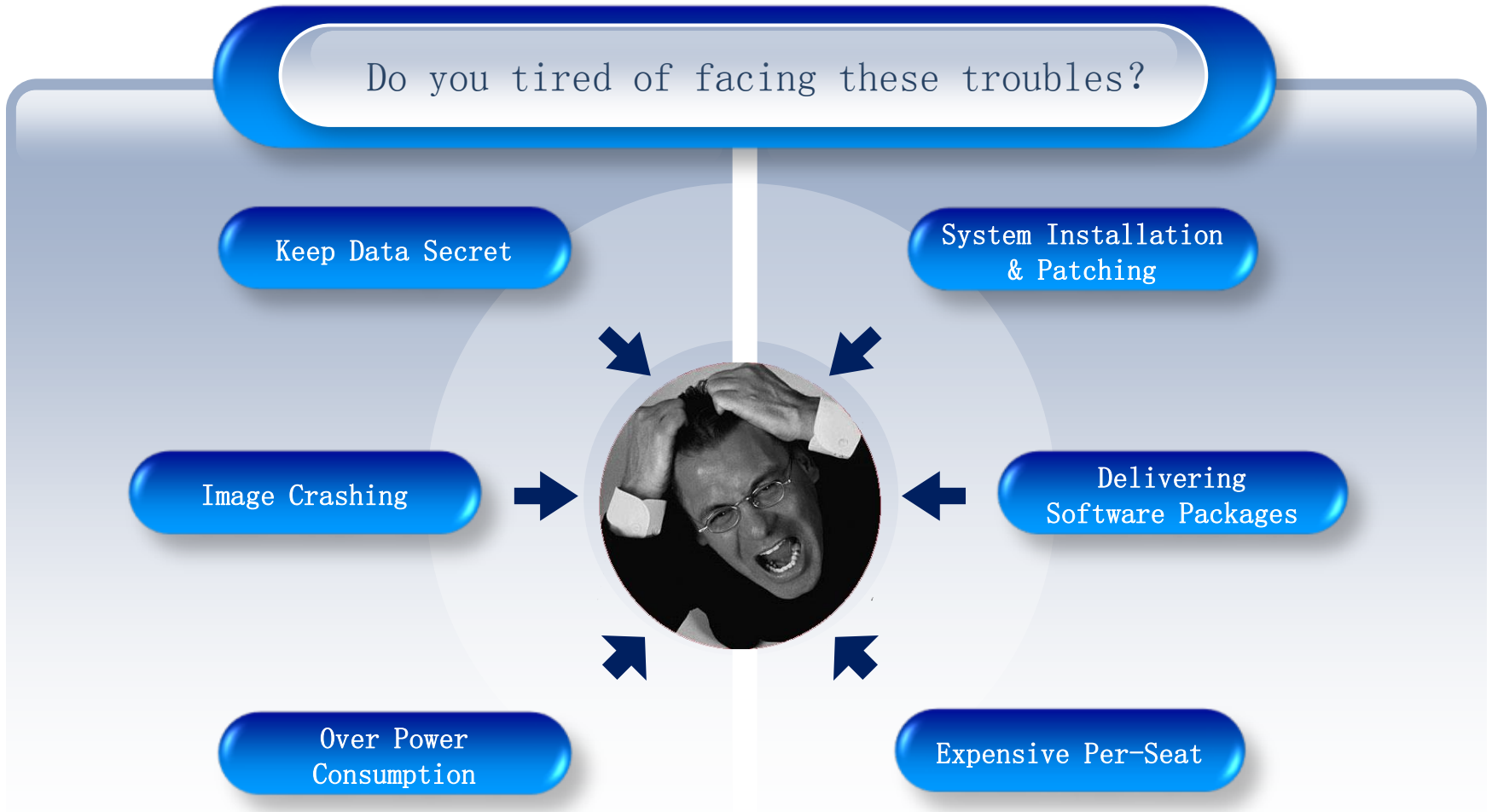
**Why Desktop VDI**

**4**

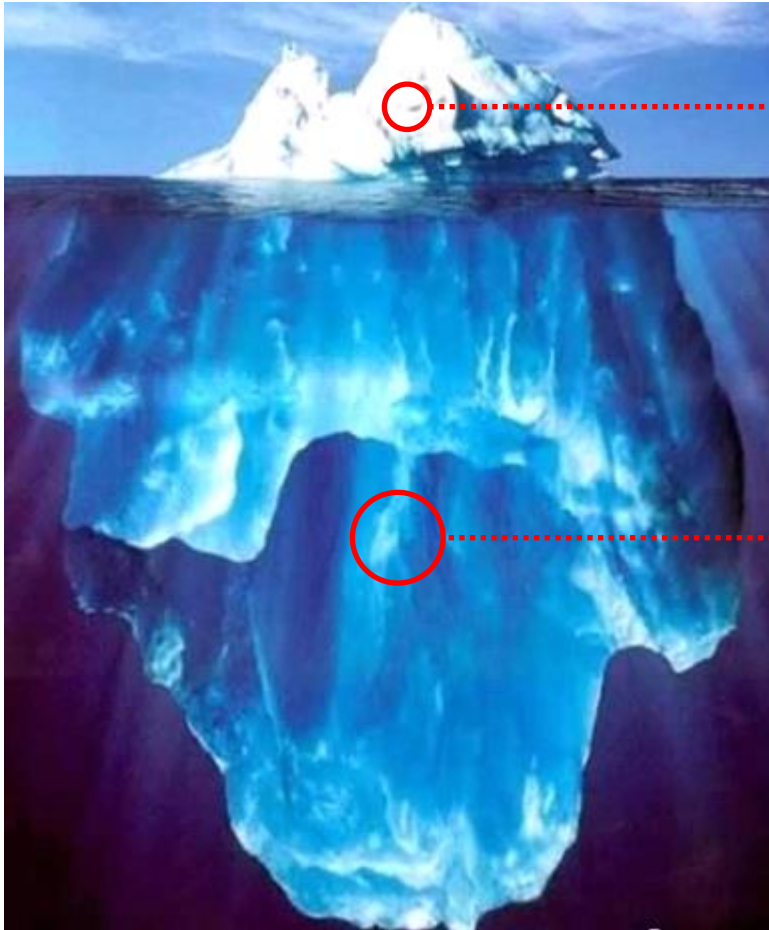
**Desktop VDI for SMB**



# Challenges of Windows PC



# Too Expensive PC Solution



Visible  
CAPEX



- PC with visible CAPEX

High OPEX

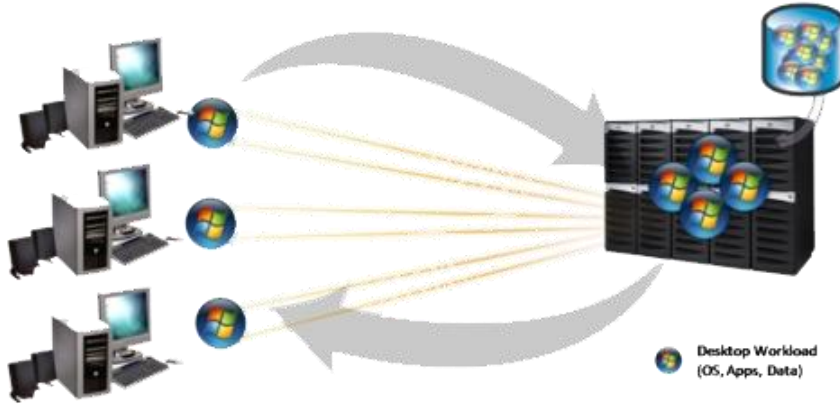


Invisible TOC

- High OPEX
- Short Live Cycle
- Security Trouble
- High Power Consumption



# Benefits from hosted VDI



## What is Hosted VDI:

- ✓ Full PC experience based on hosted windows VM
- ✓ Quickly delivery windows desktop with templates
- ✓ Energy efficient thin client



## VDI Benefits

- ✓ Data Security
- ✓ Mobile Working
- ✓ Easy Management
- ✓ Low Power Consumption
- ✓ Stateless and Dedicated Desktop
- ✓ Low CAPEX & OPEX



# Trends of VDI



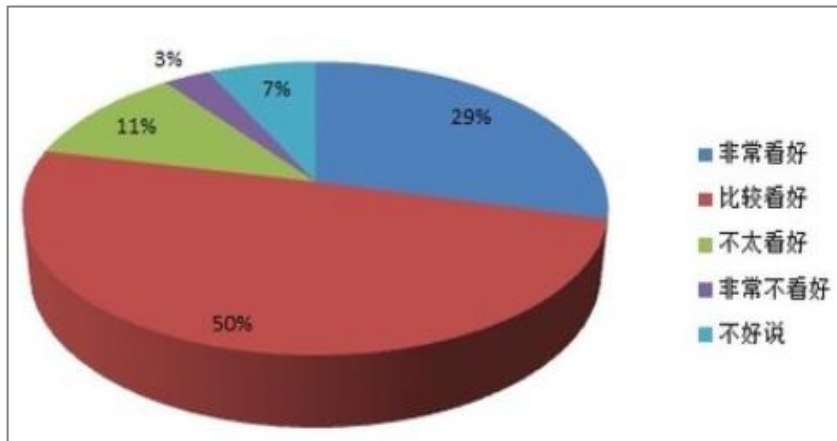
END-USER ADVOCATE  
BRIAN MADDEN

The Year of VDI is Finally Here (Really!)

*Brian Madden: Over the past few years, we might have seen VDI makes sense for only 5% to 10% of the enterprise desktops out there. Now that VDI can support 1:1 persistent disk images and graphically intense applications, VDI becomes a valid option for 40% or 50% of enterprise desktops. Yay for 2013.*

**BRIAN MADDEN** is an opinionated, supertechnical, fiercely independent desktop virtualization and consumerization expert. Email: [bmadden@techtargt.com](mailto:bmadden@techtargt.com)

## IT168 《2012-2013 VDI Trends Report》



## Gartner Reports 2013

[Top VDI Predictions for 2013 | BizCloud@ Network](http://bizcloudnetwork.com/vdi-predictions)  
[bizcloudnetwork.com/vdi-predictions](http://bizcloudnetwork.com/vdi-predictions) 翻译此页

2013年3月27日 - According to Gartner Research, the worldwide hosted virtual desktop (HVD) market will accelerate through 2013 to reach 49 million units, ...

Report from Techaisle Aug. 2012

**US SMB VDI market spend could triple by 2015 to US\$430 Million; Mid-Market Adoption to rise to 12 Percent**



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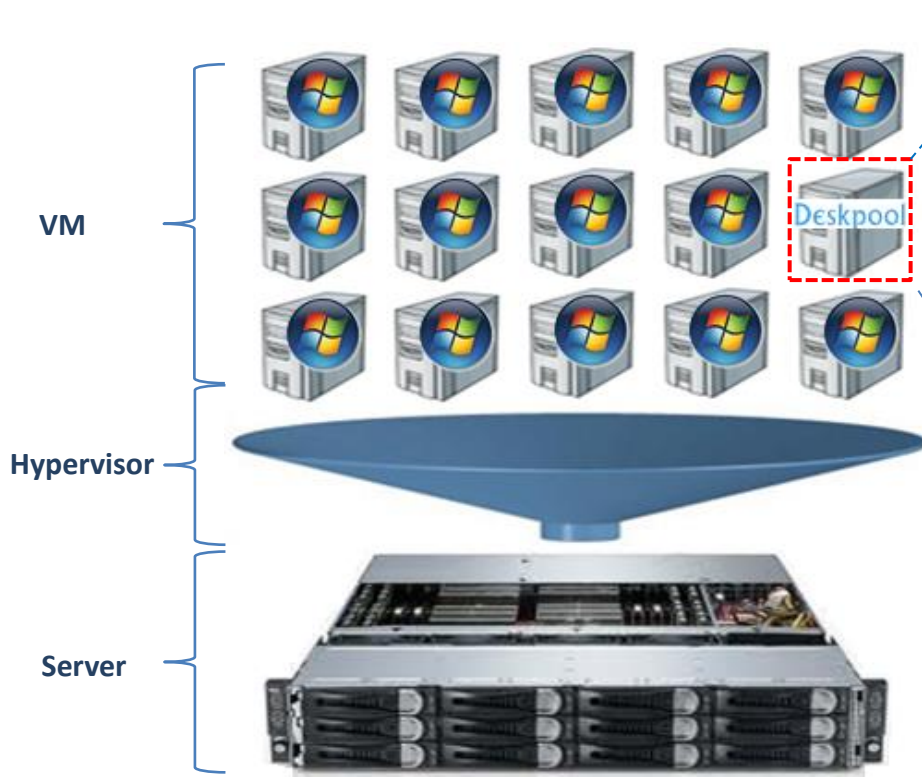
**Desktop VDI for SMB**





# Desktop VDI Architecture

## All-in-One Architecture: Desktoppool Virtual Appliance



The Desktoppool Virtual Appliance interface consists of several functional blocks arranged in a grid:

- Account
- Pool Strategy
- Connection
- Template
- VM Management
- Load Balance
- System
- Log & Event
- Capacity

Below these blocks is a large blue button labeled 'Distributed Cluster Layer'. At the bottom of the interface is the text 'Desktoppool Virtual Appliance'.

### Desktoppool Functions:

- ✓ Dynamic desktop delivery
- ✓ Pooled & dedicated desktop
- ✓ N:1 availability
- ✓ Load balance
- ✓ Connection Proxy
- ✓ Linked Clone
- ✓ Active Directory integration

### Open Virtualization Platform:

- Citrix XenServer
- Microsoft Hyper-V
- Vmware vSphere (ESXi)
- Oracle VirtualBox
- Redhat KVM



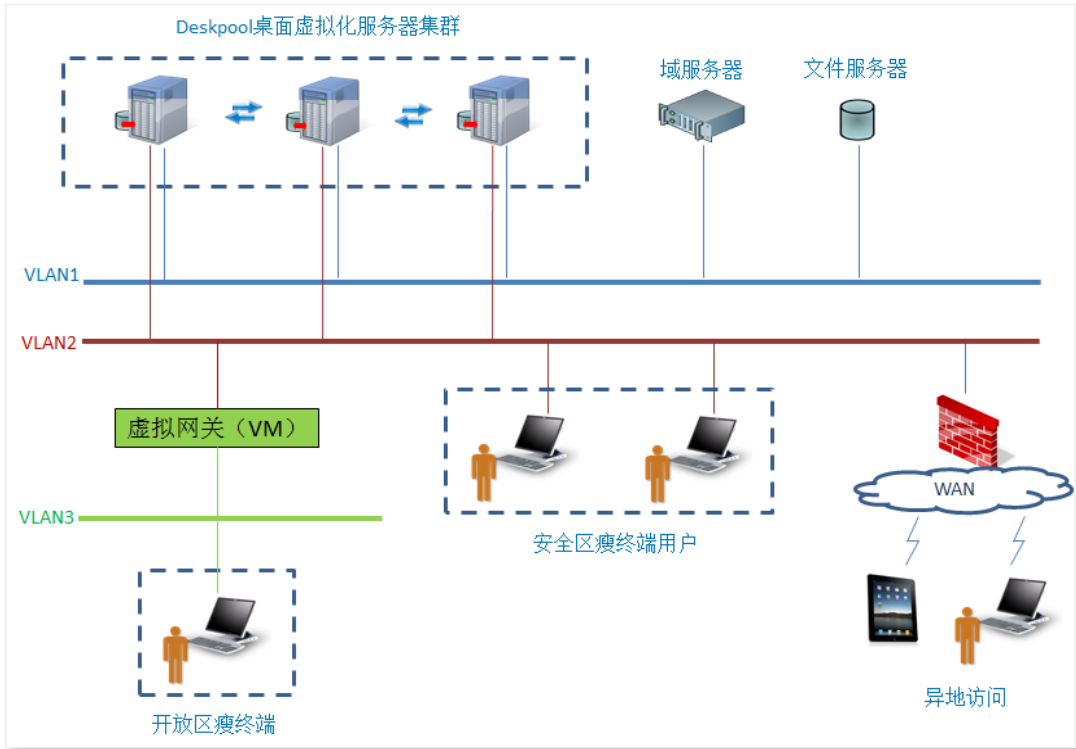


# Protocol & Deployment



## Open Protocol Strategy:

- Microsoft RDP
- Redhat SPICE
- Open for third-party desktop protocol

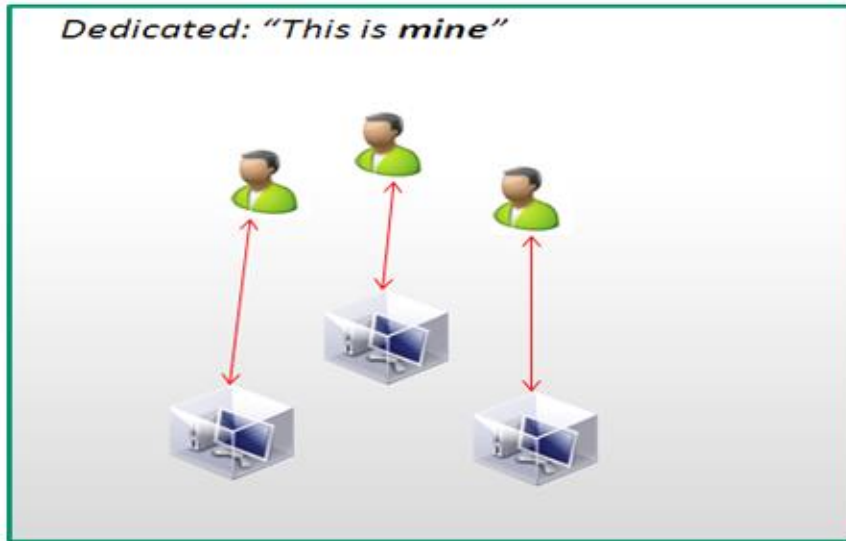


## Deskpool Deployment:

- Deskpool in one server & deskpool cluster
- Deskpool with active directory domain service
- Deskpool with multi-VLAN



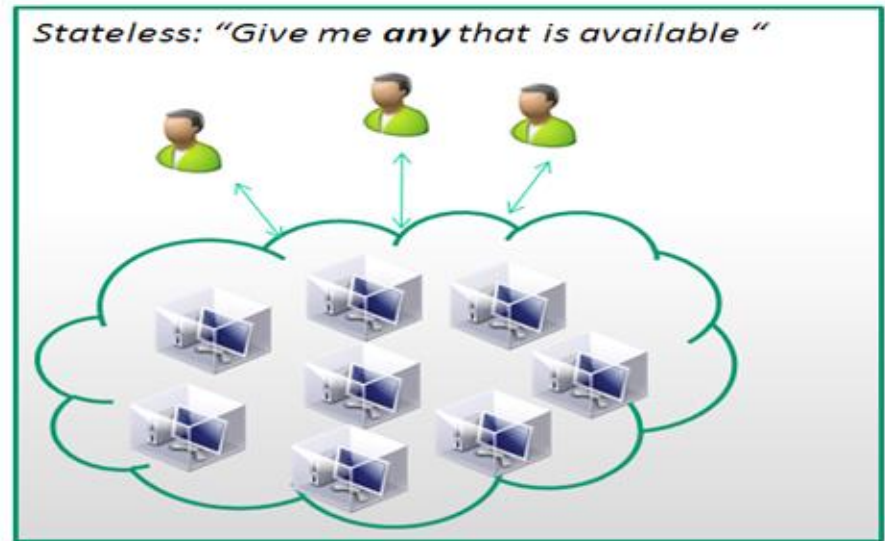
# Dedicated & Stateless



Dedicated ( persistent )

## **Dedicated:**

- Specially-assigned person
- Data persistent
- Automatic delivery
- Manual destroy
- Various turn-on strategy



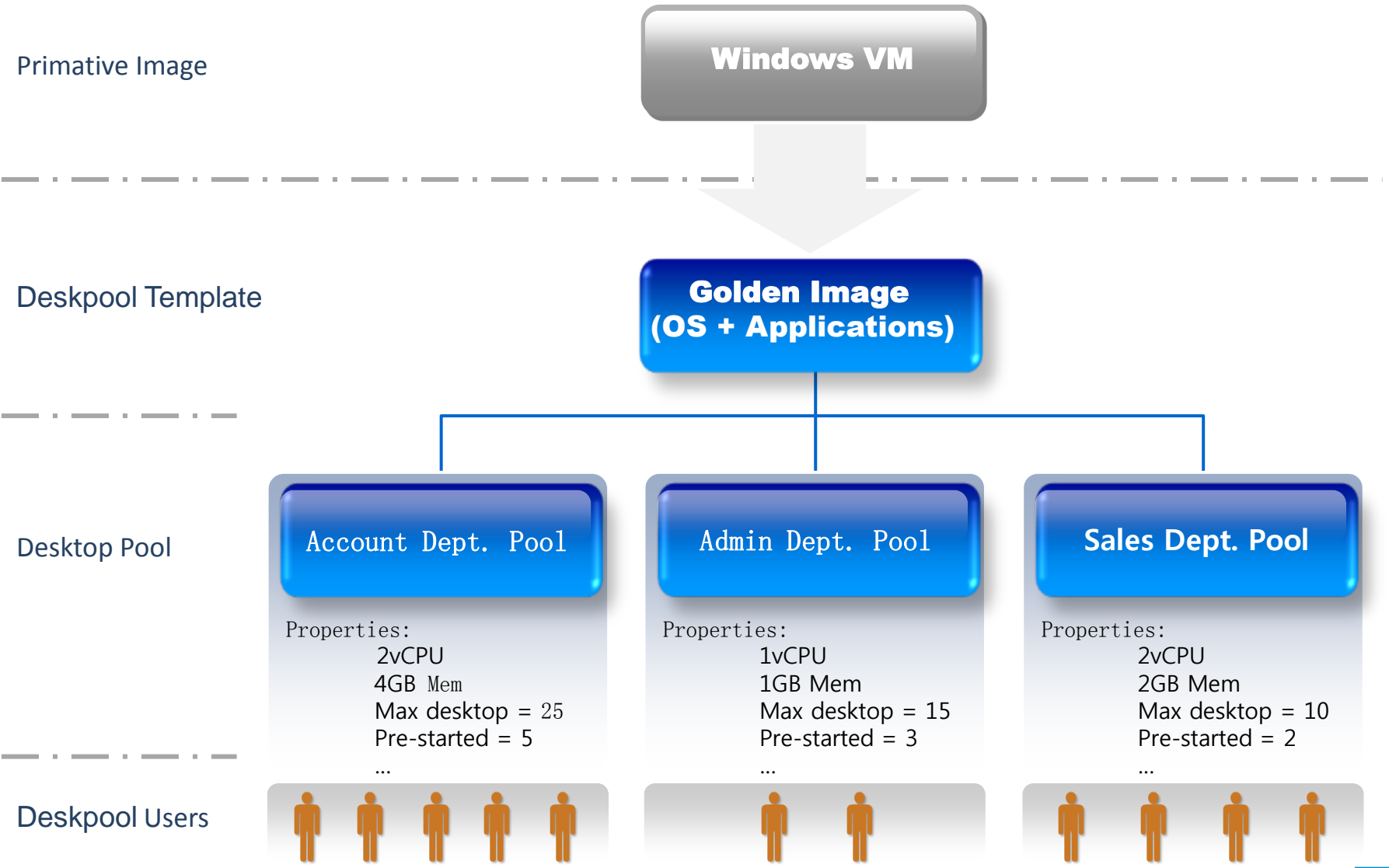
Stateless ( non-persistent )

## **Stateless:**

- Temporarily-assigned person
- Automatic delivery
- Automatic reclaim
- Automatic refresh
- Multiple reclaim strategy

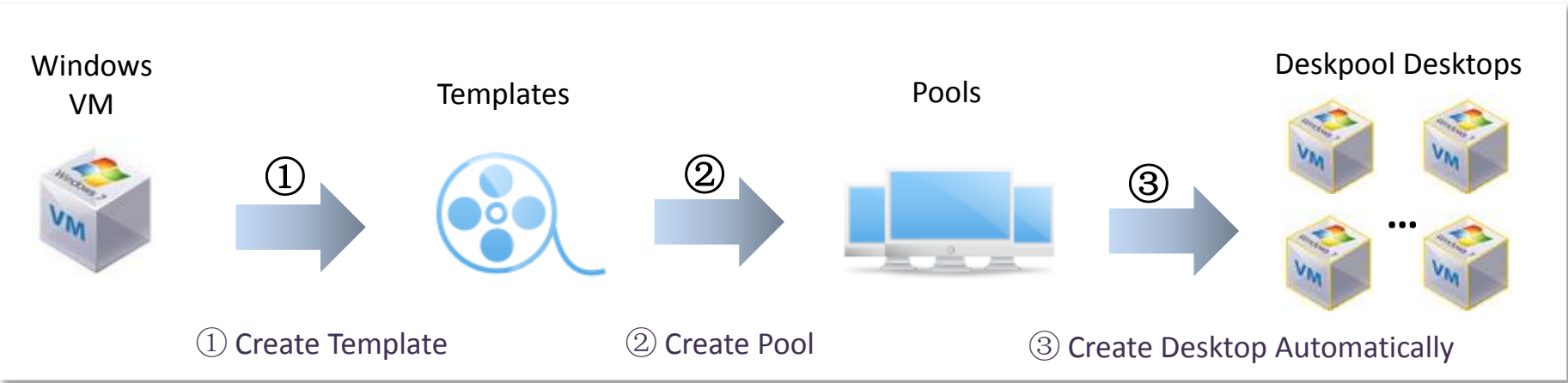


# Desktop Pool Desktop Model

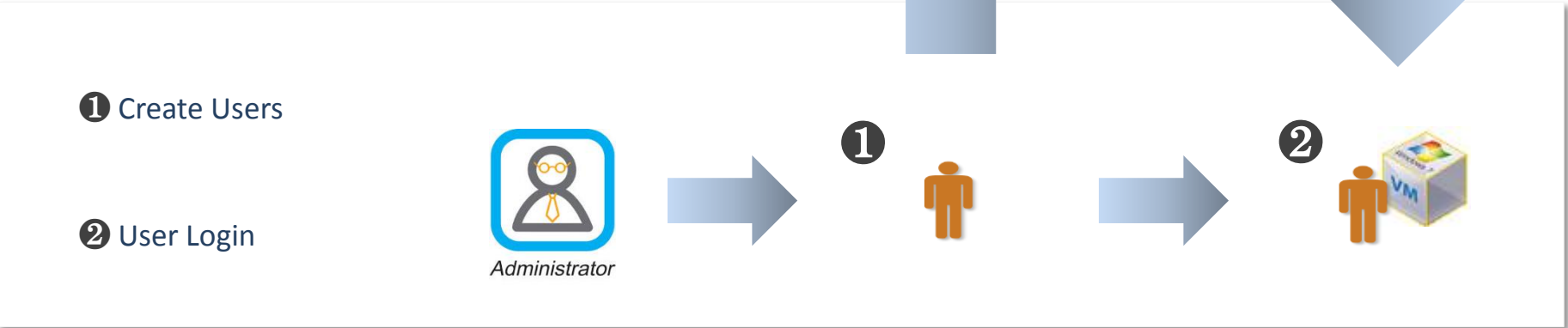


# Desktoppool Delivery Desktop

## Steps to create desktop



## Desktop delivery



# Desktoppool Cluster

Server configuration for 65 task-type desktops:

- Dual Intel Xeon E5-2640 6-Core CPU
- 96GB Memory
- 1TB 15K RPM SAS HDD, Raid10

HA: N + 1

Linear Scalability



65x Desktops



130x Desktops  
or  
65x HA Desktops



195x Desktops  
or  
130x HA Desktops




# Desktop Web UI

杰云科技 | JIEYUN TECHNOLOGY James Welcome! Logout Help | about |




**Desktopool** Home Template Pool Server Desktop Account System Event

System Capacity Used Free


52%

 **6**

Pools +

Pool Status	Assigned/Free/Max
	4/3/10 Win7 64-1
	2/2/10 Win7 32-2
	3/2/10 WinXP 32-3
	7/2/10 Win7 32 EN
	3/3/10 Win7 64 EN
	9/1/10 WinXp 32 CN

<< >>

 **6** Template +

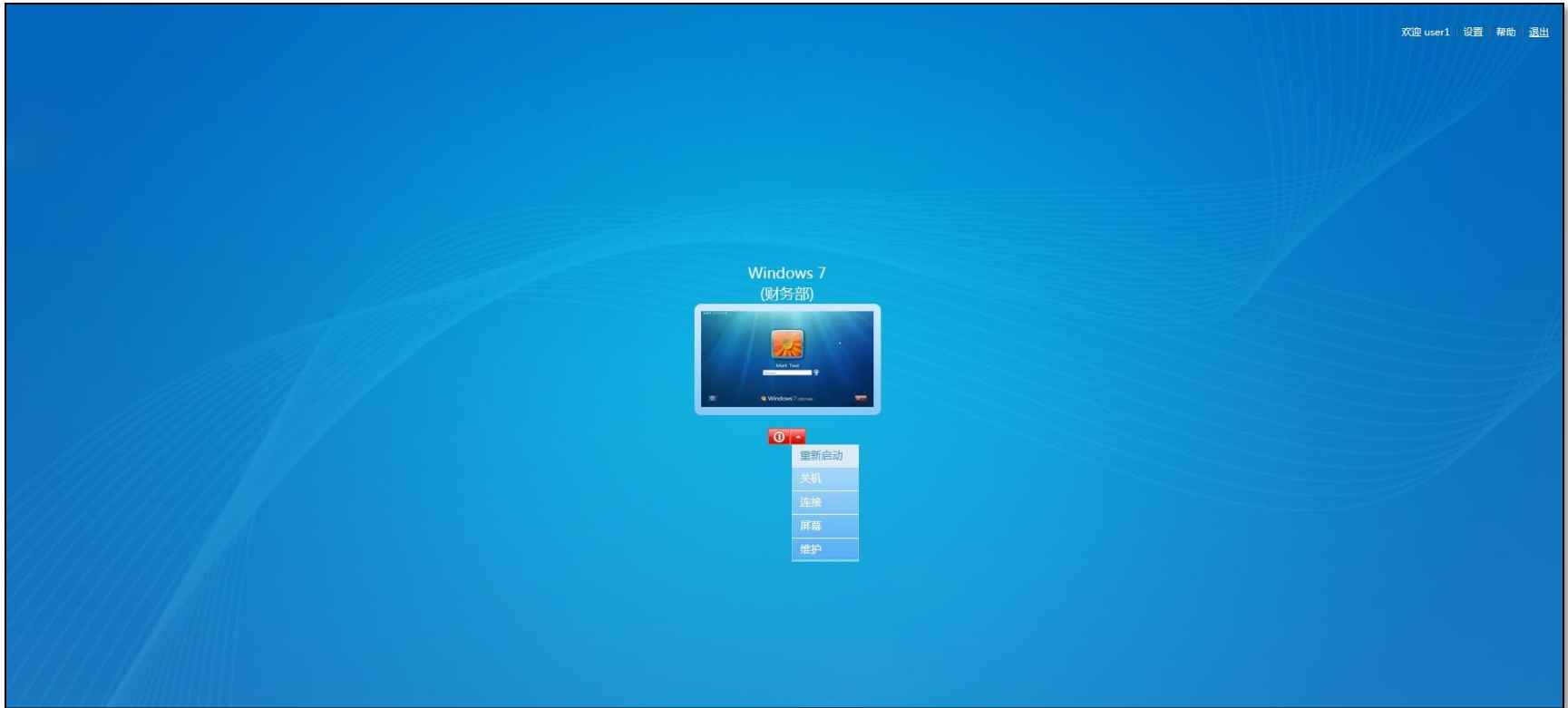
 **1** Server +

 **1** Group +

 **10** Users +



# Desktoppool Desktop Entry



Self-services

Desktop  
Thumbnail

VNC Interface

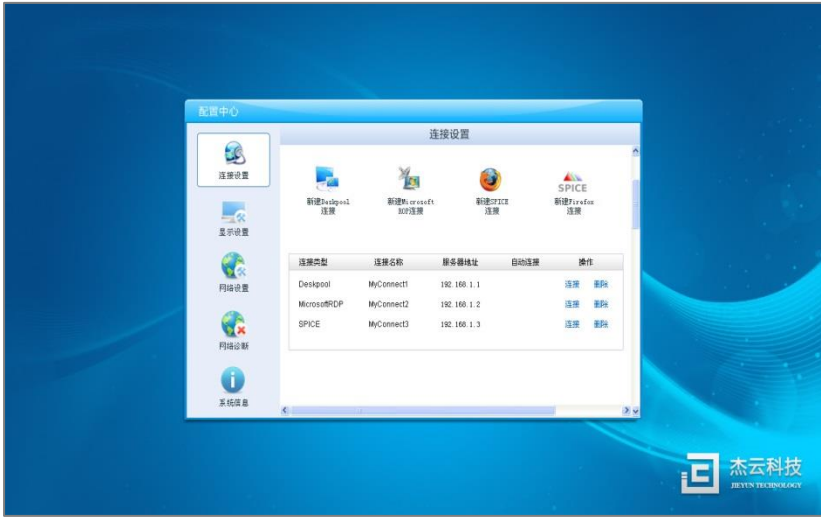
Options





# Deskpool Thin Client

Thin Client Types	Specification	Protocol
Windows PC	Browsers such as: IE8 above、Firefox、Chrome	Windows RDP SPICE
Windows X86 Thin Client	CPU 1.6GHz above、1GB mem、4GB storage	Windows RDP
ARM Thin Client	Cortex A9、4cores 1.6Ghz、1GB DDR3、2~8GB Flash	JIEYUN Linux OS Optimized RDP Client USB Redirection



ARM Thin Client Configuration Center



Supports video on-line



# Desktop Server Specification Recommendation

CPU	Memory	IOPS	Storage Capacity
<ul style="list-style-type: none"> <li>➢ 4~8 desktop per core</li> <li>➢ Hyper-thread</li> <li>➢ Desktop workload</li> <li>✓ 4- 8 task desktop per core</li> <li>✓ 4 -6 knowledge desktop per core</li> <li>✓ 2- 4 heavy desktop per core</li> </ul>	<ul style="list-style-type: none"> <li>➢ 1.5-2GB per win7</li> <li>➢ 0.5~1GB per winxp</li> <li>➢ 1GB for Hypervisor</li> <li>➢ 512MB for deskpool</li> <li>➢ 10% retention</li> </ul>	<ul style="list-style-type: none"> <li>➢ SAS 15K RPM HDD or SATA+SSD hybrid</li> <li>➢ 175 IOPS per 15KRPM SAS</li> <li>➢ Windows XP: 8 ~ 12 IOPS</li> <li>➢ Windows 7: 10 ~ 20 IOPS</li> </ul>	<p>Sum size of:</p> <ul style="list-style-type: none"> <li>➢ Templates</li> <li>➢ 10GB for deskpool</li> <li>➢ Thin provisioning, 15% template size per desktop</li> </ul>

1 \* Xeon 6-Cores hyper-thread, 2.5Ghz  
 32GB memory  
 4 x 73GB 15K RPM, RAID 10

Desktop-in-one-server DIY example (Knowledge desktop)

CPU	Memory	IOPS	Capacity
6 * 8 = 48 VM	<ul style="list-style-type: none"> <li>• 90% * 32 = 28.8</li> <li>• 28.8 - 512(Deskpool) = 28.2</li> <li>• 28x 1GB Winxp, 14x 2GB Win7</li> </ul>	<ul style="list-style-type: none"> <li>• 175 IOPS/HDD</li> <li>• RAID10, 175 * 2 = 350 IOPS</li> <li>• ~35x Winxp, 17x Win7</li> </ul>	<ul style="list-style-type: none"> <li>• 2x 20GB Template =40GB</li> <li>• 10GB Deskpool VM</li> <li>• 15% * 20GB * 48 VM = 144GB</li> </ul>

Minimum(48, 28, 35) = 28x WinXP or Minimum(48, 14, 17) = 14x Win7

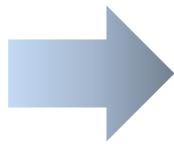
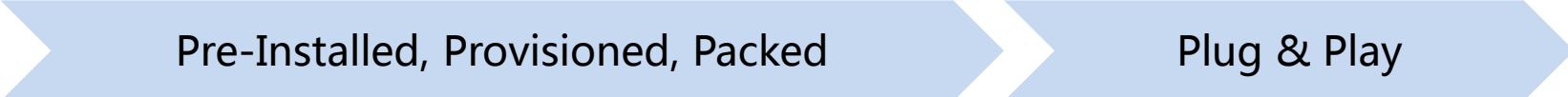


# Deskpool Server Specification

Items		Advanced	Standard
CPU		2 x Intel Xeon E5-2680 @2.7ghz – 8 Cores	2 x Intel Xeon E5-2640 @2.7ghz – 6 Cores
Memory		196GB @1666Mhz	96GB @1333Mhz
Storage		16 x 300GB SAS 6Gbps 15K RPM RAID 10	8 x 300GB SAS 6Gbps 15K RPM RAID 10
RAID Controller		1GB Cache, 8x6GB internal SAS port	1GB Cache, 8x6GB internal SAS port
SSD Cache Accelerator		Optional	Optional
Network		4 x 1Gb ethernet	4 x 1Gb ethernet
BMC		Optional	Optional
Capacity	Task	130	65
	Knowledge	100	50
	Heavy	70	35



# Desktop Server



- Server**
- 1~2 CPU
  - 16~192GB Mem
  - 4~16 SAS HDD
  - SSD Cache  
Optional
  - RAID0/1/5/6
  - 4x1GB Network

- Software Stack**
- Hypervisor
  - Desktop  
Virtual  
Appliance
  - Provisioning
  - Licenses

- VDI Server**
- Plug & Play
  - 10~150  
desktops
  - Total optimized
  - Total support
  - Scalability
  - Low TOC



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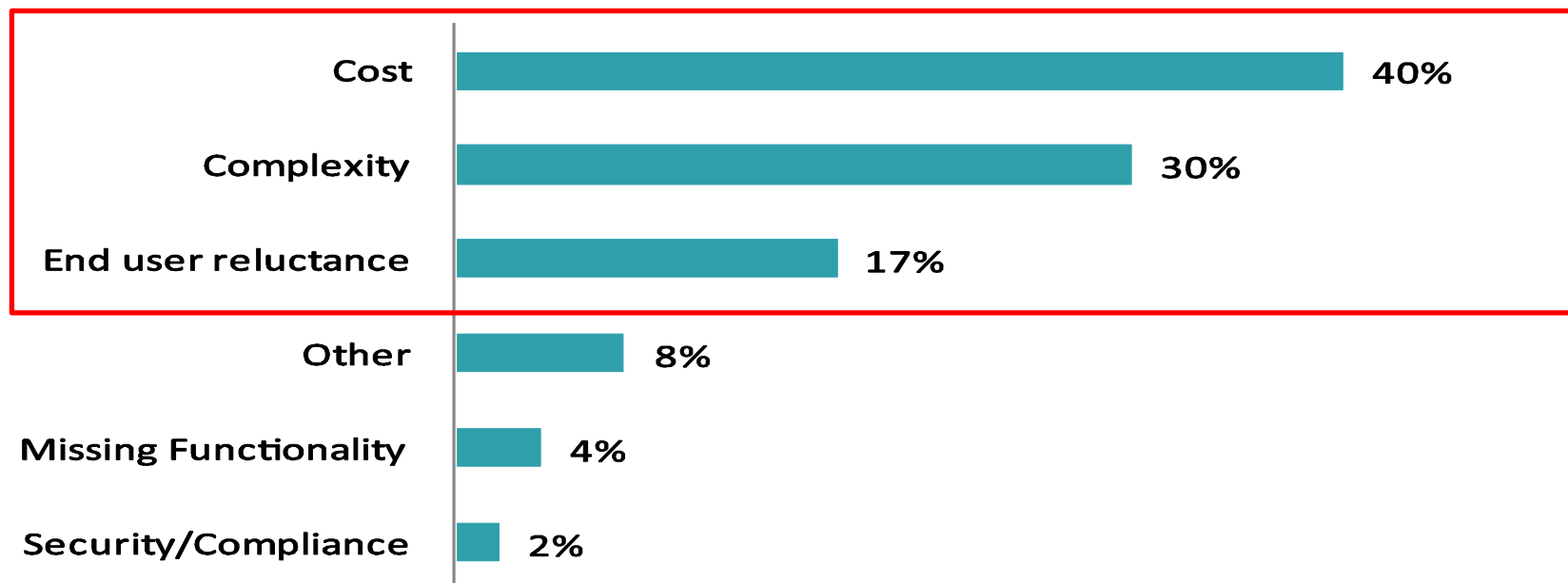


# Challenges of Traditional VDI Solution

The main challenges:

- Cost: It's too expensive per seat with traditional solution
- Complexity: It's too complex for SMB users to deploy and maintain
- Poor experience: Hard to delivery good experience to end users

## Inhibitors to Desktop Virtualization



# Deskpool Cost & Experience

## Reducing Cost

- Simplify the arch and infrastructure
- Reduced the license fee
- All in one deployment
- ARM thin client

## Optimizing Experience

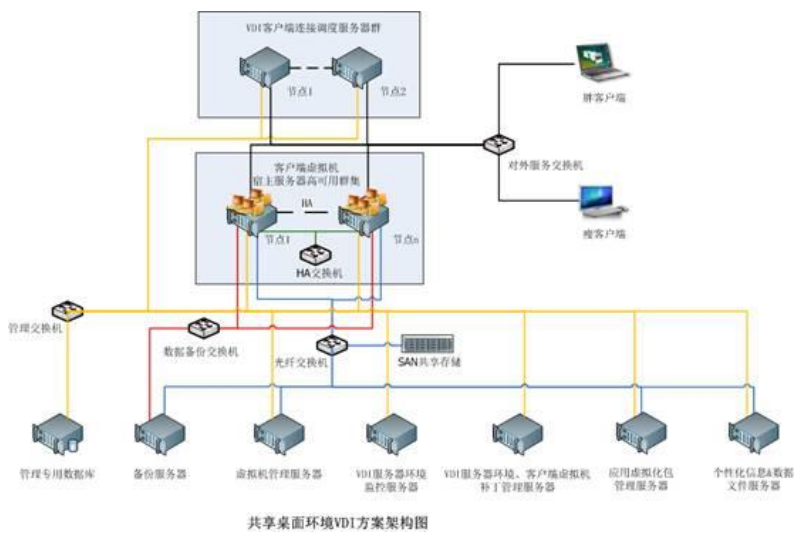
- Easy to deploy and maintain
- Enhanced ARM thin client
- USB redirection
- Video redirection





# Desktoppool vs Traditional VDI --- Infrastructure

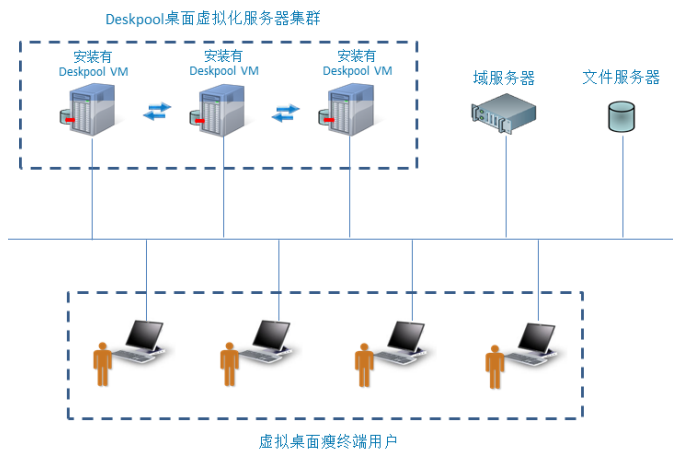
## Traditional VDI



Main Components:

- Virtualization server
- VDI management server
- SAN Storage
- FC Switch
- Database Server
- Backup server
- Ethernet switch
- Thin client

## Desktoppool VDI



Main Components:

- VDI server with local storage
- Thin client
- Ethernet switch

**60% Infrastructure Reduced**



# Desktop vs Traditional VDI – CAPEX

Components	Traditional VDI	Desktop VDI
Server	✓	✓
VDI Manager	✓ 160\$+ per seat	✓ 50\$ less per seat
Thin Client	✓ 200\$+ per seat	✓ 100\$ less per seat
Hypervisor	✓	✓ Free edition enough
Connection Manager	✓	X
Load Balance	✓	X
Others	✓	X
Storage Manager	✓	X
Commercial Database	✓	X



# Desktop Simple Deployment & Maintenance

Simple to deploy Desktop VDI

40 minutes, 4 steps to deploy a desktop VDI in one server system.

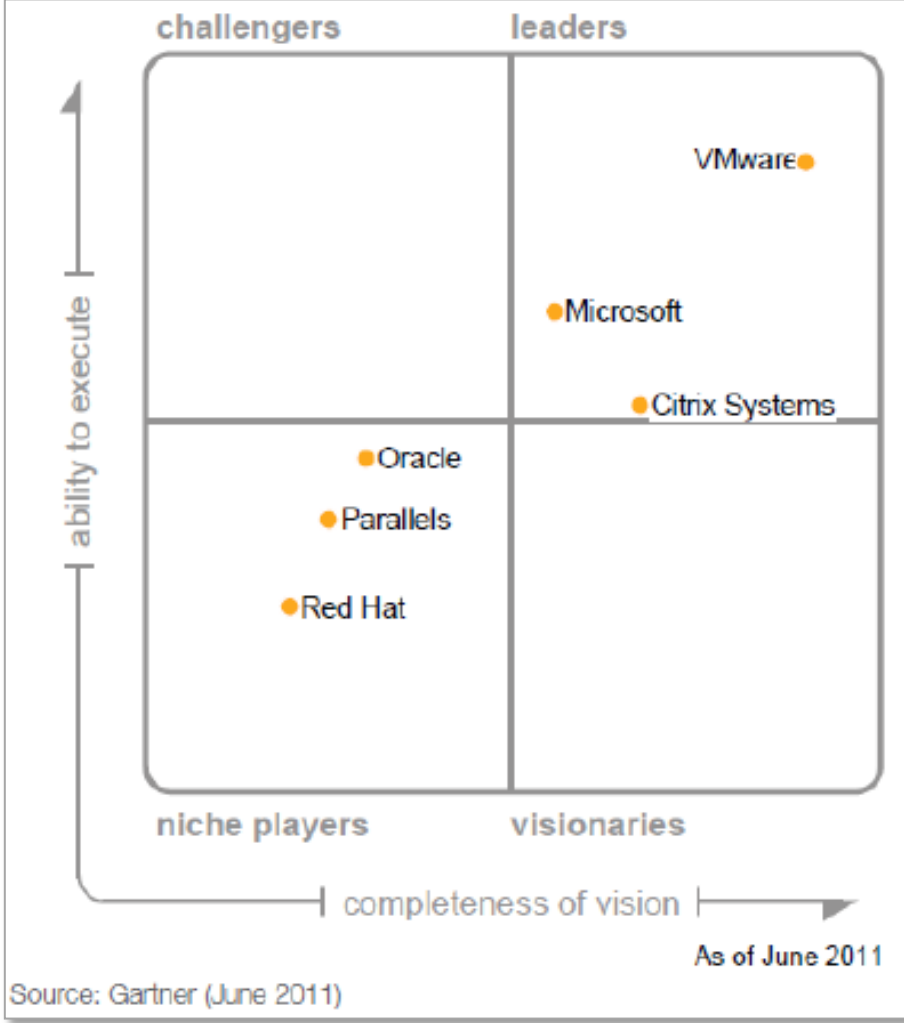


The 3 ways to solve most of the desktop troubles

	Operation
1	VM operation: re-boot, re-assignment, destroy
2	Reboot VDI server
3	Re-install system (backup template and desktop configuration in advance)



# Desktop Hypervisor Compatibility



Desktoppool based on the professional virtualization platform:

- Citrix XenServer
- Microsoft Hyper-V
- VMWare ESXi (Essentials)
- Oracle VirtualBox

*Desktoppool will support Redhat KVM and SPICE later*



# Summary

## Platform

- Simple to deploy
- Web UI, Simple to manage
- AD domain integration
- Multi-hypervisor Compatibility
- High scalability
- Simple maintainence

## Thin Client

- ARM Cortex A9 4 Cores, 1.6GHz, 1GB DDR3, 8GB Flash
- Enhanced Linux OS
- Graphical Configuration
- Video Redirection
- 1080P definition
- Dual display interfaces
- USB redirection

## Experience

- PC level experience
- Graphical entry
- Desktop thumbnail
- VNC self-service interface
- Dedicated & Stateless desktop
- Dynamic desktop providing

## Protocol

- High performance RDP & SPICE client
- WLAN acceleration
- Virtual network appliance
- Open Strategy



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# Deskpool, the best choice for SMB

Deskpool making VDI cost-effective for SMB:

- ✓ **Self-service deployment:** Deskpool enables the users to deploy VDI system by themselves, especially , users could setup the POC system without any commercial support.
- ✓ **Simple to Management:** Deskpool provides web based management UI and system initialization wizard, deskpool could automatically delivery dedicated and stateless desktop.
- ✓ **End to end cost effective :** Deskpool is very suitable for small companies looking to control IT costs , which not only provides low cost VDI software solution, but also delivery low-cost, high performance thin client products, such as J30 and J60 box from JIEYUN technology.
- ✓ **Seamless compatible with existing IT environment:** Deskpool could be deployed into an existing active directory domain environment and provides VLAN provisioning for each pool.





**Cost efficient & impressive performance**

**Delivering the professional VDI**

**Delivering the sample VDI**

**谢谢**

