



VDI is dead! Long live VDI 2.0!

*Built for the cloud and hyper-converged era*

# About the Author

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# End User Computing Problem

End users want to access:

- windows apps like SAP
- network file shares
- SaaS apps like Office 365
- web apps like SharePoint
- native apps like Box

from any device

Windows Apps				
Network Shares				
SaaS & Web Apps				
Hybrid Native Apps				
Device Management				
	Windows	Mac OS	iOS	Android

# First generation VDI had many limitations!

## High TCO and Operational Complexity

- Cost of storage
- Performance of storage
- Dynamic desktops
- Golden Images
- App Layering

## Poor User Experience

- Limited by latency and bandwidth
- Web apps/Mobile Experience/ Offline behavior

Windows Apps	Windows	Mac OS	iOS	Android
Network Shares	Windows	Mac OS	iOS	Android
SaaS & Web Apps	Windows	Mac OS	iOS	Android
Hybrid Native Apps	Windows	Mac OS	iOS	Android
Device Management	Windows	Mac OS	iOS	Android

# VDI 1.0 deployment for 30k desktops = high CapEx and OpEx



**30+ FTE**



Load  
Balancers



Web  
Interface



Controllers

Active  
Directory

**30+ servers**



Provisioning



Storage

**1000+  
servers**



Servers for virtual  
desktops

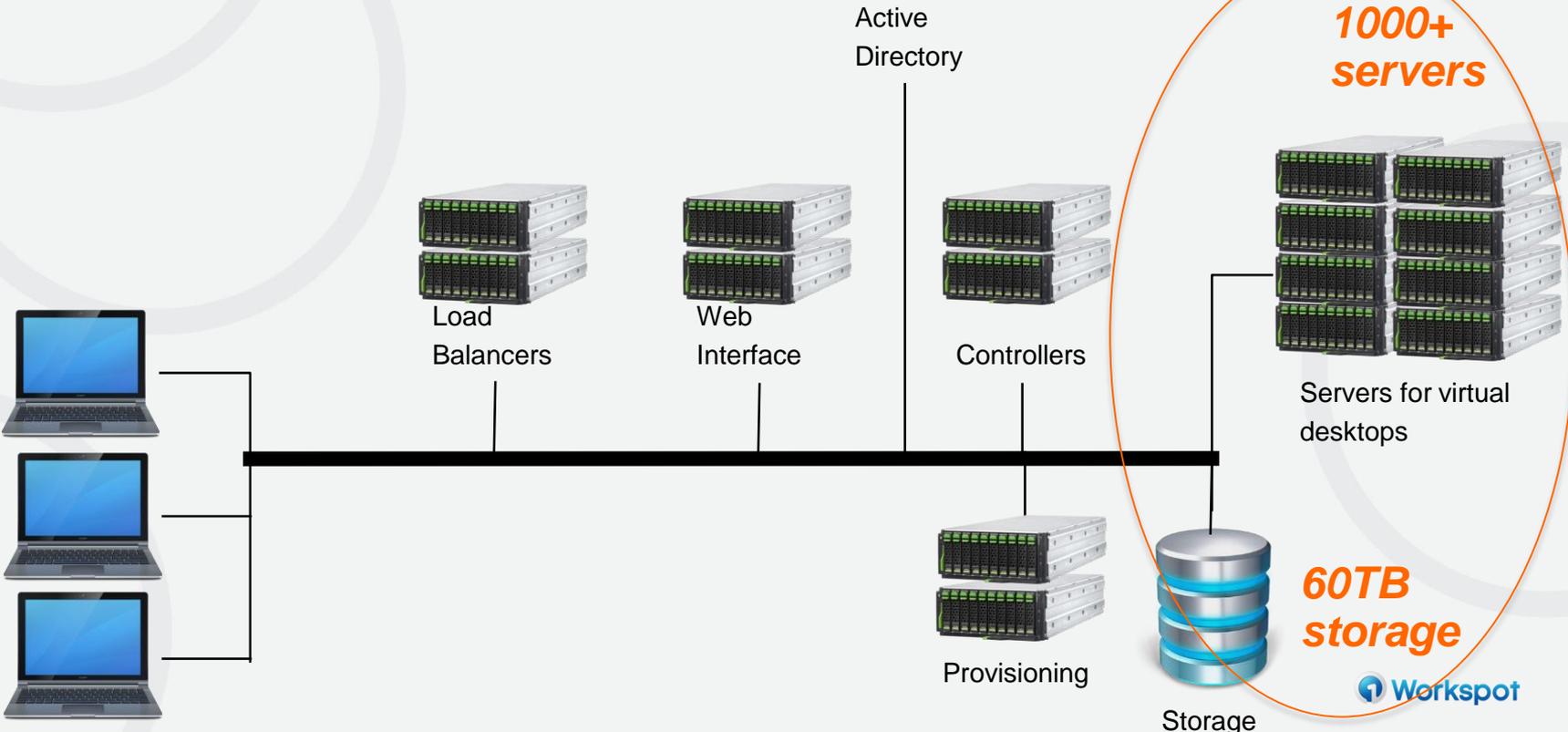
**60TB  
storage**

# But what if ...

- We had hyper-converged infrastructure (HCI) in the data center to address storage performance and cost?
- And we could build a VDI solution from scratch?
- And incorporate the cloud's ability to scale instantly?

# Step 1: Can we converge the servers and storage?

*Converge infrastructure*

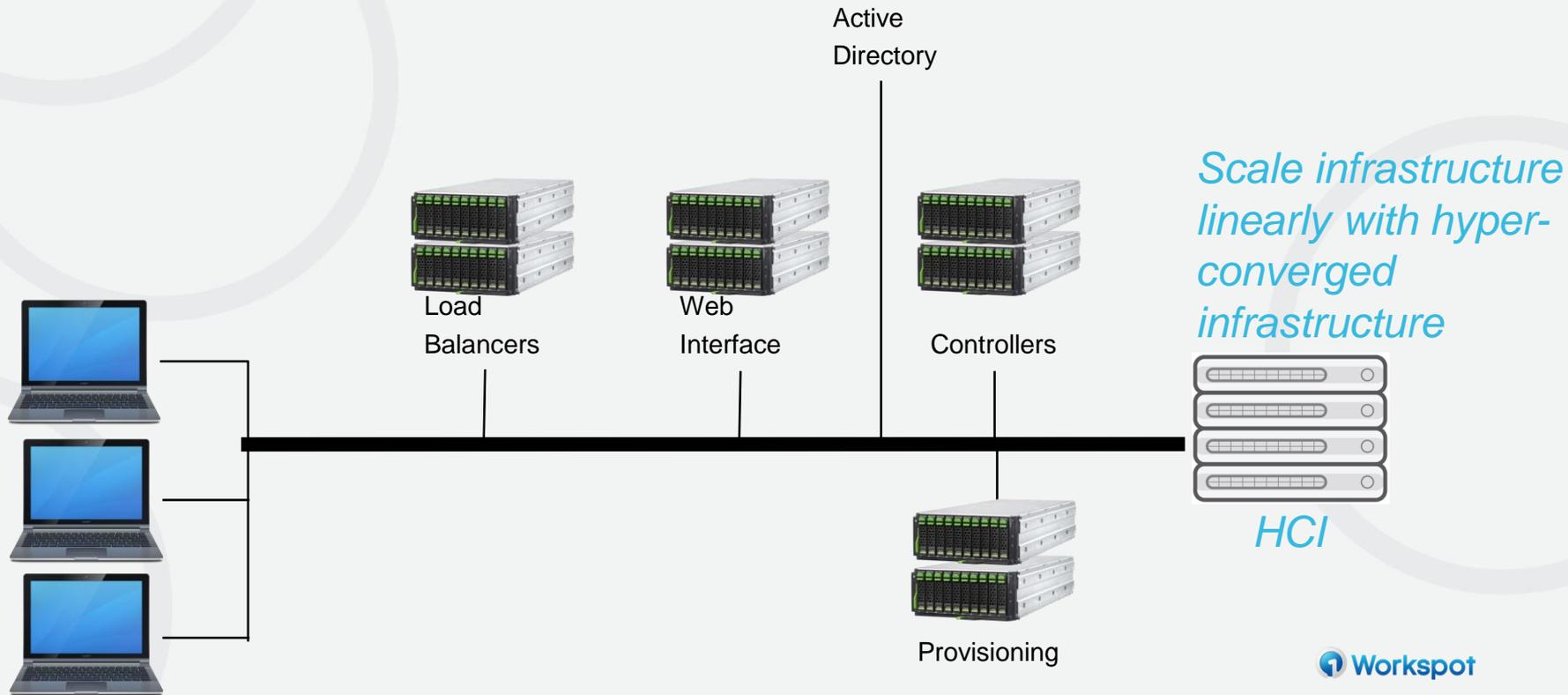


**1000+ servers**

Servers for virtual desktops

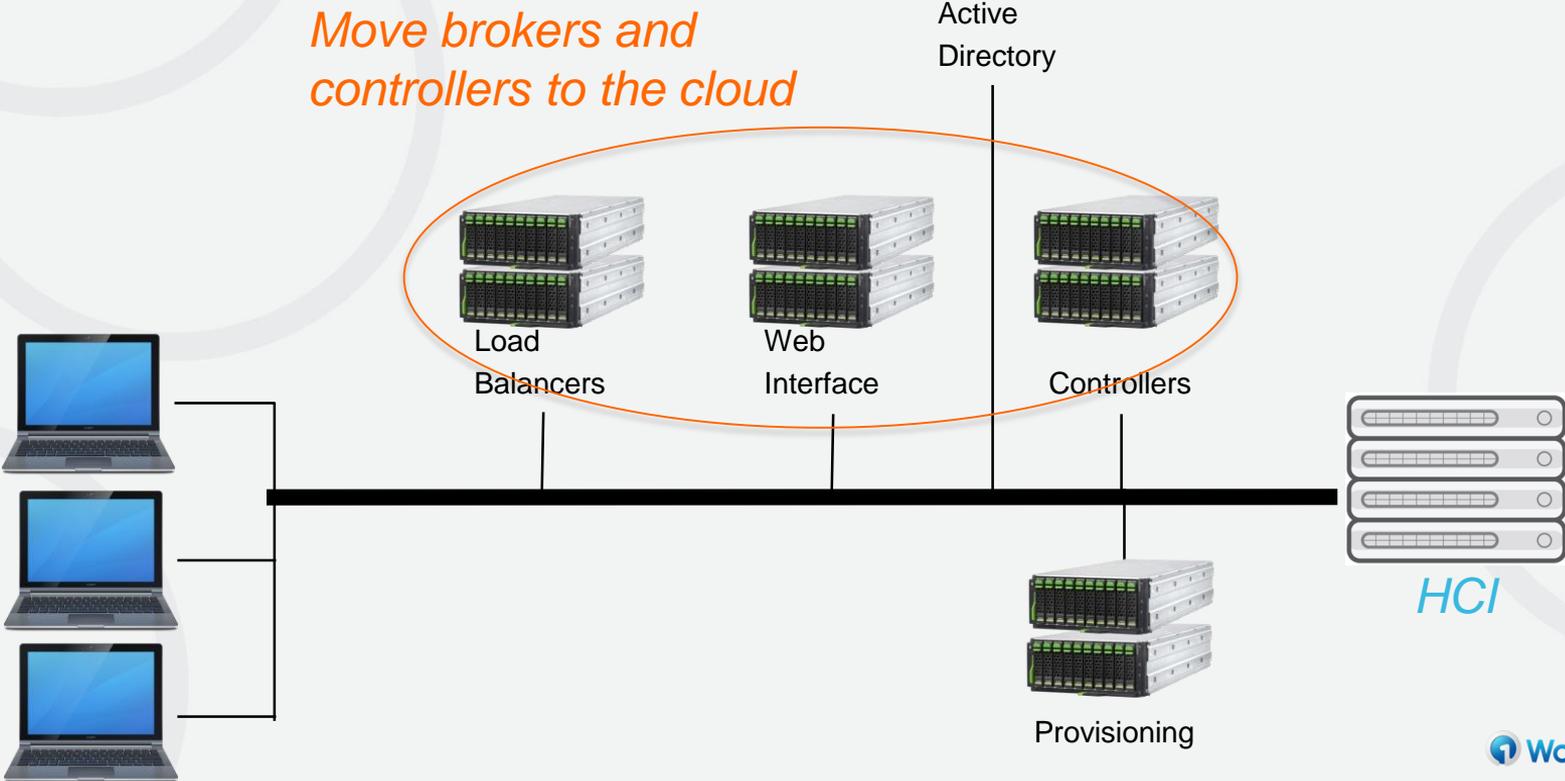
**60TB storage**

# Yes, use hyper-converged infrastructure to consolidate servers and storage for virtual desktops



# Step 2: Can we move the controllers, web interface, load balancers to the cloud?

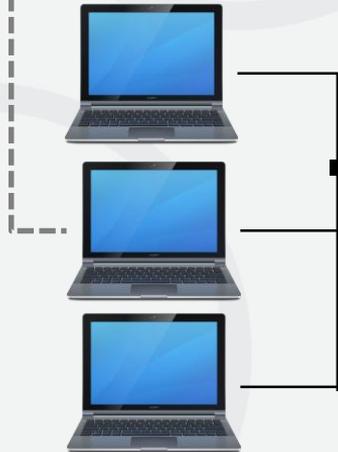
*Move brokers and controllers to the cloud*



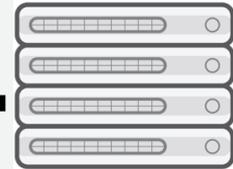
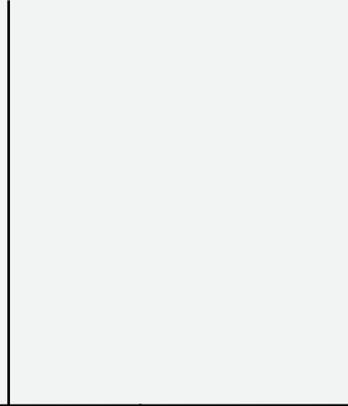
# Yes, with a modern control plane architecture



- *Simple*
- *Multi-tenant*
- *Auto-scale*
- *Lower OpEx*
- *Lower CapEX*
- *No desktops in the cloud*
- *No data proxied through cloud*

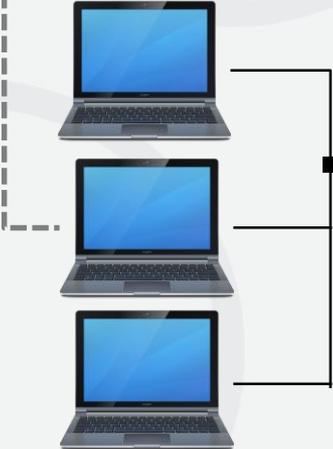


Active  
Directory



HCI

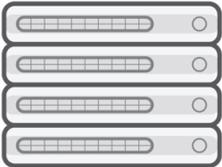
# Step 3: Do we need dynamic provisioning?



Active Directory



Provisioning



HCI

# No, because of Flash storage and de-duplication built into HCI we can just use persistent desktops



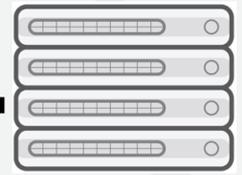
Active Directory

- Give each user a persistent desktop
- Let infrastructure de-dup
- Re-use existing PC Lifecycle management tools like SCCM, etc.

*Eliminate provisioning*



Provisioning



HCI

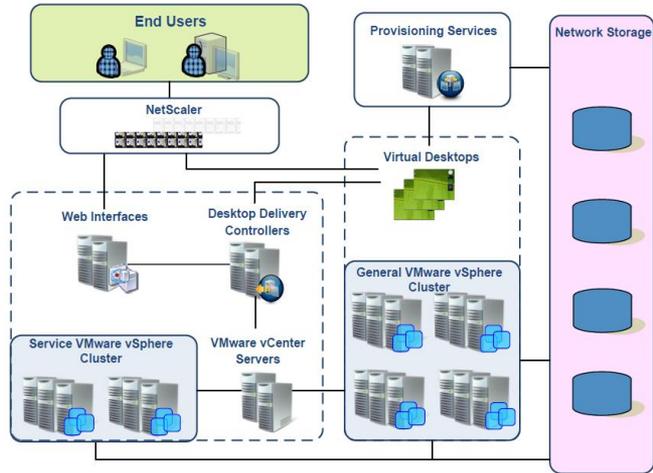
# VDI 2.0 becomes 10x simpler!



1. Hyper-Converged Infrastructure lowers the CapEx for persistent desktops
2. Existing PCLM tools can be used to manage the lifecycle of the virtual desktops, and that keeps OpEx low.
3. Cloud management of the virtual desktops reduces OpEx 90%.
4. Scaling out to more users is linear and immediate.



# VDI 1.0



Complex architecture for a complex data center:

- Every issue is a multi-organization problem (Servers/Storage/Networking/Virtualization)
- Optimizations like golden image, dynamic desktops, and app layering reduce cost and improve performance of storage, but introduce high operational complexity

# VDI 2.0



Optimized for the cloud & HCI resulting in a 10x simpler solution

- 1 admin per 10,000 desktops vs. 1 admin per 1000 desktops for VDI 1.0

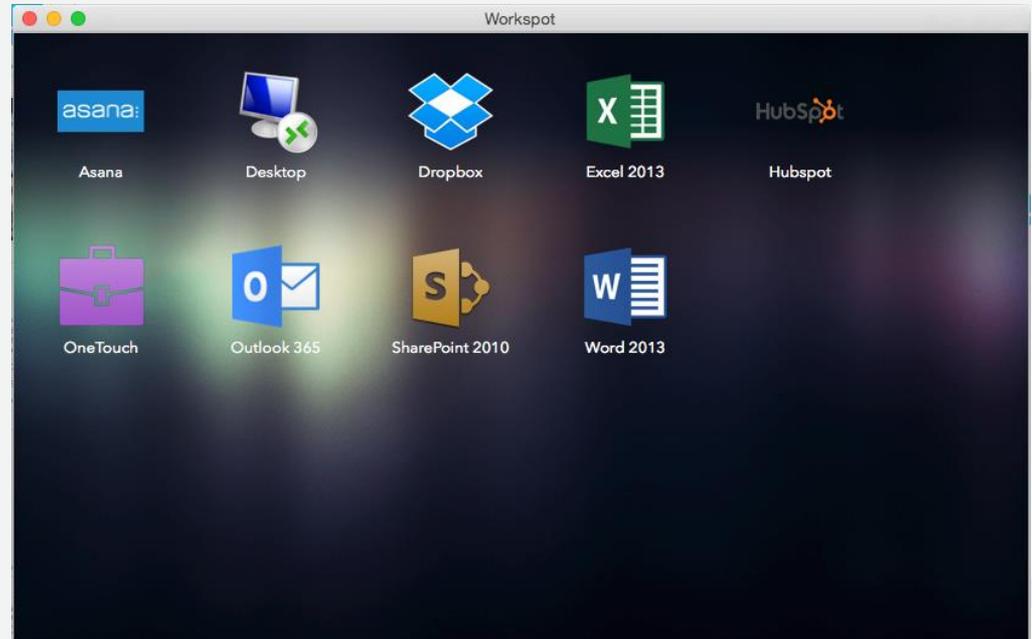
# What about the user experience limitations with VDI 1.0?

- Remoting protocols are reaching the limitations of the laws of physics: latency and bandwidth
- Small differences between HDX, PCoIP, and RDP
- We need to think differently:
  - Why remote web applications?
  - Why should we restrict the availability to online scenarios only?
  - Can we optimize the user experience for mobile?

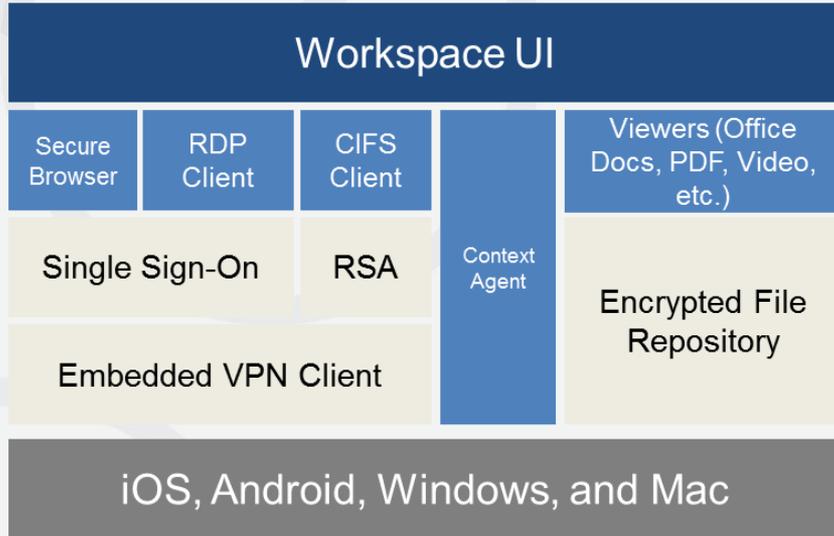
# We need to mix-and-match apps and virtual desktops...

Some users would get Apps, some would get Virtual Desktops, some both:

- Based on desired TCO for user persona
- Optimize user experience for important apps

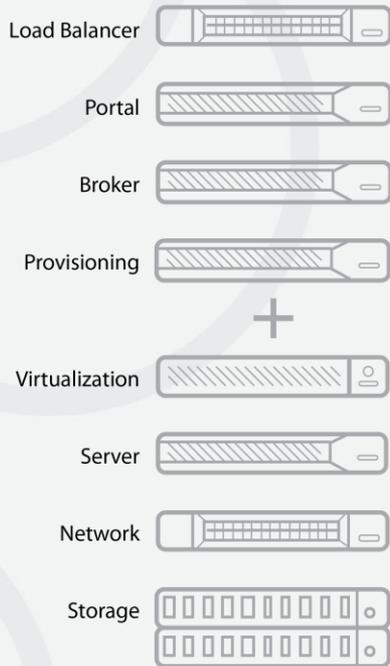


# Rich cross-platform client architecture enables mobile users in ways thin clients can't

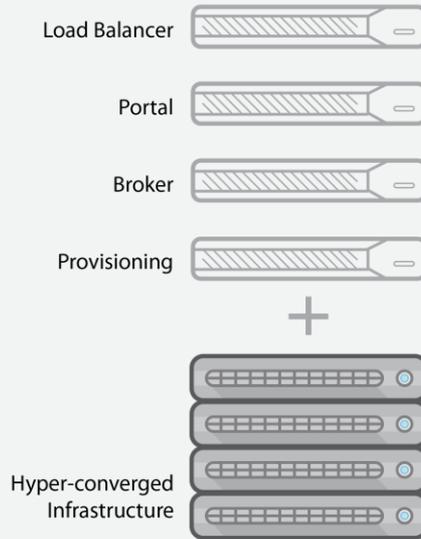


1. Consistent end user experience across different platforms
2. Best app & protocol for the job:
  - Browser for web, SaaS, video
  - CIFS for files
  - RDP for MS apps
3. Offline access to local docs with document viewers
4. Simplify security with built-in VPN, SSO, MFA/RSA, and encrypted files

# VDI 2.0 is 10x simpler!



VDI 1.0



VDI 2.0



Want more information?

*<http://VDI20.com/get-it-now>*