

Citrix Virtual Desktops hosted on Microsoft Azure drives superior scalability performance and reduces OpEx



Research Summary

Independent third-party scalability and performance testing of Citrix Virtual Apps and Desktops deployment with Microsoft Windows Virtual Desktop on Microsoft Azure revealed substantial enterprise IT and economic benefits. Adhering to Citrix Virtual Apps & Desktops deployment configuration guidelines, a typical enterprise can expect to:

- Reduce Azure virtual machine costs by 19% – 22%
- Increase user density by 3X with Citrix HDX optimization
- Improve user response time by 6% with Citrix MSCIO

Testing Methodology

Login VSI was used to simulate Citrix Virtual Desktop sessions against a single Azure virtual machine (VM) instance. For each Azure VM instance type tested, performance and price-performance comparisons were made by evaluating the end user response time against an expected threshold for density (increase or decrease), Azure storage type (standard or premium) response time, HDD versus SSD disk drive performance, and the impacts of enabling MCSIO cache. Tests were conducted against *task worker* user profiles and *knowledge worker* user profiles.

For additional technical details, refer to the complete set of research report documentation:

The scalability and economics of delivering Citrix Virtual App and Desktop services on Azure



Enterprise IT departments are migrating Windows desktops to the cloud and evaluating Citrix Virtual Apps and Desktops infrastructure with Windows Virtual Desktops on Microsoft Azure. Citrix Virtual Apps and Desktops is the most flexible, secure, hybrid cloud solution available for delivery of Windows, Linux, SaaS, and Web applications. Microsoft Azure supports all control and workload components required for a scalable, high-performance, and cost-effective Citrix deployment.

Citrix decreases Azure virtual machine expenditures by 19% – 22%

The Citrix recommended deployment configurations used in this testing demonstrated that enterprise customers can achieve significant Azure virtual machine (VM) cost savings. By pairing the most optimal Azure VM type with employee user roles based on workload type(s), **Azure VM OpEX expenditures can be reduced by 19% to 22%.**

In a typical enterprise deployment with 1,000 task workers and 1,000 knowledge workers, **task worker VM costs can be reduced by \$43,200 per year and knowledge worker VM costs reduced by \$51,840** by selecting the optimal VM instance. Annually, these configuration optimizations result in a **22% cost reduction for task workers and 19% for knowledge workers.**

Citrix HDX optimization increases per VM user density by 3X

Citrix HDX optimization for Microsoft Teams (and Office 365) provides the best possible Teams and Office experience in a Citrix Virtual Apps and Desktop environment hosted on Azure. The HDX optimization offloads CPU and memory intensive processes like video and VoIP calls in a virtualized environment from the VM to the endpoint device, reducing the workload on the server VM. Citrix testing demonstrates that **user density per server can be increased by a factor of 3x with Citrix HDX optimization**. Not only does this achieve greater server density, it **reduces the total number of VMs required for a deployment**.

In addition, Citrix Autoscale allows IT to easily scale up or down a Citrix Virtual Apps and Desktop environment as business requirements change.

Citrix MCSIO improves virtual desktop user response time by 6%

Citrix Machine Creation Services I/O cache (MCSIO) improves the application and desktop response time in a virtual desktop, resulting in applications that respond with efficient interactions, eliminating lags in response time. MCSIO accomplishes this by reducing traffic to shared storage in Citrix Virtual Desktop environment. Research test results showed enabling MCSIO cache on hard drive disks (HDD) yields better performance and end-user experiences than solid-state drives (SSD) at lower cost. **The average user response time of a virtual desktop decreased from approximately 905ms using a premium 128GB SSD to approximately 848ms using a standard 64GB HDD with Citrix MCSIO enabled, yielding a 6.3% improvement**. The result, Office 365 applications respond faster, real-time video plays without buffering, and Microsoft Teams HDX-optimized VoIP calls are crystal clear without interruption.

Conclusion:

Maximize your IT investments by deploying Citrix Virtual Apps and Desktops on Microsoft Azure.

Deploying Citrix Virtual Apps and Desktops combined with Windows Virtual Desktops on Microsoft Azure provides the best and most cost-effective architecture for delivery of Windows, Linux, SaaS, and Web applications. With independent validation of Citrix's recommended configuration for virtualized desktop deployment, enterprises will find that Citrix plus Microsoft Azure can improve their desktop virtualization ROI by:

- Reducing Azure virtual machine costs by 19% – 22%
- Increasing user density by 3X with Citrix HDX optimization
- Improving user response time by 6% with Citrix MCSIO



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The customer benefits outlined in this paper are based on independent test results in a simulated virtual machine environment. Individual customer results will vary based on deployment configuration, network conditions, and infrastructure design.